KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

January 3, 1992

Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, CA 94621

Attention: Mr. Barney Chan

RE: Unocal Service Station #5043
449 Hegenberger Road
Oakland, California

Dear Mr. Chan:

Per the request of Mr. Ron Bock of Unocal Corporation, enclosed please find our reports, as well as our work plan/proposal, all dated December 17, 1991, for the above referenced site.

If you have any questions, please call our office at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.

Judy A. Dewey

jad\82

Enclosure

cc: Ron Bock, Unocal Corporation

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Consulting Engineers
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KEI-P91-1004.P1
December 17, 1991

Unocal Corporation
2000 Crow Canyon Place, Suite 400
P.O. Box 5155
San Ramon, California 94583

Attention: Mr. Ron Bock

RE: Work Plan/Proposal
Unocal Service Station #5043
449 Hegenberger Road
Oakland, California

INTRODUCTION

In our recent soil sampling report (KEI-J91-1004.R1) dated December 17, 1991, Kaprealian Engineering, Inc. (KEI) recommended the installation of three monitoring wells.

This work plan/proposal for the installation of the wells has been prepared for your review and consideration. The site background, recent field activities, and a discussion of our recommendations is included in the referenced report.

PROPOSED FIELD WORK

PHASE I - WELL INSTALLATION

1. KEI proposes to install three two-inch diameter monitoring wells (designated as MW1, MW2, and MW3 on the attached Site Plan) using hollow stem auger equipment. Permits will be obtained from the Alameda County Health Care Services Agency, as necessary, prior to beginning work.

   The wells will be drilled approximately 10 to 15 feet into the saturated zone of the first encountered ground water, unless a clay aquitard of at least 5 feet thickness is encountered first, at which time drilling will be terminated. Based on our present understanding of the site, the proposed wells will be drilled and installed to depths of about 15 to 20 feet below grade.

2. Soil samples will be collected continuously, beginning at a depth of 3 feet below grade, and continuing until the first water table is encountered (anticipated at about 4 to 4.5 feet below grade). Sampling for lithologic purposes only will

continue below the water table to the total depth drilled. Classification of soil will be done using the Unified Soils Classification System (USCS) by KEI's field engineer or geologist. Samples will be collected in a California modified split-spoon sampler with two-inch diameter brass liners. The sampler will be advanced ahead of the drilling augers at designated depths by dropping a 140 pound hammer 30 inches. Blow counts will be recorded. The samples will be removed from the sampler, retained in the brass liners, and sealed with aluminum foil, plastic caps, and tape. They will be labeled and stored in a cooler, on ice, for delivery to a State certified laboratory.

3. Finalized Boring Logs will be prepared from field logs and submitted to the Alameda County Health Services Agency, and to the Regional Water Quality Control Board (RWQCB), San Francisco Bay Region.

4. Ground water is anticipated at approximately 4 to 4.5 feet below grade, based on the ground water level found during tank removal.

5. Well Construction:

   Casing Type: Schedule 40 PVC, flush threaded joints, 0.01 inch factory slot, two-inch diameter. Screen to run from total depth of the well to approximately 4 feet below grade. Monterey sand (#2/12) will fill the annular space from total depth to 3 feet below grade. A 1/2 to 1 foot thick bentonite seal will be placed in the annular space on top of the sand pack. Neat cement will be poured from the top of the bentonite seal to the surface.

   Well casings will be secured with a waterproof cap and a padlock. A round, watertight, flush-mounted well cover will be concreted in place over the top of the casing.

6. Wells will be checked for depth to the water table and the presence of free product and sheen (using an interface probe and/or paste tape), prior to both development and sampling. Water levels will be measured with an electronic sounder. The wells will be developed by the use of a surface pump, approximately one week after well completion. Wells will be pumped until expelled water is clear and relatively free of turbidity. Effluent generated during well development will be contained in barrels and hauled from the site by a licensed hazardous materials hauler.

The top of the Christy box covers for each well will be surveyed to Mean Sea Level by a licensed land surveyor.

7. Ground Water Sampling:

The wells will be purged (with a surface pump or bailer) of approximately 4 to 10 casing volumes prior to sampling, at least 24 hours after development. After recovery, samples will be collected using a clean Teflon bailer, and will be promptly decanted into 40 ml VOA vials and/or one-liter amber bottles, as appropriate. Vials and/or bottles will be sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, for delivery to a State certified laboratory. Properly executed Chain of Custody documentation will accompany all samples. The sampling bailer will be cleaned with soap and a clean water rinse between uses.

8. Laboratory Analyses:

Selected soil and all water samples will be analyzed by Sequoia Analytical Laboratory in either Concord or Redwood City, California, both State certified laboratories, for total petroleum hydrocarbons (TPH) as gasoline using EPA method 5030 in conjunction with modified 8015, TPH as diesel using EPA method 3510 (water) and 3550 (soil) in conjunction with modified 8015, and benzene, toluene, xylenes, and ethylbenzene using EPA method 8020, as recommended by the RWQCB, as specified in the Tri-Regional Guidelines.

Analytical results will be presented in tabular form, showing sample depths, results, and detection limits. The results will be used to delineate the vertical and lateral extent of the subsurface contaminants. A cross sectional profile will be constructed, as appropriate, showing subsurface lithology to depth drilled and first water table depth.

9. Hydrology:

Ground water flow direction will be determined from survey data and water table depths. The ground water flow direction will be shown on the Site Plan.

10. Discussion and Recommendations:

Results of Phase I will be described in a technical report. If levels of contaminants in the ground water are found to be near or below action levels, KEI will recommend a 12 month program of monthly monitoring and quarterly sampling to document the levels.

If contaminant levels in the ground water are found to significantly exceed action levels, Phase II will be initiated.

The technical report will be submitted to the Alameda County Health Care Services Agency, and to the RWQCB, San Francisco Bay Region.

PHASE II

Phase II will discuss the alternatives for continuing the subsurface investigation if Phase I reveals contamination levels in the ground water significantly in excess of action levels.

Phase II will include a proposal for additional monitoring wells (if necessary), and a ground water monitoring and sampling program for the wells installed during Phase I. The main purpose of Phase II will be to establish a zero line of ground water contamination.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

Should you have any questions regarding this work plan/proposal, please do not hesitate to call me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.

Joel G. Greger
Certified Engineering Geologist

License No. 1633
Exp. Date 6/30/92

Timothy R. Ross
Project Manager

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Attachments: Location Map
Site Plan
QA/QC Plan
Site Safety Plan

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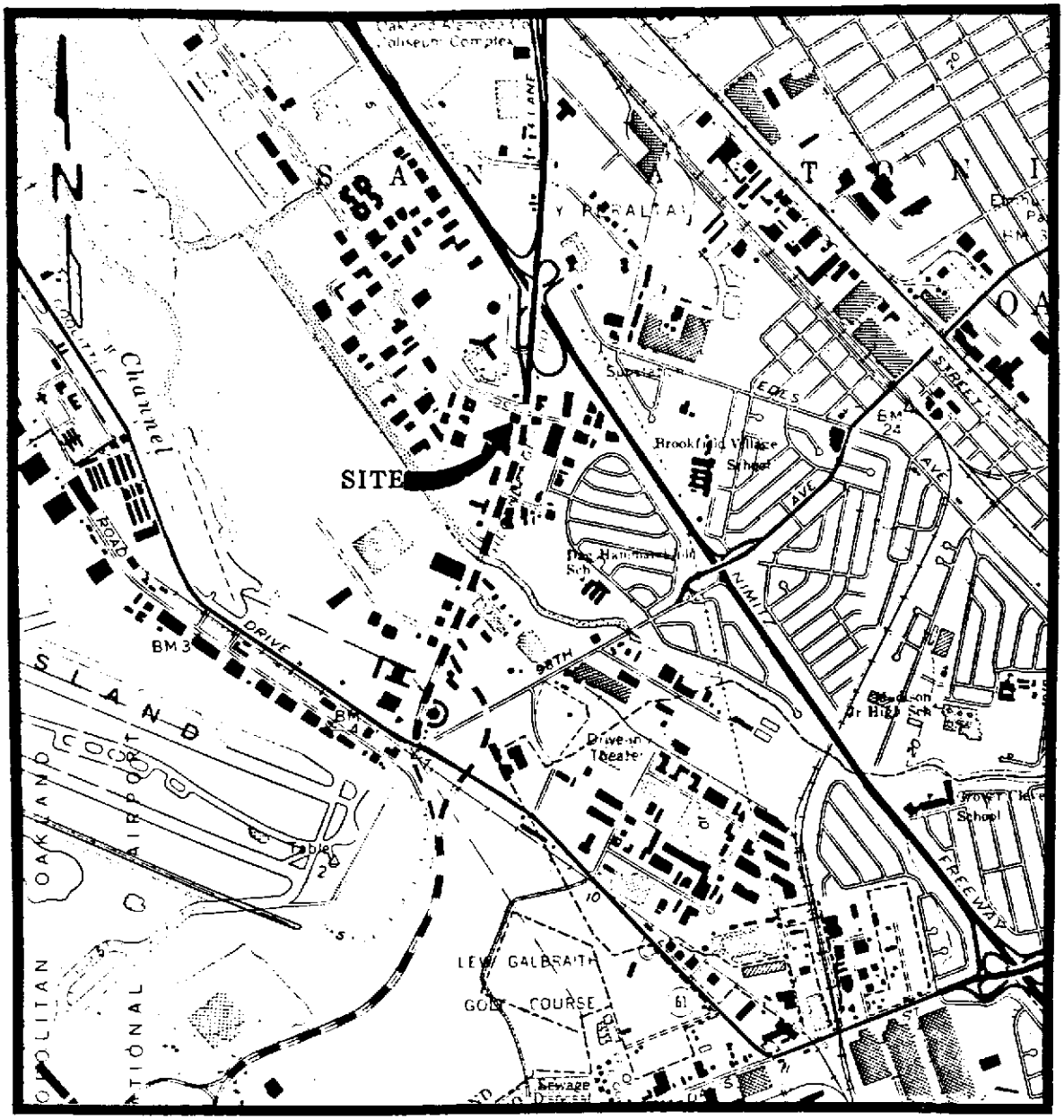

LOCATION MAP

Base modified from 7.5 minute U.S.G.S. San Leandro, California Quadrangle (photorevised 1980)

Unocal S/S #5043
449 Hegenber Road
Oakland, CA

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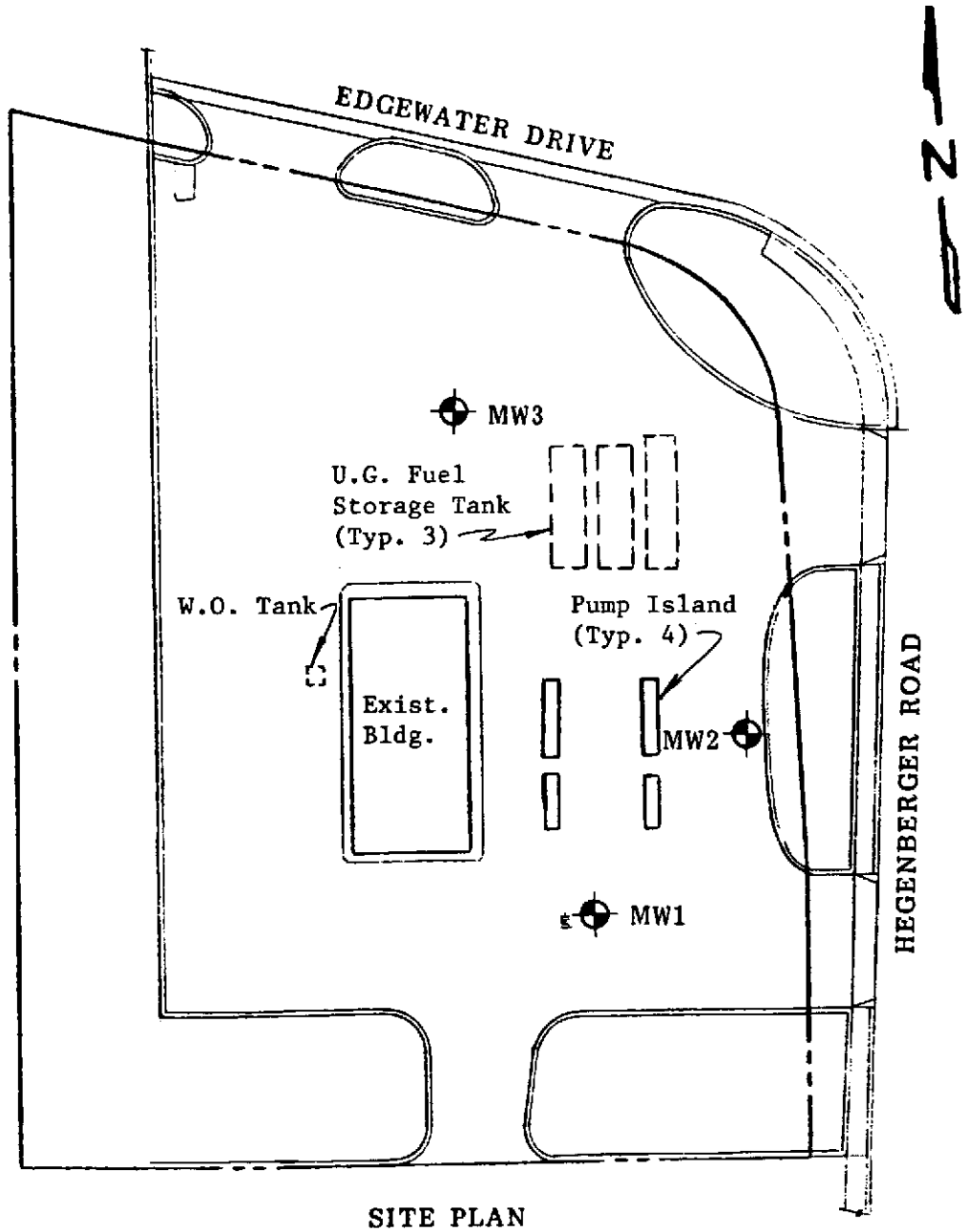


SITE PLAN

LEGEND

⊕ Monitoring well (proposed)

0 40 80
Approx. scale feet

Unocal S/S #5043
449 Hegenberger Road
Oakland, CA

KEI GROUND WATER LEVEL MEASUREMENT AND SAMPLE COLLECTION QA PLAN

Depth to Water Level Measurement

Monitoring well reference elevations are measured to the center of the protective Christy box lid. When the lid is removed and depth to water measurements are desired, a rigid instrument, such as a ruler, is placed across the top of the now open Christy box. Depth to water is measured using an electric water level indicator and referenced to the middle and bottom edge of the rigid instrument spanning the top of the Christy box. Alternatively, a steel or aluminum yardstick covered with water finding paste is attached to a steel tape and lowered until part of the yardstick encounters the water layer. The measured length of the steel tape is added to the unaffected length of the yardstick as measured from the top of the yardstick to the point where the discoloration of the water finding paste begins. Depth to water level measurements are made to the nearest 0.01 feet.

Water levels are measured prior to development, purging or sampling.

Free Product Thickness Measurement

Free product measurements are made to the same reference point as described above for water level measurements. Free product thickness measurements are accomplished in one of several ways.

Depth measurement to the top of the free product layer may be performed using an electric petroleum hydrocarbon indicator. Alternatively, a steel or aluminum yardstick covered with product finding paste is attached to a steel tape and lowered until part of the yardstick encounters the free product layer. The measured length of the steel tape is added to the unaffected length of the yardstick as measured from the top of the yardstick to the point where discoloration of the product finding paste begins.

The total product thickness is determined by finding the difference between the measured depth to product and the measured depth to water.

In most instances, it is possible to place both water finding paste and product finding paste on the yardstick and directly measure the thickness of the discolored product finding paste from the yardstick. Depth to free product or free product thickness measurements are made to the nearest 0.01 feet.

Determination of Sheen

After depth to water and free product measurements are performed, a test for the presence of sheen is conducted. A transparent bailer is lowered into the well in a manner such that only part of the bailer is submerged. The bailer is withdrawn from the well and the surface of the water in the bailer is observed for the presence of sheen as determined by the presence of iridescence or emulsification. Presence of sheen is not investigated if it is determined that free product is present in the well.

Total Well Depth Measurement

Once the test for sheen presence has been conducted, the total depth of the well is measured. Total well depth is determined by measuring from the reference elevation described in the section for Depth to Water level Measurement, above, to the depth at which tension in the tape measure to which the electric probe is attached or the steel tape to which the yardstick is attached becomes slack. Total well depth measurements are made to the nearest 0.05 feet.

Well Purging

In order to obtain a representative sample of the water in the aquifer being sampled, stagnant water in the well casing must be removed to permit well recharge with non-stagnant aquifer water. The removal of stagnant water will be accomplished by the removal of the water to the surface where it will be either disposed of or stored for future disposal.

The purging rate used at a particular monitoring well will depend on the expected or known hydraulic yield of the well.

In moderate to high yield formation wells the purging device will be placed near the top of the screened interval of the well to ensure that non-stagnant formation water will move upward in the screened interval. When purging low yield formation wells, water will be removed from the bottom of the screened interval.

When purging low-yield wells (wells which yield less than 3 casing volumes), the wells will be purged to dryness once. As soon as the well has recovered to a volume sufficient for sampling, samples will be collected. At no time will a well be purged to dryness if the rate of recharge is such that formation water will cascade down the sides of the casing.

During purging operations, the yield parameters of pH, temperature, electrical conductivity (EC) and turbidity will be monitored in the purged water.

Ground water samples will be removed from the monitoring well only after a minimum of five (5) casing volumes have been purged from the well casing, and purging has been of sufficient duration to result in the stabilization of pH, temperature, and EC readings. A well purging/sampling log will be maintained for purging of each monitoring well.

The field parameters of pH, temperature, and EC parameters will be monitored and recorded during the purging operations at a minimum rate of two (2) readings per casing volume purged. Stabilization of the parameters of pH, temperature and EC will be used to indicate that the well has been sufficiently purged for sampling. Parameter stabilization will be indicated by at least three near-constant pH, temperature, and EC values for a minimum of one (1) casing volume. The acceptable range of values for stabilization of the field parameters are ±0.5°C for temperature, ±0.2 for pH, and ±10 percent of the total value of EC.

Standardization of field equipment will be done at the beginning of each use, according to manufactures' specifications and consistent with methods described in EPA SW-846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods.

Sample Collection

Samples of non-stagnant formation water will be collected only after the minimum of five (5) casing volumes of water have been purged from the casing and field parameters have stabilized. In low yield formation wells which were purged to dryness, the sample(s) will be collected as soon as the well has recovered sufficiently for sample collection.

All samples will be collected in an order such that those parameters most sensitive to volatization will be sampled first. A general order of collection for some common ground water parameters follows:

- Volatile Organics Compounds (VOC's)
- Total Organic Halogens (TOX)
- Total Organic Carbon (TOC)
- Total Metals
- Dissolved Metals
- Phenols
- Sulfate and Chloride
- Turbidity
- Nitrate and Ammonia

All samples will be collected in such a manner as to minimize the volatilization or oxidation of a sample due to agitation during transference from pump or bailer to sample container. When a bladder pump is used for the collection of volatile compounds, the flow rate will be adjusted to provide a constant flow stream of approximately 100 milliliters/minute. After samples for volatile compounds have been collected, higher flow rates may be used, particularly if large volumes are necessary. The sampling flow rates will never exceed the flow rate during the purging process.

SITE SAFETY PLAN

A. GENERAL INFORMATION

SITE: Unocal Service Station #5043
449 Hegenberger Road
Oakland, California

LOCATION: West side of Hegenberger Road, just west of Nimitz Freeway

PLAN PREPARED BY: Joel Greger **DATE:** 12/17/91

APPROVED BY: Richard Bradish **DATE:** 12/17/91

OBJECTIVE(S): To install three ground water monitoring wells.

PROPOSED DATE OF INVESTIGATION: Unknown at this time.

BACKGROUND REVIEW Complete: Preliminary: x

DOCUMENTATION/SUMMARY: **OVERALL HAZARD:** Serious: Moderate:
Low: x Unknown:

B. SITE/WASTE CHARACTERISTICS

WASTE TYPE(S): Liquid: x Solid: x Sludge: Gas:

CHARACTERISTIC(S): Corrosive: Ignitable: x Radioactive:
Volatile: x Toxic: Reactive: Unknown: Other (Name):

FACILITY DESCRIPTION: Unocal Service Station vending gasoline and automobile maintenance.

Principal Disposal Method (type and location): Soil cuttings will be placed in barrels and properly disposed after analyses. Rinse water from the auger and sample tool will be retained in a temporary sump and pumped to DOT approved barrels for analysis and approved disposal.

Unusual Features (power lines, terrain, utilities, etc.): Well locations will be such that any overhead power lines will not present a problem. Well locations will be pre-marked and USA (Underground Service Alert) will locate underground utilities prior to drilling activities.

HISTORY (Agency Action, Complaints, Injuries, etc.): See the attached site background information from KEI's proposal KEI-P91-1004.P1 dated December 17, 1991.

C. HAZARD EVALUATION

PARAMETER	TLV (ppm)	IDLH (ppm)	LEL (%)	HEALTH skin	eyes	inge	inha

See attached Material Safety Data Sheets.

SPECIAL PRECAUTIONS AND COMMENTS: None

D. SITE SAFETY WORK PLAN

PERIMETER ESTABLISHMENT: Map/Sketch Attached: x Site Secured:
Perimeter Identified: Zone(s) of Contamination Identified:

Exclusion zone will be maintained with orange cones or yellow tape around the work area.

PERSONAL PROTECTION:
Level of Protection: A_____B_____C_____D__x__
Modifications:

KEI personnel will be provided with organic vapor respirators, inner and outer safety gloves, standard Tyvek suits, and steel-toed boots to be used as necessary.

Surveillance Equipment and Materials:
Instrument Action Level

None

SITE ENTRY PROCEDURES:

None

DECONTAMINATION PROCEDURES:
Personal: Soap and water wash with clean water rinse.
Equipment: Steam clean and wash with non-phosphate detergent and water and rinse with clean water.

FIRST AID:

WORK LIMITATIONS (time of day, weather, heat/cold stress):

Work to be done in daylight hours only and from an upwind direction whenever possible.

INVESTIGATION-DERIVED MATERIAL DISPOSAL: ---

TEAM COMPOSITION:

Team Member	Responsibility
Doug Lee or Wade Weston	Project Geologist/on-site Safety Officer
Joel Greger	Project Manager - Certified Engineering Geologist

E. EMERGENCY INFORMATION

LOCAL RESOURCES:

Ambulance:	911
Hospital Emergency Room:	367-6500 (Humana Hospital)
Poison Control Center:	1-800-523-2222
Police:	911
Fire Department:	911
Explosives Unit:	---
Agency Contact:	484-2600

SITE RESOURCES:

Water Supply:	Yes
Telephone:	Yes
Radio:	No
Other:	---

EMERGENCY CONTACTS:

Name: Mardo Kaprealian Phone: 707/746-6915

Also, drilling contractor will be added when project is scheduled.

EMERGENCY ROUTES: (Give road or other directions; attach map)

Hospital: See attached directions and map.

SITE SKETCH: (Work zones, command post, etc.):

See the attached Site Plan for well locations.

DIRECTIONS FROM SUBJECT SITE TO HOSPITAL

Take Hegenberger Road to Highway 880 south. Exit at Marina Boulevard, go east. Turn right on San Leandro Boulevard. Turn right on Rose Drive, go to end.

MATERIAL SAFETY DATA SHEET

Unocal Corporation
1201 West 5th Street, P.O. Box 7600
Los Angeles, California 90051

MANUFACTURER

UNOCAL REFINING & MARKETING DIVISION
UNION OIL COMPANY OF CALIFORNIA
1201 WEST 5TH STREET
LOS ANGELES, CALIFORNIA 90017

CONTACT FOR FURTHER INFORMATION:
MSDS COORDINATOR 213-977-7589

Transportation Emergencies:
CHEMTREC
(800) 424-9300 Cont. U.S.
(202) 483-7616 (Collect)
from Alaska & Hawaii
Health Emergencies:
Call LOS ANGELES POISON
INFORMATION CENTER (24 hrs)
1-(800)-356-3129

PRODUCT IDENTIFICATION

PRODUCT NAME: UNOCAL 76 UNLEADED GASOLINE

GENERIC NAME: UNLEADED GASOLINE

CHEMICAL FAMILY: PETROLEUM HYDROCARBON MIXTURE

DOT PROPER SHIPPING NAME: GASOLINE

ID NUMBER: UN1203

DOT HAZARD CLASSIFICATION: FLAMMABLE LIQUID

SECTION I - COMPONENTS

SECTION I - COMPONENTS	PERCENT	EXPOSURE LIMIT	UNITS	AGENCY	TYPE
HAZARDOUS COMPONENTS					
GASOLINE					
CAS #: 8006-61-9		300.000	ppm	ACGIH	TWA
		500.000	ppm	ACGIH	STEL
		300.000	ppm	OSHA	TWA
		500.000	ppm	OSHA	STEL
		300.000	ppm	CAL OSHA	TWA
BENZENE					
CAS #: 71-43-2	1.0 - 5.0	10.000	ppm	ACGIH	TWA
		25.000	ppm	MSHA	CEIL-SKIN
		1.000	ppm	OSHA	TWA
		5.000	ppm	OSHA	STEL
		50.000	ppm	CAL OSHA	CEIL
		25.000	ppm	CAL OSHA	EXCUR
		10.000	ppm	CAL OSHA	TWA-SKIN
TOLUENE					
CAS #: 108-88-3	1.0 - 5.0	100.000	ppm	ACGIH	TWA
		150.000	ppm	ACGIH	STEL
		100.000	ppm	MSHA	TWA
		100.000	ppm	OSHA	TWA
		150.000	ppm	OSHA	STEL
		200.000	ppm	CAL OSHA	EXCUR
		100.000	ppm	CAL OSHA	TWA-SKIN
		500.000	ppm	CAL OSHA	CEIL-SKIN

SECTION I - COMPONENTS	PERCENT	EXPOSURE LIMIT	UNITS	AGENCY	TYPE
XYLENES					
CAS #: 1330-20-7	1.0 - 9.0	100.000	ppm	ACGIH	TWA
		150.000	ppm	ACGIH	STEL
		100.000	ppm	MSHA	TWA
		100.000	ppm	OSHA	TWA
		150.000	ppm	OSHA	STEL
		200.000	ppm	CAL OSHA	EXCUR
		100.000	ppm	CAL OSHA	TWA-SKIN
		300.000	ppm	CAL OSHA	CEIL-SKIN
N-HEXANE					
CAS #: 110-54-3	1.0 - 14.0	50.000	ppm	ACGIH	TWA
		500.000	ppm	MSHA	TWA
		50.000	ppm	OSHA	TWA
		50.000	ppm	CAL OSHA	TWA

OTHER COMPONENTS

--NONE--

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA 313 AND 40 CFR 372:	CAS NUMBER	WEIGHT %
BENZENE	71-43-2	1-5
TOLUENE	108-88-3	1-5
XYLENES	1330-20-7	1-9
N-HEXANE	110-54-3	1-14
ETHYLBENZENE	100-41-4	1-5
METHYL TERT-BUTYL ETHER	1634-04-4	0-10
1,2,4-TRIMETHYLBENZENE	95-63-6	1-5

NOTE: GASOLINE IS A COMPLEX COMBINATION OF HYDROCARBONS INCLUDING A SMALL QUANTITY OF BENZENE, TOLUENE, XYLENE AND N-HEXANE. THE IDENTITIES OF INGREDIENTS THAT ARE TRADE SECRETS ARE EXCLUDED FROM THIS LIST.

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EMERGENCY
Have physician call LOS ANGELES POISON INFORMATION CENTER (24 hrs) (800) 356-3129

EYE CONTACT:

IF IRRITATION OR REDNESS DEVELOPS, MOVE VICTIM AWAY FROM EXPOSURE AND INTO FRESH AIR. FLUSH EYES WITH CLEAN WATER. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

SKIN CONTACT:

WIPE MATERIAL FROM SKIN AND REMOVE CONTAMINATED SHOES AND CLOTHING. CLEANSE AFFECTED AREA(S) THOROUGHLY BY WASHING WITH MILD SOAP AND WATER AND, IF NECESSARY, A WATERLESS SKIN CLEANSER. IF IRRITATION OR REDNESS DEVELOPS AND PERSISTS, SEEK MEDICAL ATTENTION.

INHALATION (BREATHING):

IF RESPIRATORY SYMPTOMS OR OTHER SYMPTOMS OF EXPOSURE DEVELOP, MOVE VICTIM AWAY FROM SOURCE OF EXPOSURE AND INTO FRESH AIR. IF SYMPTOMS PERSIST, SEEK IMMEDIATE MEDICAL ATTENTION. IF VICTIM IS NOT BREATHING, IMMEDIATELY BEGIN ARTIFICIAL RESPIRATION. IF BREATHING DIFFICULTIES DEVELOP, OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. SEEK IMMEDIATE MEDICAL ATTENTION.

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

INGESTION (SWALLOWING):

ASPIRATION HAZARD: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. IF VICTIM IS DROWSY OR UNCONSCIOUS, PLACE ON THE LEFT SIDE WITH THE HEAD DOWN. IF POSSIBLE, DO NOT LEAVE VICTIM UNATTENDED. SEEK MEDICAL ATTENTION.

COMMENTS:

NOTE TO PHYSICIANS: EXPOSURE TO HIGH CONCENTRATIONS OF THIS MATERIAL (E.G., IN ENCLOSED SPACES OR WITH DELIBERATE ABUSE) MAY BE ASSOCIATED WITH CARDIAC ARRHYTHMIAS. EPINEPHRINE AND OTHER SYMPATHOMIMETIC DRUGS MAY INITIATE CARDIAC ARRHYTHMIAS IN PERSONS EXPOSED TO THIS MATERIAL. OTHER DRUGS WITH LESS ARRHYTHMOGENIC POTENTIAL SHOULD BE CONSIDERED. IF SYMPATHOMIMETIC DRUGS ARE ADMINISTERED, OBSERVE FOR THE DEVELOPMENT OF CARDIAC ARRHYTHMIAS.

SECTION III - HEALTH HAZARDS/ROUTES OF ENTRY

EYE CONTACT:

THIS MATERIAL MAY CAUSE MILD EYE IRRITATION. DIRECT CONTACT WITH THE LIQUID OR EXPOSURE TO VAPORS OR MISTS MAY CAUSE STINGING, TEARING AND REDNESS.

SKIN CONTACT:

THIS MATERIAL MAY CAUSE MILD SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE REDNESS, BURNING, AND DRYING AND CRACKING OF THE SKIN. CONTACT MAY RESULT IN SKIN ABSORPTION BUT SYMPTOMS OF TOXICITY ARE NOT ANTICIPATED BY THIS ROUTE ALONE UNDER NORMAL CONDITIONS OF USE. PERSONS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS MATERIAL.

INHALATION (BREATHING):

WHILE THIS MATERIAL HAS A LOW DEGREE OF TOXICITY, BREATHING HIGH CONCENTRATIONS OF VAPORS OR MISTS MAY CAUSE FLUSHING, BLURRED VISION, NAUSEA AND SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., HEADACHE, DROWSINESS, DIZZINESS, LOSS OF COORDINATION AND FATIGUE). EXPOSURE TO HIGH CONCENTRATIONS MAY CAUSE LOSS OF CONSCIOUSNESS, CONVULSIONS, RESPIRATORY COLLAPSE AND DEATH. RESPIRATORY SYMPTOMS ASSOCIATED WITH PRE-EXISTING LUNG DISORDERS (E.G., ASTHMA-LIKE CONDITIONS) MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL.

INGESTION (SWALLOWING):

ASPIRATION HAZARD - THIS MATERIAL CAN ENTER LUNGS DURING SWALLOWING OR VOMITING AND CAUSE LUNG INFLAMMATION AND DAMAGE. INGESTION OF EXCESSIVE QUANTITIES OF THIS MATERIAL MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT AND SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., HEADACHE, DROWSINESS, DIZZINESS, LOSS OF COORDINATION, AND FATIGUE).

COMMENTS:

GASOLINE IS A POSSIBLE CANCER HAZARD BASED ON TESTS IN LABORATORY ANIMALS. FOLLOW-UP STUDIES SUGGEST THAT THIS MAY BE A UNIQUE EFFECT IN MALE RATS. UNLEADED GASOLINE HAS BEEN IDENTIFIED AS A POSSIBLE CARCINOGEN BY IARC. BENZENE, A COMPONENT OF THIS PRODUCT, IS A KNOWN CANCER (LEUKEMIA) HAZARD. RESULTS OF TESTS IN HUMANS HAVE SHOWN THAT EXPOSURE TO BENZENE CAN CAUSE IRREVERSIBLE CHANGES IN THE GENETIC MATERIAL (DNA) OF A CELL. THE HUMAN HEALTH CONSEQUENCES OF THESE CHANGES IS NOT FULLY UNDERSTOOD. BENZENE HAS BEEN IDENTIFIED AS A CARCINOGEN BY IARC, NTP AND OSHA. THERE IS INSUFFICIENT EVIDENCE TO SHOW THAT GASOLINE POSES ANY HAZARD RELATED TO ITS LOW BENZENE CONTENT. PERSONS WITH PRE-EXISTING HEART DISORDERS MAY BE MORE SUSCEPTIBLE TO IRREGULAR HEARTBEATS (ARRHYTHMIAS) IF EXPOSED TO HIGH CONCENTRATIONS OF THIS MATERIAL (SEE SECTION II - NOTE TO PHYSICIANS).

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION:

IF CURRENT VENTILATION PRACTICES ARE NOT ADEQUATE TO MAINTAIN AIRBORNE CONCENTRATIONS BELOW THE ESTABLISHED EXPOSURE LIMITS (SEE SECTION I), ADDITIONAL VENTILATION OR EXHAUST SYSTEMS MAY BE REQUIRED. WHERE EXPLOSIVE MIXTURES MAY BE PRESENT, ELECTRICAL SYSTEMS SAFE FOR SUCH LOCATIONS MUST BE USED.

RESPIRATORY PROTECTION:

THE USE OF RESPIRATORY PROTECTION IS ADVISED WHEN CONCENTRATIONS EXCEED THE ESTABLISHED EXPOSURE LIMITS (SEE SECTION I). DEPENDING ON THE AIRBORNE CONCENTRATION, USE A RESPIRATOR OR GAS MASK WITH APPROPRIATE CARTRIDGES AND CANNISTERS (NIOSH APPROVED, IF AVAILABLE) OR SUPPLIED AIR EQUIPMENT.

PROTECTIVE GLOVES:

THE USE OF GLOVES IMPERMEABLE TO THE SPECIFIC MATERIAL HANDLED IS ADVISED TO PREVENT SKIN CONTACT AND POSSIBLE IRRITATION.

EYE PROTECTION:

APPROVED EYE PROTECTION TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT, IRRITATION OR INJURY IS RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN THE WORK AREA FOR FLUSHING EYES AND SKIN. IMPERVIOUS CLOTHING SHOULD BE WORN AS NEEDED.

SECTION V - REACTIVITY DATA

STABILITY:

STABLE UNDER NORMAL CONDITIONS OF STORAGE AND HANDLING.

CONDITIONS TO AVOID (STABILITY):

AVOID CONTACT OF LIQUID, FUMES, OR VAPORS WITH ANY SOURCE OF HEAT, SPARKS, OR FLAME.

INCOMPATIBILITY (MATERIALS TO AVOID):

STRONG OXIDIZING AGENTS SUCH AS CHLORINE, PERMANGANATES AND DICHROMATES MAY CAUSE FIRE OR EXPLOSION.

HAZARDOUS DECOMPOSITION PRODUCTS:

COMBUSTION MAY YIELD SIGNIFICANT AMOUNTS OF CARBON MONOXIDE AND SMALL AMOUNTS OF OXIDES OF SULFUR AND NITROGEN, BENZENE AND OTHER ORGANIC COMPOUNDS.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR

POLYMERIZATION CONDITIONS TO AVOID:

NONE KNOWN

SECTION VI - SPILL AND LEAK PROCEDURES

HIGHWAY OR RAILWAY SPILLS
Call CHEMTREC (800) 424-9300 Cont. U.S.
(Collect) (202) 483-7616 from Alaska & Hawaii

PRECAUTIONS IN CASE OF RELEASE OR SPILL:

STAY UPWIND AND AWAY FROM SPILL/RELEASE. WEAR APPROPRIATE PROTECTIVE EQUIPMENT INCLUDING RESPIRATORY PROTECTION AS CONDITIONS WARRANT (SEE SECTION IV). DO NOT ENTER OR STAY IN AREA UNLESS MONITORING INDICATES THAT IT IS SAFE TO DO SO. ISOLATE HAZARD AREA AND LIMIT ENTRY TO EMERGENCY CREW. EXTREMELY FLAMMABLE. KEEP ALL SOURCES OF IGNITION AND HOT METAL SURFACES AWAY FROM SPILL/RELEASE. STOP SPILL/RELEASE IF IT CAN BE DONE WITHOUT RISK. SPILLED MATERIAL MAY BE ABSORBED INTO AN APPROPRIATE ABSORBENT MATERIAL. CONTACT FIRE AUTHORITIES AND APPROPRIATE FEDERAL, STATE OR LOCAL AGENCIES. PREVENT SPILLED MATERIAL FROM ENTERING SEWERS, STORM DRAINS, OTHER UNAUTHORIZED TREATMENT/DRAINAGE SYSTEMS AND NATURAL WATERWAYS. IF SPILL OF ANY AMOUNT IS MADE INTO OR UPON U.S. NAVIGABLE WATERS, THE CONTIGUOUS ZONE, OR ADJOINING SHORELINES, NOTIFY THE NATIONAL RESPONSE CENTER (PHONE NUMBER 800-424-8802).

WASTE DISPOSAL METHOD:

DISPOSE OF PRODUCT IN ACCORDANCE WITH LOCAL, COUNTY, STATE, AND FEDERAL REGULATIONS.

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS:

STORE ONLY IN APPROVED CONTAINERS. KEEP CONTAINERS TIGHTLY CLOSED, OUT OF DIRECT SUNLIGHT, AND AWAY FROM ALL SOURCES OF IGNITION. KEEP AWAY FROM INCOMPATIBLE MATERIALS (SEE SECTION V). OUTDOOR OR DETACHED STORAGE IS PREFERRED. INDOOR STORAGE SHOULD BE IN A STANDARD FLAMMABLE LIQUID STORAGE ROOM. PROVIDE ADEQUATE VENTILATION AND POST AREA "NO SMOKING OR OPEN FLAME." BOND AND GROUND ALL EQUIPMENT WHEN TRANSFERRING FROM ONE VESSEL TO ANOTHER. KEEP WORK AREA FREE OF HOT METAL SURFACES AND OTHER SOURCES OF IGNITION. AVOID INHALATION OF VAPORS/MISTS/FUMES AND PERSONAL CONTACT WITH THE PRODUCT. WASH THOROUGHLY AFTER HANDLING. LAUNDER SATURATED CLOTHING BEFORE WEARING.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

NFPA HAZARD CLASS			HAZARD RANKING	FLASH POINT
	HEALTH HAZARD:	2	0 - LEAST	
	FLAMMABILITY:	3	1 - SLIGHT	
	REACTIVITY:	0	2 - MODERATE	(TCC) -45 F
	OTHER:		3 - HIGH	
			4 - EXTREME	

EXTINGUISHING MEDIA:

THE USE OF DRY CHEMICAL, FOAM OR CO2 IS RECOMMENDED. WATER MAY BE INEFFECTIVE.

UNUSUAL FIRE & EXPLOSION HAZARDS:

THIS MATERIAL IS EXTREMELY FLAMMABLE AND MAY BE IGNITED BY HEAT, SPARKS, FLAME OR OTHER SOURCES OF IGNITION (e.g. STATIC ELECTRICITY, PILOT LIGHTS OR MECHANICAL/ELECTRICAL EQUIPMENT). IF CONTAINER IS NOT PROPERLY COOLED, IT MAY EXPLODE IN HEAT OF A FIRE. VAPORS MAY TRAVEL CONSIDERABLE DISTANCES TO A SOURCE OF IGNITION WHERE THEY MAY IGNITE, FLASHBACK OR EXPLODE.

SPECIAL FIRE FIGHTING PROCEDURES:

THE USE OF A SELF-CONTAINED BREATHING APPARATUS (SCBA) IS RECOMMENDED FOR FIRE FIGHTERS. WATER SPRAY MAY BE USEFUL IN MINIMIZING VAPORS AND COOLING CONTAINERS EXPOSED TO HEAT AND FLAME. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES. MOVE UNDAMAGED CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK.

SECTION IX - PHYSICAL DATA

***UNLESS OTHERWISE NOTED, VALUES ARE AT 20 C/68 F AND 760 mm Hg/1 atm.

APPROX BOILING POINT	(AIR = 1) VAPOR DENSITY	(N-BUTYL ACETATE = 1) EVAPORATION RATE	% VOLATILE
85-430 F / 29-221 C	>1	<1	100%

% SOLUBILITY IN WATER

NEGLIGIBLE

SPECIFIC GRAVITY

0.75

APPEARANCE

CLEAR LIQUID

ODOR

GASOLINE

SECTION X - PRECAUTIONARY WARNING

DANGER! EXTREMELY FLAMMABLE. VAPORS MAY EXPLODE. HARMFUL OR FATAL IF SWALLOWED. VAPOR HARMFUL. ASPIRATION HAZARD IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE. POSSIBLE CANCER HAZARD BASED ON TESTS WITH LABORATORY ANIMALS. NO SMOKING. KEEP AWAY FROM HEAT, SPARKS OR FLAME INCLUDING PILOT LIGHTS, ELECTRIC MOTORS AND OTHER SOURCES OF IGNITION. VAPORS MAY BE IGNITED BY SPARK OR FLAME SOURCE MANY FEET AWAY. DO NOT OVERFILL TANK. USE ONLY WITH ADEQUATE VENTILATION. DO NOT BREATHE VAPOR OR MIST. KEEP FACE AWAY FROM NOZZLE AND CONTAINER OPENING. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. DO NOT TASTE OR SWALLOW. KEEP CONTAINER CLOSED. WASH THOROUGHLY AFTER HANDLING. NEVER SIPHON BY MOUTH. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL ON OR NEAR THIS CONTAINER. "EMPTY" CONTAINER RETAINS RESIDUE (LIQUID AND/OR VAPOR) AND MAY EXPLODE IN HEAT OF A FIRE. KEEP OUT OF REACH OF CHILDREN. FAILURE TO USE CAUTION MAY CAUSE SERIOUS INJURY OR ILLNESS. FIRST AID: DANGER - ASPIRATION HAZARD. IF SWALLOWED DO NOT INDUCE VOMITING. CALL A PHYSICIAN. IN CASE OF CONTACT, FLUSH EYES OR SKIN WITH PLENTY OF WATER. NOTE TO PHYSICIANS: EPINEPHRINE AND OTHER SYMPATHOMIMETIC DRUGS SHOULD BE USED CAUTIOUSLY, IF AT ALL. IF USED, OBSERVE FOR DEVELOPMENT OF CARDIAC ARRHYTHMIAS.

SECTION XI - DOCUMENTARY INFORMATION

ISSUE DATE: 10/20/89 PRODUCT CODE NO. 00400

PREV. DATE: 04/25/89 PREV. PROD. CODE NO. N/A

MSDS NO: N/A PREV. MSDS NO: N/A

Santa Clara Valley Water District
5750 Almaden Expressway, San Jose, CA 95118 (408) 265-2600

WELL CONSTRUCTION APPLICATION

FC 158 (10-25-90) (DP 4-901)

TO BE COMPLETED BY DISTRICT

District Permit No.:	Date Issued:	Well Registration No.:
Geologic Setting:	Expiration Date:	Driller's Log No.:

TO BE COMPLETED BY OWNER AND DRILLER

Property Owner:	Well Owner (if different):	Drilling Co.:
City of San Jose	Unocal Corp, San Ramon, CA	West Hazmat Drilling
Address: 801 N. First St., Rm. 346	Address of Well Site: median strip- Story Road at Felipe Avenue	Driller's Contractors License Number (C-57 Req'd): (C57)554979
City, State, Zip: San Jose, CA 95110	City, State, Zip: San Jose, CA	Address: 23953 Saklan Road
Telephone No.: (408)277-5161 (Public Works)	Telephone No.: Unocal: (510)277341-Rick Sisk	City, State, Zip: Hayward, CA 94545
Assessor's Parcel No. of Well site: Book 472 Page 10 Parcel	Owner's/Consultant's Well No.: MW8	Telephone No.: (510)782-8770

Estimated depth of completed well: [X] Less than 50 ft. [ ] 50 to 300 ft. [ ] Over 300 ft.

Purpose of Well: [ ] Domestic [ ] Municipal/Industrial [ ] Agricultural [X] *Monitoring [ ] Cathodic Protection

*Monitoring wells are those constructed for the purpose of obtaining repetitive water level measurements and/or repetitive air samples for analysis. This includes wells constructed for general exploration and investigation purposes as well as those to be constructed in conformance with the Hazardous Materials Storage Permit Ordinance for site-specific groundwater monitoring of existing underground hazardous materials storage tanks.

THIS SECTION TO BE COMPLETED FOR ALL MONITORING WELLS OR EXTRACTION/RECOVERY WELLS

Purpose of Monitoring Well: [ ] To comply with City or County Hazardous Materials Storage Permit Ordinance [ ] Exploration studies
[X] Other (specify): to comply with the RWQCB guidelines [ ] Extraction/Recovery

NAME OF BUSINESS AT WELL SITE: Unocal Service Station #5925

If proposed well is to meet compliance with a Hazardous Materials Storage Permit Ordinance has the City or County been contacted? [ ] Yes [ ] No

If yes, give name of City or County:

Consultant's Name (Company): Kaprealian Engineering, Inc.

Address: P.O. Box 996

City, State, Zip: Benicia, CA 94510

Telephone No.: (707)746-6915

Type of monitoring device: [X] Groundwater [ ] Vadose

Type of extraction device [ ] Groundwater [ ] Vadose

Monitoring well use: [X] Depth [X] Quality [ ] Chloride

Vadose device installation: [ ] Vapor [ ] Interface [ ] Suction Lysimeter

Signature of Responsible Professional
(No substitution of signature will be accepted)

Registration No. Civil Engineer OR Certificate No. Engineering Geologist: EG1633

TOPOGRAPHIC FEATURES

Well is to be constructed: [ ] In a public sidewalk [X] In a public road [ ] On public property [ ] On private property [ ] On SCVWD property

Within 50 ft of the top of a creek bank	[ ] Yes	[X] No	Within 50 ft. of any existing well	[ ] Yes	[X] No
Within 50 ft. of a sanitary sewer	[X] Yes	[ ] No	Within 150 ft of a cesspool or seepage pit	[ ] Yes	[X] No
Within 100 ft. of a pit privy, septic tank, leachfield	[ ] Yes	[X] No	Other wells exist on this property	[ ] Yes	[X] No

Status: [ ] Active [ ] Inactive [ ] Abandoned

CERTIFICATION BY WELL OWNER/AGENT AND DRILLER/AGENT:

I certify that the information given above is correct to the best of my knowledge. I certify that the well will be constructed in compliance with the conditions of this permit, the Santa Clara Valley Water District's Ordinance 90-1 and, if applicable, the Hazardous Materials Storage Permit Ordinance of the County or City, as appropriate. It is my responsibility as the well owner to notify this District of any changes in the purpose of this well from that which is indicated on this application form.

/agent — Signature of Well Owner/Agent — 12/13/91 — Date

/agent — Signature of Driller/Agent — 12/13/91 — Date

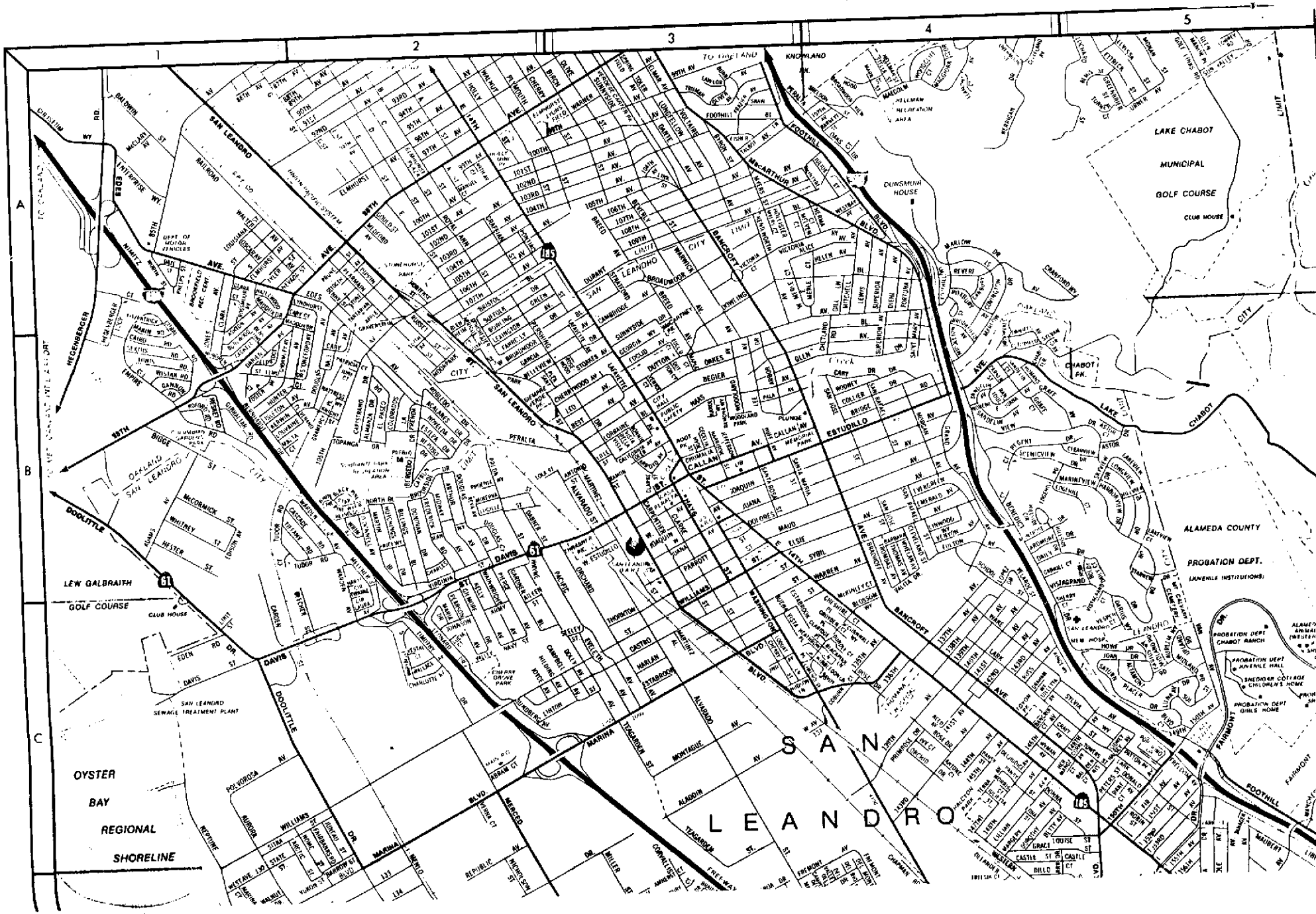
MONITORING WELL PLAN APPROVAL

City/County:

Approved by:

Date:

IMPORTANT: A minimum 24-hour notice must be given to SCVWD Well Inspection Dept. prior to installing the annular seal. Call (408) 927-0710 Ext. 660. For weekends, holidays, after hours call (408) 395-8121 or (408) 927-0714.


SAN LEANDRO
OYSTER BAY REGIONAL SHORELINE
LAKE CHABOT MUNICIPAL GOLF COURSE
LEW GALBRAITH GOLF COURSE
SAN LEANDRO SEWAGE TREATMENT PLANT
ALAMEDA COUNTY PROBATION DEPT.
(JUVENILE INSTITUTIONS)
DUNSMUIR HOUSE
SAN LEANDRO CREEK
CHABOT PK.
LAKE CHABOT
DOOLITTLE
DAVIS
MARINA
ESTUDILLO
SAN LEANDRO BLVD
BANCROFT
MacARTHUR BLVD
FOOTHILL
FAIRMONT
HEGENBERGER
98TH AVE
SAN LEANDRO
OAKLAND SAN LEANDRO
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