GETTLER-RYAN INC.

TRANSMITTAL

TO: Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

DATE: March 23, 1999
PROJ. #: 140101.02-3
SUBJECT: Work Plan
Tosco 76 Branded Facility
No. 6419
6401 Dublin Boulevard
Dublin, California

FROM:
Clyde J. Galantine
Project Geologist
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COMMENTS:
Enclosed is one copy of the above work plan. If you have any questions or comments, please call me at (925) 551-7555.

cc: Eva Chu, Alameda County Health Care Services Agency

GETTLER-RYAN INC.

WORK PLAN FOR MONITORING WELL INSTALLATION

at

Tosco 76 Branded Facility No. 6419
6401 Dublin Boulevard
Dublin, California

Report No. 140101.02-1

Prepared for:

Mr. David B. De Witt
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2000 Crow Canyon Place, Suite 400
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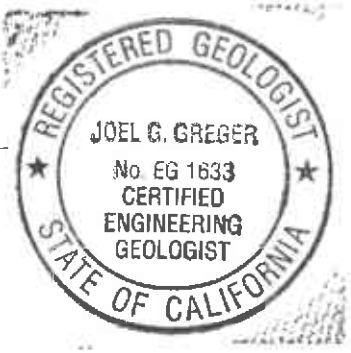
C.E.G. EG 1633



March 22, 1999

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at

Tosco 76 Branded Facility No. 6419
6401 Dublin Boulevard
Dublin, California

Report No. 140101.02-1

INTRODUCTION

At the request of Tosco Marketing Company (Tosco), Gettler-Ryan Inc. (GR), has prepared this Work Plan for the installation of three groundwater monitoring wells to further evaluate groundwater conditions at the site. This work plan has been prepared in response to an Alameda County Health Care Services Agency (ACHSCA) letter dated October 16, 1998 requesting delineation of the dissolved hydrocarbon plume down-gradient of on-site monitoring well MW-1. The proposed work includes: preparing the site safety plan; obtaining the required well installation permits; installing three on-site groundwater monitoring wells; surveying the wellhead elevations; developing and sampling the wells; collecting and submitting selected soil and groundwater samples for chemical analysis; arranging for Tosco's contractor to dispose of the waste materials; and preparing a report documenting the field activities and analytical results associated with the well installation.

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 Underground Storage Tank Regulations, 1994*, the Regional Water Quality Control Board's (RWQCB) *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites*, and ACHSCA guidelines.

SITE DESCRIPTION AND BACKGROUND

The subject site is an active service station located on the western corner of the intersection of Dublin Boulevard and Dougherty Road in Dublin, California (Figure 1). Aboveground facilities consist of two dispenser islands under a canopy, a station building, and a car wash. Pertinent site features are shown on Figure 2.

In September 1993, two gasoline underground storage tanks (USTs), one waste oil UST, one underground septic tank, and the associated product piping were removed from the site. Two double-wall glasteel USTs were installed in the same pit immediately northeast of the canopy and dispenser islands (Kaprealian Engineering Inc., 1994). On-site groundwater monitoring wells MW-1, MW-2, and MW-3 were installed in 1994. Groundwater has been historically reported at approximately 5 to 10 feet below ground surface (bgs). Groundwater flow direction has been reported as southwest for the last eight sampling events dating back to August 1995 (MPDS, 1995 through 1997, GR, 1998).

PROPOSED SCOPE OF WORK

GR proposes to install on-site groundwater monitoring wells to further delineate the dissolved hydrocarbon plume. GR Field Methods and Procedures are included in Appendix A. To perform this scope of work, GR proposes the following tasks:

Task 1. Pre-Field Activities

Prepare a site-specific safety plan, and obtain the necessary well installation permits from the ACHSCA and Zone 7. Mark each drilling location with white paint. Notify Underground Service Alert (USA) a minimum of 48 hours prior to drilling. A subsurface utility locator will also inspect the proposed locations for the presence of subsurface utilities.

Task 2. Well Installation

Install four groundwater monitoring wells to approximately 19 feet bgs at the locations shown on Figure 2. Well location is subject to access and underground and overhead utility locations. Drilling and well construction activities will be performed by a California licensed driller. The well borings will be advanced using 8-inch-diameter hollow-stem augers and truck- or track-mounted drill rig. A GR geologist will observe drilling, collect soil samples for description and possible chemical analyses, describe the encountered soil, and prepare a log of the borings.

The groundwater monitoring wells will be constructed of 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) well casing and 0.02-inch machine-slotted PVC well screen. The screened interval will extend from approximately 4- to 19-feet bgs. This proposed screen interval is designed to accommodate known groundwater level fluctuations at the site. Proposed Well Construction Details are shown on Figure 3.

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 data will be recorded on each boring log.

Soil samples for description and possible chemical analysis will be obtained from each boring at five-foot intervals, as a minimum. 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 unsaturated soil sample from each boring will be submitted for chemical analysis as described in Task 5.

Drill cuttings will be stockpiled at the site pending disposal. Stockpiled cuttings will be placed on and covered with plastic sheeting. Four soil samples from the drill cuttings will be collected for

disposal characterization as described in Appendix A. These samples will be submitted to the laboratory to be composited into one sample and analyzed as described in Task 5. Once approval is granted, drill cuttings will be transported by a Tosco-approved soil transporter to Forward Landfill, located in Manteca, California.

Task 3. Wellhead Survey

Following installation, the tops of the well casings will be surveyed to mean sea level by a California-licensed surveyor. Horizontal coordinates of the well locations will be obtained at the same time.

Task 4. Well Development and Sampling

The newly installed groundwater monitoring wells will be developed after being allowed to stand a minimum of 72 hours following installation. Groundwater samples from the newly installed wells will be collected immediately upon completion of well development. Rinsate water and groundwater purged from the wells during development and sampling will be transported to the Tosco Refinery in Rodeo, California for proper disposal. The groundwater samples will be analyzed as described in Task 5.

Task 5. Laboratory Analyses

All samples will be submitted to a California-certified Hazardous Materials Testing Laboratory. Soil and groundwater samples will be analyzed for TPHg, BTEX, and MtBE by EPA Methods 5030/8015/8020. The groundwater will also be analyzed for MtBE by EPA Method 8260. The disposal characterization sample from the soil stockpile will be analyzed for TPHg, BTEX, MtBE, and total lead by EPA Method 6010.

Soil samples for porosity, TOC/FOC, bulk density, water content.

Task 6. Reporting

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

PROJECT STAFF

Mr. Joel G. Greger, a Certified Engineering Geologist in the State of California (C.E.G. EG 1633), will provide technical oversight and review of the work. Mr. Douglas J. Lee, Project Manager, will supervise and direct field and office operations. GR employs a staff of geologist, engineers, and technicians who will assist with the project.

SCHEDULE

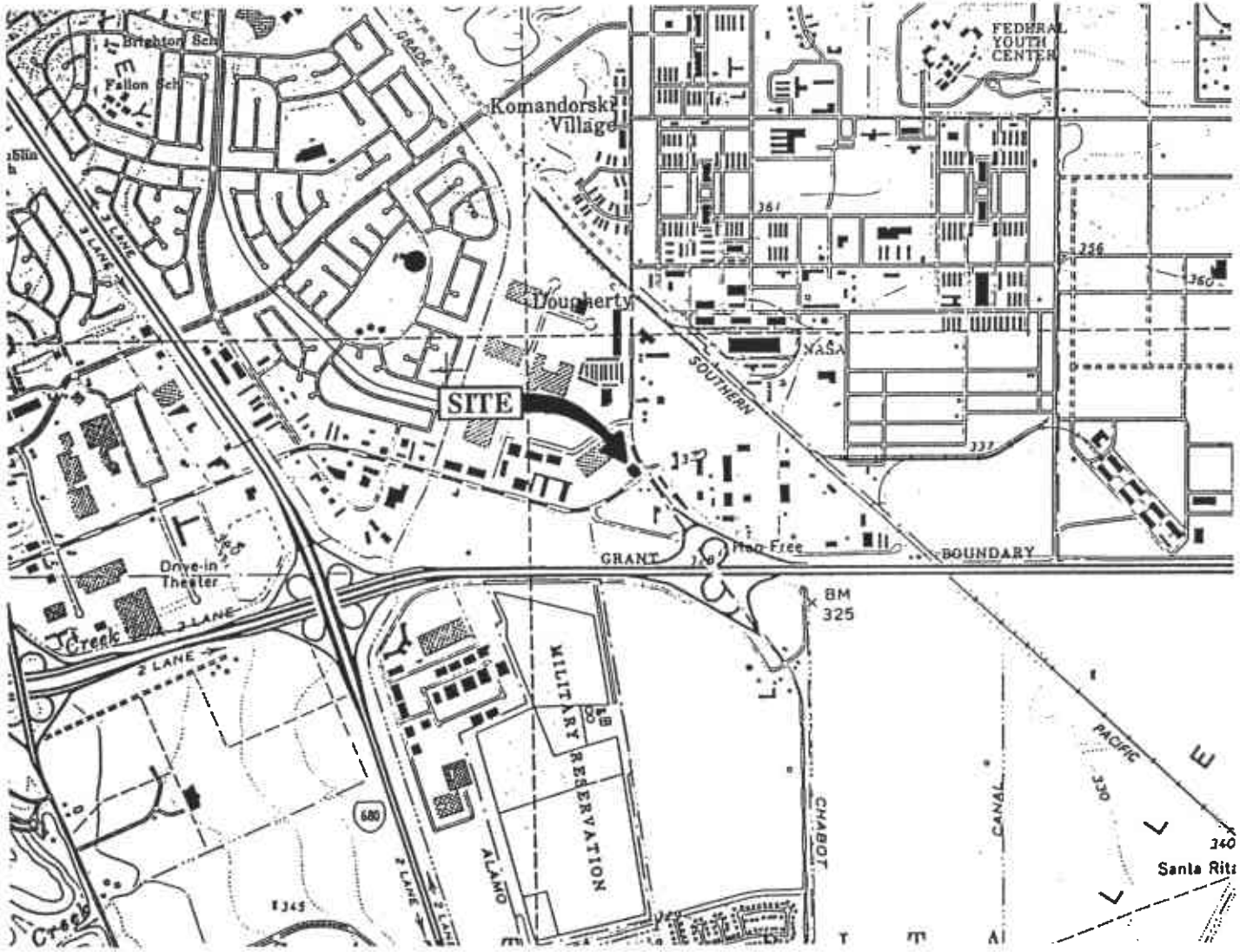
Implementation of the proposed scope of work will commence upon receipt of regulatory approval and a well installation permit.

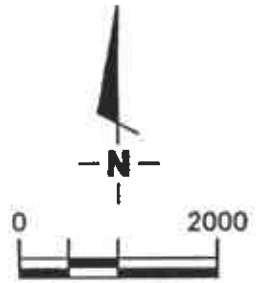
REFERENCES

Gettler-Ryan Incorporated, 1998, Groundwater Monitoring and Sampling Report, Semi-Annual 1998 – Events of February 2 and August 24, 1998 for Tosco (Unocal) Service Station No. 6419, 6401 Dublin Boulevard, Dublin, California; Job #180021 dated April 10 and October 13, 1998.

Kaprealian Engineering Incorporated, 1994, Preliminary Ground Water Investigation at Unocal Service Station No. 6419, 6401 Dublin Boulevard, Dublin,, California; Report No. KEI-P93-0401.R5, dated April 7, 1994.

MPDS Services Incorporated, 1995 through 1997, Quarterly and Semi-Annual Data Reports for Unocal Service Station No. 6419 6401 Dublin Boulevard, Dublin, California; Reports Nos. MPDS-UN6419-5 through MPDS-UN6419-10, dated September 19, 1995 through September 16, 1997.





Base Map: USGS Topographic Map

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VICINITY MAP
Tosco 76 Branded Facility #6419
6401 Dublin Boulevard
Dublin, California

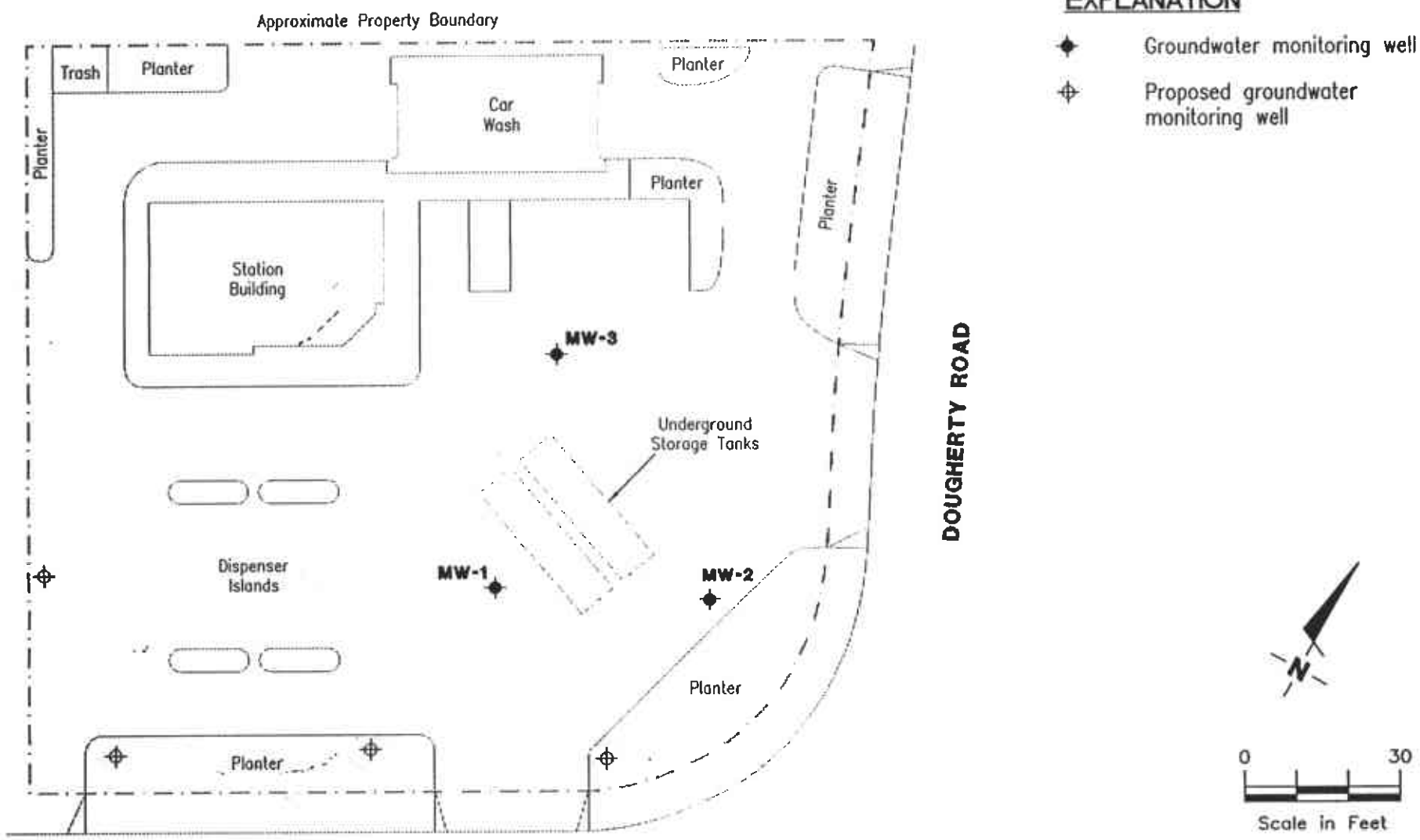
FIGURE
1

JOB NUMBER
140101

REVIEWED BY

DATE
November, 1998

REVISED DATE



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.

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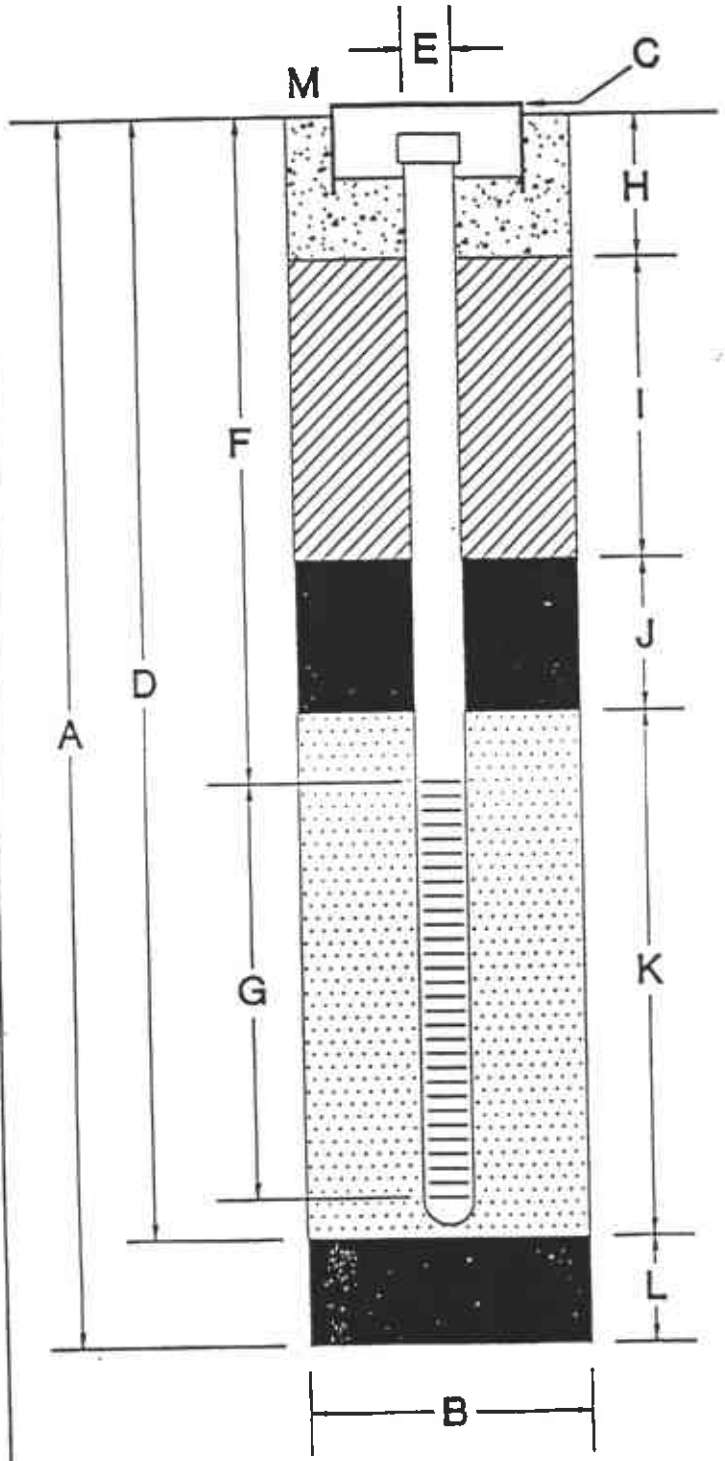
SITE PLAN
Tosco 76 Branded Facility #6419
6401 Dublin Boulevard
Dublin, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
140101.02		March, 1999	

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 CONCRETE

I Backfill From 1 to 2 ft.
Backfill Material NEAT CEMENT

J Seal From 2 to 3 ft.
Seal Material BENTONITE

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

L Bottom Seal NONE ft.
Seal Material _____

M Traffic-rated Well Box, locking plug, lock

Note: Depths Measured From Initial Ground Surface.

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Proposed Well Construction Detail
Tosco (Unocal) Service Station No. 6419
6401 Dublin Boulevard
Dublin, California

JOB NUMBER	REVIEWED BY	DATE	REVISION DATE
140101		10/98	

APPENDIX A

GR 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 and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the of these plans contents 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

Exploratory 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 exploratory soil boring with a split-barrel sampler or other appropriate sampling device fitted with clean brass 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 soil is 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 head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. 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.

Stockpile Sampling

Stockpile samples consist of four individual sample liners collected from each 100 cubic yards (yd^3) of stockpiled soil material. Four arbitrary points on the stockpiled material are chosen, and discrete soil sample is collected at each of these points. Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass tube into the stockpiled material with a wooden mallet or hand driven soil sampling device. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, placed in the

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.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory 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 space adjacent to the entire screened interval. A bentonite transition 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 cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

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 50 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 then driving the stainless 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.

Wellhead Survey

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL).

Well Development

The purpose of well development is to improve hydraulic communication between the well and surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Groundwater Monitoring and Sampling

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to sampling each well, the static water level is measured using an electric sounder and/or calibrated portable oil-water interface probe. Both static water-level and separate-phase product thickness are measured to the nearest ± 0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ± 0.01 foot with a decimal scale tape. The monofilament line used to lower the bailer is replaced between borings with new line to preclude the possibility of cross-contamination. Field observations (e.g. product color, turbidity, water color, odors, etc.) are noted. Water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Sample Collection and Labeling

A temporary PVC screen is installed in the boring to facilitate a grab groundwater sample collection. Samples of groundwater are collected from the surface of the water in each well or boring using the teflon bailer or a pump. The water samples are then gently poured into laboratory-cleaned containers and sealed with teflon-lined caps, and inspected for air bubbles to check for headspace. The samples are then labeled by an adhesive label, noted in permanent ink, and promptly placed in an ice storage. A Chain-of-Custody Record is initiated and updated throughout handling of the samples, and accompanies the samples to the laboratory certified by the State of California for analyses requested.