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

February 25, 1992

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

Attention: Mr. Larry Seto

RE: Unocal Service Station #3292
15008 E. 14th Street
San Leandro, California

Dear Mr. Seto:

Per the request of Mr. Bob Boust of Unocal Corporation, enclosed please find our report dated February 14, 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: Bob Boust, Unocal Corporation

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Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
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KEI-P91-0102.QR2
February 14, 1992

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

Attention: Mr. Bob Boust

RE: Quarterly Report
Unocal Service Station #3292
15008 E. 14th Street
San Leandro, California

Dear Mr. Boust:

This report presents the results of the second quarter of monitoring and sampling of the monitoring wells at the referenced site by Kaprealian Engineering, Inc. (KEI), per KEI's proposal KEI-P91-0102.P3 dated August 6, 1991. The wells are currently monitored monthly and sampled on a quarterly basis. This report covers the work performed by KEI from October through December, 1991.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station. The site is situated on gently sloping, southwest trending topography, and is located at the east corner of the intersection of East 14th Street and 150th Avenue in San Leandro, California. The site is also located southeast of a former Mobil service station (across 150th Avenue), approximately due east of a former Phillips service station (at the intersections of Hesperian Boulevard, 150th Avenue, and East 14th Street), and is northeast of a current Chevron service station (on Hesperian Boulevard). A Location Map, a Site Vicinity Map, and Site Plans are attached to this report.

KEI's initial field work was conducted on January 16, 1991, when two underground gasoline storage tanks and one waste oil tank were removed from the site. The tanks consisted of one 10,000 gallon regular unleaded gasoline tank, one 10,000 gallon super unleaded gasoline storage tank, and one 280 gallon waste oil tank. The tanks were made of steel, and two holes of about 1/2-inch in diameter were observed in the super unleaded gasoline tank. Mr. William Faulhaber of the Alameda County Health Care Services Agency (ACHCS) was present during tank removal and subsequent soil sampling. Mr. James Kneeland of the Eden Consolidated Fire Protection District was also present during tank removal.

One soil sample, labeled WO1, was collected from beneath the waste oil tank at a depth of approximately 8.25 feet below grade. Four soil samples, labeled A1, A2, B1, and B2, were collected from beneath the fuel tanks at depths between 15 and 16 feet below grade. Due to obvious contamination, additional soil was excavated beneath sample points A1, A2, B1, and B2, in order to further define the vertical extent of soil contamination. During excavation activities, ground water was encountered in the fuel tank pit at a depth of approximately 16.5 feet below grade, thus prohibiting the collection of any additional soil samples from beneath sample points A1, A2, B1, and B2. Sample locations are as shown on the attached Site Plan, Figure 2.

In an attempt to remove as much of the contaminated soil as possible, and in order to collect a tank pit water sample, the fuel tank pit was excavated to a depth of about 17.5 feet below grade. After soil excavation was completed, approximately 15,700 gallons of ground water were pumped from the fuel tank pit. On January 28, 1991, one water sample, labeled W1, was collected from the fuel tank pit.

KEI returned to the site on February 11, 1991, in order to collect soil samples from the product pipe trenches, as requested by Mr. Faulhaber. Seven samples, labeled P1 through P7, were collected at depths ranging from 3.5 to 5 feet below grade.

KEI again returned to the site on February 12, 1991, in order to complete the collection of pipe trench soil samples. Two samples, labeled P8 and P9, were collected at depths of 3.5 feet and 7.5 feet below grade, respectively. After the soil sampling was completed, the pipe trenches were excavated to the depth of the sample points. Pipe trench sample point locations are shown on the attached Site Plan, Figure 2.

All samples were analyzed by Sequoia Analytical Laboratory in Concord, California. All soil and water samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, xylenes, and ethylbenzene (BTX&E). In addition, the soil sample collected from the waste oil tank pit (WO1) was analyzed for TPH as diesel, total oil and grease (TOG), the metals cadmium, chromium, lead, nickel, and zinc, and EPA method 8010 constituents.

Analytical results of the soil samples collected from the fuel tank pit indicated levels of TPH as gasoline ranging from 150 ppm to 840 ppm, except for sample A1, which showed a level of TPH as gasoline at 2,600 ppm. Please note that soil represented by these samples was removed during excavation of the fuel tank pit to a depth of about 17.5 feet below grade (or approximately 1 foot below the observed ground water level).

Analytical results of soil samples collected from the product pipe trenches indicated non-detectable levels of TPH as gasoline for samples P1, P3 through P6, and P8. The levels of TPH as gasoline detected in samples P2, P7, and P9 were 1.2 ppm, 7.1 ppm, and 130 ppm, respectively. Benzene was detected at concentrations ranging from non-detectable to 0.89 ppm.

Analytical results of the soil sample collected from beneath the waste oil tank pit (WO1) indicated non-detectable levels of all constituents analyzed, except for zinc, which showed 31 ppm. Results of the soil analyses are summarized in Table 4.

Analytical results of the water sample (W1) collected from the fuel tank pit indicated 13,000 ppb of TPH as gasoline and 64 ppb of benzene. The results of the water analyses are summarized in Table 5.

To comply with the requirements of the regulatory agencies and based on the analytical results, KEI proposed the installation of five monitoring wells. Documentation of the tank removal protocol, sample collection techniques, and analytical results are summarized in KEI's report (KEI-J91-0102.R1) dated March 6, 1991.

On April 23 and 24, 1991, five two-inch diameter monitoring wells (designated as MW1, MW2, MW3, MW4, and MW5 on the attached Site Plan, Figure 1a) were installed at the site. The monitoring wells were drilled and completed to total depths ranging from 19.5 to 22.5 feet below grade. Ground water was encountered at depths ranging from 12.25 to 13.25 feet beneath the surface during drilling, except in MW5, where water was not initially encountered until a depth of 15 feet below grade, but quickly rose to a depth of about 12 feet below grade.

The surface of each well cover was surveyed by Kier & Wright of Pleasanton, California, to Mean Sea Level (MSL) and to a vertical accuracy of 0.01 feet. The wells were developed on April 29 and 30, 1991, and were initially sampled on May 4, 1991. No free product or sheen was noted in any of the wells, except for well MW5, where a trace of product was observed on April 30, 1991, and where only a sheen was detected on May 4, 1991.

Water and selected soil samples were analyzed at Sequoia Analytical Laboratory in Concord, California. The soil and water samples were analyzed for TPH as gasoline and BTX&E.

Analytical results of the soil samples collected from the borings for monitoring wells MW1 through MW5 indicated levels of TPH as gasoline ranging from non-detectable to 7.7 ppm, with benzene levels ranging from non-detectable to 0.029 ppm in all samples,

except for MW1(10), MW1(12), and MW5(14.5), which showed levels of TPH as gasoline at 82 ppm, 420 ppm, and 620 ppm, respectively, and benzene levels at 0.20 ppm, 1.2 ppm, and 6.8 ppm, respectively.

Analytical results of the ground water samples collected on May 4, 1991, from monitoring wells MW1 through MW5 indicated levels of TPH as gasoline ranging from 6,300 ppb to 69,000 ppb, with benzene levels ranging from 2.0 ppb to 1,400 ppb, except in MW4, where benzene was non-detectable. The results of the soil analyses are summarized in Table 3, and the results of the water analyses are summarized in Table 2.

Based on the analytical results, KEI recommended the implementation of a monthly monitoring and quarterly sampling program. In addition, KEI recommended monthly purging of wells MW1 and MW5 in an attempt to reduce the level of contamination in the vicinity of these wells.

KEI concluded that because upgradient wells MW3 and MW4 showed levels of TPH as gasoline at 9,100 ppb and 6,300 ppb, respectively, a possible off-site upgradient source of contamination is indicated. Also, KEI concluded that the extent of ground water contamination had not been defined in the vicinity of the Unocal site. However, prior to recommending additional monitoring wells at that time, KEI proposed to evaluate the adjacent area for possible monitoring well locations and to review Regional Water Quality Control Board (RWQCB) files on adjacent properties. Documentation of well installation protocol, sample collection techniques, and analytical results are presented in KEI's report (KEI-P91-0102.R4) dated May 29, 1991.

Additionally, KEI has reviewed a letter from Law Environmental, Inc., dated October 29, 1990, and titled "Preliminary findings - Phase II Site Assessment." Apparently, three monitoring wells have been installed at the Shadrall property at 15035 East 14th Street (presently used as a Liquor Barn facility and related parking lot). Ground water is present at a depth of about 14 feet below grade, with a gradient toward the south-southwest at 0.0003. In addition, upgradient well MW3 apparently showed a level of TPH as gasoline at 11,000 ppb, with a benzene level of 540 ppb. KEI has not reviewed any technical reports or boring logs prepared for the installation of these wells. The letter by Law Environmental, Inc. also indicates that an adjacent Chevron service station has eight monitoring wells, which (as of April 11, 1990) showed a ground water flow direction toward the southeast at a gradient of 0.005.

In July of 1991, a representative of KEI reviewed the RWQCB file for the adjacent Chevron service station. The ground water flow direction, as of April 5, 1991, was toward the southwest. Also, it

appears that a former Mobil station was located northwest of the Unocal site across 150th Avenue, and a former Phillips station was located west of Unocal and northwest of the Shadrall property.

KEI subsequently recommended the installation of six off-site monitoring wells (see the attached Site Vicinity Map) in KEI's work plan (KEI-P91-0102.P3) dated August 6, 1991.

Additionally, KEI has reviewed a letter from the ACHCS dated October 4, 1991, which approved KEI's work plan (KEI-P91-0102.P3) dated August 6, 1991, but also stated that Unocal must immediately begin the engineering of a dedicated ground water remediation system. As discussed in KEI's report (KEI-P91-0102.QR1) dated October 23, 1991, KEI is evaluating various pump and treatment methods for the remediation of the contaminated ground water in the vicinity of the Unocal site. KEI concluded that until the extent of ground water contamination has been completely delineated, there is no feasible way for KEI to conduct aquifer testing on all of the affected areas. This aquifer testing is essential in order to design a remediation system that will hydraulically control and remediate the entire contaminant plume.

RECENT FIELD ACTIVITIES

The five wells (MW1, MW2, MW3, MW4, and MW5) were monitored three times and were sampled once during the quarter. During monitoring, the wells were checked for depth to water and the presence of free product. During sampling, the wells were also checked for the presence of sheen. No free product or sheen was noted in any of the wells during the quarter. Monitoring data are summarized in Table 1.

Water samples were collected from the wells on December 18, 1991. Prior to sampling, the wells were each purged of between 4 and 6 gallons by the use of a bailer. Samples were then collected by the use of a clean Teflon bailer. Samples were decanted into clean VOA vials, which were 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 during the quarter, ground water flow direction appeared to be complex, varying predominantly between the south-southwest to due west, at very flat gradients averaging between 0.0003 to 0.0006. The ground water table contours interpreted from data collected on December 18, 1991, November 19, 1991, and October 18, 1991, are presented on the attached Site Plans, Figures 1a, 1b, and 1c, respectively. Water

levels have fluctuated during the quarter, showing a net decrease of 0.51 to 0.56 feet in all wells since September 19, 1991. The measured depth to ground water at the site on December 18, 1991, ranged between 14.58 and 15.57 feet below grade.

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 closely adjacent to a mapped geologic contact separating Coarse-grained alluvium (Qhac) from Late Pleistocene alluvium (Qpa). The Coarse-grained alluvium is described as typically consisting of unconsolidated, permeable sand and silt, with local areas of coarse sand and gravel. The thickness of this unit ranges from less than 10 feet to as much as 50 feet. The Late Pleistocene alluvium is described as consisting of weakly consolidated, irregular interbedded clay, silt, sand, and gravel. This unit has a reported maximum thickness of at least 150 feet. Also, the site is located approximately 2,000 feet southwest of a mapped splay of the active Hayward Fault Zone.

The results of our subsurface study indicate that the site is underlain by clay and/or silt materials to the maximum depth explored (22.5 feet below grade), except for a 3/4 to 1 foot thick clayey sand lens encountered in wells MW3 and MW4 at depths below grade of about 13 to 14 feet. It is unclear if this relatively thin sand lens is continuous across the site, but missed by the sampling interval used. Ground water was encountered within this clayey sand lens at MW3 and MW4.

ANALYTICAL RESULTS

Ground water samples were analyzed at Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation. The samples were 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 ground water samples collected from monitoring wells MW1 through MW5 indicated levels of TPH as gasoline ranging from 2,500 ppb to 31,000 ppb, with benzene levels ranging from 28 ppb to 1,600 ppb. The levels of TPH as gasoline and benzene detected in ground water samples collected from all wells on December 18, 1991, are presented on the attached Site Plan, Figure 1d. Results of the analyses are summarized in Table 2. Copies of the analytical results and Chain of Custody documentation are attached to this report.

DISCUSSION AND RECOMMENDATIONS

Based on the analytical results collected and evaluated to date, KEI recommends the continuation of the current monitoring and sampling program of the existing wells.

KEI previously recommended the installation of six off-site monitoring wells (as shown on the attached Site Vicinity Map). KEI has received the necessary encroachment permits from the City of San Leandro for the installation of wells MW6 and MW7. Unocal is in the process of gaining access permission from all affected property owners for the installation of wells MW8, MW9, MW10, and MW11. Once all access agreements have been secured, KEI is prepared to install the proposed wells as soon as possible.

DISTRIBUTION

A copy of this report should be sent to Mr. Larry Seto of the ACHCS, and to Mr. Lester Feldman of 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.

Should 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 through 5
Location Map
Site Vicinity Map
Site Plans - Figures 1a, 1b, 1c, 1d & 2
Laboratory Analyses
Chain of Custody documentation

KEI-P91-0102.QR2
February 14, 1992

TABLE 1

SUMMARY OF MONITORING DATA

Well No.	Ground Water Elevation (feet)	Depth to Water (feet)	Product Thickness	Sheen	Water Bailed (gallons)
(Monitored and Sampled on December 18, 1991)					
MW1	21.80	14.92	0	No	4
MW2	21.82	15.07	0	No	4
MW3	21.83	15.01	0	No	5.5
MW4	21.83	15.57	0	No	4
MW5	21.82	14.58	0	No	6
(Monitored on November 19, 1991)					
MW1	22.19	14.53	0	--	10
MW2	22.25	14.64	0	--	0
MW3	22.25	14.59	0	--	0
MW4	22.26	15.14	0	--	0
MW5	22.21	14.19	0	--	14
(Monitored on October 18, 1991)					
MW1	21.96	14.76	0	--	8
MW2	22.00	14.89	0	--	0
MW3	22.00	14.84	0	--	0
MW4	WELL INACCESSIBLE				
MW5	21.96	14.44	0	--	55

Well #	Surface Elevation* (feet)
MW1	36.72
MW2	36.89
MW3	36.84
MW4	37.40
MW5	36.40

-- Sheen determination was not performed.

* Elevations of the tops of the well covers were surveyed to MSL.

KEI-P91-0102.QR2
February 14, 1992

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample Well #	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
12/18/91	MW1	17,000	160	20	1,600	1,400
	MW2	10,000	110	5.1	96	420
	MW3	5,900	54	6.4	64	110
	MW4	2,500	28	2.5	22	54
	MW5	31,000	1,600	3,100	19,000	4,800
9/19/91	MW1	26,000	130	16	1,800	1,300
	MW2	19,000	100	6.8	310	790
	MW3	7,600	ND	13	170	190
	MW4	1,800	0.83	ND	46	54
	MW5	57,000	1,600	2,700	20,000	5,200
5/04/91	MW1	31,000	74	20	1,500	920
	MW2	19,000	6.6	1.4	630	460
	MW3	9,100	2.0	ND	180	55
	MW4	6,300	ND	ND	61	2.8
	MW5	69,000	1,400	2,500	15,000	3,500
Detection Limits		30	0.30	0.30	0.30	0.30

ND = Non-detectable.

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

KEI-P91-0102.QR2
February 14, 1992

TABLE 3

SUMMARY OF LABORATORY ANALYSES
SOIL

Date	Sample Number	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
4/23/91	MW1(5)	5.0	ND	ND	ND	0.0070	ND
	MW1(10)	10.0	82	0.20	0.23	0.31	0.14
	MW1(12)	12.0	420	1.2	1.3	0.72	0.78
	MW2(5)	5.0	ND	ND	ND	0.022	0.0085
	MW2(10)	10.0	2.2	0.089	ND	0.0064	ND
	MW2(12)	12.0	12	ND	0.017	0.075	0.14
	MW3(5)	5.0	ND	ND	ND	ND	ND
	MW3(10)	10.0	1.4	0.015	0.0051	0.014	ND
	MW3(13)	13.0	3.5	0.026	0.026	0.030	0.0088
	MW4(5)	5.0	ND	ND	ND	ND	ND
	MW4(10)	10.0	ND	ND	ND	0.0060	ND
	MW4(13)	13.0	ND	ND	ND	0.012	0.0088
	MW5(5)	5.0	ND	ND	ND	ND	ND
	MW5(10)	10.0	7.7	0.029	0.14	0.090	0.13
	MW5(14.5)	14.5	620	6.8	4.4	75	18
	Detection Limits		1.0	0.0050	0.0050	0.0050	0.0050

ND = Non-detectable.

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

KEI-P91-0102.QR2
February 14, 1992

TABLE 4

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on January 16, and
February 11 & 12, 1991)

Sample	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
A1	15.5	2,600	7.1	55	170	55
A2	16.0	290	1.3	1.1	1.2	1.5
B1	15.5	840	1.5	2.7	9.9	1.3
B2	15.0	150	1.6	3.3	11	2.0
P1	3.5	ND	0.0072	0.019	0.026	ND
P2	4.75	1.2	0.014	0.041	0.11	0.019
P3	3.75	ND	ND	ND	ND	ND
P4	3.75	ND	ND	ND	ND	ND
P5	3.5	ND	ND	ND	ND	ND
P6	5.0	ND	ND	ND	ND	ND
P7	5.0	7.1	0.89	0.23	0.70	0.57
P8	3.5	ND	ND	ND	ND	ND
P9	7.5	130	0.068	0.37	0.076	0.66
WO1*	8.25	ND	ND	ND	ND	ND
Detection Limits		1.0	0.0050	0.0050	0.0050	0.0050

ND = Non-detectable.

* TOG, TPH as diesel, and all EPA method 8010 constituents were non-detectable. Metals were non-detectable, except for zinc, which showed 31 ppm.

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

KEI-P91-0102.QR2
February 14, 1992

TABLE 5

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample #	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
1/28/91	W1	13,000	64	37	85	25
Detection Limits		30	0.30	0.30	0.30	0.30

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

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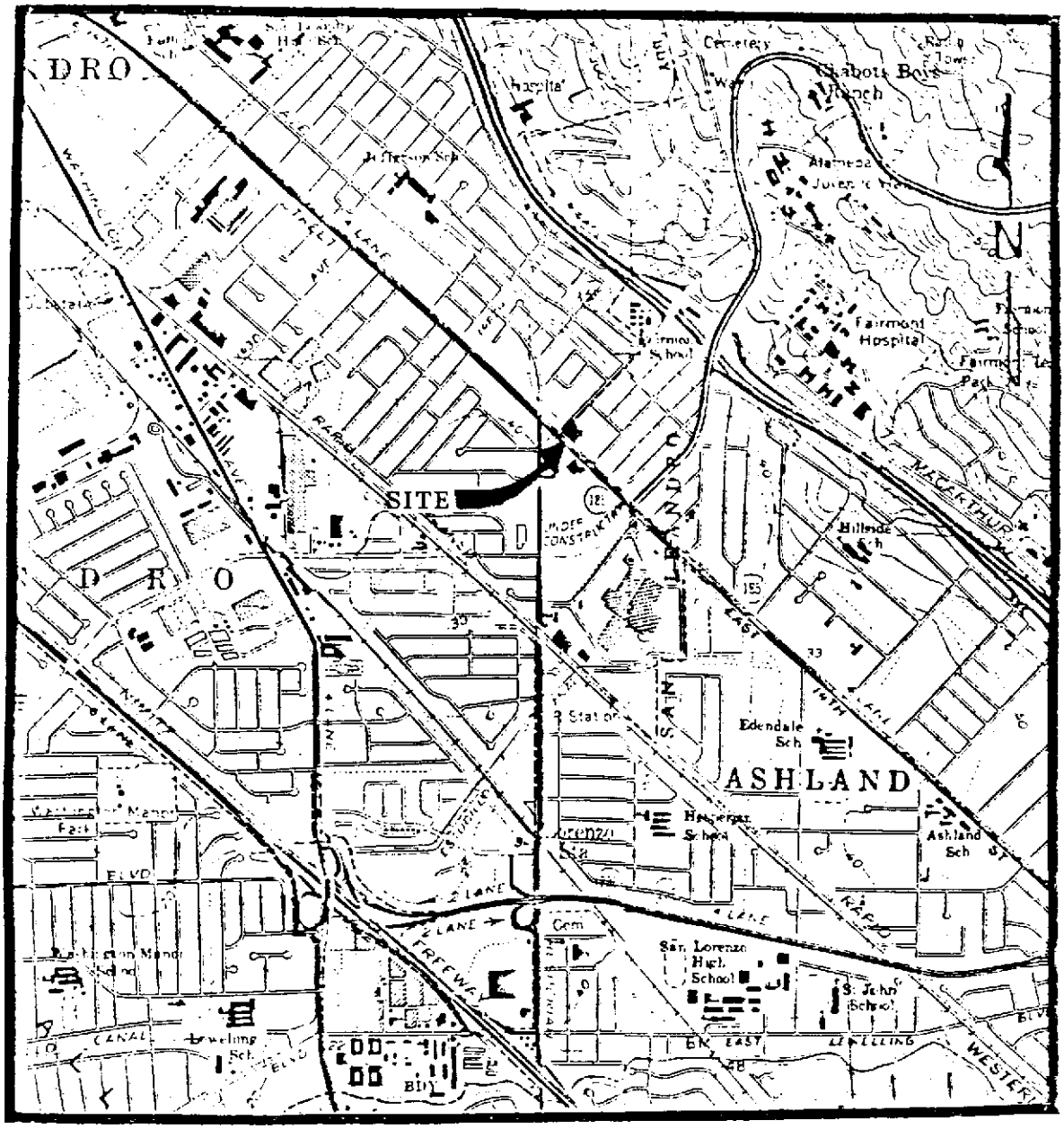

LOCATION MAP

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

Unocal S/S #3292
15008 E. 14th Street
San Leandro, CA

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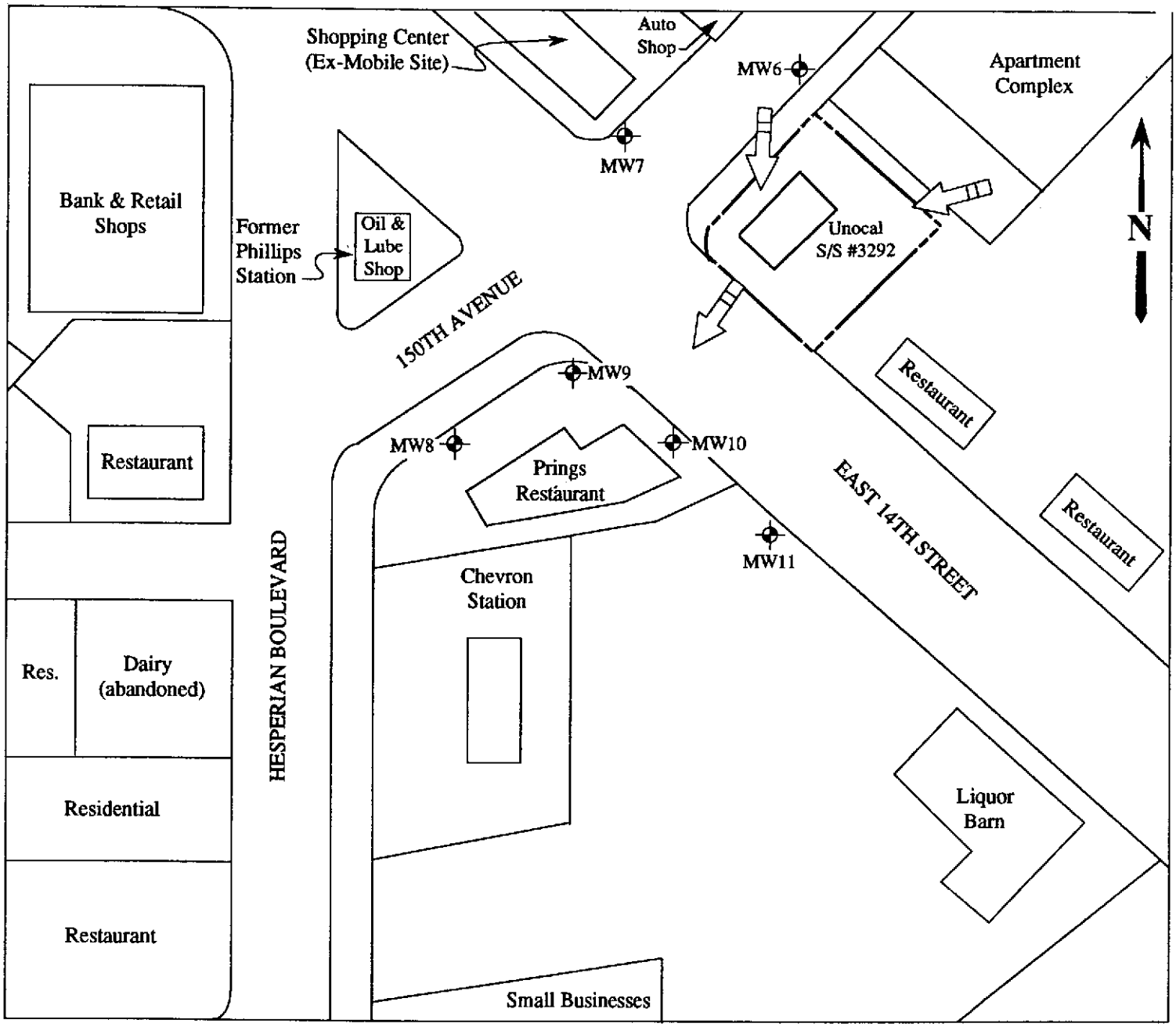

SITE VICINITY MAP

not to scale

LEGEND

Monitoring well (proposed)

Direction of ground water flow at Unocal Site on 12/18/91

Unocal Service Station #3292
15008 E. 14th Street
San Leandro, CA

Base modified from map by Weiss Associates for Chevron Service Station #92013

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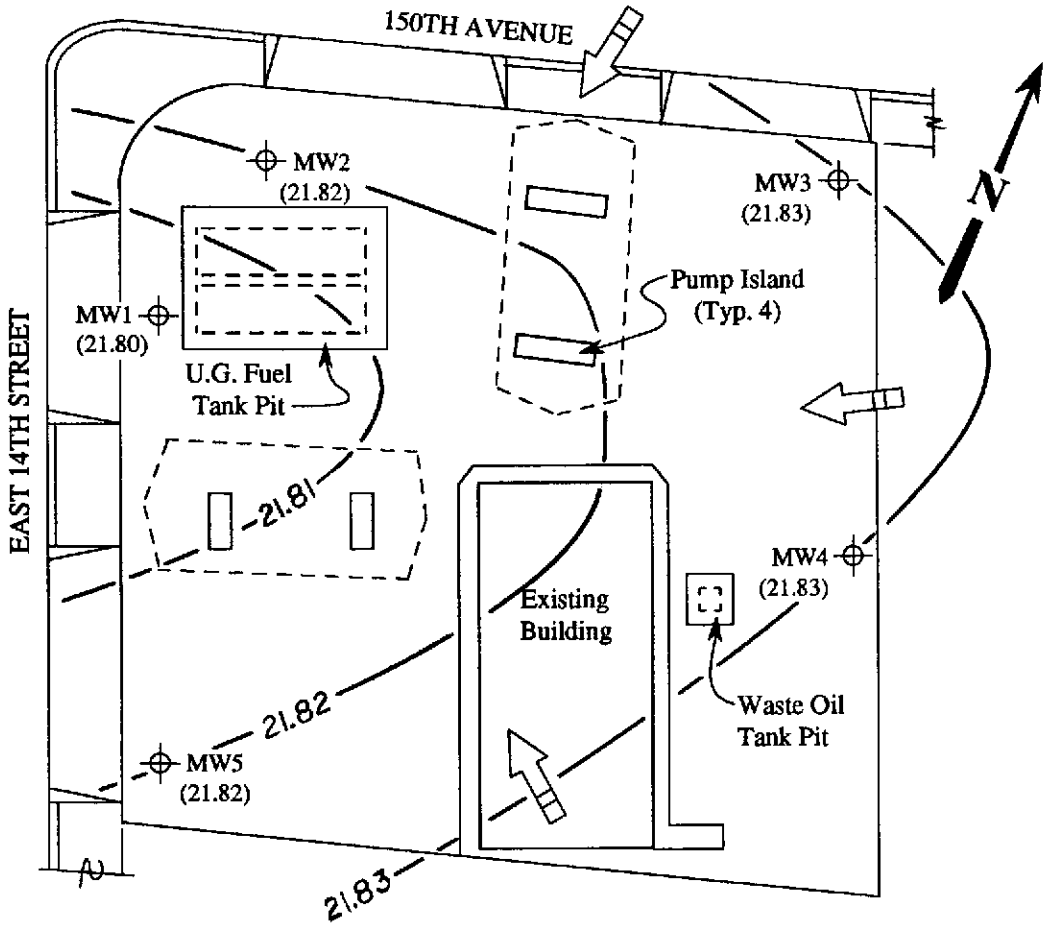

SITE PLAN
Figure 1a

LEGEND

- Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level on 12/18/91
- Direction of ground water flow
- Contours of ground water elevation

0 30 60
Approx. scale feet

Unocal Service Station #3292
15008 E. 14th Street
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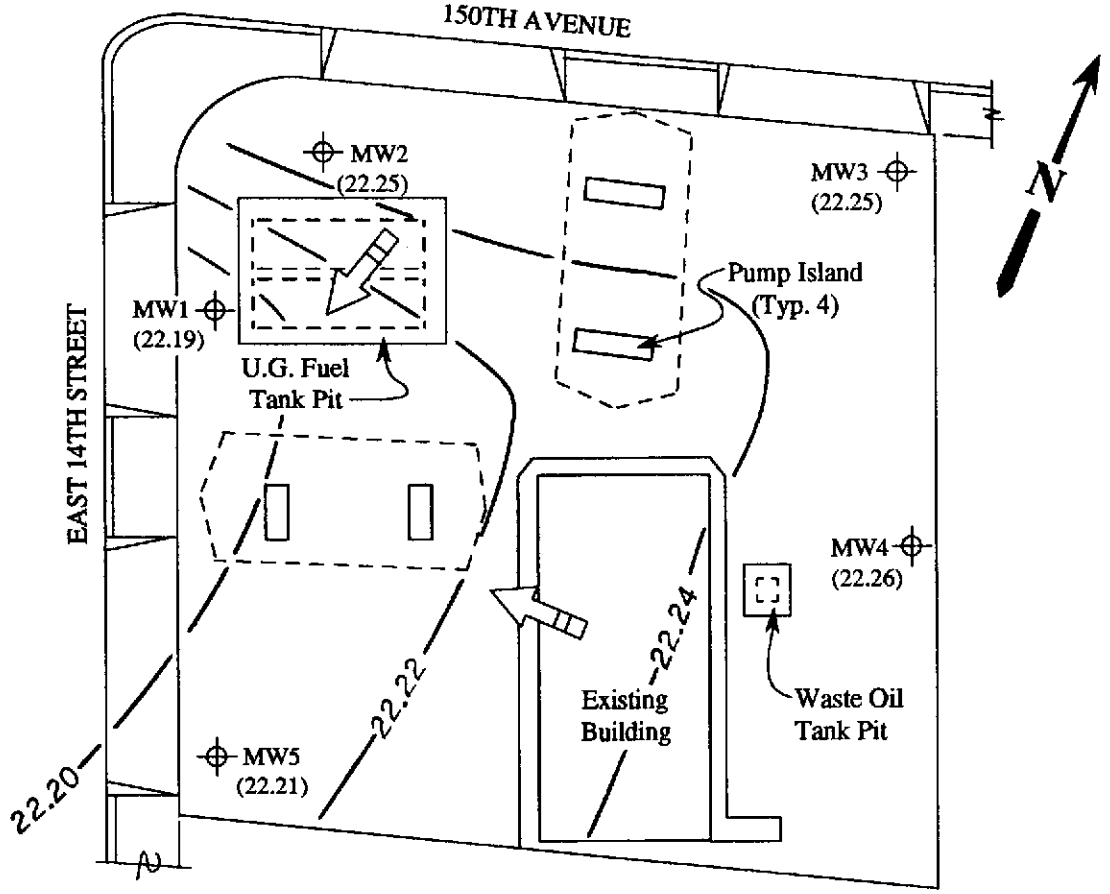

SITE PLAN
Figure 1b

LEGEND

- Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level on 11/19/91
- Direction of ground water flow
- Contours of ground water elevation

0 30 60
Approx. scale feet

Unocal Service Station #3292
15008 E. 14th Street
San Leandro, CA

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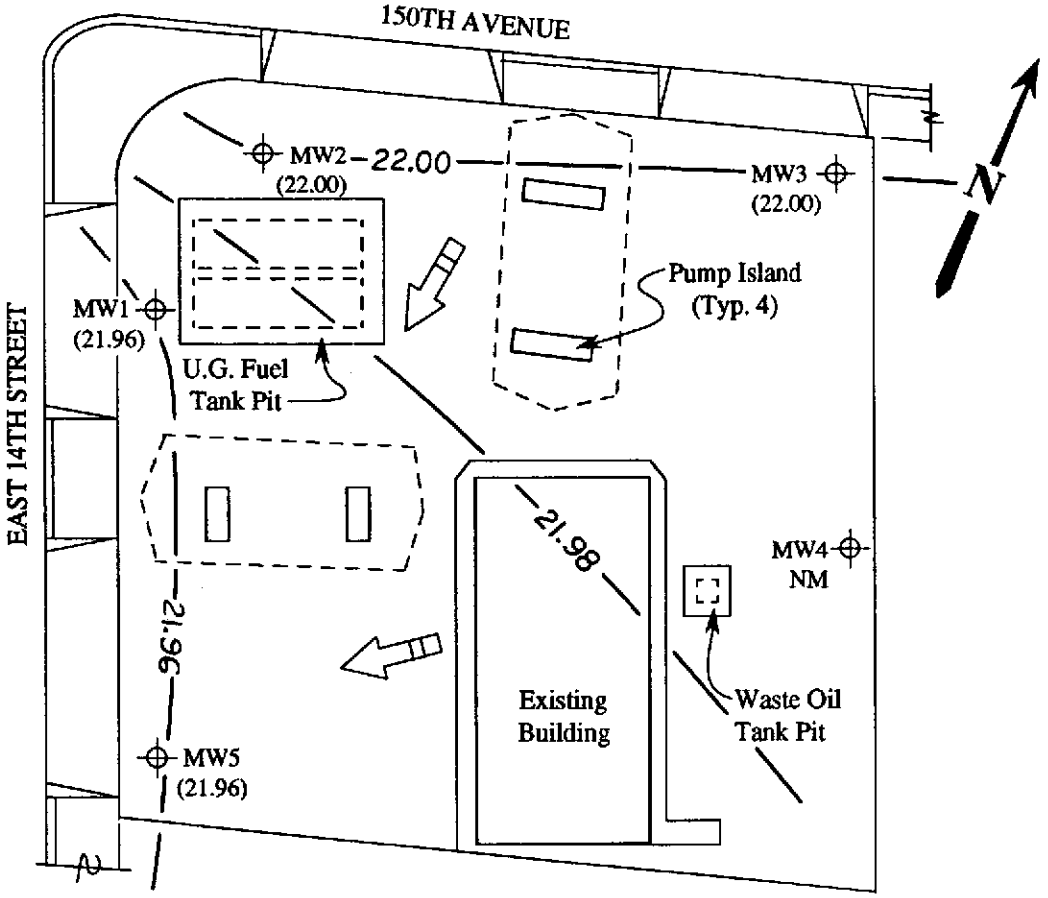

SITE PLAN

Figure 1c

LEGEND

- ⊕ Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level on 10/18/91
- ⇨ Direction of ground water flow
- ——— Contours of ground water elevation

NM = Not monitored - well inaccessable

0 30 60
Approx. scale feet

Unocal Service Station #3292
15008 E. 14th Street
San Leandro, CA

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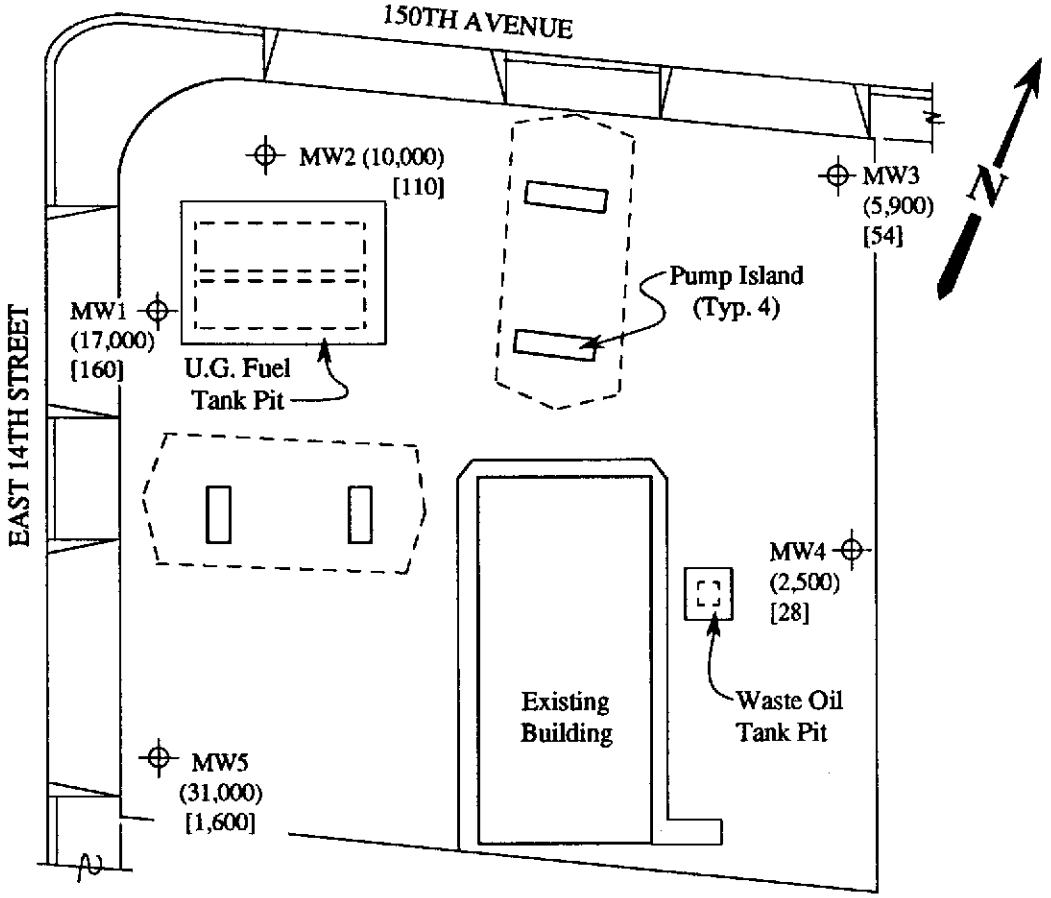


SITE PLAN
Figure 1d
(Samples Collected on 12/18/91)

LEGEND

⊕ Monitoring well

( ) Concentrations of TPH as gasoline in ppb

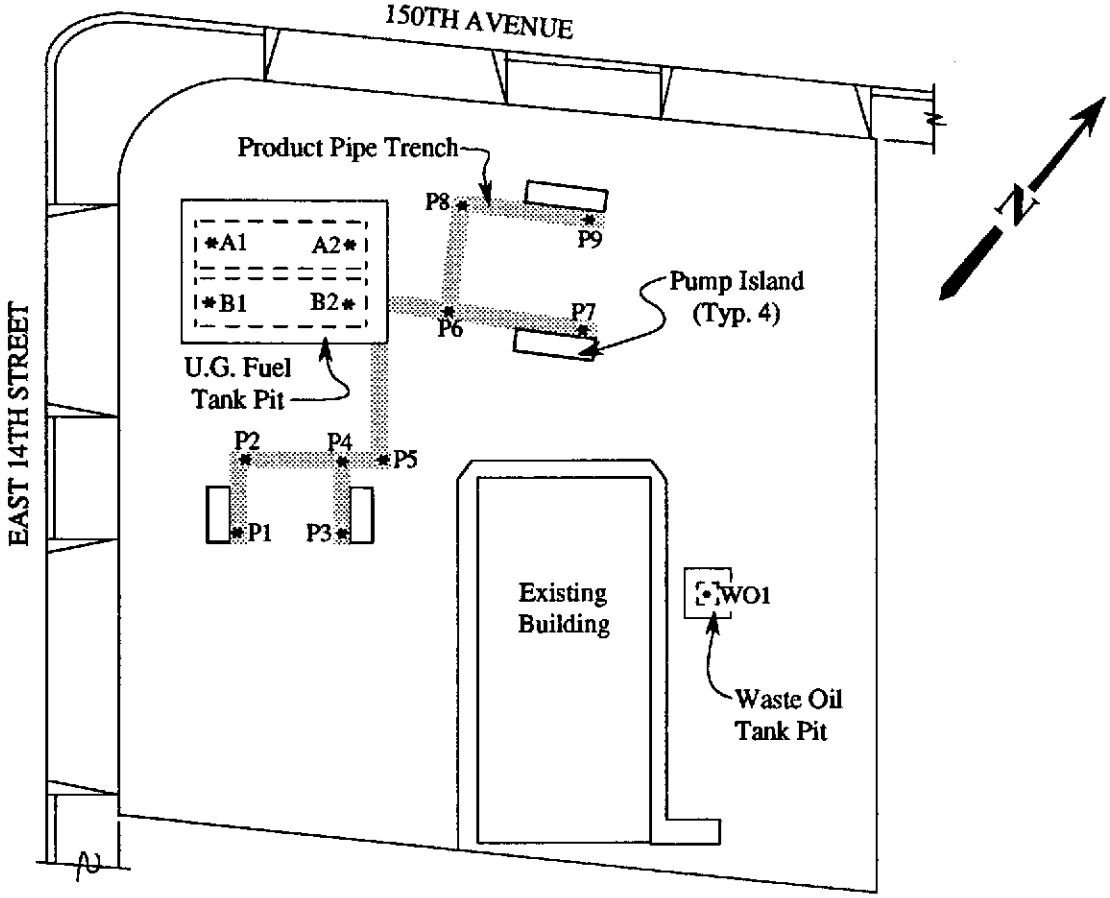
[ ] Concentrations of benzene in ppb

ND = Non-detectable

0 30 60
Approx. scale feet

Unocal Service Station #3292
15008 E. 14th Street
San Leandro, 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

(Samples collected during January and February of 1991)

0 30 60
Approx. scale feet

Unocal Service Station #3292
15008 E. 14th Street
San Leandro, CA

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 15008 E. 14th St., San Leandro	Sampled:	Dec 18, 1991
P.O. Box 996	Matrix Descript:	Water	Received:	Dec 18, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Dec 23, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	112-0733	Reported:	Jan 3, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
112-0733	MW-1	17,000	160	20	1,400	1,600
112-0734	MW-2	10,000	110	5.1	420	96
112-0735	MW-3	5,900	54	6.4	110	64
112-0736	MW-4	2,500	28	2.5	54	22
112-0737	MW-5	31,000	1,600	3,100	4,800	19,000
Method Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.

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Belinda C. Vega
Laboratory Director

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Kapreallan Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 15008 E. 14th St., San Leandro
QC Sample Group: 1120733-737
Reported: Jan 3, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	K.N.	K.N.	K.N.	K.N.
Reporting Units:	ug/L	ug/L	ug/L	ug/L
Date Analyzed:	Dec 23, 1991	Dec 23, 1991	Dec 23, 1991	Dec 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:	18	18	19	58
Matrix Spike % Recovery:	90	90	95	96
Conc. Matrix Spike Dup.:	18	18	19	58
Matrix Spike Duplicate % Recovery:	90	90	95	96
Relative % Difference:	0.0	0.0	0.0	0.0

Laboratory blank contained the following analytes: None Detected

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Belinda C. Vega
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Client Project ID: Unocal, 15008 E. 14th St., San Leandro
QC Sample Group: 1120733-737
Reported: Jan 3, 1992

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	K.N.	K.N.	K.N.	K.N.	K.N.	K.N.
Reporting Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date Analyzed:	Dec 23, 1991	Dec 23, 1991	Dec 23, 1991	Dec 23, 1991	Dec 23, 1991	Dec 23, 1991
Sample #:	112-0733	112-0734	112-0735	112-0736	112-0737	Blank
Surrogate % Recovery:	76	77	77	80	74	96

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Belinda C. Vega
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

KET

SAMPLER	SITE NAME & ADDRESS	ANALYSES REQUESTED	TURN AROUND TIME:
Varthes	Unocal / San Leandro 15008 E. 14th street.		Regular.
WITNESSING AGENCY			

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPHG: BTXE							REMARKS
MW-1	12/18/91	12:40 P.M.		✓	✓		2	Monitoring Well	✓		1120733 AB					VOA's Preserved in HCl.
MW-2	"			✓	✓		2	" "	✓		734					
MW-3	"			✓	✓		2	" "	✓		735					
MW-4	"			✓	✓		2	" "	✓		736					
MW-5	"	3:15 P.M.		✓	✓		2	" "	✓		737					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
W. Thadgian	12/18/91 3:55 PM	K. Walters 3:55 12/18/91
[signature]	12-19-91 1105 AM	Van Lambrook

The following MUST BE completed by the laboratory accepting samples for analysis:

1. Have all samples received for analysis been stored in ice? ✓
2. Will samples remain refrigerated until analyzed? ✓
3. Did any samples received for analysis have head space? no
4. Were samples in appropriate containers and properly packaged? ✓

Signature	Title	Date
KW	Log-in	12/18/91