wells mw-4, -5, -6

KAPREALIAN ENGINEERING
INCORPORATED

KEI-P94-0903.R5
November 4, 1996

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

Attention: Mr. Robert A. Boust

RE: Continuing Ground Water Investigation at
Unocal Service Station #7376
4191 - 1st Street
Pleasanton, California

Dear Mr. Boust:

This report presents the results of Kaprealian Engineering, Inc's. (KEI) most recent soil and ground water investigation for the referenced site, in accordance with KEI's proposal (KEI-P94-0903.P2R) dated February 12, 1996. The purpose of the investigation was to further define the degree and extent of soil and ground water contamination at the site. The scope of the work performed by KEI consisted of the following:

Coordination with regulatory agencies

Geologic logging of three borings for the installation of three monitoring wells

Soil sampling

Ground water monitoring, purging, and well development

Delivery of soil samples (including properly executed Chain of Custody documentation) to a California-certified analytical laboratory for laboratory analyses

Data analysis, interpretation, and report preparation

SITE DESCRIPTION AND BACKGROUND

The subject site contains a Unocal service station facility. The site is situated at the intersection of Ray and First Streets in Pleasanton, California. The site occupies flat terrain and is located approximately 700 feet southeast of Arroyo Del Valle. It is KEI's understanding that the subject site was previously operated as a service station (reportedly by Armour Oil, Inc.) prior to Unocal's acquisition. A Location Map is attached to this report.



2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: 510.602.5100 Fax: 510.687.0602

On June 30, 1987, three exploratory borings (designated as B-1, B-2, and B-3 on the attached Figure 4) were drilled and sampled by Applied GeoSystems (AGS) at the subject site. Borings B-1 and B-2 were each drilled to a total depth of 46.5 feet below grade. Boring B-3 was drilled to a depth of 55 feet below grade. Ground water was not encountered during drilling. Selected soil samples collected during the drilling of these borings were analyzed for total volatile hydrocarbons (TVH), and benzene, toluene, ethylbenzene, and xylenes (BTEX). One soil sample collected from B-1 was also analyzed for total extractable hydrocarbons (TEH). The analytical results of the soil samples are summarized in Table 5.

Based on the analytical results of the soil samples collected from exploratory borings B-1 through B-3, AGS recommended the installation of a monitoring well. Documentation on drilling of the three exploratory borings, sampling techniques, and the analytical results of the soil samples are presented in the AGS report (Job No. 87065-1) dated July 14, 1987.

On August 21, 1987, one additional exploratory boring (designated as B-4 on the attached Figure 4) was drilled and sampled by AGS to a total depth of 66.5 feet below grade. Ground water was not encountered during drilling. Two soil samples collected from this boring were analyzed for TVH, BTEX, and TEH. The analytical results of the soil samples are summarized in Table 5.

Based on the analytical results of the soil samples collected from the four exploratory borings, AGS concluded that the majority of the soil contamination underneath the site is derived from TEH (diesel). Also, based on the fact that the analytical results of the deepest soil sample collected from B-4 (65 feet below grade) indicated 0.45 mg/kg of TVH and non-detectable concentrations of BTEX and TEH, AGS concluded that hydrocarbon contamination may not have impacted ground water beneath the site. Documentation on the drilling of exploratory boring B-4, sampling techniques, and the analytical results are presented in the AGS report (Job No. 87086-1) dated September 9, 1987.

On December 2 through 7, 1987, three borings (B-5 through B-7) were drilled and sampled at the site and were completed as monitoring wells (designated as MW-1 through MW-3 on the attached Figures 1 and 4) by AGS. The borings for the three wells were drilled to total depths of 96.5 feet below grade. Wells MW1 and MW3 were completed to depths of 96.5 feet below grade, and well MW2 was completed to a depth of 85 feet below grade. During drilling, the first saturated soil was encountered at a depth of approximately 80 feet below grade.

The three wells were developed on December 3 through 8, 1987, and were initially monitored and sampled on December 8, 1987. The ground water and soil samples collected from the monitoring wells were analyzed at the Anametrix, Inc. Laboratories of San Jose, California. The water and soil samples were analyzed for total petroleum hydrocarbons (TPH), BTEX, and TEH. The ground water samples were also analyzed for EPA method 624 constituents. The analytical results of the soil samples are summarized in Table 5. The analytical results of the ground water samples are summarized in Table 8.

A water well survey of a 1/2-mile radius from the site was conducted by AGS in late 1987/early 1988, in order to identify water producing wells in the vicinity. Information for the well survey was obtained from the Alameda County Flood Control and Water Conservation District - Zone 7 (ACFCWCD). Five water wells and two cathodic protection wells were identified within the 1/2-mile radius survey area. Of the five water wells, one appears to be a monitoring well and the remaining four are classified as domestic wells. Well survey data is presented on the attached Table 7.

Documentation on the monitoring well installation procedures, sampling techniques, and the analytical results are presented in the AGS report No. 87086-3. The exact date of this report is not given on the copy that is on file at KEI. However, it is believed that the report was prepared in early 1988.

Reportedly, in December 1987, the four 12,000 gallon underground fuel storage tanks located in the northern portion of the site were removed and replaced by two 12,000 gallon fuel tanks at the same location.

Per Unocal Corporation's direction, on September 9, 1994, KEI was present during the dispenser upgrade project at the subject service station. All former product piping and dispensers were removed and replaced. Twelve soil samples (labeled P1 through P12) were collected from the product piping trenches at depths of approximately 3 feet below grade. Mr. Scott Deaver from the City of Pleasanton Fire Department (CPFD) was on-site on September 9, 1994. The soil sample locations are shown on the attached Figure 3.

KEI returned to the site on September 15, 1994, to collect soil samples following the overexcavation in the areas of sample points P2 and P5. Two additional soil samples, labeled P2(9) and P5(9), were collected from the excavations at depths of approximately 9 feet below grade.

On September 23, 1994, KEI was again on-site to observe excavation activities at the southwest portion of the site. One soil sample, labeled P13, was collected at a depth of approximately 9 feet below grade, in order to define the extent of hydrocarbons in the soil at that portion of the site. Ground water was not encountered in any of the excavations. All excavated soil was sampled and properly disposed of off-site. The soil sample point locations are shown on the attached Figure 3.

All samples were analyzed by Sequoia Analytical Laboratory in Concord, California, for TPH as gasoline and BTEX. The analytical results for the soil samples are summarized in Table 6. Based on the analytical results of all of the soil samples collected and evaluated, and in accordance with the guidelines established by the Regional Water Quality Control Board (RWQCB), KEI concluded that further subsurface investigative work was warranted at the subject site. Documentation of the product piping and dispenser island replacement procedures, sampling techniques, and the analytical results are presented in KEI's report (KEI-J94-0903.R1) dated October 21, 1994.

In a work plan/proposal (KEI-P94-0903.P1) dated January 11, 1995, KEI recommended the destruction and replacement of existing monitoring well MW2 due to the presence of asphalt tar within the well. In addition, KEI recommended the installation of an exploratory boring.

On February 6 and 7, 1995, one additional exploratory boring and one two-inch diameter monitoring well (designated as EB1 and MW2B, respectively, on the attached Figure 4) were installed at the site. All drilling activities, including the construction and completion of the ground water monitoring well, were conducted in accordance with the guidelines of the RWQCB and the California Well Standards (per Bulletin 74-90). Mr. Scott Seery of the Alameda County Health Care Services (ACHCS) Agency was present during a portion of the drilling activities.

Exploratory boring EB1 was drilled to a total depth of 66 feet below grade. Ground water was not encountered in this boring during drilling. Monitoring well MW2B was drilled and completed to a total depth of 91 feet below grade. Ground water was encountered at a depth of 72 feet below grade during drilling.

Monitoring well MW2B was developed (by KEI) on February 21, 1995, and all of the wells, including the newly installed well MW2B, were monitored and sampled on March 1, 1995, by MPDS Services, Inc. of Concord, California.

Selected soil samples collected from the boring of EB1 and monitoring well MW2B were analyzed at Sequoia Analytical Laboratory in Concord, California, for TPH as gasoline, BTEX, and TPH as diesel. The analytical results of the soil samples are summarized in Table 3. The analytical results of the ground water samples collected from monitoring wells MW1, MW2B, and MW3 on March 1, 1995, are summarized in Table 2. Documentation of the boring and well installation procedures, sample collection techniques, and the analytical results are presented in KEI's report (KEI-P94-0903.R3) dated April 27, 1995.

On February 7, 1995, one on-site monitoring well (designated as MW2 on the attached Figure 4) was destroyed by fully drilling out the existing well seal, well casing, and filter pack materials to a total depth of 96.5 feet below grade. The borehole was then fully sealed with neat cement grout which was placed from the bottom of the boring to the surface through the hollow-stem augers.

The borehole for former well MW2 extended to a total depth of 96.5 feet below grade. However, the well was completed (by AGS) to a depth of 85 feet below grade. Monitoring well MW2 was destroyed because asphalt tar (Asphaltic) was encountered within the well casing following repaving activities at the site. Documentation of the well destruction procedures are also presented in KEI's report dated April 27, 1995.

RECENT FIELD ACTIVITIES

On July 23 and 24, 1996, three additional two-inch diameter monitoring wells (designated as MW4, MW5, and MW6 on the attached Figure 1) were installed at and in the vicinity of the site. The wells were each drilled, constructed, and completed in accordance with the guidelines of the RWQCB and the California Well Standards (per Bulletin 74-90). The subsurface materials penetrated and details of the construction of the wells are described in the attached Boring Logs and Well Construction Diagrams, respectively.

Monitoring wells MW4, MW5, and MW6 were each drilled and completed to total depths ranging from 73.5 to 93 feet below grade. Ground water was encountered during drilling at depths ranging from 64 to 80 feet below grade during drilling. Soil samples were collected for laboratory analysis and for lithologic logging purposes at a maximum spacing of 5 foot intervals, at significant changes in lithology, at obvious areas of contamination, and at or within the soil/ground water interface, beginning at a depth of approximately 4.5 feet below grade and continuing until ground water was encountered. Soil sampling conducted below the ground water table was for lithologic logging purposes only. The undisturbed soil

samples were collected by driving a California-modified split-spoon sampler (lined with brass liners) ahead of the drilling augers. The two-inch diameter brass liners holding the samples were sealed with Teflon-lined plastic caps, labeled, and placed in individually sealed plastic bags, which were then stored in a cooler, on ice, until delivery to a state-certified laboratory.

Each well casing was installed with a watertight cap and padlock. A round, watertight, flush-mounted well cover was cemented in place over each well casing. The surface of each well cover and casing were surveyed by Kier & Wright of Pleasanton, California, to Mean Sea Level (MSL) and to a vertical accuracy of 0.01 foot.

Monitoring wells MW4, MW5, and MW6 were developed on September 3 and 4, 1996. Prior to development, the wells were checked for the depth to the water table and the presence of free product. No free product was noted in any of the wells. After recording the monitoring data, the three new wells were each purged of 40 to 45 gallons of water until the evacuated water was clear and free of visible suspended sediment. The monitoring and well development data are summarized in Table 1.

**All of the Unocal monitoring wells, including the newly installed wells MW4, MW5, and MW6, were monitored and sampled on September 18, 1996, by MPDS Services, Inc. of Concord, California.** Prior to sampling, the wells were checked for depth to water, and the presence of free product and sheen. **No free product or sheen was noted in any of the wells.** After recording the monitoring data and prior to sampling, the wells were each purged of between 2.5 and 13 gallons of water. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded and the data is attached to MPDS Services, Inc's. Quarterly Data Report dated October 15, 1996. Once the field parameters were observed to stabilize and, where possible, a minimum of approximately three casing volumes had been removed from each well, water samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory.

ANALYTICAL RESULTS

Water samples from all of the wells and selected soil samples from the borings of MW4, MW5, and MW6 were analyzed at Sequoia Analytical Laboratory. All samples analyzed were accompanied by properly executed Chain of Custody documentation. The samples were analyzed for TPH as gasoline by EPA method 5030/modified 8015, and BTEX by

EPA method 8020. The soil samples collected from the borings of MW4, MW5, and MW6 were also analyzed for a "fuel fingerprint" (diesel, JP-4, JP-5, kerosene, motor oil, paint thinner, and unidentified extractable hydrocarbons) by EPA method 3550/modified 8015. In addition, the water samples collected from all of the wells were analyzed for TPH as diesel by EPA method 3510/modified 8015, and methyl tert butyl ether (MTBE) by EPA method 8020. The analytical results of the soil samples are summarized in Tables 3 and 4. Copies of the laboratory analyses and the Chain of Custody documentation for the soil samples are attached to this report.

The analytical results of all of the ground water samples collected from the monitoring wells to date are summarized in Table 2. The concentrations of TPH as gasoline, benzene, and TPH as diesel detected in the ground water samples collected on September 18, 1996, are shown on the attached Figure 2. Copies of the laboratory analyses and the Chain of Custody documentation for the water samples collected on September 18, 1996, are attached to MPDS Services, Inc's. report (MPDS-UN7376-07) dated October 15, 1996.

HYDROLOGY AND GEOLOGY

On September 18, 1996, the measured depth to ground water in the monitoring wells ranged from 64.20 to 82.84 feet below the tops of the well casings. The ground water flow direction on this date is shown on the attached Figure 1. The hydraulic gradient at the site on September 18, 1996, was approximately 0.01, based on water level data collected from the monitoring wells prior to purging.

Based on the ACFCWCD Fall 1993 Groundwater Contour Map Report (dated 17 December 1993), the subject site is located within the southwestern portion of the Amador Subbasin of the Livermore Valley Groundwater Basin. The regional ground water flow direction at and in the vicinity of the site appears to be to the northwest.

Based on review of regional geologic maps (U.S. Geological Survey Professional Paper 943, "Flatland deposits of the San Francisco Bay Region, California, their geology and engineering properties, and their importance to comprehensive planning," by E.J. Helley and K.R. Lajoie, et. al., 1979), the subject site is directly underlain by the Holocene coarse grained alluvium (Qhac), which is described as typically consisting of unconsolidated and well bedded, moderately sorted, permeable sand and silt, with coarse sand and gravel becoming abundant toward fan heads and in narrow canyons. The exact thickness of these deposits underneath the site and vicinity is not known to KEI. However, the Qhac sequence is believed to be as much as 50 feet thick.

Based on review of additional regional geologic maps (U.S.G.S. Open File Report 80-533B, "Preliminary Geologic Map of the Livermore Quadrangle, Alameda and Contra Costa Counties, California," by T.W. Diblee, Jr., 1980), the site is located approximately 1,000 feet west of Pliocene and/or Pleistocene non-marine sedimentary rocks (Qtl - Livermore Gravel), which consist of cobble-pebble gravel containing debris from Franciscan rocks.

Based on our subsurface studies to date, the site is underlain by alluvium to the maximum depth explored (93 feet below grade). **The alluvium underlying the site consists of an interbedded sequence of silt or gravelly silt, well sorted sand with gravel, and clayey or silty gravel.**

As of September 1996, the unsaturated zone underneath the site is approximately 64 to 83 feet thick and consists predominantly of silt and sand, with lesser amounts of silty to sandy gravel. Minor amounts of clay are also present. The saturated zone consisted predominantly of sand and gravel, with minor amounts of silt and clay. **The ground water level in well MW5 is approximately 15 feet higher than the levels in the adjacent wells MW6 and MW2B. This water appears to be perched over the clay encountered in MW5 at a depth of approximately 69 feet below grade.** The subsurface conditions are depicted on Geologic Cross-Sections A-A' and B-B' (Figures 5 and 6). The locations of the cross-sections are shown on Figure 4.

The results of the particle size analysis (sieve and hydrometer) of the soil sample collected from the saturated zone of the boring for monitoring well MW2B at a depth of 85 feet below grade indicated that the sample is composed of approximately 51% sand, 40% gravel, and 9% silt and clay. The sample was classified in the field as a well graded sand with gravel (SW).

## DISCUSSION AND RECOMMENDATIONS

Based on the analytical results of the ground water samples collected and evaluated to date, KEI recommends the continuation of the current quarterly ground water monitoring and sampling program. The ground water samples are analyzed for TPH as gasoline, TPH as diesel, BTEX, and MTBE. The results of the monitoring program will be documented and evaluated after each monitoring and sampling event, and recommendations for altering or terminating the program will be made as warranted.

As seen in the attached figures, wells MW5 and MW6 were installed in the location of former Southern Pacific railroad tracks. In addition, an active underground petroleum pipeline is located

adjacent to this location at a depth of approximately 18 feet below grade. A representative of the owner/operator, Santa Fe Pipeline, was on-site during drilling in order to approve the proposed well locations. According to the representative of Santa Fe, the pipeline has been in place since the mid-1960's, and is currently used for a variety of refined petroleum products (such as gasoline, diesel, aviation fuel, etc.).

**Soil samples collected from off-site wells MW5 and MW6 during well drilling indicated concentrations of TPH as gasoline and/or TPH as diesel greater than 100 mg/kg. Soil samples collected from MW4 and MW5 also indicated detectable concentrations of kerosene, a constituent not typically associated with service station operations.** Based on the analytical results of the soil samples, it appears that the hydrocarbons detected at and in the vicinity of the Unocal site may be at least partially due to off-site sources.

perhaps kerosene-range, not kerosene per se!

based on what?

DISTRIBUTION

Copies of this report should be sent to Mr. Scott Seery of the ACHCS, and to the RWQCB, San Francisco Bay Region.

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.

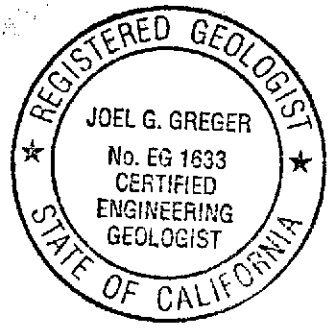
The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, 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 report, please do not hesitate to call at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.

Thomas J. Berkins
Project Manager




Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. EG 1633
Exp. Date 8/31/98

Robert H. Kezerian
Project Manager

/jad

Attachments: Tables 1 through 8
Location Map
Figures 1 through 6
Boring Logs
Well Construction Diagrams
Laboratory Analyses
Chain of Custody documentation

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TABLE 1

SUMMARY OF MONITORING DATA

| Well # | Ground Water Elevation (feet) | Depth to Water (feet)♦ | Total Well Depth (feet)♦ | Product Thickness (feet) | Sheen | Water Purged (gallons) |
|---|---|---|---|---|---|---|
| **(Monitored and Sampled on September 18, 1996)** | | | | | | |
| MW1 | 287.09 | 79.90 | 86.39 | 0 | No | 3.5 |
| MW2B | 283.97 | 81.08 | 85.25 | 0 | No | 2.5 |
| MW3 | 284.17 | 82.84 | 94.10 | 0 | No | 6 |
| MW4 | 295.36 | 73.67 | 94.99 | 0 | No | 13 |
| MW5 | 299.03 | 64.20 | 72.58 | 0 | No | 5.5 |
| MW6 | 284.05 | 79.07 | 88.09 | 0 | No | 6 |
| **(Monitored and Developed on September 3 and 4, 1996)** | | | | | | |
| MW4 | 293.83 | 75.20 | 95.00 | 0 | -- | 45 |
| MW5 | 300.13 | 63.10 | 72.60 | 0 | -- | 45 |
| MW6 | 283.87 | 79.25 | 88.10 | 0 | -- | 40 |
| **(Monitored and Sampled on June 15, 1996)** | | | | | | |
| MW1 | 291.92 | 75.07 | 86.40 | 0 | No | 8 |
| MW2B | 291.84 | 73.21 | 85.25 | 0 | No | 8.5 |
| MW3 | 291.88 | 75.13 | 94.09 | 0 | No | 13 |
| **(Monitored and Sampled on March 1, 1996)** | | | | | | |
| MW1 | 291.90 | 75.09 | 86.39 | 0 | No | 8 |
| MW2B | 291.78 | 73.27 | 85.25 | 0 | No | 8.5 |
| MW3 | 291.83 | 75.18 | 94.10 | 0 | No | 13 |
| **(Monitored and Sampled on December 12, 1995)** | | | | | | |
| MW1 | 289.44 | 77.55 | 86.47 | 0 | No | 6.5 |
| MW2B | 289.09 | 75.96 | 85.33 | 0 | No | 6.5 |
| MW3 | 289.28 | 77.73 | 94.20 | 0 | No | 11.5 |

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

| Well # | Well Casing Elevation (feet)* |
|---|---|
| MW1 | 366.99 |
| MW2B | 365.05 |
| MW3 | 367.01 |
| MW4 | 369.03 |
| MW5 | 363.23 |
| MW6 | 363.12 |

♦ The depth to water and total well depth measurements were taken from the top of the well casings.

* The elevation of the tops of the well casings were surveyed relative to City of Pleasanton Benchmark V1, a brass disk on the north curb of Ray Street, approximately 200 feet northwest of the centerline of First Street (elevation = 367.17 feet MSL).

-- Sheen determination was not performed.

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TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

| Well # | Date | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | MTBE |
|---|---|---|---|---|---|---|---|---|
| MW1 | 12/07/94 | -- | ND | ND | ND | ND | ND | -- |
| | 3/01/95 | 120 | ND | ND | 1.1 | ND | 1.3 | -- |
| | 6/01/95 | 54[1] | 130 | 1.0 | 2.9 | 0.79 | 4.5 | -- |
| | 9/06/95 | 690 | ND | ND | ND | ND | ND | [2] |
| | 12/12/95 | 190[1] | ND | ND | ND | ND | ND | -- |
| | 3/01/96 | 56 | ND | ND | ND | ND | ND | 370 |
| | 6/15/96 | ND | ND | ND | ND | ND | ND | 270 |
| | 9/18/96 | 130[1] | ND | ND | ND | ND | ND | 590 |
| MW2 | 12/07/94 | WELL WAS DAMAGED | | | | | | |
| | 2/07/95 | WELL WAS DESTROYED | | | | | | |
| MW2B | 3/01/95 | 320 | ND | ND | ND | ND | ND | -- |
| | 6/01/95 | 280 | 350 | 19 | 5.8 | ND | 7.7 | -- |
| | 9/06/95 | ND | ND | 90 | ND | ND | ND | [2] |
| | 12/12/95 | 850[3] | 1,200 | 630 | ND | 15 | 57 | [4] |
| | 3/01/96 | 870[3] | 1,000 | 620 | ND | ND | 5.3 | 4,300 |
| | 6/15/96 | 420 | 910 | 350 | ND | ND | ND | 3,700 |
| | 9/18/96 | 600 | 1,200 | 95 | ND | ND | ND | 5,200 |
| MW3 | 12/07/94 | -- | ND | ND | ND | ND | ND | -- |
| | 3/01/95 | 140[3] | ND | ND | 1.1 | ND | 1.1 | -- |
| | 6/01/95 | 140[1] | 62 | 7.8 | 0.90 | ND | 1.6 | -- |
| | 9/06/95 | 880[1] | 4,100 | 380 | 490 | 130 | 710 | [2] |
| | 12/12/95 | 3,100[3] | 19,000 | 600 | 380 | 2,100 | 5,300 | [4] |
| | 3/01/96 | 1,500[1] | 3,400 | 950 | 3.2 | 1,900 | 290 | 59 |
| | 6/15/96 | 400[3] | 780 | 190 | 8.8 | 3.8 | 4.0 | 630 |
| | 9/18/96 | 170 | 2,800 | 340 | 12 | 11 | 110 | 2,500 |
| MW4 | 9/18/96 | 200 | 160 | 14 | ND | ND | 1.6 | ND |
| MW5 | 9/18/96 | 4,700[1] | 36,000 | 6,700 | 410 | 730 | 6,500 | 4,100 |
| MW6 | 9/18/96 | ND | 160 | 5.4 | ND | ND | ND | ND |

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

[1] Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

[2] Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the ground water sample collected from this well.

[3] Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

[4] Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the sample collected from this well.

ND = Non-detectable.

-- Indicates analysis was not performed.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

**NOTES:**

The detection limit for results reported as non-detectable by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

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TABLE 3

SUMMARY OF LABORATORY ANALYSES
SOIL

| Date | Sample Number | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes |
|---|---|---|---|---|---|---|---|
| 2/06/95 | MW2B(5) | ND | 7.3 | 0.13 | 0.048 | 0.090 | 0.63 |
| | MW2B(10) | ND | 2.1 | 0.062 | 0.020 | 0.0078 | 0.11 |
| | MW2B(15) | ND | 2.0 | 0.12 | 0.0076 | 0.0074 | 0.02 |
| | MW2B(20) | 110* | 16♦ | 0.50 | 0.042 | 0.12 | 0.18 |
| | MW2B(25) | 550* | 660 | 9.5 | 2.6 | 4.1 | 11 |
| | MW2B(30) | 1,100* | 680 | 8.2 | 1.1 | 6.1 | 11 |
| | MW2B(35) | 2,400* | 720 | 3.2 | 1.1 | 4.6 | 15 |
| | MW2B(40) | 430* | 130♦ | 1.4 | 0.45 | 1.6 | 5.0 |
| | MW2B(45) | 1,000* | 110♦ | 0.31 | 0.083 | 0.63 | 1.7 |
| | MW2B(50) | 1,800* | 190♦ | ND | 0.68 | 0.33 | 2.2 |
| | MW2B(55) | 320* | 4.3♦♦ | ND | ND | 0.013 | 0.056 |
| | MW2B(60) | 33* | 2.2♦♦ | 0.013 | 0.0088 | ND | 0.035 |
| | MW2B(65) | 4.7* | 1.0 | ND | 0.0099 | ND | 0.0097 |
| | MW2B(70) | ND | ND | ND | ND | ND | ND |
| | MW2B(75) | ND | ND | ND | ND | ND | ND |
| | MW2B(80) | ND | ND | ND | ND | ND | ND |
| | EB1(5) | 3,600* | 15,000 | 340 | 1,700 | 390 | 2,100 |
| | EB1(10) | 690* | 3,200 | 32 | 280 | 73 | 400 |
| | EB1(15) | 800* | 1,800 | 15 | 140 | 41 | 240 |
| | EB1(20) | 240* | 1,700 | 4.9 | 76 | 39 | 220 |
| | EB1(25) | 840* | 2,000 | 3.9 | 78 | 44 | 250 |
| | EB1(30) | 530** | 1,500 | ND | 40 | 30 | 170 |
| | EB1(35) | 200** | 1,800 | 1.4 | 52 | 44 | 250 |
| | EB1(40) | 98* | 1,200 | 1.3 | 50 | 25 | 140 |
| | EB1(45) | 2.6** | 27 | 1.4 | 5.7 | 0.59 | 3.2 |
| | EB1(50) | 55* | 430 | 0.29 | 11 | 7.5 | 42 |
| | EB1(55) | ND | 6.4 | 0.89 | 0.097 | 0.20 | 1.0 |
| | EB1(60) | ND | 1.6 | 0.0090 | 0.061 | 0.021 | 0.098 |
| | EB1(65) | ND | ND | ND | 0.034 | 0.011 | 0.065 |

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
SOIL

| Date | Sample Number | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes |
|---|---|---|---|---|---|---|---|
| 7/23/96 | MW4(5) | 10 | 14♦♦ | ND | ND | ND | 0.068 |
| & | MW4(10) | ND | ND | 0.080 | 0.039 | 0.0059 | 0.096 |
| 7/24/96 | MW4(15) | ND | ND | 0.011 | ND | ND | ND |
| | MW4(20) | ND | ND | ND | ND | ND | ND |
| | MW4(25) | 15 | 47♦ | ND | ND | ND | 0.77 |
| | MW4(30) | ND | ND | ND | 0.014 | ND | 0.029 |
| | MW4(35) | ND | ND | 0.0054 | 0.015 | ND | 0.021 |
| | MW4(40.5) | ND | ND | 0.031 | 0.039 | 0.0083 | 0.040 |
| | MW4(45) | ND | ND | 0.015 | 0.0078 | ND | 0.0089 |
| | MW4(50) | ND | ND | 0.015 | ND | ND | 0.0074 |
| | MW4(55) | ND | ND | ND | ND | ND | ND |
| | MW4(60) | ND | ND | ND | ND | ND | ND |
| | MW4(65) | ND | 27 | 0.026 | 0.081 | 0.27 | 0.35 |
| | MW4(70) | ND | ND | 0.27 | 0.0053 | ND | 0.081 |
| | MW4(75) | ND | ND | ND | ND | ND | ND |
| | MW4(79.5) | ND | ND | ND | ND | ND | ND |
| | MW5(5) | ND | ND | ND | ND | ND | ND |
| | MW5(10) | ND | ND | ND | ND | ND | ND |
| | MW5(15) | ND | ND | ND | ND | ND | ND |
| | MW5(20) | ND | ND | ND | ND | ND | ND |
| | MW5(25) | ND | ND | ND | ND | ND | ND |
| | MW5(30) | ND | ND | 0.013 | ND | ND | ND |
| | MW5(35) | ND | ND | 0.034 | ND | ND | 0.0055 |
| | MW5(40) | ND | ND | ND | ND | ND | ND |
| | MW5(45) | ND | ND | ND | ND | ND | ND |
| | MW5(50) | ND | ND | 0.038 | ND | ND | ND |
| | MW5(55) | ND | 32 | 0.28 | ND | 0.098 | 0.048 |
| | MW5(60) | 110 | 560 | 2.4 | 2.6 | 2.3 | 6.5 |
| | MW5(65) | 450 | 400 | 3.9 | 4.1 | 5.5 | 56 |
| | MW6(5) | ND | ND | 0.054 | 0.055 | 0.052 | 0.17 |
| | MW6(10) | ND | ND | 0.011 | 0.0085 | 0.014 | 0.043 |
| | MW6(15) | ND | ND | ND | ND | ND | ND |
| | MW6(20) | ND | ND | ND | ND | ND | ND |
| | MW6(25) | ND | ND | ND | ND | ND | ND |
| | MW6(35) | ND | 4.8 | 0.59 | 0.57 | 0.073 | 0.71 |
| | MW6(40) | ND | 1.2 | 0.27 | 0.15 | 0.010 | 0.053 |
| | MW6(45) | ND | 4.8 | 1.2 | 1.2 | 0.049 | 0.50 |
| | MW6(50) | ND | ND | 0.026 | ND | 0.014 | 0.0095 |
| | MW6(55) | 200 | 5.0 | 0.034 | 0.043 | 0.049 | 0.11 |

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
SOIL

| Date | Sample Number | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes |
|---|---|---|---|---|---|---|---|
| 7/23/96 | MW6(60) | ND | ND | 0.0050 | ND | ND | ND |
| & | MW6(65) | ND | ND | 0.011 | ND | ND | ND |
| 7/24/96 | MW6(70) | ND | ND | 0.17 | 0.018 | ND | 0.039 |
| (Con't) | MW6(75) | ND | ND | ND | ND | ND | ND |
| | MW6(77.5) | ND | ND | ND | ND | ND | ND |

* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

♦♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

**NOTE**: The soil samples were collected at the depths below grade indicated in the ( ) of the respective sample number.

ND = Non-detectable.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

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TABLE 4

SUMMARY OF LABORATORY ANALYSES
SOIL

"FUEL FINGERPRINT" RESULTS

| Date | Sample Number | Diesel (C10-C22) | JP-4 (C8-C14) | JP-5 (C10-C16) | Kerosene (C10-C16) | Motor Oil (>C16) | Paint Thinner (C10-C12) | Unidentified Extractable Hydrocarbons |
|---|---|---|---|---|---|---|---|---|
| 7/24/96 | MW4(5) | 10 | NI | NI | NI | NI | NI | NI |
| | MW4(10) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(15) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(20) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(25) | 15 | NI | NI | 17 | NI | NI | NI |
| | MW4(30) | NI | NI | NI | 9.6 | NI | NI | NI |
| | MW4(35) | NI | NI | NI | 2.2 | NI | NI | NI |
| | MW4(40) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(45) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(50) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(55) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(60) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(65) | NI | NI | NI | 4.2 | NI | NI | NI |
| | MW4(70) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(75) | NI | NI | NI | NI | NI | NI | NI |
| | MW4(79.5) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(5) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(10) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(15) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(20) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(25) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(30) | NI | NI | NI | NI | NI | NI | NI |

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TABLE 4 (Continued)

SUMMARY OF LABORATORY ANALYSES
SOIL

"FUEL FINGERPRINT" RESULTS

| Date | Sample Number | Diesel (C10-C22) | JP-4 (C8-C14) | JP-5 (C10-C16) | Kerosene (C10-C16) | Motor Oil (>C16) | Paint Thinner (C10-C12) | Unidentified Extractable Hydrocarbons |
|---|---|---|---|---|---|---|---|---|
| 7/24/96 (Con't) | MW5(35) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(40) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(45) | NI | NI | NI | NI | NI | NI | **2.2** |
| | MW5(50) | NI | NI | NI | NI | NI | NI | NI |
| | MW5(55) | NI | NI | NI | NI | NI | NI | **2.7** |
| | MW5(60) | **110** | NI | NI | **81** | NI | NI | NI |
| | MW5(65) | **450** | NI | NI | **310** | NI | NI | NI |
| | MW6(5) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(10) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(15) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(20) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(25) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(35) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(40) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(45) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(50) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(55) | **200** | NI | NI | NI | **320** | NI | NI |
| | MW6(60) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(65) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(70) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(75) | NI | NI | NI | NI | NI | NI | NI |
| | MW6(77.5) | NI | NI | NI | NI | NI | NI | NI |

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TABLE 4 (Continued)

SUMMARY OF LABORATORY ANALYSES
SOIL

"FUEL FINGERPRINT" RESULTS

**NOTE:** The soil samples were collected at the depths below grade indicated in the ( ) of the respective sample number.

NI = Not identified.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

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TABLE 5

SUMMARY OF ANALYTICAL RESULTS
SOIL
(by AGS)

| Sample Number | TVH | Benzene | Ethyl-benzene | Toluene | Xylenes | TEH |
|---|---|---|---|---|---|---|
| **(Collected on June 30, 1987)** | | | | | | |
| S-20-B1 | 281.9 | 17.1 | 17.0 | 73.6 | 92.3 | NA |
| S-35-B1 | 126.13 | 2.06 | 0.84 | 1.02 | 6.59 | 1,325 |
| S-45-B1 | 9.36 | 0.64 | 0.26 | 1.06 | 1.47 | NA |
| S-25-B2 | 188.8 | 13.1 | 6.1 | 6.3 | 56.2 | NA |
| S-35-B2 | 56.81 | 1.47 | 1.81 | 1.58 | 18.09 | NA |
| S-45-B2 | 9.09 | 0.07 | 0.18 | 0.26 | 1.30 | NA |
| S-10-B3 | ND | ND | ND | ND | ND | NA |
| S-30-B3 | 7.72 | 3.95 | 0.13 | 0.51 | 0.85 | NA |
| S-40-B3 | 180.7 | 12.4 | 9.4 | 47.8 | 45.1 | NA |
| **(Collected on August 21, 1987)** | | | | | | |
| S-35-B4 | 100.5 | 1.4 | 0.5 | 0.6 | 4.4 | 1,835 |
| S-65-B4 | 0.45 | ND | ND | ND | ND | ND |
| **(Collected on December 2 through 7, 1987)** | | | | | | |
| S-35-B5 | ND | ND | ND | ND | ND | ND |
| S-75-B5 | ND | ND | ND | ND | ND | ND |
| S-35-B6 | 5.0 | ND | ND | ND | ND | ND |
| S-70-B6 | ND | ND | ND | ND | ND | ND |
| S-55-B7 | 390.0 | 1.3 | 14.0 | 6.2 | 34.0 | 220.0 |
| S-75-B7 | 5.0 | ND | ND | ND | ND | 30.0 |

Results are in milligrams per kilogram (mg/kg).

TVH: Total volatile hydrocarbons

TEH: Total extractable hydrocarbons

ND = Non-detectable.

TABLE 5 (Continued)

SUMMARY OF ANALYTICAL RESULTS
SOIL
(by AGS)

NA = Not analyzed.

**NOTE**: Monitoring wells MW1, MW2, and MW3 were installed in borings B5, B6, and B7, respectively.

The analytical results were obtained from AGS Reports #87065-1, #87086-1, and #87086-3.

TABLE 6

SUMMARY OF LABORATORY ANALYSES
SOIL

| Date | Sample | Depth (feet) | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes |
|---|---|---|---|---|---|---|---|
| 9/09/94 | P1 | 3 | ND | ND | ND | ND | ND |
| | P2 | 3 | 1,300 | 3.3 | 57 | 26 | 130 |
| | P3 | 3 | 4.9 | 0.071 | 0.028 | 0.065 | 0.70 |
| | P4 | 3 | 11 | 0.26 | 0.014 | 0.23 | 1.3 |
| | P5 | 3 | 8,900 | 65 | 570 | 160 | 800 |
| | P6 | 3 | ND | 0.0093 | 0.015 | ND | 0.028 |
| | P7 | 3 | 8.7 | 0.21 | 0.028 | 0.081 | 0.73 |
| | P8 | 3 | 10 | 0.074 | 0.27 | 0.043 | 0.38 |
| | P9 | 3 | 65* | 0.69 | 0.15 | 0.71 | 3.9 |
| | P10 | 3 | ND | ND | ND | ND | 0.015 |
| | P11 | 3 | ND | ND | ND | ND | ND |
| | P12 | 3 | 4.7* | 0.011 | 0.17 | 0.091 | 0.54 |
| 9/15/94 | P2(9) | 9 | 13 | 0.020 | 0.015 | 0.013 | 1.1 |
| | P5(9) | 9 | 17 | 0.029 | 0.031 | 0.047 | 1.4 |
| 9/23/94 | P13 | 9 | 4,400 | 29 | 390 | 150 | 790 |

ND = Non-detectable.

* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

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TABLE 7

LISTING OF WATER WELL LOCATIONS WITHIN A
HALF-MILE RADIUS OF UNOCAL SERVICE STATION #7376
(Conducted 1987/1988)

| Well Number | Total Depth (feet) | Water Level (feet) | Screened Interval (feet) | Year Constructed | Water Use |
|---|---|---|---|---|---|
| 16-L-11 | NA | NA | NA | 1979 | Dom? |
| 16-P-5 | 74 | 65 | 65-70 | 1976 | Mon |
| 16-R-1 | 239 | 66 | 70-226 | 1948 | Dom |
| 21-C-2 | 182 | NA | NA | NA | Dom |
| 21-C-4 | 115 | 56 | NA | 1911 | Dom? |
| 21-E-1 | 43 | 43 | NA | 1977 | Cat |
| 21-G-1 | 120 | 100 | >95 | 1974 | Cat |

NA = Not available
Dom = Domestic
Mon = Monitoring
Cat = Cathodic protection

**NOTE**: This list was obtained from Table 4 of the AGS Report #87086-3. A Location Map is not available with the copy of this report on file at KEI.

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November 4, 1996

## TABLE 8

### SUMMARY OF ANALYTICAL RESULTS
### WATER

| Date | Well # | TPH | Benzene | Ethyl-benzene | Toluene | Xylenes | TEH |
|---|---|---|---|---|---|---|---|
| 12/08/87 | MW1* | 50 | 58 | ND | 8 | 10 | 2,100 |
| | MW2 | 1,800 | 910 | 260 | 800 | 1,200 | 620 |
| | MW3 | 24,000 | 2,600 | 160 | 1,300 | 660 | 2,300 |

TPH = Total petroleum hydrocarbons

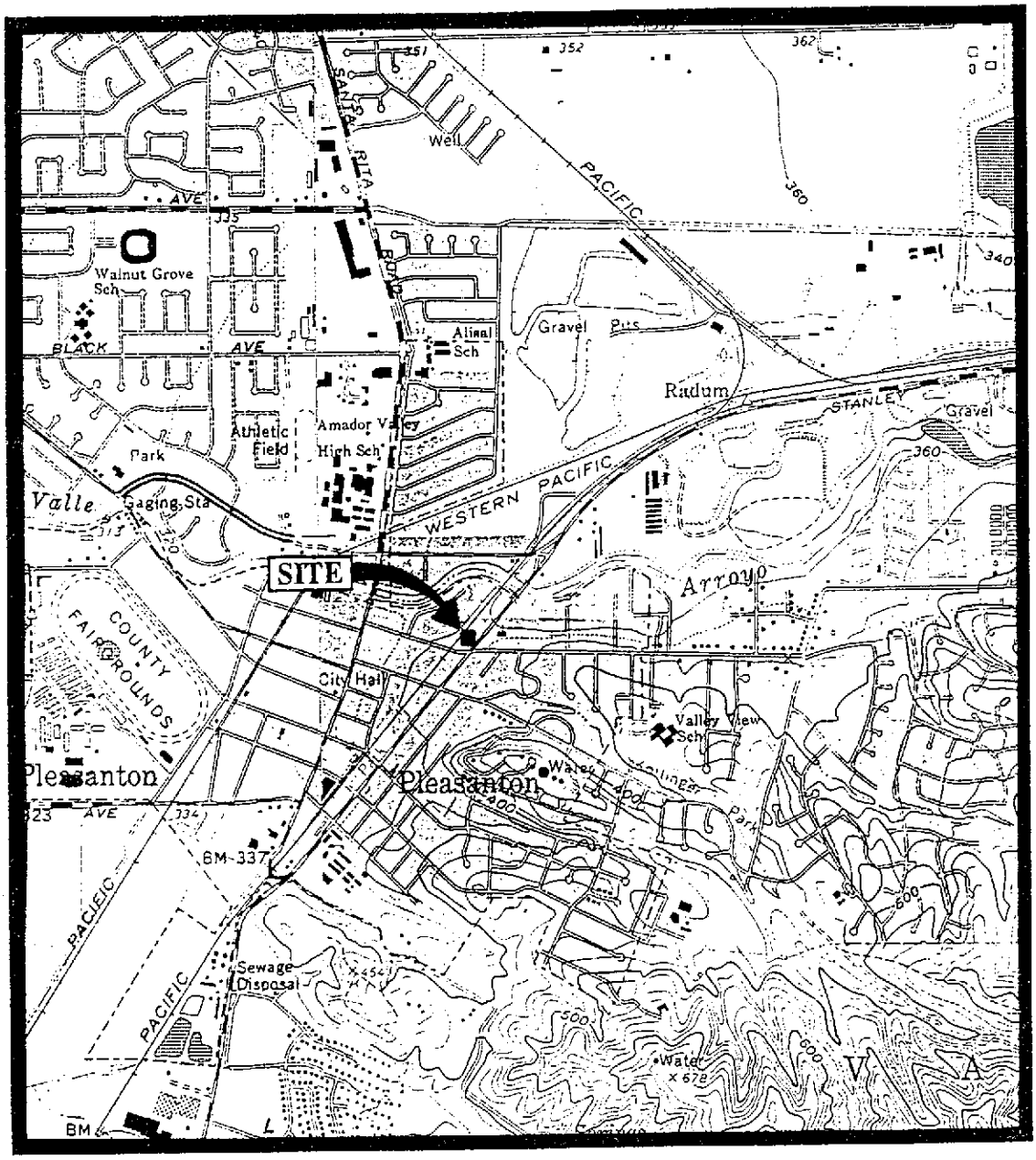
TEH = Total extractable hydrocarbons

ND = Non-detectable.

* 1,2-Dichloroethene was detected at a concentration of 18 µg/L.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

**NOTE**: The above analytical results were obtained from AGS report 86086-3.

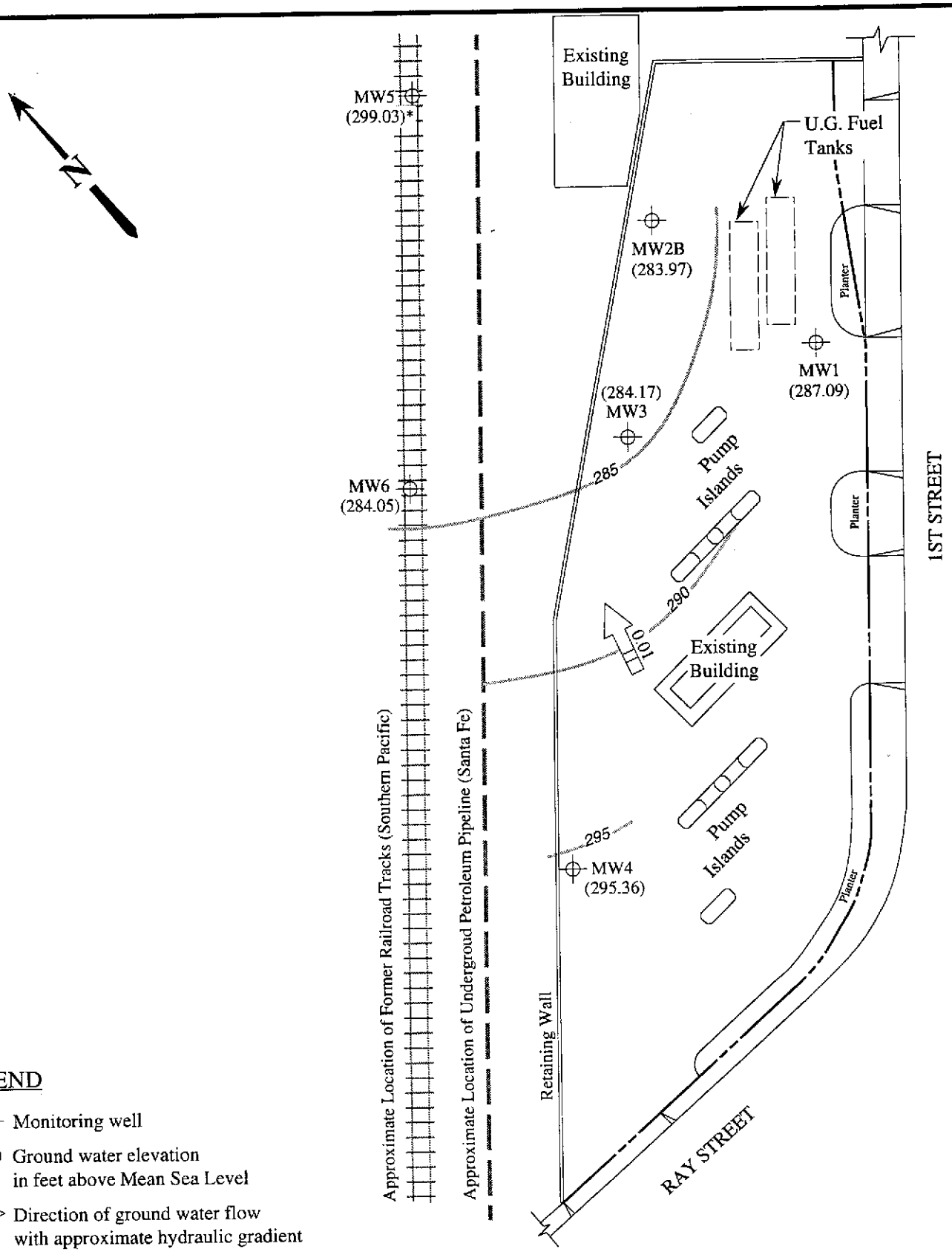



Base modified from 7.5 minute U.S.G.S. Dublin and Livermore Quadrangles
(both photorevised 1980)

KAPREALIAN ENGINEERING
INCORPORATED

**UNOCAL SERVICE STATION #7376**
**4191 1ST STREET**
**PLEASANTON, CALIFORNIA**

**LOCATION MAP**




LEGEND

- Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level
- #.## Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation

* Elevation was not used to calculate contours.

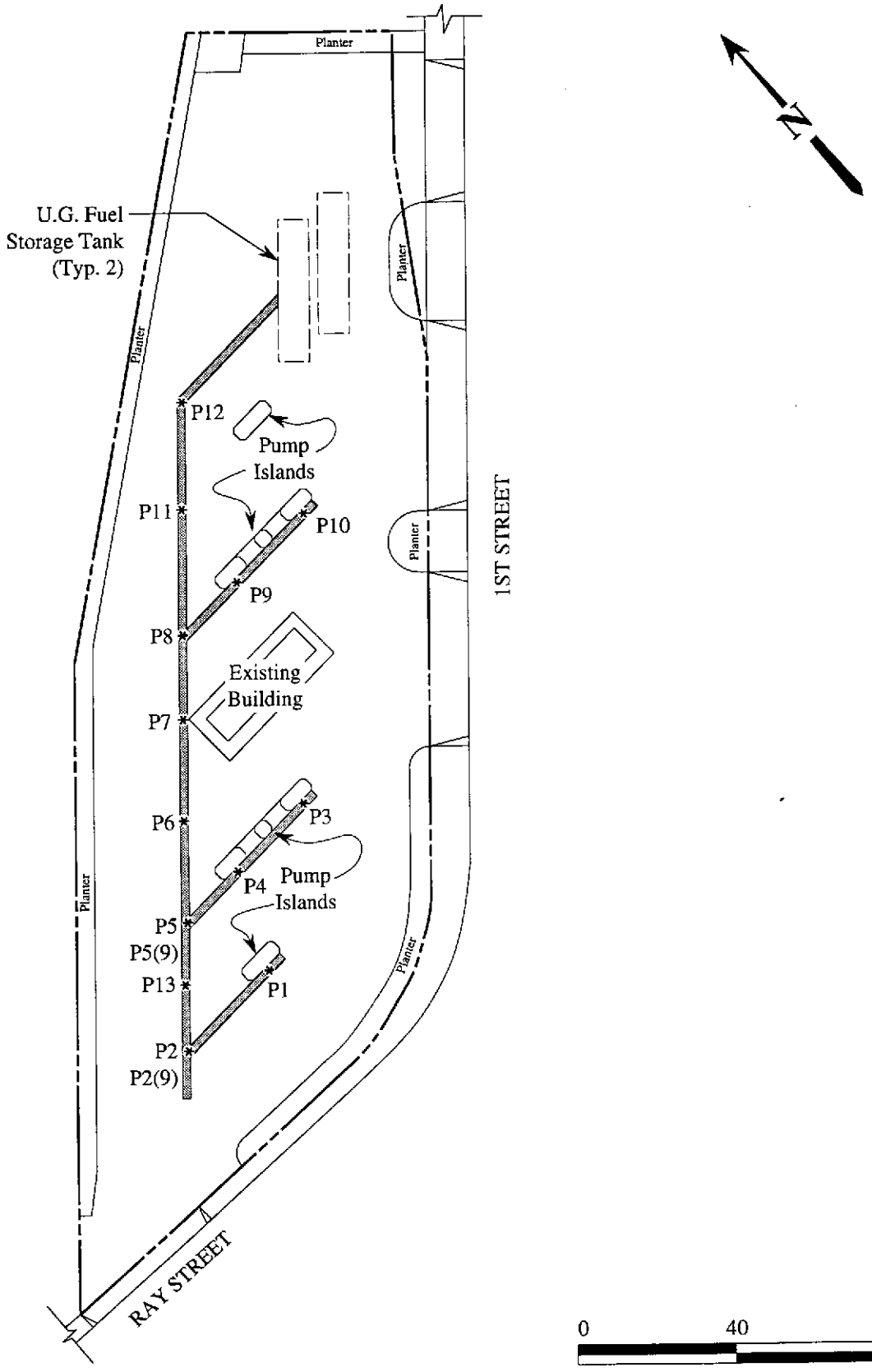
**POTENTIOMETRIC SURFACE MAP FOR THE SEPTEMBER 18, 1996 MONITORING EVENT**

KAPREALIAN ENGINEERING
INCORPORATED

**UNOCAL SERVICE STATION #7376**
**4191 1ST STREET**
**PLEASANTON, CALIFORNIA**

0 40 80
Approx. scale feet

FIGURE
**1**




LEGEND

* Soil sample point location (1994)

**SOIL SAMPLE POINT LOCATION MAP**

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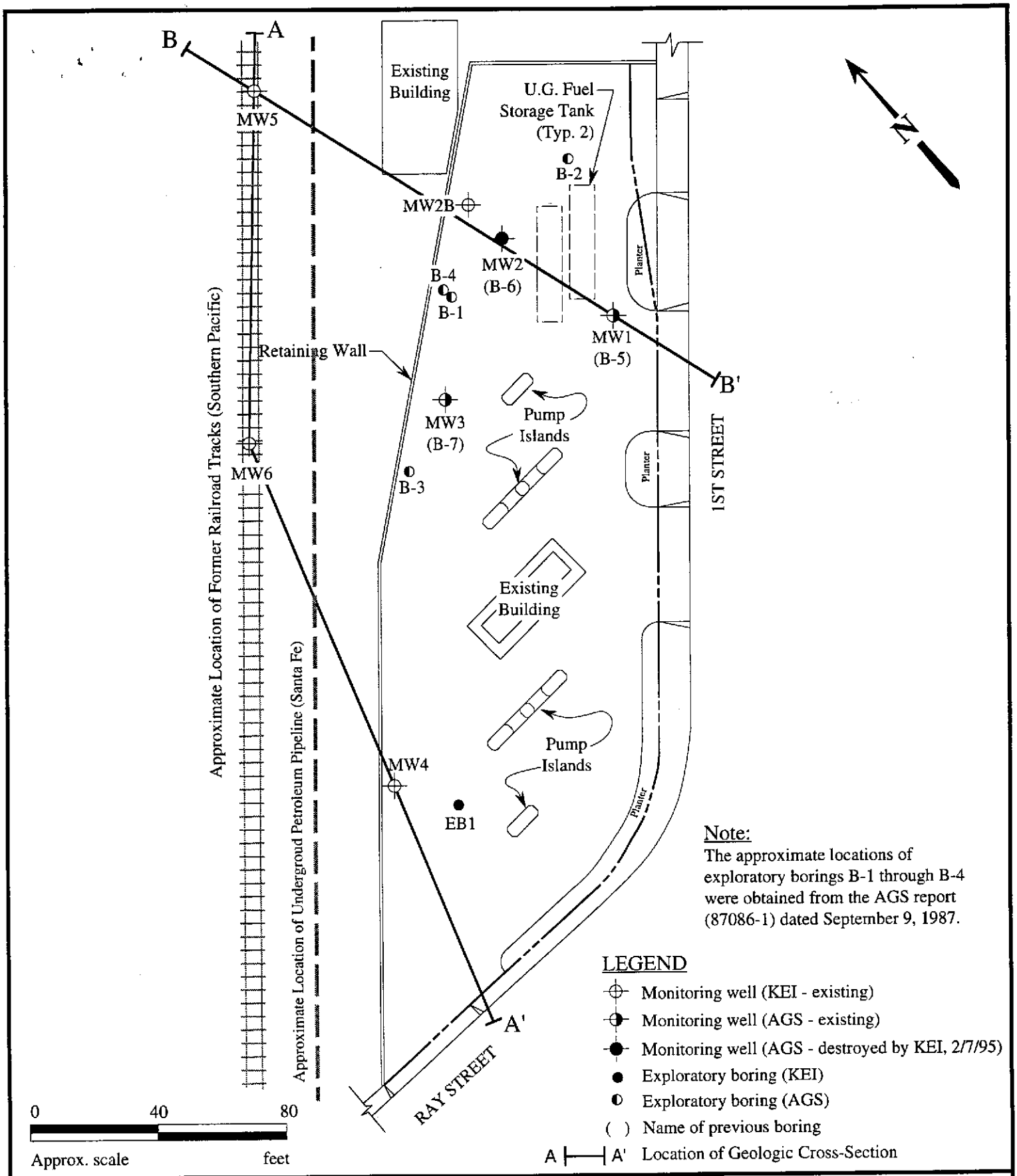
**UNOCAL SERVICE STATION #7376**
**4191 1ST STREET**
**PLEASANTON, CALIFORNIA**

FIGURE
**3**

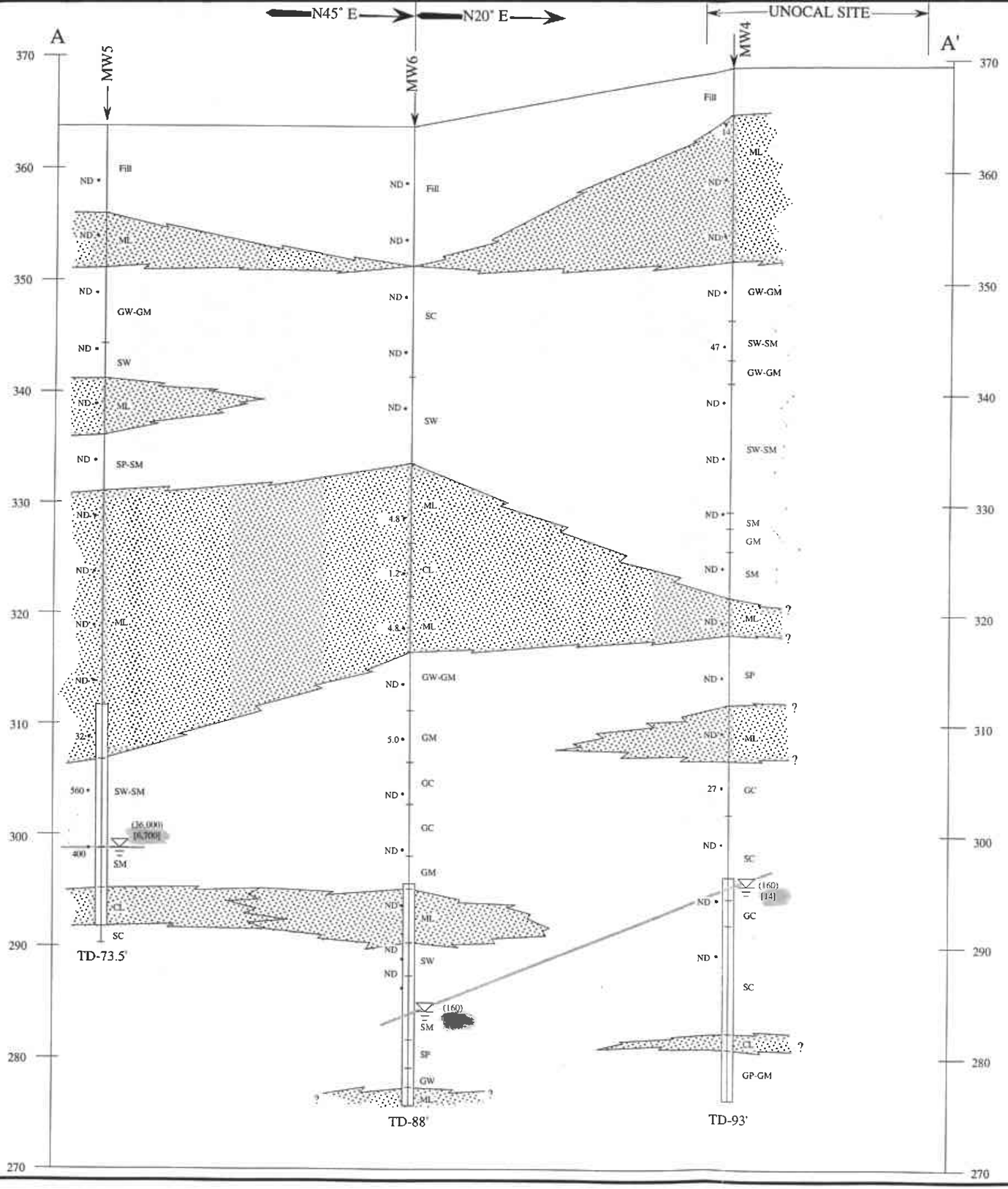



**GEOLOGIC CROSS-SECTION LOCATION MAP**

KAPREALIAN ENGINEERING
INCORPORATED

**UNOCAL SERVICE STATION #7376**
**4191 1ST STREET**
**PLEASANTON, CALIFORNIA**

FIGURE
**4**




## LEGEND

Soil classification symbols per USCS

- Ground water level on 9/18/96
- Screened interval of well
- ND Non-detectable
- ( ) Concentration of TPH as gasoline (µg/L) in ground water sample collected on 9/18/96
- Concentration of benzene (µg/L) in ground water sample collected on 9/18/96
- • Concentration of TPH as gasoline (mg/kg) in soil sample collected at depth shown
- ——? Geologic contact, queried where uncertain.
- Predominantly silt and or clay
- Predominantly sand and gravel

0 40 80
Approx. horizontal scale feet

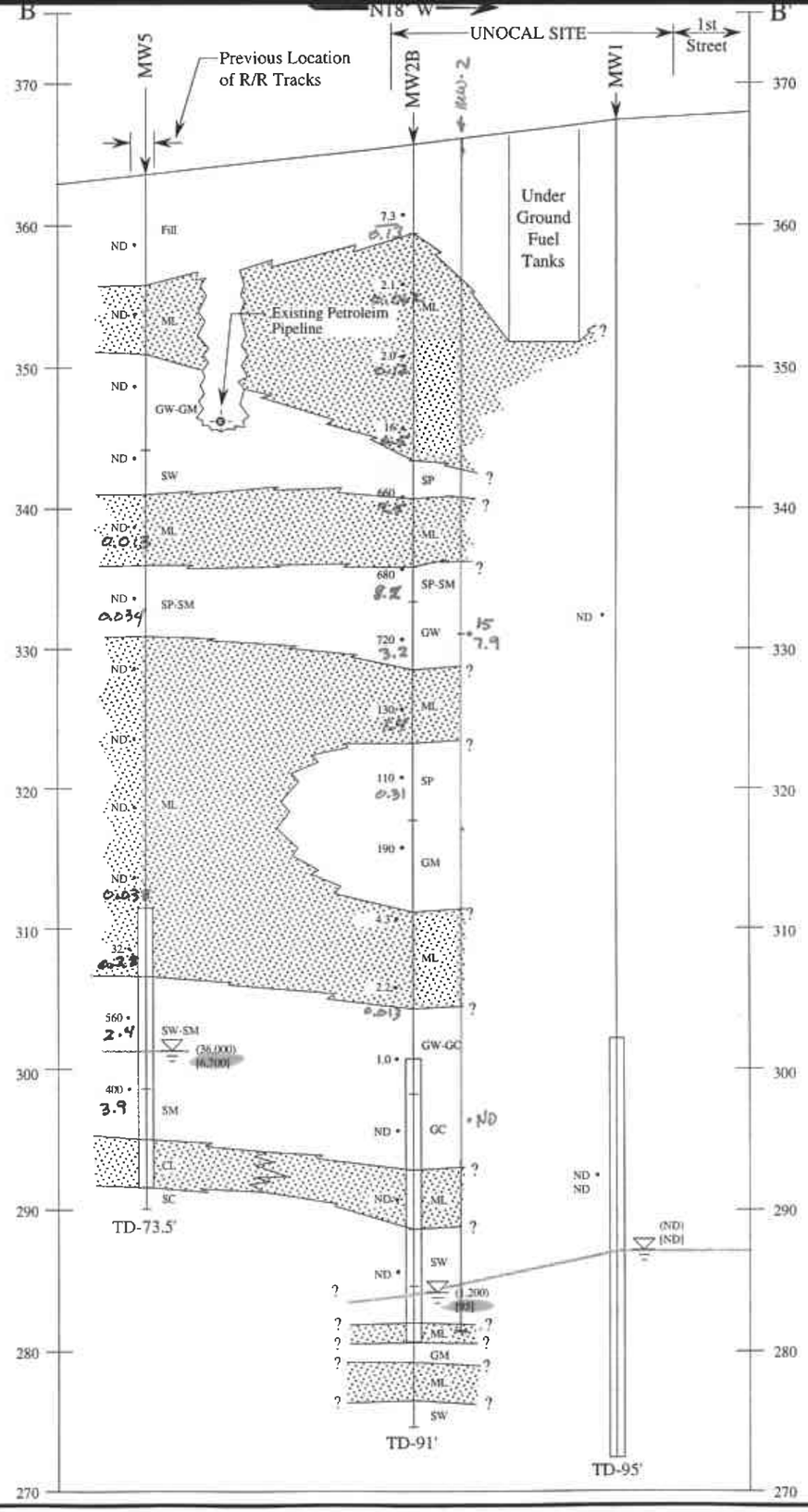
0 10 20
Approx. vertical scale feet

**GEOLOGIC CROSS SECTION A-A'**

**UNOCAL SERVICE STATION #7376**
**4191 1ST STREET**
**PLEASANTON, CALIFORNIA**

KAPREALIAN ENGINEERING
INCORPORATED

FIGURE
**5**




LEGEND

Soil classification symbols per USCS

- Ground water level on 9/18/96
- Screened interval of well
- ND Non-detectable
- ( ) Concentration of TPH as gasoline (µg/L) in ground water sample collected on 9/18/96
- [ ] Concentration of benzene (µg/L) in ground water sample collected on 9/18/96
- • Concentration of TPH as gasoline (mg/kg) in soil sample collected at depth shown
- ——? Geologic contact, queried where uncertain.
- Predominantly silt and or clay
- Predominantly sand and gravel

Notes:

Lithologic data for MW1 not available.

0 40 80
Approx. horizontal scale feet

0 10 20
Approx. vertical scale feet

**GEOLOGIC CROSS SECTION B-B'**

**UNOCAL SERVICE STATION #7376**
**4191 1ST STREET**
**PLEASANTON, CALIFORNIA**

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FIGURE
**6**

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** T.S. TGG CE6/633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton, CA | **Well Cover Elevation** N/A | **Date Drilled** 7/24/96 |
| **Boring No.** MW4 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | 0 | | Pavement over base gravel. |
| | | | | | Sandy silt with gravel to 1 inch in diameter, firm, moist, dark brown (fill). |
| 10/11/30 | | | 5 | | Silt, estimated at 5-10% medium to coarse-grained sand, trace gravel to 1/2 inch in diameter, very stiff to hard, moist, brown. |
| 20/23/25 | | | | | Silt, estimated at 10-20% predominantly fine-grained sand, 15-25% clay and trace gravel to 1/2 inch in diameter, hard, moist, yellowish brown. |
| 19/22/23 | | | 10 | ML | Sandy silt, trace gravel to 3/4 inch in diameter, sand is fine to coarse-grained, hard, moist, dark yellowish brown. |
| 14/19/21 | | | 15 | | Sandy silt, estimated at 30-35% fine to very coarse-grained sand and 10-20% clay, hard, moist, dark yellowish brown. |
| 13/14/14 | | | 20 | GW-GM | Sandy well graded gravel, estimated at 25-30% predominantly fine to medium-grained sand and 5-15% silt, gravel to 1 inch in diameter, medium dense, moist, dark yellowish brown. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** JGG <br> **T.S.** CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton, CA | **Well Cover Elevation** N/A | **Date Drilled** 7/24/96 |
| **Boring No.** MW4 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| 17/19/22 | | | 45 | SM | Silty sand with gravel, estimated at 20-25% gravel to 1/2 inch in diameter and 15-20% silt, sand is fine to coarse-grained, dense to very dense, moist, dark yellowish brown, moist at gravel margins. |
| 8/10/11 | | | 50 | ML | Clayey silt, trace sand, very stiff, moist, yellowish brown. |
| 15/18/20 | | | | | Sandy silt, estimated at 10-20% very fine to fine-grained sand, very stiff, moist, greenish gray. |
| 21/25/27 | | | 55 | SP-SM | Poorly graded sand with silt and gravel, estimated at 5-10% silt, sand is predominantly medium to coarse-grained, gravel to 1-1/4 inches in diameter, dense, moist, dark yellowish brown. <br> Poorly graded sand with silt and gravel, as above except dense to very dense. |
| 15/8/9 | | | 60 | ML | Gravelly silt, estimated at 20-30% gravel to 2 inches in diameter and 5-15% sand, very stiff, moist, olive. |
| 19/26/38 | | | 65 | GC | Clayey gravel with sand, estimated at 30-35% medium to coarse-grained sand and 10-20% clay, gravel to 1-1/4 inches in diameter, dense to very dense, moist, dark yellowish brown. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" / **Casing Diameter** 2" | **Logged By** T.S. TGG CEG 1633 |
| **Project Name** Unocal S/S #7376 4191 1st Street, Pleasanton, CA | **Well Cover Elevation** N/A | **Date Drilled** 7/24/96 |
| **Boring No.** MW4 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | | GC | Clayey gravel with sand, estimated at 30-35% medium to coarse-grained sand and 10-20% clay, gravel to 1-1/4 inches in diameter, dense to very dense, moist, dark yellowish brown. |
| 11/17/20 | | | 70 | SC | Clayey sand, estimated at 15-25% clay and 15-25% gravel to 3/4 inch in diameter, sand is fine to coarse-grained, medium dense to dense, moist, dark yellowish brown. |
| 14/30/39 | | | 75 | GC | Clayey gravel, estimated at 20-30% fine to coarse-grained sand and 10-20% clay, gravel to 3/4 inch in diameter, dense to very dense, moist, yellowish brown. |
| 19/36/38 | ▽ | | 80 | SC | Clayey sand with gravel, estimated at 20-25% gravel to 1 inch in diameter and 10-20% clay, sand is well graded and medium to very coarse-grained, very dense, moist to wet, dark yellowish brown. |
| 20/29/30 | | | 85 | | Clayey sand with gravel, estimated at 15-20% gravel and 10-20% clay, sand is fine to very coarse-grained, predominantly very coarse-grained, dense to very dense, wet, yellowish brown. |
| 25/30/32 | | | | CL | Clay, estimated at 10-15% gravel to 1 inch in diameter and 10-15% fine to medium-grained sand, hard, moist, olive, black staining. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** TGC <br> T.S. LEG 16 33 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton, CA | **Well Cover Elevation** N/A | **Date Drilled** 7/24/96 |
| **Boring No.** MW4 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | | CL | Clay, estimated at 10-15% gravel to 1 inch in diameter and 10-15% fine to medium-grained sand, hard, moist, olive, black staining. |
| 34/50-6" | | | 90 | GP-GM | Sandy gravel, estimated at 20-30% predominantly fine-grained sand and 5-15% silt, gravel to 1-1/2 inches in diameter, very dense, moist to wet, dark yellowish brown, moisture at clast boundaries. |
| 33/50-6" | | | | | |
| | | | 95 | | TOTAL DEPTH: 93' |
| | | | 100 | | |
| | | | 105 | | |

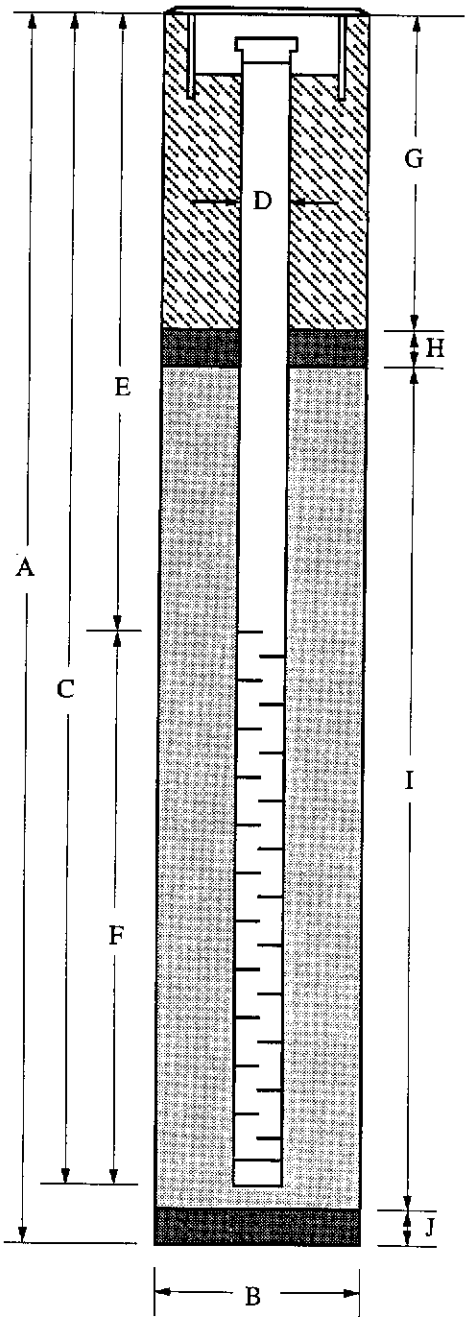
# WELL CONSTRUCTION DIAGRAM

**PROJECT NAME:** Unocal S/S #7376, 4191 1st Street, Pleasanton, CA **WELL NO.:** MW4

**PROJECT NUMBER:** KEI-P94-0903.P2R

**WELL PERMIT NO.:**

Flush-mounted Well Cover




A. Total Depth : 93'

B. Boring Diameter: 8.5"

Drilling Method: Hollow Stem Auger

C. Casing Length: 93'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 73'

F. Perforated Length: 20'

Perforation Type: Machine Slotted

Perforation Size: 0.010"

G. Surface Seal: 69'

Seal Material: Neat Cement

H. Seal: 2'

Seal Material: Bentonite

I. Filter Pack: 22'

Pack Material: RMC Lonestar Sand

Size: #2/12

J. Bottom Seal: 1.5'

Seal Material: N/A

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** JBG <br> T.S. CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton | **Well Cover Elevation** N/A | **Date Drilled** 7/23/96 |
| **Boring No.** MW5 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V&W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | 0 | | Silty gravel with sand, loose, moist, dark brown (fill). |
| 7/8/8 | | | 5 | | Sandy silt with clay, estimated at 15-20% sand, 5-15% clay and trace gravel to 3/4 inch in diameter, medium dense, moist, dark yellowish brown (fill). |
| | | | | | NATIVE SOIL |
| 6/9/9 | | | 10 | ML | Silt, estimated at 15-20% fine to medium-grained sand and 10-15% gravel to 1 inch in diameter, stiff to very stiff, moist, dark brown. |
| 14/16/17 | | | 15 | GW-GM | Sandy gravel, estimated at 10-15% silt, gravel to 1-1/4 inches in diameter, dense, moist, yellowish brown. |
| 14/15/16 | | | 20 | SW | Sand, fine to medium-grained, estimated at 5-10% silt and trace coarse-grained sand, dense, moist, greenish gray. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** JGG <br> T.S. CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton | **Well Cover Elevation** N/A | **Date Drilled** 7/23/96 |
| **Boring No.** MW5 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V&W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | | SW | Sand, fine to medium-grained, estimated at 5-10% silt, trace coarse-grained sand, dense, moist, greenish gray. |
| 11/14/20 | | | 25 | ML | Silt, estimated at 10-20% fine to medium-grained sand and 10-15% clay, very stiff to hard, moist, dark yellowish brown and dark greenish gray, mottled. |
| 9/11/16 | | | 30 | SP-SM | Sand, predominantly fine to medium-grained, estimated at 5-10% silt, medium dense, moist, greenish gray. |
| 8/10/13 | | | 35 | ML | Silt, estimated at 10-20% fine to medium-grained sand, very stiff, moist, greenish gray and dark olive, mottled. |
| 7/9/10 | | | 40 | | Silt, estimated at 5-15% fine-grained sand, very stiff, moist, dark yellowish brown and greenish gray, mottled. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" | **Logged By** JGC |
| | **Casing Diameter** 2" | T.S. LEG 1633 |
| **Project Name** Unocal S/S #7376 | **Well Cover Elevation** | **Date Drilled** |
| 4191 1st Street, Pleasanton | N/A | 7/23/96 |
| **Boring No.** MW5 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V&W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| 13/14/17 | | | 45 | | Clayey silt, very stiff, moist, predominantly yellowish brown, greenish gray staining. |
| 4/8/17 | | | 50 | ML | Clayey silt, trace pebbles, very stiff to hard, moist, dark yellowish brown and greenish gray, mottled, black staining. |
| 12/17/20 | | | 55 | | Silt, estimated at 10-15% sand, trace gravel to 3/4 inch in diameter, variable clay content, very stiff to hard, moist, dark yellowish brown, greenish gray staining. |
| 21/30/32 | | | 60 | SW-SM | Well graded sand with silt and gravel, estimated at 5-15% silt and 5-15% gravel to 3/4 inch in diameter, sand is fine to coarse-grained, very dense, moist, greenish gray and dark yellowish brown, mottled. |
| 40/50-6" | ▽ | | 65 | | Well graded sand with silt and gravel, as above except estimated at 10-20% gravel to 1-1/4 inches in diameter. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** T.S. JGG CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton | **Well Cover Elevation** N/A | **Date Drilled** 7/23/96 |
| **Boring No.** MW5 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V&W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| 50-6" | | | | SM | Silty sand with gravel, estimated at 15-25% gravel to 1 inch in diameter and 10-20% silt, very dense, saturated, olive brown. |
| 10/13/19 | | | 70 | CL | Sandy clay, estimated at 20-30% fine to coarse-grained sand, very stiff, wet, yellowish brown. |
| 12/15/16 | | | | SC | Clayey sand, estimated at 25-35% clay, sand is fine to coarse-grained, medium dense to dense, wet, yellowish brown. |
| | | | 75 | | TOTAL DEPTH: 73.5' |
| | | | 80 | | |
| | | | 85 | | |

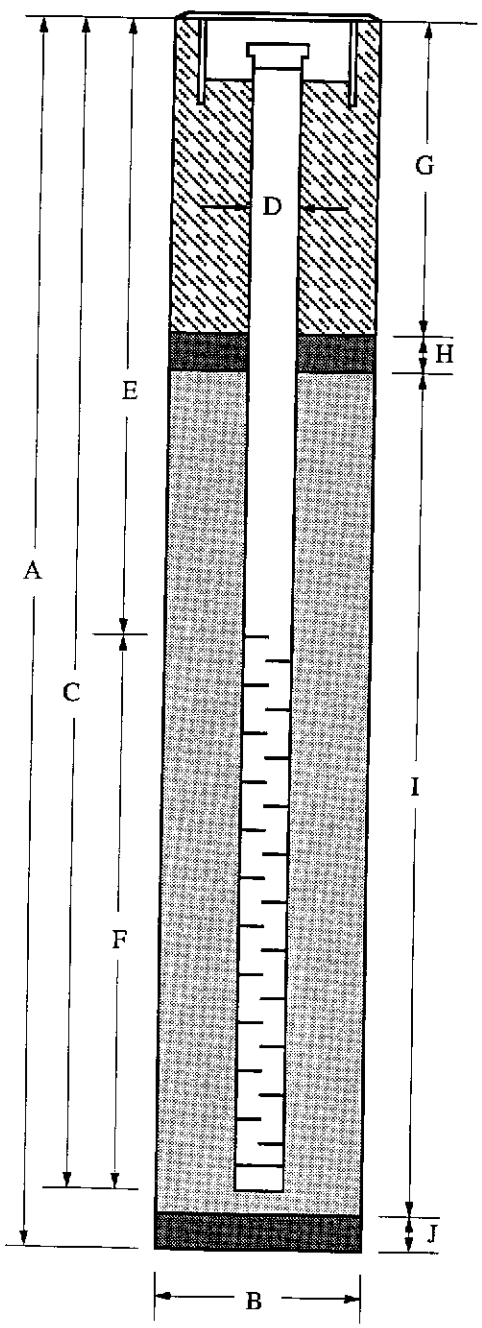
# WELL CONSTRUCTION DIAGRAM

**PROJECT NAME:** Unocal S/S #7376, 4191 1st Street, Pleasanton, CA **WELL NO.:** MW5

**PROJECT NUMBER:** KEI-P94-0903.P2R

**WELL PERMIT NO.:**

Flush-mounted Well Cover




A. Total Depth : 73.5'

B. Boring Diameter: 8.5"

Drilling Method: Hollow Stem Auger

C. Casing Length: 72'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 52'

F. Perforated Length: 20'

Perforation Type: Machine Slotted

Perforation Size: 0.010"

G. Surface Seal: 48'

Seal Material: Neat Cement

H. Seal: 2'

Seal Material: Bentonite

I. Filter Pack: 22'

Pack Material: RMC Lonestar Sand

Size: #2/12

J. Bottom Seal: 1.5'

Seal Material: Bentonite

Perfs 52-72'

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P 94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** T.S. JG CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton | **Well Cover Elevation** N/A | **Date Drilled** 7/23-24/96 |
| **Boring No.** MW6 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | 0 | | Gravelly silt, estimated at 15-20% gravel to 1 3/4 inches in diameter, and 15-20% sand, loose, moist, dark brown (fill). |
| 2/5/9 | | | 5 | | Silt, estimated at 15-20% predominantly fine-grained sand, and 5-10% gravel to 3/4 inch in diameter, firm, moist, dark brown (fill). |
| 6/7/8 | | | 10 | | Silty sand, estimated at 20-30% silt, and 5-10% gravel to 1/2 inch in diameter, sand is predominantly fine-grained, medium dense, moist, yellowish brown (fill). |
| 10/11/13 | | | 15 | SC | Clayey sand with gravel, estimated at 15-25% clay and 5-10% gravel to 1 inch in diameter, sand is fine to coarse-grained, medium dense, moist, dark yellowish brown. |
| 19/21/29 | | | 20 | | Clayey sand, estimated at 20-30% clay, trace gravel to 3/4 inch in diameter, sand is predominantly medium-grained, dense, moist, dark yellowish brown. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P 94-0903.P2R | **Boring Diameter** 8.5" | **Logged By** JGG T.S. CEG 1633 |
| | **Casing Diameter** 2" | |
| **Project Name** Unocal S/S #7376 | **Well Cover Elevation** | **Date Drilled** |
| 4191 1st Street, Pleasanton | N/A | 7/23-24/96 |
| **Boring No.** MW6 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | | SC | Clayey sand, estimated at 20-30% clay, trace gravel to 3/4 inch in diameter, sand is predominantly medium-grained, dense, moist, dark yellowish brown. |
| 36/50-6" | | | 25 | SW | Gravelly sand, estimated at 10-15% gravel to 3/4 inch in diameter, trace silt, sand is fine to coarse-grained, very dense, moist, dark olive. |
| 39/50-6" | | No recovery | 30 | | 2" gravel clast in shoe of sampler. |
| | | | | ML | |
| 9/11/12 | | | 35 | | Silt, estimated at 5-15% sand, very stiff, moist, olive and yellowish brown, mottled, black staining. |
| 16/20/20 | | | 40 | CL | Sandy clay, estimated at 20-30% predominantly fine-grained sand, hard, moist, dark yellowish brown and greenish gray, mottled, black staining. |
| | | | | ML | Sandy silt, estimated at 20-30% predominantly fine-grained sand and 5-15% clay, very stiff, moist, greenish gray and dark yellowish brown, mottled. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P 94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** T.S. JGG CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton | **Well Cover Elevation** N/A | **Date Drilled** 7/23-24/96 |
| **Boring No.** MW6 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| 11/12/18 | | | 45 | ML | Sandy silt, estimated at 20-30% predominantly fine-grained sand, and 5-15% clay, very stiff, moist, greenish gray and dark yellowish brown, mottled. |
| 29/50-6" | | | 50 | GW-GM | Sandy gravel, estimated at 20-30% fine to coarse-grained sand and 10-15% silt, gravel to 1 inch in diameter, very dense, moist, olive. |
| 23/28/31 | | | 55 | GM | Silty gravel, estimated at 20-30% fine to coarse-grained sand and 15-25% silt, gravel to 2 inches in diameter, very dense, moist, dark yellowish brown, moisture along clast boundaries. |
| 14/23/34 | | | 60 | GC | Clayey gravel, estimated at 20-30% fine to coarse-grained sand and 10-20% clay, gravel to 1-1/2 inches in diameter, dense to very dense, moist, yellowish brown. |
| 20/28/29 | | | | | Clayey gravel, as above. |
| 29/39/50 | | | 65 | | Clayey gravel, estimated at 20-30% fine to coarse-grained sand and 10-20% clay, gravel to 1-1/2 inches in diameter, very dense, moist, yellowish brown, moisture at clast margins. |

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P 94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** T.S. JGG CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton | **Well Cover Elevation** N/A | **Date Drilled** 7/23-24/96 |
| **Boring No.** MW6 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| 24/50-6" | | | | GM | Silty gravel, estimated at 15-25% fine to coarse-grained sand and 10-20% silt, gravel to 2 inches in diameter, very dense, moist to wet, yellowish brown. |
| 21/12/13 | | | 70 | ML | Silt, hard to very stiff, moist, yellowish brown. |
| 12/13/14 | | | | | Silty sand, estimated at 20-30% silt, sand is predominantly very fine to fine-grained, medium dense, moist, yellowish brown. |
| 50/50-6" | | | 75 | SW | Sand with gravel and silt, estimated at 20-25% gravel to 3/4 inch in diameter and 5-10% silt, sand is predominantly fine to medium-grained, very dense, moist, dark yellowish brown. |
| 31/50-6" | ▽ | | | SM | Silty sand with gravel, estimated at 15-20% gravel to 1 inch in diameter, and 10-20% silt, sand is fine to coarse-grained, very dense, moist to wet, dark yellowish brown. |
| 33/50-6" | | | 80 | | Silty sand with gravel, as above. |
| | | | | SP | Poorly graded sand, predominantly medium-grained, medium dense, saturated, olive brown. |
| 8/10/11 | | | 85 | GW | Well graded gravel with sand, gravel to 1/2 inch in diameter, medium to very coarse-grained sand, medium dense, saturated, olive brown. |
| 33/50-3" | | | | ML | Silty sand with gravel, estimated at 15-25% silt and 10-20% gravel to 1 inch in diameter, sand is predominantly fine to medium-grained, very dense, saturated, dark yellowish brown. |

TOTAL DEPTH: 88'

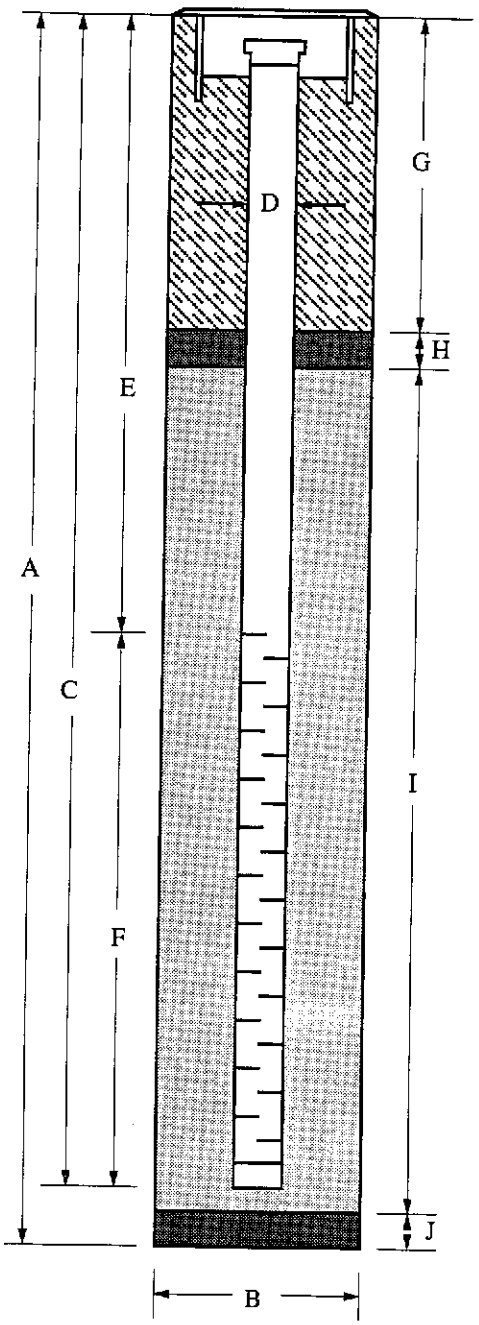
# WELL CONSTRUCTION DIAGRAM

**PROJECT NAME:** Unocal S/S #7376, 4191 1st Street, Pleasanton **WELL NO.:** MW6

**PROJECT NUMBER:** KEI-P94-0903.P2R

**WELL PERMIT NO.:** 00000

Flush-mounted Well Cover




A. Total Depth : 88'

B. Boring Diameter: 8.5"

Drilling Method: Hollow Stem Auger

C. Casing Length: 88'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 68'

F. Perforated Length: 20'

Perforation Type: Machine Slotted

Perforation Size: 0.010"

G. Surface Seal: 64'

Seal Material: Neat Cement

H. Seal: 2'

Seal Material: Bentonite

I. Filter Pack: 22'

Pack Material: RMC Lonestar Sand

Size: #2/12

J. Bottom Seal: None

Seal Material: N/A

Sequoia Analytical

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404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1678 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1678 MW-4(5) | Sample I.D. 607-1679 MW-4(10) | Sample I.D. 607-1680 MW-4(15) | Sample I.D. 607-1681 MW-4(20) | Sample I.D. 607-1682 MW-4(25) | Sample I.D. 607-1683 MW-4(30) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | 14 | N.D. | N.D. | N.D. | 47 | N.D. |
| Benzene | 0.0050 | N.D. | 0.080 | 0.011 | N.D. | N.D. | N.D. |
| Toluene | 0.0050 | N.D. | 0.039 | N.D. | N.D. | N.D. | 0.014 |
| Ethyl Benzene | 0.0050 | N.D. | 0.0059 | N.D. | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | 0.068 | 0.096 | N.D. | N.D. | 0.77 | 0.029 |
| Chromatogram Pattern: | | Unidentified Hydrocarbons >C8 | -- | -- | -- | Gasoline & Unidentified Hydrocarbons >C8 | -- |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 25 | 1.0 |
| Date Analyzed: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Instrument Identification: | HP-5 | HP-5 | HP-5 | HP-4 | HP-4 | HP-4 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 94 | 93 | 102 | 105 | 101 | 103 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

6071678.KEI <1>

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1684 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1684 MW-4(35) | Sample I.D. 607-1685 MW-4(40.5) | Sample I.D. 607-1686 MW-4(45) | Sample I.D. 607-1687 MW-4(50) | Sample I.D. 607-1688 MW-4(55) | Sample I.D. 607-1689 MW-4(60) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Benzene | 0.0050 | 0.0054 | 0.031 | 0.015 | 0.015 | N.D. | N.D. |
| Toluene | 0.0050 | 0.015 | 0.039 | 0.0078 | N.D. | N.D. | N.D. |
| Ethyl Benzene | 0.0050 | N.D. | 0.0083 | N.D. | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | 0.021 | 0.040 | 0.0089 | 0.0074 | N.D. | N.D. |
| Chromatogram Pattern: | | -- | -- | -- | -- | -- | -- |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/29/96 |
| Instrument Identification: | HP-4 | HP-5 | HP-5 | HP-4 | HP-4 | HP-4 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 107 | 91 | 95 | 105 | 104 | 106 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23-24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1690 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1690 MW-4(65) | Sample I.D. 607-1691 MW-4(70) | Sample I.D. 607-1692 MW-4(75) | Sample I.D. 607-1693 MW-4(79.5) | Sample I.D. 607-1694 MW-5(5) | Sample I.D. 607-1695 MW-5(10) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | 27 | N.D. | N.D. | N.D. | N.D. | N.D. |
| Benzene | 0.0050 | 0.026 | 0.27 | N.D. | N.D. | N.D. | N.D. |
| Toluene | 0.0050 | 0.081 | 0.0053 | N.D. | N.D. | N.D. | N.D. |
| Ethyl Benzene | 0.0050 | 0.27 | N.D. | N.D. | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | 0.35 | 0.081 | N.D. | N.D. | N.D. | N.D. |
| Chromatogram Pattern: | | Gasoline | -- | -- | -- | -- | -- |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 5.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 7/30/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-4 | HP-5 | HP-5 | HP-5 | HP-5 | HP-5 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 98 | 99 | 104 | 109 | 99 | 94 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

Sequoia Analytical

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1696 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1696 MW-5(15) | Sample I.D. 607-1697 MW-5(20) | Sample I.D. 607-1698 MW-5(25) | Sample I.D. 607-1699 MW-5(30) | Sample I.D. 607-1700 MW-5(35) | Sample I.D. 607-1701 MW-5(40) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Benzene | 0.0050 | N.D. | N.D. | N.D. | 0.013 | 0.034 | N.D. |
| Toluene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Ethyl Benzene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | N.D. | N.D. | N.D. | N.D. | 0.0055 | N.D. |
| Chromatogram Pattern: | | -- | -- | -- | -- | -- | -- |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-4 | HP-4 | HP-4 | HP-4 | HP-4 | HP-4 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 107 | 104 | 104 | 106 | 105 | 103 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1702 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1702 MW-5(45) | Sample I.D. 607-1703 MW-5(50) | Sample I.D. 607-1704 MW-5(55) | Sample I.D. 607-1705 MW-5(60) | Sample I.D. 607-1706 MW-5(65) | Sample I.D. 607-1707 MW-6(5) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. | 32 | 560 | 400 | N.D. |
| Benzene | 0.0050 | N.D. | 0.038 | 0.28 | 2.4 | 3.9 | 0.054 |
| Toluene | 0.0050 | N.D. | N.D. | N.D. | 2.6 | 4.1 | 0.055 |
| Ethyl Benzene | 0.0050 | N.D. | N.D. | 0.098 | 2.3 | 5.5 | 0.052 |
| Total Xylenes | 0.0050 | N.D. | N.D. | 0.048 | 6.5 | 56 | 0.17 |
| Chromatogram Pattern: | | -- | -- | Gasoline | Gasoline | Gasoline | -- |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 5.0 | 100 | 50 | 1.0 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 |
| Instrument Identification: | HP-4 | HP-5 | HP-5 | HP-4 | HP-4 | HP-4 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 102 | 94 | 83 | 104 | 114 | 101 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1708 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1708 MW-6(10) | Sample I.D. 607-1709 MW-6(15) | Sample I.D. 607-1710 MW-6(20) | Sample I.D. 607-1711 MW-6(25) | Sample I.D. 607-1712 MW-6(35) | Sample I.D. 607-1713 MW-6(40) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. | N.D. | N.D. | 4.8 | 1.2 |
| Benzene | 0.0050 | 0.011 | N.D. | N.D. | N.D. | 0.59 | 0.27 |
| Toluene | 0.0050 | 0.0085 | N.D. | N.D. | N.D. | 0.57 | 0.15 |
| Ethyl Benzene | 0.0050 | 0.014 | N.D. | N.D. | N.D. | 0.073 | 0.010 |
| Total Xylenes | 0.0050 | 0.043 | N.D. | N.D. | N.D. | 0.71 | 0.053 |
| Chromatogram Pattern: | | -- | -- | -- | -- | Gasoline | Gasoline |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/30/96 |
| Instrument Identification: | HP-5 | HP-5 | HP-5 | HP-5 | HP-5 | HP-5 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 97 | 93 | 97 | 104 | 95 | 94 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1714 | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1714 MW-6(45) | Sample I.D. 607-1715 MW-6(50) | Sample I.D. 607-1716 MW-6(55) | Sample I.D. 607-1717 MW-6(60) | Sample I.D. 607-1718 MW-6(65) | Sample I.D. 607-1719 MW-6(70) |
|---|---|---|---|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | 4.8 | N.D. | 5.0 | N.D. | N.D. | N.D. |
| Benzene | 0.0050 | 1.2 | 0.026 | 0.034 | 0.0050 | 0.011 | 0.17 |
| Toluene | 0.0050 | 1.2 | N.D. | 0.043 | N.D. | N.D. | 0.018 |
| Ethyl Benzene | 0.0050 | 0.049 | 0.014 | 0.049 | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | 0.50 | 0.0095 | 0.11 | N.D. | N.D. | 0.039 |
| Chromatogram Pattern: | | Gasoline | -- | Gasoline | -- | -- | -- |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 |
| Instrument Identification: | HP-5 | HP-5 | HP-4 | HP-4 | HP-4 | HP-4 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 97 | 96 | 100 | 103 | 102 | 105 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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|---|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: | Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: | Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: | Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1720 | | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1720 MW-6(75) | Sample I.D. 607-1721 MW-6(77.5) |
|---|---|---|---|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. |
| Benzene | 0.0050 | N.D. | N.D. |
| Toluene | 0.0050 | N.D. | N.D. |
| Ethyl Benzene | 0.0050 | N.D. | N.D. |
| Total Xylenes | 0.0050 | N.D. | N.D. |
| Chromatogram Pattern: | | -- | -- |

**Quality Control Data**

| | | |
|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 |
| Date Analyzed: | 7/30/96 | 7/30/96 |
| Instrument Identification: | HP-5 | HP-4 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 96 | 103 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | **EPA 3550/8015 Modified** | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1678 | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1678 MW-4(5) | Sample I.D. 607-1679 MW-4(10) | Sample I.D. 607-1680 MW-4(15) | Sample I.D. 607-1681 MW-4(20) | Sample I.D. 607-1682 MW-4(25) | Sample I.D. 607-1683 MW-4(30) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | 10 | N.I. | N.I. | N.I. | 15 | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | 17 | 9.6 |
| Motor Oil (>C16) | 10 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Extracted: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1684 | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1684 MW-4(35) | Sample I.D. 607-1685 MW-4(40.5) | Sample I.D. 607-1686 MW-4(45) | Sample I.D. 607-1687 MW-4(50) | Sample I.D. 607-1688 MW-4(55) | Sample I.D. 607-1689 MW-4(60) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | 2.2 | N.I. | N.I. | N.I. | N.I. | N.I. |
| Motor Oil (>C16) | 10 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Extracted: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | | |
|---|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: | Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: | Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: | Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1690 | | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1690 MW-4(65) | Sample I.D. 607-1691 MW-4(70) | Sample I.D. 607-1692 MW-4(75) | Sample I.D. 607-1693 MW-4(79.5) | Sample I.D. 607-1694 MW-5(5) | Sample I.D. 607-1695 MW-5(10) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | 4.2 | N.I. | N.I. | N.I. | N.I. | N.I. |
| Motor Oil (>C16) | 10 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Extracted: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

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| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1696 | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1696 MW-5(15) | Sample I.D. 607-1697 MW-5(20) | Sample I.D. 607-1698 MW-5(25) | Sample I.D. 607-1699 MW-5(30) | Sample I.D. 607-1700 MW-5(35) | Sample I.D. 607-1701 MW-5(40) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Motor Oil (>C16) | 10 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Extracted: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A | HP-3A |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1702 | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1702 MW-5(45) | Sample I.D. 607-1703 MW-5(50) | Sample I.D. 607-1704 MW-5(55) | Sample I.D. 607-1705 MW-5(60) | Sample I.D. 607-1706 MW-5(65) | Sample I.D. 607-1707 MW-6(5) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. | N.I. | 110 | 450 | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | N.I. | N.I. | N.I. | 81 | 310 | N.I. |
| Motor Oil (>C16) | 10 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | 2.2 | N.I. | 2.7 | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 10 | 20 | 1.0 |
| Date Extracted: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Date Analyzed: | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 | 7/29/96 |
| Instrument Identification: | HP-3A | HP-3B | HP-3B | HP-3B | HP-3B | HP-3B |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

6071678.KEI <13>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1708 | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1708 MW-6(10) | Sample I.D. 607-1709 MW-6(15) | Sample I.D. 607-1710 MW-6(20) | Sample I.D. 607-1711 MW-6(25) | Sample I.D. 607-1712 MW-6(35) | Sample I.D. 607-1713 MW-6(40) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Motor Oil (>C16) | 10 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Extracted: | 7/29/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 |
| Date Analyzed: | 7/29/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 |
| Instrument Identification: | HP-3B | HP-3A | HP-3A | HP-3A | HP-3A | HP-3B |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | | |
|---|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: | Jul 23, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: | Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: | Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1714 | | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1714 MW-6(45) | Sample I.D. 607-1715 MW-6(50) | Sample I.D. 607-1716 MW-6(55) | Sample I.D. 607-1717 MW-6(60) | Sample I.D. 607-1718 MW-6(65) | Sample I.D. 607-1719 MW-6(70) |
|---|---|---|---|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. | 200 | N.I. | N.I. | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Motor Oil (>C16) | 10 | N.I. | N.I. | 320 | N.I. | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 2.0 | N.I. | N.I. | N.I. | N.I. | N.I. | N.I. |

**Quality Control Data**

| | | | | | | |
|---|---|---|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 10 | 1.0 | 1.0 | 1.0 |
| Date Extracted: | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 |
| Date Analyzed: | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 | 7/30/96 |
| Instrument Identification: | HP-3B | HP-3B | HP-3B | HP-3B | HP-3B | HP-3B |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

6071678.KEI <15>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| Kaprealian Engineering, Inc. | Client Project ID: | Unocal #7376, 4191 1st St., Pleasanton | Sampled: Jul 24, 1996 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Soil | Received: Jul 25, 1996 |
| Concord, CA 94520 | Analysis Method: | EPA 3550/8015 Modified | Reported: Aug 1, 1996 |
| Attention: Dennis Royce | First Sample #: | 607-1720 | |

## FUEL FINGERPRINT

| Analyte | Reporting Limit mg/kg | Sample I.D. 607-1720 MW6(75) | Sample I.D. 607-1721 MW6(77.5) |
|---|---|---|---|
| Diesel (C10-C22) | 1.0 | N.I. | N.I. |
| JP-4 (C8-C14) | 1.0 | N.I. | N.I. |
| JP-5 (C10-C16) | 1.0 | N.I. | N.I. |
| Kerosene (C10-C16) | 1.0 | N.I. | N.I. |
| Motor Oil (> C16) | 10 | N.I. | N.I. |
| Paint Thinner (C10-C12) | 1.0 | N.I. | N.I. |
| Unidentified Extractable Hydrocarbons | 1.0 | N.I. | N.I. |

**Quality Control Data**

| | | |
|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 |
| Date Extracted: | 7/30/96 | 7/30/96 |
| Date Analyzed: | 7/30/96 | 7/30/96 |
| Instrument Identification: | HP-3B | HP-3B |

Unidentified Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.I. (None Identified) were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Dennis Royce

Client Project ID: Unocal #7376, 4191 1st St., Pleasanton
Matrix: Solid
QC Sample Group: 6071678-721

Reported: Aug 1, 1996

# QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl Benzene | Xylenes | Diesel | Diesel | Diesel |
|---|---|---|---|---|---|---|---|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8015 | EPA 8015 | EPA 8015 |
| Analyst: | S. Chullakorn | S. Chullakorn | S. Chullakorn | S. Chullakorn | J. Dinsay | J. Dinsay | J. Dinsay |
| MS/MSD Batch#: | 6071656 | 6071656 | 6071656 | 6071656 | 6071653 | 6071707 | 6071709 |
| Date Prepared: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/29/96 | 7/30/96 |
| Date Analyzed: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/29/96 | 7/30/96 |
| Instrument I.D.#: | HP-5 | HP-5 | HP-5 | HP-5 | HP-3A | HP-3B | HP-3A |
| Conc. Spiked: | 0.40 mg/kg | 0.40 mg/kg | 0.40 mg/kg | 1.2 mg/kg | 10 mg/kg | 10 mg/kg | 10 mg/kg |
| Matrix Spike % Recovery: | 90 | 88 | 90 | 92 | 78 | 99 | 96 |
| Matrix Spike Duplicate % Recovery: | 93 | 90 | 90 | 92 | 82 | 99 | 120 |
| Relative % Difference: | 2.7 | 2.8 | 0.0 | 0.0 | 4.3 | 0.0 | 17 |
| LCS Batch#: | 5LCS072696 | 5LCS072696 | 5LCS072696 | 5LCS072696 | LCS072696 | LCS072996 | LCS073096 |
| Date Prepared: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/29/96 | 7/30/96 |
| Date Analyzed: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 | 7/29/96 | 7/30/96 |
| Instrument I.D.#: | HP-5 | HP-5 | HP-5 | HP-5 | HP-3A | HP-3B | HP-3A |
| LCS % Recovery: | 95 | 90 | 90 | 92 | 100 | 110 | 100 |
| % Recovery Control Limits: | 60-140 | 60-140 | 60-140 | 60-140 | 50-150 | 50-150 | 50-150 |

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Dennis Royce

Client Project ID: Unocal #7376, 4191 1st St., Pleasanton
Matrix: Solid
QC Sample Group: 6071678-721

Reported: Aug 1, 1996

## QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl Benzene | Xylenes |
|---|---|---|---|---|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 |
| Analyst: | S. Chullakorn | S. Chullakorn | S. Chullakorn | S. Chullakorn |
| MS/MSD Batch#: | 6071656 | 6071656 | 6071656 | 6071656 |
| Date Prepared: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Date Analyzed: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Instrument I.D.#: | HP-4 | HP-4 | HP-4 | HP-4 |
| Conc. Spiked: | 0.40 mg/kg | 0.40 mg/kg | 0.40 mg/kg | 1.2 mg/kg |
| Matrix Spike % Recovery: | 90 | 90 | 88 | 92 |
| Matrix Spike Duplicate % Recovery: | 85 | 88 | 83 | 83 |
| Relative % Difference: | 5.7 | 2.8 | 5.9 | 9.5 |
| LCS Batch#: | 4CLS072696 | 4CLS072696 | 4CLS072696 | 4CLS072696 |
| Date Prepared: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Date Analyzed: | 7/26/96 | 7/26/96 | 7/26/96 | 7/26/96 |
| Instrument I.D.#: | HP-4 | HP-4 | HP-4 | HP-4 |
| LCS % Recovery: | 90 | 90 | 90 | 90 |
| % Recovery Control Limits: | 60-140 | 60-140 | 60-140 | 60-140 |

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

# UNOCAL 76


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❑ 18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200
❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800


| | |
|---|---|
| Consultant Company: Kaprealian Engineering, Inc. | Project Name: 4191 1st Street, Pleasanton |
| Address: 2401 Stanwell Drive, Suite 400 | UNOCAL Project Manager: Bob Benst |
| City: Concord State: California Zip Code: 94520 | AFE #: |
| Telephone: 510 602-5100 FAX #: 687-0602 | Site #, City, State: 7376, Pleasanton, CA |
| Report To: Dennis Royce Sampler: Tom Seeliger | QC Data: ☒ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A |

**Turnaround Time:** ❑ 10 Work Days ☒ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

**CODE:** ❑ Misc. ☒ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water
❑ Waste Water
☒ Other

Analyses Requested

| Client Sample I.D. | Date/Time Sampled | Matrix Desc. | # of Cont. | Cont. Type | Laboratory Sample # | TPH-G | BTEX | TPH-D | TEPH-Fuel Fingerprint | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW4 (5) | 7/24/96 | soil | 1 | tube | 6071678 | X | X | | X | | | | |
| 2. MW4 (10) | | | | | 6071679 | | | | | | | | |
| 3. MW4 (15) | | | | | 6071680 | | | | | | | | |
| 4. MW4 (20) | | | | | 6071681 | | | | | | | | |
| 5. MW4 (25) | | | | | 6071682 | | | | | | | | |
| 6. MW4 (30) | | | | | 6071683 | | | | | | | | |
| 7. MW4 (35) | | | | | 6071684 | | | | | | | | |
| 8. MW4 (40.5) | | | | | 6071685 | | | | | | | | |
| 9. MW4 (45) | | | | | 6071686 | | | | | | | | |
| 10. MW4 (50) | | | | | 6071687 | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished By: Tom Seeliger | Date: 7/25/96 | Time: 1715 | Received By: | Date: 7/25/96 | Time: 1630 |
| Relinquished By: | Date: 7/25/96 | Time: 1715 | Received By: | Date: | Time: |
| Relinquished By: | Date: | Time: | Received By Lab: | Date: 7/25/96 | Time: 1715 |

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page 1 of _____

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

# UNOCAL 76


❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
❑ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
❑ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600
❑ 18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200
❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800


| | |
|---|---|
| Consultant Company: Kaprealian Engineering, Inc. | Project Name: 4191 1st Street, Pleasanton |
| Address: 2401 Stanwell Drive, Suite 400 | UNOCAL Project Manager: Bob Boust |
| City: Concord State: California Zip Code: 94520 | AFE #: |
| Telephone: 510 602-5100 FAX #: 687-0602 | Site #, City, State: 7376, Pleasanton, CA |
| Report To: Dennis Royce Sampler: Tom Seeliger | QC Data: ☑ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A |

Turnaround Time: ❑ 10 Work Days ☒ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

CODE: ❑ Misc. ☒ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water
❑ Waste Water
☒ Other

Analyses Requested

| | Client Sample I.D. | Date/Time Sampled | Matrix Desc. | # of Cont. | Cont. Type | Laboratory Sample # | TPH-G | BTEX | TPH-D (w/ silica gel cleanup) | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW4 (55) | 7/24/96 | soil | 1 | tube | 6071688 | X | X | X | | | | | |
| 2 | MW4 (60) | | | | | 6071689 | | | | | | | | |
| 3 | MW4 (65) | | | | | 6071690 | | | | | | | | |
| 4 | MW4 (70) | | | | | 6071691 | | | | | | | | |
| 5 | MW4 (75) | | | | | 6071692 | | | | | | | | |
| 6 | MW4 (79.5) | | | | | 6071693 | | | | | | | | |
| 7 | MW4 (85) | | | | | | | | | | | | | Hold |
| 8 | MW5 (5) | 7/23/96 | | | | 6071694 | | | | | | | | |
| 9 | MW5 (10) | | | | | 6071695 | | | | | | | | |
| 10 | MW5 (15) | | | | | 6071696 | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished By: Tom Seeliger | Date: 7/25/96 | Time: 1730 | Received By: | Date: 7/25/96 | Time: 1730 |
| Relinquished By: | Date: 7/25/96 | Time: 1713 | Received By: | Date: | Time: |
| Relinquished By: | Date: | Time: | Received By Lab: Keith R Hall | Date: 7/25/96 | Time: 1715 |

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page 2 of __

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

# UNOCAL 76

❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
❑ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
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❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

| | |
|---|---|
| Consultant Company: Kaprealian Engineering, Inc. | Project Name: 4191 7th Street, Pleasanton |
| Address: 2401 Stanwell Drive, Suite 400 | UNOCAL Project Manager: Bob Boust |
| City: Concord State: California Zip Code: 94520 | AFE #: |
| Telephone: 510 602-5100 FAX #: 687-0602 | Site #, City, State: 7376, Pleasanton, CA |
| Report To: Dennis Royce Sampler: Tom Seeliger | QC Data: ☒ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A |

Turnaround Time: ❑ 10 Work Days ☒ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

CODE: ❑ Misc. ☒ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water
❑ Waste Water
☒ Other

Analyses Requested

| Client Sample I.D. | Date/Time Sampled | Matrix Desc. | # of Cont. | Cont. Type | Laboratory Sample # | TPH-G | BTEX | TPH-D (Fuel Fingerprint) | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW5(20) | 7/23/96 | soil | 1 | tube | | x | x | x | 6071697 | | | | |
| 2. MW5(25) | | | | | | | | | 6071698 | | | | |
| 3. MW5(30) | | | | | | | | | 6071699 | | | | |
| 4. MW5(35) | | | | | | | | | 6071700 | | | | |
| 5. MW5(40) | | | | | | | | | 6071701 | | | | |
| 6. MW5(45) | | | | | | | | | 6071702 | | | | |
| 7. MW5(50) | | | | | | | | | 6071703 | | | | |
| 8. MW5(55) | | | | | | | | | 6071704 | | | | |
| 9. MW5(60) | | | | | | | | | 6071705 | | | | |
| 10. MW5(65) | | | | | | | | | 6071706 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished By: Tom Seeliger | Date: 7/25/96 | Time: 1520 | Received By: | Date: 7/25/96 | Time: 1620 |
| Relinquished By: | Date: 7/25/96 | Time: 1715 | Received By: | Date: | Time: |
| Relinquished By: | Date: | Time: | Received By Lab: Keith B Schell | Date: 7/25/96 | Time: 1715 |

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page 23 of __

To be completed upon receipt of report:
1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____
2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

# UNOCAL 76


❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
❑ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
❑ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600
❑ 18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200
❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800


| | |
|---|---|
| Consultant Company: Kaprealian Engineering, Inc. | Project Name: 4191 1st Street, Pleasanton |
| Address: 2401 Stanwell Drive, Suite 400 | UNOCAL Project Manager: Bob Boust |
| City: Concord State: California Zip Code: 94520 | AFE #: |
| Telephone: 510 602-5100 FAX #: 687-0602 | Site #, City, State: 7376, Pleasanton, CA |
| Report To: Dennis Royce Sampler: Tom Seeliger | QC Data: ☒ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A |

**Turnaround Time:** ❑ 10 Work Days ☒ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

**CODE:** ❑ Misc. ☒ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water
❑ Waste Water
☒ Other

Analyses Requested

| Client Sample I.D. | Date/Time Sampled | Matrix Desc. | # of Cont. | Cont. Type | Laboratory Sample # | TPH-G | BTEX | TPH-D (w/ Silica Gel Cleanup) | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW6(5) | 7/23/96 | Soil | 1 | tube | 6071707 | X | X | X | | | | | |
| 2. MW6(10) | | | | | 6071708 | | | | | | | | |
| 3. MW6(15) | | | | | 6071709 | | | | | | | | |
| 4. MW6(20) | | | | | 6071710 | | | | | | | | |
| 5. MW6(25) | | | | | 6071711 | | | | | | | | |
| 6. MW6(35) | | | | | 6071712 | | | | | | | | |
| 7. MW6(40) | | | | | 6071713 | | | | | | | | |
| 8. MW6(45) | | | | | 6071714 | | | | | | | | |
| 9. MW6(50) | | | | | 6071715 | | | | | | | | |
| 10. MW6(55) | | | | | 6071716 | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished By: Tom Seeliger | Date: 7/25/96 | Time: 1715 | Received By: | Date: 7/26/96 | Time: 1630 |
| Relinquished By: | Date: 7/25/96 | Time: 1715 | Received By: | Date: | Time: |
| Relinquished By: | Date: | Time: | Received By Lab: Keith Rhodes | Date: 7/25/96 | Time: 1715 |

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page 1 of 1

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

# UNOCAL 76


❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
❑ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
❑ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600
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❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800


| | |
|---|---|
| Consultant Company: Kaprealian Engineering, Inc. | Project Name: 4191 1st Street, Pleasanton |
| Address: 2401 Stanwell Drive, Suite 400 | UNOCAL Project Manager: Bob Boust |
| City: Concord State: California Zip Code: 94520 | AFE #: |
| Telephone: 510 602-5100 FAX #: 687-0602 | Site #, City, State: 7376, Pleasanton, CA |
| Report To: Dennis Royce Sampler: Tom Seeliger | QC Data: ☒ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A |

Turnaround Time: ❑ 10 Work Days ☒ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

CODE: ❑ Misc. ☒ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water
❑ Waste Water
☒ Other

Analyses Requested

| Client Sample I.D. | Date/Time Sampled | Matrix Desc. | # of Cont. | Cont. Type | Laboratory Sample # | TPH-6 | BTEX | TPH-D (Fuel Fingerprint) | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW6(60) | 7/23/96 | soil | 1 | tube | | X | X | X | | 6071717 | | | | | |
| 2. MW6(65) | ↓ | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ | | 6071718 | | | | | |
| 3. MW6(70) | ↓ | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ | | 6071719 | | | | | |
| 4. MW6(75) | 7/24/96 | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ | | 6071720 | | | | | |
| 5. MW6(77.5) | ↓ | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ | | 6071721 | | | | | |
| 6. MW6(80) | ↓ | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ | | | | | | | Hold |
| 7. | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| Relinquished By: Tom Seeliger | Date: 7/25/96 | Time: 1630 | Received By: | Date: 7/25/96 Time: 1630 |
| Relinquished By: | Date: 7/25/96 | Time: 1715 | Received By: | Date: Time: |
| Relinquished By: | Date: | Time: | Received By Lab: | Date: 7/25/96 Time: 1715 |

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page 1 of 1

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

# BORING LOG

| | | |
|---|---|---|
| **Project No.** KEI-P94-0903.P2R | **Boring Diameter** 8.5" <br> **Casing Diameter** 2" | **Logged By** JGG T.S. CEG 1633 |
| **Project Name** Unocal S/S #7376 <br> 4191 1st Street, Pleasanton, CA | **Well Cover Elevation** N/A | **Date Drilled** 7/24/96 |
| **Boring No.** MW4 | **Drilling Method** Hollow-stem Auger | **Drilling Company** V & W Drilling |

| Pene-tration blows/6" | G.W. level | O.V.M. (P.P.M.) | Depth (feet) Samples | Stratigraphy USCS | Description |
|---|---|---|---|---|---|
| | | | | GW-GM | Sandy well graded gravel, estimated at 25-30% predominantly fine to medium-grained sand and 5-15% silt, gravel to 1 inch in diameter, medium dense, moist, dark yellowish brown. |
| 28/38/32 | | | 25 | SW-SM | Well graded sand with silt and gravel, estimated at 15-25% gravel to 1 inch in diameter and 5-15% silt, sand is fine to coarse-grained, very dense, moist, dark yellowish brown. |
| 25/38/37 | | | | GW-GM | Sandy well graded gravel, estimated at 20-30% fine to coarse-grained sand and 5-15% silt, gravel to 1-1/2 inches in diameter, very dense, moist, dark yellowish brown. |
| 36/26/30 | | | 30 | | Well graded sand with silt and gravel, estimated at 15-25% gravel to 3/4 inch in diameter and 5-15% silt, sand is fine to coarse-grained, very dense, moist, dark yellowish brown. |
| 24/25/27 | | | 35 | SW-SM | Gravelly sand, estimated at 20-25% gravel to 2 inches in diameter and 5-15% silt, sand is predominantly fine to medium-grained, very dense, moist, dark yellowish brown. |
| | | | | | Gravelly sand as above. |
| 20/12/10 | | | 40 | SM | Silty sand, estimated at 10-20% silt, sand is fine to coarse-grained, medium dense, moist, dark yellowish brown. |
| 17/19/22 | | | | GM | Silty gravel with sand, estimated at 15-25% silt and 10-20% medium to coarse-grained sand, gravel to 1-1/4 inches in diameter, dense to very dense, moist, dark yellowish brown. |
| | | | | SM | Silty sand with gravel, estimated at 20-25% gravel to 1/2 inch in diameter and 15-20% silt, sand is fine to coarse-grained, dense to very dense, moist, dark yellowish brown, moist at gravel margins. |