



**KAPREALIAN ENGINEERING, INC.**  
**Consulting Engineers**

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

82 JAN - 9 11:43  
January 3, 1992

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

RE: Unocal Service Station #5366  
7375 Amador Valley Blvd.  
Dublin, California

Gentlemen:

Per the request of Mr. Ron Bock of Unocal Corporation, enclosed please find our report dated January 3, 1992, for the above referenced site.

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

Sincerely,

Kaprealian Engineering, Inc.

Judy A. Dewey

jad\82

Enclosure

cc: Ron Bock, Unocal Corporation



**KAPREALIAN ENGINEERING, INC.**  
**Consulting Engineers**

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

KEI-P88-0205.QR14  
January 3, 1992

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

Attention: Mr. Ron Bock

RE: Quarterly Report  
Unocal Service Station #5366  
7375 Amador Valley Boulevard  
Dublin, California

Dear Mr. Bock:

This report presents the results of the most recent quarter of monitoring and sampling of the monitoring wells at the referenced site by Kaprealian Engineering, Inc. (KEI), per KEI's report KEI-P88-0205.QR3 dated February 15, 1989. The wells are currently being monitored monthly, and only downgradient well MW1 is being sampled on a quarterly basis. This report covers the work performed by KEI from September through November, 1991.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station. The site is located near the center of the southeast end of San Ramon Valley. The site is situated at the west corner of the intersection of Village Parkway and Amador Valley Boulevard in Dublin, California. A BP Service Station, an Arco Service Station, and a former Shell Station are located at the other three corners of this intersection. A Location Map, a Site Vicinity Map, and Site Plans are attached to this report.

KEI's initial work at the site began on February 18, 1988, and consisted of soil sampling following the removal of three underground fuel storage tanks. The tanks consisted of one 10,000 gallon unleaded gasoline tank, one 10,000 gallon super unleaded gasoline tank, and one 10,000 gallon diesel fuel tank. The tanks were made of steel and had various sized holes at the bottom of the tanks, ranging from a quarter-inch to one-inch in diameter. Ground water was encountered in the tank pit at a depth of 10.5 feet below grade, thus prohibiting the collection of soil samples from beneath the tanks. Six soil samples, labeled S1 through S4, S2D, and S4D,

were collected from the sidewalls of the fuel tank pit. The soil sample collection points are shown on the attached Site Plan, Figure 2. The fuel tank pit was then excavated to a depth of approximately 13 feet below grade. After 9,000 gallons of water were pumped from the former tank pit, one ground water sample, labeled W1, was collected. In addition, a second water sample, labeled W2, was collected from a second excavation where the new tanks were installed.

Samples were analyzed at HAZCAT Mobile Organics Laboratory in San Carlos, California, a state-certified hazardous waste testing laboratory. Soil samples S2, S3, and S4, and the water samples, were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, xylenes, and ethylbenzene (BTX&E). Soil samples S1, S2D, and S4D, and the water samples, were analyzed for TPH as diesel. The analytical results of soil samples S2, S3, and S4 showed levels of TPH as gasoline at 14 ppm, 14 ppm, and 1,700 ppm, respectively. The analytical results of the water samples showed 91,000 ppb of TPH as gasoline and 8,200 ppb of benzene in sample W1, and 120 ppb of TPH as gasoline with a non-detectable level of benzene in sample W2. Analytical results of the soil and water samples are listed in Table 3. Documentation of the tank removal procedures, sample collection techniques, and sample results are presented in KEI's report (KEI-J88-025) dated February 25, 1988. Based on the analytical results, KEI recommended the installation of four monitoring wells to begin to determine the extent of the soil and ground water contamination, and to determine the direction of ground water flow.

On April 14, 1988, four two-inch diameter monitoring wells, designated as MW1 through MW4 on the attached Site Plan, Figure 1, were installed at the site. The wells were drilled and completed to total depths of 20 feet below grade. Ground water was encountered at depths ranging from 14 to 16 feet beneath the surface during drilling. The wells were developed on April 26, 1988, and were initially sampled on April 29, 1988. A total of six soil samples were collected at depths ranging from 5 to 10 feet below grade. The samples were analyzed at HAZCAT Organics Laboratory in San Carlos, California, for TPH as gasoline and BTX&E. In addition, the soil samples collected from boring MW3 were analyzed for TPH as diesel, total oil and grease (TOG), and EPA method 8010 compounds. The soil sample results showed low to non-detectable levels of TPH as gasoline and BTX&E in all wells, except well MW1, which showed a TPH as gasoline level of 340 ppm in the soil sample collected at a depth of 10 feet below grade. Analytical results of the soil samples are summarized in Table 4.

The analytical results of the water samples collected on April 29, 1988, indicated non-detectable levels of TPH as gasoline and benzene in wells MW3 and MW4. Analytical results of the water samples collected from wells MW1 and MW2 showed TPH as gasoline at levels of 10,000 ppb and 170 ppb, respectively, with benzene levels of 960 ppb and 2.7 ppb, respectively. Analytical results of the water samples are summarized in Table 2. Documentation of monitoring well installation protocol, sample collection techniques, and sample results are presented in KEI's report (KEI-J88-025A-1) dated May 11, 1988. Based on the sample results, KEI recommended a monthly monitoring and quarterly sampling program for the four wells. The four wells have been monitored monthly since April 29, 1988. In addition, all four wells were sampled quarterly from April 29, 1988, until May 18, 1990. Since that time, wells MW2, MW3, and MW4 have not been sampled because previous samples collected from these wells indicated non-detectable levels of TPH as gasoline and benzene for three consecutive quarters. Beginning on August 15, 1990, only well MW1 has been sampled quarterly.

As previously indicated, past activities at the site have led to a situation where some residual soil contamination is still present in the area between the old tank pit and the southwest side of the pump islands. As much contaminated soil as possible was removed during tank replacement in February of 1988 without compromising the structural integrity of the pump islands.

Three of the four corners at the intersection of Village Parkway and Amador Valley Boulevard have active service stations (BP, Arco, and Unocal). The fourth corner (southwest) was previously a Shell Station, and has been converted into an oil changing facility. The respective locations of the service stations are shown on the attached Site Vicinity Map. In addition, immediately adjacent to and south of the former Shell Station is a facility referred to as the Dodge Property, located at 7400 Amador Valley Boulevard, which also contained underground fuel storage tanks. During a site visit by KEI, it was determined that several monitoring wells have been installed at the former Shell Station site, located south-southeast of the subject site, and at the BP Station, located east-southeast of the subject site. In addition, KEI reviewed the files of the Regional Water Quality Control Board (RWQCB) on March 5, 1991, to obtain information regarding any subsurface investigations conducted at the above mentioned sites. The following is a summary of the file reviews:

1. Former Shell Service Station, located at 7194 Amador Valley Boulevard (southwest corner).

Shell has installed 11 monitoring wells (six off-site) and one recovery well. One monitoring well was subsequently destroyed. Levels of TPH as gasoline have been detected in the ground water samples collected from the on-site wells at concentrations ranging from non-detectable to 200,000 ppb. The levels of TPH as gasoline detected in ground water samples collected from on-site wells on August 21, 1990, (most recent data reviewed) ranged from non-detectable to 5,100 ppb. The ground water flow direction, as measured on August 20, 1990, appeared to be towards the north at the northern portion of the site and to the south at the southern portion of the site.

2. BP Service Station, located at 7197 Village Parkway (southeast corner).

BP has installed six monitoring wells on-site. One monitoring well has consistently detected free product. The levels of TPH as gasoline detected in ground water samples collected from the six wells on September 6, 1990, (most recent data reviewed) ranged from non-detectable to 470 ppb. The ground water flow direction is reportedly to the south-southwest.

3. Arco Service Station, located at northeast corner of Amador Valley Boulevard and Village Parkway.

It is presently unknown to KEI whether any subsurface investigations have been conducted at the Arco site. The site is not currently listed on the RWQCB's fuel leak list.

4. Former Dutch Pride Dairy facility (currently referred to as the Dodge Property), located at 7400 Amador Valley Boulevard, adjacent to and south of the former Shell Station.

Two 10,000 gallon gasoline storage tanks were removed from the site in January of 1990. The analytical results of soil samples collected from the gasoline tank pit indicated levels of TPH as gasoline at concentrations ranging from non-detectable to 6,000 ppm. It is presently unknown to KEI whether any monitoring wells have been installed by the property owner or any tenants. A monitoring well installed by Shell (now destroyed) at the site showed levels of TPH as gasoline detected in ground water samples at concentrations ranging from non-detectable to 3,300 ppb.

#### RECENT FIELD ACTIVITIES

The four wells (MW1, MW2, MW3, and MW4) were monitored three times during the quarter. Well MW1 was purged of 55 to 52 gallons during

the two initial monitoring events. During monitoring, the wells were checked for depth to water and presence of free product and sheen, except for monitoring conducted on September 13, 1991, when the wells were not checked for the presence of sheen. No free product or sheen was noted in any of the wells during the quarter. At the time of the November 13, 1991, monitoring at the Unocal site, a joint monitoring program was also conducted at the nearby BP and former Shell service stations. Monitoring data from the Unocal site are summarized in Table 1, and monitoring data from the BP and former Shell service stations are summarized in Table 1a. Prior to conducting the joint monitoring, the surface of each well cover at the Unocal site was surveyed by Kier & Wright of Pleasanton, California, to Mean Sea Level (MSL) and to a vertical accuracy of 0.01 feet. The monitoring wells at the nearby BP and former Shell service stations have also been surveyed to MSL using the same benchmark as used by Unocal.

A water sample was collected from monitoring well MW1 on November 13, 1991. Prior to sampling, the well was purged of 4 gallons by the use of a surface pump. A sample was then collected using a clean Teflon bailer. The sample was decanted into a clean VOA vial and/or one-liter amber bottle, as appropriate, which was then sealed with Teflon-lined screw caps and stored in a cooler, on ice, until delivery to the State certified laboratory.

#### HYDROLOGY AND GEOLOGY

Based on the water level data gathered on November 13, 1991, the ground water flow direction at the Unocal site appeared to be to the east-northeast (relatively unchanged from the previous quarters), with an approximate hydraulic gradient of 0.006. Water levels have fluctuated during the quarter, showing a net decrease of 0.16 to 0.29 feet in all wells since August 12, 1991. The measured depth to ground water at the site on November 13, 1991, ranged between 11.44 and 11.70 feet below grade.

As previously recommended, KEI conducted joint monitoring on November 13, 1991, with representatives of BP and the former Shell service station. The data from the joint monitoring event is included on the Site Vicinity Map and is summarized in Tables 1 and 1a. The ground water flow direction is generally to the east over the majority of the study area, varying from the southeast in the vicinity of the former Shell station, to the northeast in the vicinity of the BP station, and to the east-northeast at the Unocal site, as reported above. At the southern portion of the study area, the ground water flow direction appears to be toward the north.

The site is situated within the Dublin Subbasin of the Livermore Valley Ground Water Basin, as defined by the Alameda County Flood Control and Water Conservation District, and by the California Department of Water Resources Bulletin 118-2. Regionally, the ground water flow direction is toward the southeast, based on ground water contours presented in the Zone 7 Fall 1990 Ground Water Level Report.

Based on review of regional geologic maps (U.S. Geological Survey Professional Paper 943 "Flatland Deposits - Their Geology and Engineering Properties and their Importance to Comprehensive Planning" by E.J. Helley and K.R. Lajoie, 1979), the subject site is situated at a mapped geologic contact separating Holocene-age Fine-grained Alluvium (Qhaf) and Late-Pleistocene Alluvium (Qpa). The Fine-grained Alluvium is described as typically consisting of unconsolidated silt and clay materials rich in organic material and is generally less than 10 feet thick. The Late-Pleistocene Alluvium is described as typically consisting of irregular interbedded clay, silt, sand, and gravel, which has a maximum thickness up to 150 feet.

The results of our previous subsurface study indicate that the site is apparently underlain predominantly by clay and silty clay soil materials to the maximum depth explored (20 feet below grade).

#### ANALYTICAL RESULTS

The ground water sample from MW1 was analyzed at Sequoia Analytical Laboratory in Concord, California, and was accompanied by properly executed Chain of Custody documentation. The sample was analyzed for TPH as gasoline using EPA method 5030 in conjunction with modified 8015, and BTX&E using EPA method 8020.

Analytical results of the water sample collected from monitoring well MW1 indicated a level of TPH as gasoline at 860 ppb, and a level of benzene at 40 ppb. Xylenes and ethylbenzene levels in MW1 were 2.5 ppb and 11 ppb, respectively. Results of the ground water analysis is summarized in Table 2. Copies of the analytical results and Chain of Custody documentation are attached to this report.

#### DISCUSSION AND RECOMMENDATIONS

As discussed in the background section of this report, the reported ground water flow directions at the Unocal, BP, and former Shell service stations are complex. The recent joint monitoring conducted on November 13, 1991, confirms the previously reported complex flow directions (see the attached Site Vicinity Map).

recommends continuing the joint monitoring effort with the BP and former Shell service stations. In addition, KEI recommends conducting a joint sampling of all monitoring wells in order to assess the current ground water quality in the vicinity of the Unocal site.

Based on the analytical results collected and evaluated to date, and no evidence of free product or sheen in any of the wells, KEI recommends the continuation of the current monthly monitoring program of the existing wells, per KEI's report (KEI-P88-0205.QR3) dated February 15, 1989. In addition, KEI recommends that quarterly sampling of downgradient monitoring well MW1 be continued. KEI also recommends the continuation of monthly purging of 55 gallons from MW1.

#### DISTRIBUTION

A copy of this report should be sent to Alameda County Health Care Services Agency, and to the RWQCB, San Francisco Bay Region.

#### LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing 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.

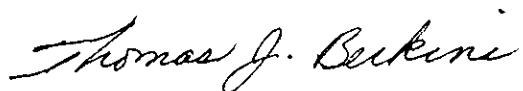


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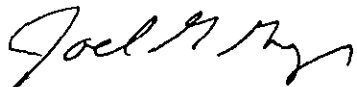
If you have any questions regarding this report, please do not hesitate to call me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.



Thomas J. Berkins  
Senior Environmental Engineer



Joel G. Greger  
Certified Engineering Geologist

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



Timothy R. Ross  
Project Manager

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Attachments: Tables 1, 1a, 2, 3 & 4  
Location Map  
Site Vicinity Map  
Site Plans - Figures 1 & 2  
Laboratory Analyses  
Chain of Custody documentation

TABLE 1  
 SUMMARY OF MONITORING DATA

<u>Well No.</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Bailed (gallons)</u>
<b>(Monitored and Sampled on November 13, 1991)</b>					
MW1	325.88	11.44	0	No	4
MW2*	325.80	11.56	0	No	0
MW3*	325.83	11.70	0	No	0
MW4*	325.33	11.67	0	No	0
<b>(Monitored on October 11, 1991)</b>					
MW1	325.45	11.27	0	No	55
MW2	325.94	11.42	0	No	0
MW3	325.95	11.58	0	No	0
MW4	325.46	11.54	0	No	0
<b>(Monitored on September 13, 1991)</b>					
MW1	325.62	11.10	0	--	52
MW2	326.19	11.17	0	--	0
MW3	326.06	11.47	0	--	0
MW4	325.50	11.50	0	--	0

<u>Well #</u>	<u>Surface Elevation** (feet)</u>
MW1	336.72
MW2	337.36
MW3	337.53
MW4	337.00

-- Sheen determination not performed.

\* Monitored only.

\*\* Elevation of top of well covers surveyed to MSL.

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TABLE 1a

SUMMARY OF MONITORING DATA

(BP Service Station and Former Shell Service Station)

<u>Well No.</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)</u>	<u>Top of Casing Elevation (feet)</u>
-----------------	--	--------------------------------------	---

(BP Service Station Wells Monitored by Alton Geoscience  
on November 13, 1991)

MW1	325.08	10.09	335.17
MW2	324.85	9.73	334.58
MW3	324.86	10.27	335.13
AW4	324.85	8.57	333.42
AW5	324.99	9.80	334.79
AW6	325.33	9.58	334.91

(Former Shell Service Stations Wells  
Monitored by Exceltech on November 13, 1991)

MW1	325.24	9.59	334.83
MW2	325.39	11.57	336.96
MW3	325.65	11.28	336.93
MW4	325.54	11.60	337.14
MW5	325.60	9.36	334.96
MW6	325.42	10.00	335.42
MW7	324.82	8.41	333.23
MW8	325.93	9.87	335.80
MW9	325.18	9.39	334.57
MW11	325.21	8.99	334.20
MW12	324.64	7.89	332.53
MW13	325.45	10.19	335.64

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TABLE 2

SUMMARY OF LABORATORY ANALYSES  
 WATER

<u>Date</u>	<u>Sample Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
11/13/91	MW1	860	40	ND	2.5	11
8/12/91	MW1	1,100	68	2.6	9.3	210
5/15/91	MW1	2,100	220	ND	27	360
2/14/91	MW1	1,900	150	2.9	43	340
11/14/90	MW1	2,000	110	0.52	16	410
8/15/90	MW1	2,200	160	ND	45	570
5/18/90	MW1	2,000	140	1.8	19	460
	MW2	ND	ND	ND	ND	ND
	MW3+	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
2/06/90	MW1	2,700	170	ND	29	350
	MW2	ND	ND	ND	ND	ND
	MW3+	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
10/20/89	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3*	ND	ND	ND	ND	0.38
	MW4	ND	ND	ND	ND	ND
7/27/89	MW1	1,900	130	6.3	68	ND
	MW2	ND	ND	ND	ND	ND
	MW3**	ND	ND	ND	ND	ND
	MW4	ND	0.34	ND	ND	ND
5/22/89	MW3	ND	ND	ND	ND	ND
4/28/89	MW1	1,000	97	0.8	24	170
	MW2	ND	ND	ND	ND	ND
	MW3***	880	9.6	9.7	12.7	19
	MW4	ND	0.3	ND	ND	ND
1/26/89	MW1	1,900	240	1.8	30	81
	MW2	ND	ND	ND	ND	ND
	MW3****	ND	ND	ND	ND	ND
	MW4	ND	0.67	ND	ND	ND

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TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Sample Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
10/28/88	MW1	5,200	150	ND	12	250
	MW2	ND	ND	ND	ND	ND
	MW3****	--	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
7/25/88	MW1	6,100	170	2.1	94	94
	MW2	ND	ND	ND	ND	ND
	MW3****	--	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
4/29/88	MW1	10,000	960	17	1,500	870
	MW2	170	2.7	0.6	13	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

+ TPH as diesel, all EPA method 8010 constituents, and TOG were non-detectable.

\* TPH as diesel and all EPA method 8010 constituents were non-detectable. TOG showed 2.5 ppm.

\*\* TPH as diesel and all EPA method 8010 constituents were non-detectable. TOG showed 1.6 ppm.

\*\*\* TPH as diesel was 72 ppb, TOG, and all EPA method 8010 constituents were non-detectable.

\*\*\*\* TPH as diesel and all EPA method 8010 constituents were non-detectable.

ND = Non-detectable.

-- Indicates analysis not performed.

Results in parts per billion (ppb), unless otherwise indicated.

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TABLE 3

SUMMARY OF LABORATORY ANALYSES  
SOIL

<u>Date</u>	<u>Sample #</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-benzene</u>
2/18/88	S1	<10	--	--	--	--	--
	S2	--	14	0.8	<0.1	2.7	4.6
	S2D	<10	--	--	--	--	--
	S3	--	14	1.1	<0.1	0.7	7.1
	S4	--	1,700	8.0	22	340	62
	S4D	83	--	--	--	--	--

-- Indicates analysis not performed.

Results in parts per million (ppm), unless otherwise indicated.

SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Sample #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-benzene</u>
2/19/88	W1	91,000	8,200	1,200	5,300	4,300
	W2	120	<0.5	5.0	12	2.4

Results in parts per billion (ppb), unless otherwise indicated.

KEI-P88-0205.QR14  
January 3, 1992

TABLE 4  
SUMMARY OF LABORATORY ANALYSES  
SOIL

<u>Date</u>	<u>Sample Number</u>	<u>Depth (feet)</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
4/14/88	MW1(10)	10	340	<0.1	<0.1	<0.1	<0.1
	MW1(15)	15	11	<0.1	<0.1	<0.1	<0.1
	MW2(10)	10	<1.0	<0.1	<0.1	<0.1	<0.1
	MW3(5)*	5	<1.0	<0.1	<0.1	<0.1	<0.1
	MW3(10)*	10	--	--	--	--	--
	MW4(10)	10	4.9	<0.1	<0.1	<0.1	<0.1

\* TOG and TPH as diesel were non-detectable; MW3(10) had non-detectable levels of EPA methods 8010 and 8020 priority pollutants.

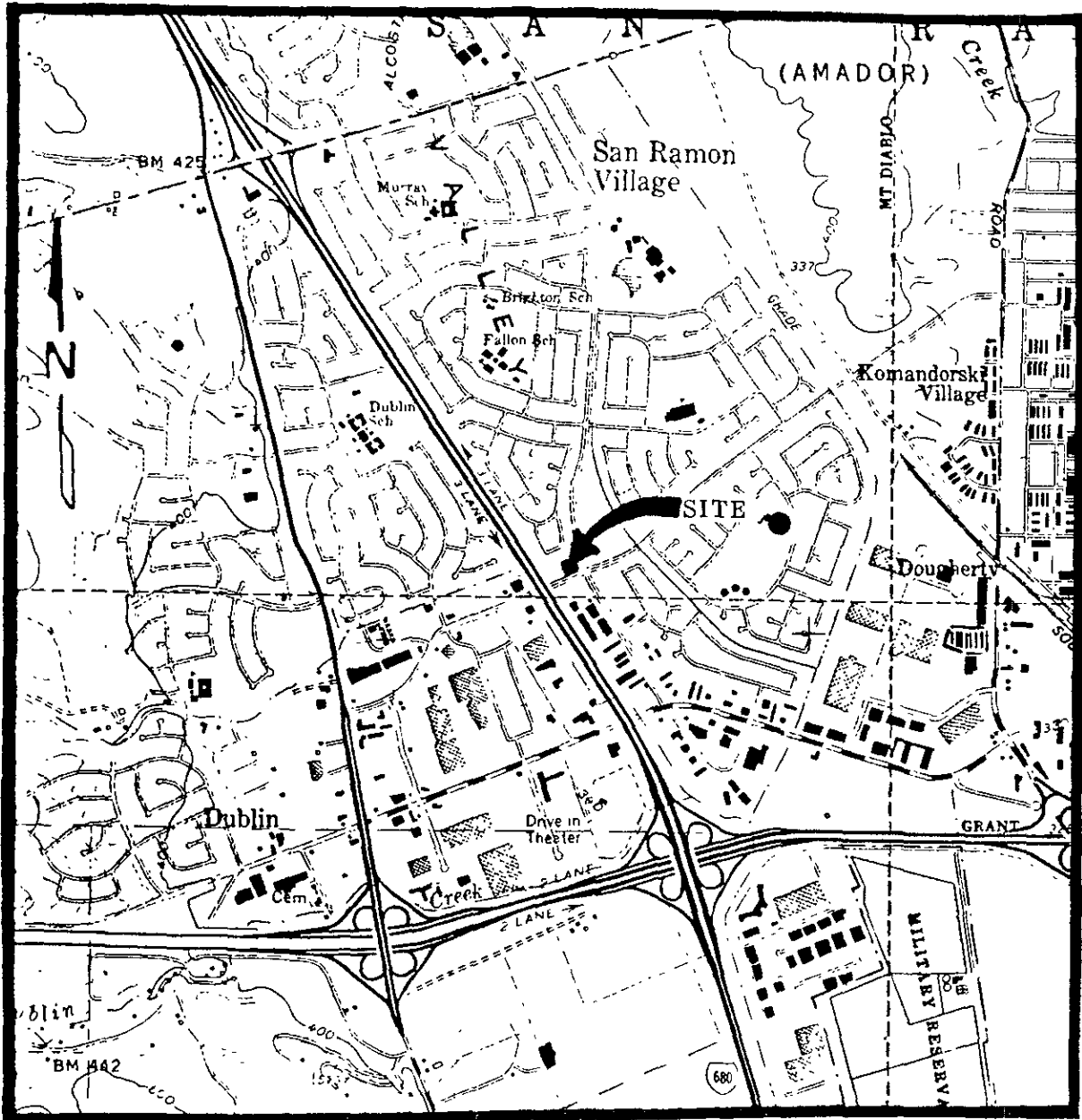
-- Indicates analysis not performed.

Results in parts per million (ppm), unless otherwise indicated.



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LOCATION MAP

Unocal S/S #5366  
7375 Amador Valley Blvd.  
Dublin, CA



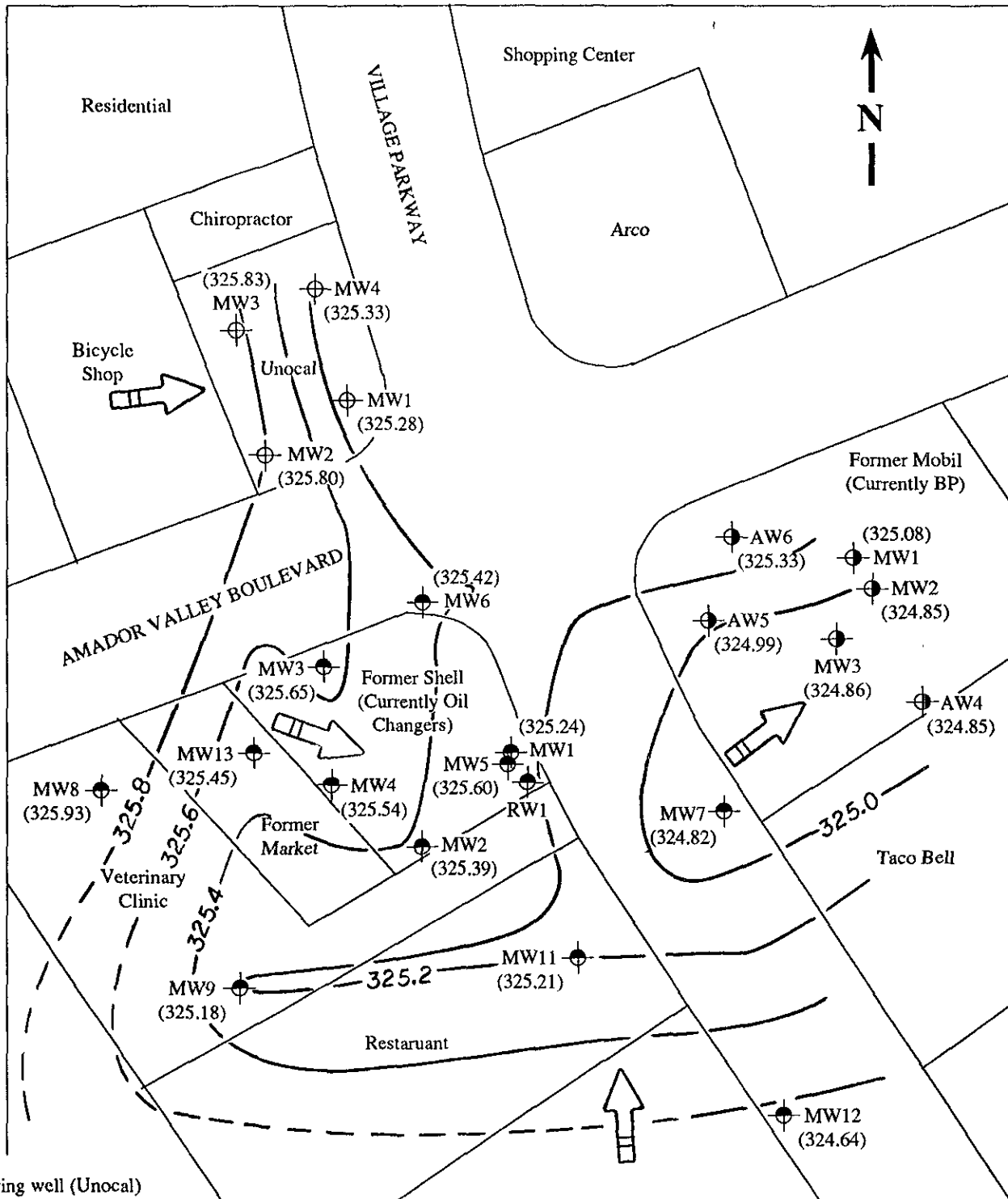


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### LEGEND

⊕ Monitoring well (Unocal)

⊕ Monitoring well (BP)

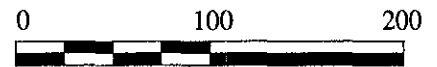
⊕ Monitoring well (Shell)

( ) Ground water elevation in feet above Mean Sea Level on 11/13/91

— Contours of Ground water elevation

➔ Direction of ground water flow

### SITE VICINITY MAP



Approx. scale feet

Unocal Service Station #5366  
7375 Amador Valley Blvd.  
Dublin, CA

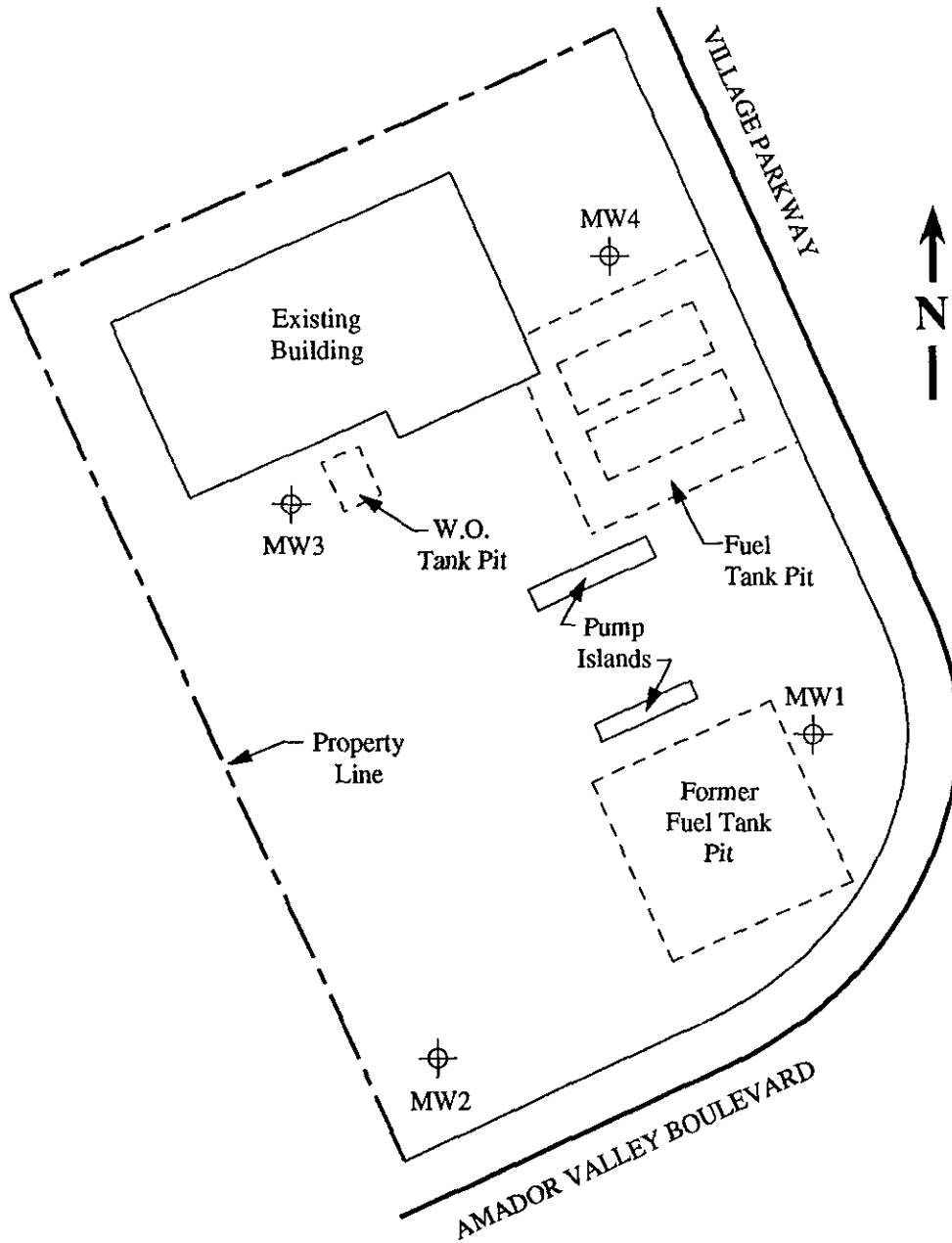
\* Base modified from Alton Geo Science, adjacent properties map, project #30-095



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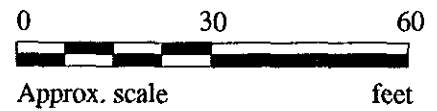


## SITE PLAN

Figure 1

### LEGEND

⊕ Monitoring Well



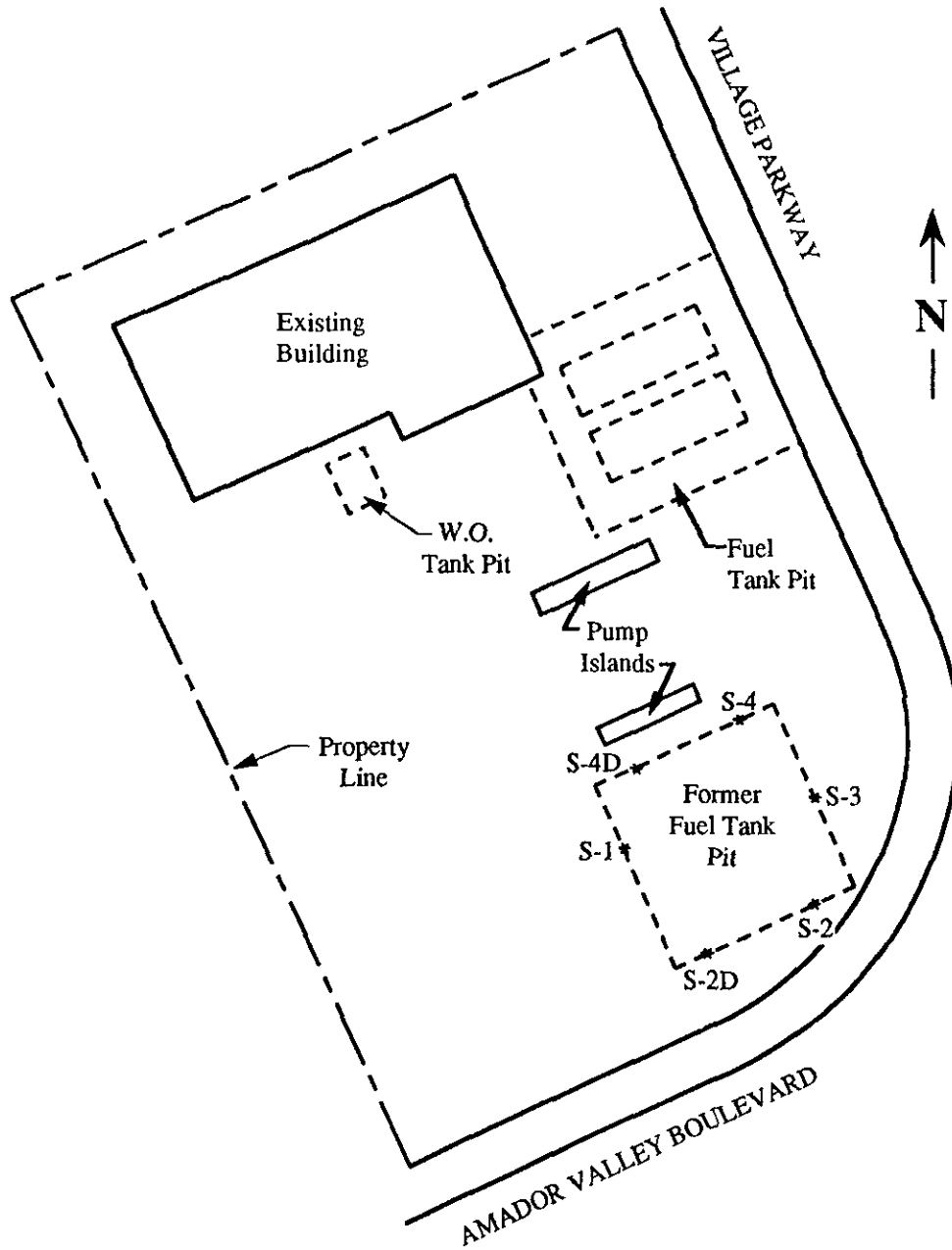
Unocal Service Station # 5366  
7375 Amador Valley Boulevard  
Dublin, CA



# KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510  
(707) 746-6915 • (707) 746-6916 • FAX (707) 746-5581

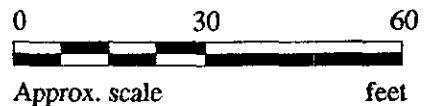


## SITE PLAN

Figure 2

### LEGEND

- \* Sample Point Location



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# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.	Client Project ID: Unocal, Dublin, 7375 Amador Valley	Sampled: Nov 13, 1991
P.O. Box 996	Sample Descript.: Water, MW-1	Received: Nov 14, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Nov 23, 1991
Attention: Mardo Kaprealian, P.E.	Lab Number: 111-1006	Reported: Dec 4, 1991

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Low to Medium Boiling Point Hydrocarbons	30	860
Benzene	0.30	40
Toluene	0.30	N.D.
Ethyl Benzene	0.30	11
Xylenes	0.30	2.5

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega  
Laboratory Director



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Kapreallan Engineering, Inc.

Client Project ID: Unocal, Dublin, 7375 Amador Valley Blvd.

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kapreallan, P.E. QC Sample Group: 111-1006

Reported: Dec 4, 1991

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	R.H./J.F.	R.H./J.F.	R.H./J.F.	R.H./J.F.
Reporting Units:	ug/L	ug/L	ug/L	ug/L
Date Analyzed:	Nov 23, 1991	Nov 23, 1991	Nov 23, 1991	Nov 23, 1991
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	20	20	20	61
Matrix Spike % Recovery:	100	100	100	101
Conc. Matrix Spike Dup.:	21	21	21	63
Matrix Spike Duplicate % Recovery:	105	105	105	105
Relative % Difference:	4.8	4.8	4.8	3.2

Laboratory blank contained the following analytes: None Detected

SEQUOIA ANALYTICAL

*Belinda C. Vega*  
Belinda C. Vega  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Reported: Dec 4, 1991

## QUALITY CONTROL DATA REPORT

### SURROGATE

	EPA	EPA
Method:	8015/8020	8015/8020
Analyst:	R.H./J.F.	R.H./J.F.
Reporting Units:	ug/L	ug/L
Date Analyzed:	Nov 23, 1991	Nov 23, 1991
Sample #:	111-1006	Blank

Surrogate		
% Recovery:	92	110

SEQUOIA ANALYTICAL

*Belinda C. Vega*  
Belinda C. Vega  
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <i>Handy</i>		SITE NAME & ADDRESS <i>Unocal - Dublin</i>					ANALYSES REQUESTED				TURN AROUND TIME: <i>REGULAR</i>
WITNESSING AGENCY		<i>7375 Amador Valley Blvd</i>					<input checked="" type="checkbox"/> PH-0 <input checked="" type="checkbox"/> BT-XE				REMARKS  <i>1111006A-C</i>
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP					
<i>MW-1</i>	<i>11/13/91</i>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>3</i>	<i>Monitoring Well</i>			
Relinquished by: (Signature) <i>George K...</i>	Date/Time <i>11-14-91</i> <i>9:45 AM</i>	Received by: (Signature) <i>Kevin Van Bamber...</i>	The following MUST BE completed by the laboratory accepting samples for analysis:								
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/>								
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/>								
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	3. Did any samples received for analysis have head space? <i>NO</i>								
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/>								
			<i>KUS</i>			<i>S.A.</i>			<i>11-14-91</i>		
			Signature			Title			Date		