Received
7/12/91
SDS

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
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April 15, 1991

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

RE: Unocal Service Station #3072
2445 Castro Valley Boulevard
Castro Valley, California

Gentlemen:

Per the request of Mr. Ron Bock of Unocal Corporation, enclosed please find our report dated April 15, 1991, for the above referenced site.

Should you have any questions, please feel free to 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-P89-1106.QR2
April 15, 1991

Unocal Corporation
2000 Crow Canyon Place, Suite 400
San Ramon, CA 94583

Attention: Mr. Ron Bock

RE: Quarterly Report
Unocal Service Station #3072
2445 Castro Valley Boulevard
Castro Valley, California

Dear Mr. Bock:

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 proposal KEI-P89-1106.P3 dated June 11, 1990. The wells are currently monitored monthly and sampled on a quarterly basis. This report covers the work performed by KEI from January through March, 1991.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station and auto care facility. The subject site is situated on gently sloping, northeast trending topography, and is located near the base of the northeast flank of a series of low lying, northwest trending foothills separating Castro Valley from Hayward. The site is located at the southern corner of the intersection of Castro Valley Boulevard with Strobridge Avenue, and is situated approximately 1,200 feet southwest of an unnamed drainage. A Location Map and Site Plans are attached to this report.

KEI's work at the site began on November 14, 1989, when KEI collected soil samples following the removal of three fuel storage tanks (10,000 gallon each - regular unleaded, super unleaded, and diesel), and one 550 gallon waste oil tank at the referenced site. All of the tanks were made of steel. Two small holes were observed in the regular unleaded gasoline tank. Extensive pitting, but no holes were observed in the super unleaded gasoline tank. The diesel tank had been treated and wrapped prior to installation, and therefore it was not possible to assess the condition of the tank at the time of removal. No apparent holes or cracks were observed in the waste oil tank. The soil samples (designated as A1, A2, B1, B2, C1 and C2) under the fuel storage tanks were collected at a

depth of 13.5 feet. The soil sample (WO1) under the waste oil tank was collected at a depth of 10.5 feet. All soil samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California. The samples collected under the fuel storage tanks were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, xylenes and ethylbenzene (BTX&E). In addition, the two samples collected from under the diesel tank were analyzed for TPH as diesel. Analytical results of soil samples collected from beneath the fuel tanks showed levels of TPH as gasoline ranging from non-detectable to 11 ppm, with non-detectable BTX&E concentrations in each case. TPH as diesel concentrations were non-detectable for the two samples collected beneath the diesel tank. The soil sample collected from under the waste oil tank was analyzed for TPH as gasoline, BTX&E, TPH as diesel, total oil and grease (TOG), EPA method 8010 compounds, EPA method 8270 compounds, and the metals - cadmium, chromium, lead and zinc. Analytical results of the soil sample collected from beneath the waste oil tank showed TPH as gasoline at 5.9 ppm, metals ranging from non-detectable to 45 ppm, 55 ppb of 1,1-dichloroethene, and non-detectable levels of all other constituents analyzed. Analytical results are summarized in Table 5, and sample point locations are as shown on the attached Site Plan, Figure 2.

On November 16, 1989, KEI collected six sidewall soil samples (designated as SW1 through SW6) and a water sample (designated as W1) from the fuel tank pit. The tank pit water level was measured to be 11.5 feet below the ground surface. The sidewall soil samples were collected approximately 6 to 12-inches above the tank pit water level. All samples were analyzed for TPH as gasoline and BTX&E. Three of the six sidewall soil samples (labeled SW2, SW3 and SW4) and the water sample (labeled W1) were also analyzed for TPH as diesel. Analytical results of the soil samples collected from the fuel tank pit showed TPH as gasoline ranging from non-detectable to 29 ppm for four of the six samples, with samples SW1 and SW4 showing 140 ppm and 160 ppm, respectively. TPH as diesel levels were non-detectable for two of the sidewall samples with sample SW4 showing 24 ppm. Analytical results of the water sample collected from the fuel tank pit showed 11,000 ppb of TPH as diesel, 26,000 ppb of TPH as gasoline, and 670 ppb of benzene. Analytical results of the soil samples are summarized in Table 5, the water sample in Table 10, and sample point locations are as shown on the attached Site Plan, Figure 2.

On November 28, 1989, KEI returned to the site to meet with the representative of the Alameda County Health Care Services (ACHCS) to clarify ACHCS guidelines as applied to the subject site for fuel tank pit excavation and sampling. In response to the meeting, KEI submitted a Phase I work plan (KEI-P89-1106.P1) dated November 30,

1989, to define the extent of contamination in the vicinity of the tank pit. The work plan was approved by the ACHCS in a letter dated December 8, 1989.

On December 22, 1989, KEI returned to the site after further excavation to collect additional sidewall soil samples from the fuel tank pit. Soil was excavated from the north, east and south sides of the pit. Sidewall soil samples, designated as SW1(17), SW2(17), SW7, SW8, SW9, SW10, SW11 and SW3(13), were collected at depths of approximately 9 or 11 feet, and analyzed on-site by Mobile Chem Labs, Inc., of Lafayette, California, a state-certified mobile laboratory. After excavation, TPH as gasoline was detected at concentrations of 1,500 ppm and 1,900 ppm on the northerly wall of the pit, at concentrations ranging from 3.0 ppm to 1,700 ppm on the easterly wall, and at 410 ppm on the southerly wall. Analytical results are summarized in Table 6, and sample point locations are as shown on the attached Site Plan, Figure 3.

Based on the analytical results, KEI recommended the installation of nine exploratory borings to further define the extent of the soil contamination. Documentation of soil sample collection and sample analytical results are presented in KEI's work plan/proposal (KEI-P89-1106.P2) dated January 8, 1990.

On January 18 and 19, 1990, three two-inch diameter monitoring wells (designated as MW1, MW2 and MW3 on the attached Site Plan, Figure 1) were installed at the site. The monitoring wells were drilled and completed to total depths ranging from 22 to 30 feet. Ground water was encountered at depths ranging from 9 to 20.5 feet beneath the surface during drilling. The wells were developed on January 22 and 23, 1990, and initially sampled on March 22, 1990.

Samples were analyzed for TPH as gasoline by EPA method 5030 in conjunction with modified 8015, and BTX&E by EPA method 8020. Analytical results of the soil samples, collected from the borings for monitoring wells MW1, MW2 and MW3, indicated non-detectable levels of TPH as gasoline and BTX&E in all soil samples, except for sample MW1(5), which showed 2.8 ppm of TPH as gasoline, 0.051 ppm of benzene, and 0.11 ppm of ethylbenzene. Analytical results of the ground water samples collected from monitoring wells MW2 and MW3 indicated non-detectable levels of TPH as gasoline and BTX&E. In well MW1, TPH as gasoline and benzene were detected at 32 ppb and 4.2 ppb, respectively. Analytical results of the soil samples are summarized in Table 9, and water samples in Table 2. Documentation of well installation, sample collection, and sample results are presented in KEI's report (KEI-J89-1106.R7) dated April 12, 1990.

On February 14, 1990, three soil samples, labeled P1, P2 and P3, were collected from the product pipe trenches at depths ranging from 2.5 to 4 feet. The soil samples were analyzed for TPH as gasoline and BTX&E. Analytical results of samples collected from the pipe trench indicated levels of TPH as gasoline ranging from 6.0 ppm to 87 ppm, and benzene levels ranging from 0.23 ppm to 0.47 ppm. Results of the soil analyses are summarized in Table 7. Soil sample locations are shown on the attached Site Plan, Figure 4. Documentation of sample collection and sample results are presented in KEI's report (KEI-J89-1106.R5) dated March 6, 1990.

KEI returned to the site on March 9, 1990, when three sidewall soil samples, labeled SWB, SWC and SWD, were collected from the sidewalls of the waste oil tank at depths of 8 to 9 feet. The waste oil tank pit had been excavated to a depth of 11 to 12 feet. The soil samples were analyzed for TPH as gasoline, TPH as diesel, TOG, and EPA method 8010 compounds. Analytical results of the soil samples (SWB, SWC and SWD), collected from sidewalls of the waste oil tank pit, indicated non-detectable levels of TOG and all EPA method 8010 constituents for each of the three samples. The analytical results indicated non-detectable levels of TPH as gasoline and BTX&E for samples SWC and SWD, while SWB showed 37 ppm of TPH as gasoline, with 0.10 ppm of benzene. TPH as diesel levels were non-detectable for sample SWC, with both SWB and SWD less than 10 ppm. Results of the soil samples are summarized in Table 8. Soil sample point locations are as shown on the attached Site Plan, Figure 5. Documentation of sample collection, and sample results are presented in KEI's report (KEI-J89-1106.R6) dated April 13, 1990.

On April 24 and 25, 1990, eight exploratory borings (designated as EB1 through EB8 on the attached Site Plan, Figure 1) were drilled at the site. The eight borings were drilled and/or sampled to depths of 10.5 to 15 feet below grade. Ground water was encountered at depths of approximately 10 to 14 feet beneath the surface in each boring except EB4 where ground water was not encountered. Drilling was generally stopped about 1 to 2 feet after intersecting the first water table, except for EB4, which was terminated at a depth of 14.5 feet and ground water was not encountered. A water sample was collected from boring EB5 only. All borings were backfilled to the surface with neat cement.

Samples were analyzed at Sequoia Analytical Laboratory in Redwood City, California. Soil samples from all borings and the water sample from EB5 were analyzed for TPH as gasoline using EPA method 5030 in conjunction with modified 8015, and BTX&E using EPA method 8020. The results of soil analyses are summarized in Table 4, and the results of the water analyses are summarized in Table 10.

Analytical results of the soil samples, collected from the eight exploratory borings (EB1 through EB8), indicated non-detectable levels of TPH as gasoline in all samples, except EB1(9.5), EB4(14), EB6(5), EB7(5) and EB8(5), in which the levels ranged from 1.7 ppm to 5.0 ppm. Benzene was detected in all soil samples at levels ranging from 0.0053 ppm to 0.023 ppm. The analytical results of the water sample collected from boring EB5 immediately after drilling, indicated a level of TPH as gasoline at 5,900 ppb, with a level of benzene at 840 ppb.

Based on the analytical results, KEI recommended the installation of two additional monitoring wells to further define the extent of ground water contamination. In addition, KEI recommended the implementation of monthly monitoring and quarterly sampling of the existing monitoring wells. Results of the exploratory drilling and soil sampling activities are presented in KEI's report (KEI-J89-1106.R8) dated June 11, 1990.

On August 13, 1990, two two-inch diameter monitoring wells (designated as MW4 and MW5 on the attached Site Plan, Figure 1) were installed at the site. The two wells were drilled and completed to total depths ranging from 23.5 to 24 feet. Ground water was encountered at depths ranging from 10 to 14.5 feet beneath the surface during drilling. The new wells were developed on August 20, 1990, and all wells were sampled on August 27, 1990.

Water from all wells (MW1 through MW5) and selected soil samples from the borings for wells MW4 and MW5 were analyzed at Sequoia Analytical Laboratory, Redwood City, California. The samples were analyzed for TPH as gasoline by EPA method 5030 in conjunction with modified 8015 and BTX&E by EPA method 8020.

Analytical results of the soil samples, collected from the borings for monitoring wells MW4 and MW5, indicated non-detectable levels of TPH as gasoline and BTX&E in all analyzed samples. The analytical results of the water samples collected from the wells showed non-detectable levels of TPH as gasoline in all wells. Benzene was detected in wells MW1, MW3 and MW4 at levels of 3.2 ppb, 1.1 ppb and 0.34 ppb, respectively. Results of the soil analyses are summarized in Table 3, and the water analyses in Table 2. Documentation of well installation, sample collection, and sample results are presented in KEI's report (KEI-P89-1106.R9) dated September 28, 1990. Based on the analytical results, KEI recommended continuation of the monthly monitoring and quarterly sampling program.

RECENT FIELD ACTIVITIES

The five wells (MW1 through MW5) were monitored three times and sampled once during the quarter. During monitoring, the wells were checked for depth to water and presence of free product and 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 March 11, 1991. Prior to sampling, the wells were purged of 15 gallons each using a bailer. Samples were then collected using a clean Teflon bailer. Samples were decanted into clean VOA vials and/or one liter amber bottles as appropriate which were 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 predominantly toward the northeast, varying from an approximately due north flow direction at the northwestern portion of the site, and a flow direction toward the east at the southeastern portion of the site on March 11, 1990. This situation is relatively similar to that previously determined on December 12, 1990, except for a more easterly flow direction at the south-eastern portion of the site. Water levels have steadily increased during the quarter, showing a net increase in all wells ranging from 0.16 to 1.01 feet since December 12, 1990. The measured depth to ground water at the site on March 11, 1991, ranged between 6.08 and 8.86 feet below existing grade.

Based on review of regional geologic maps (U.S. Geological Survey Open-File Report 80-540 "Preliminary Geologic Map of the Hayward Quadrangle, Alameda and Contra Costs Counties, California" by T.W. Dibblee, Jr., 1980), the subject site is underlain by Quaternary-age alluvium. Mapped bedrock outcrops adjacent to the site include the marine Panoche Formation (Kpc), which is described as a conglomerate generally composed of granite, diorite, quartzite and black chert cobbles in a sandstone matrix and the Knoxville Formation (JKk), which is described as consisting of dark micaceous shale with minor thin sandstone.

Also, the site is situated approximately 3,000 feet northeast of the mapped trace of the active Hayward Fault; 1,900 feet southwest of the concealed mapped trace of the East Chabot Fault; and 1,800 feet northeast of the mapped trace (northern terminous?) of the West Chabot Fault.

As exposed in the underground tank pit excavation, the earth materials at the subject site consist of artificial fill materials at the surface which are typically 1 to 2 feet thick, and locally vary up to a maximum of about 9 feet at the original east wall of the pit excavation prior to additional excavation. These fill materials are inturn underlain by dark gray silty clay soil materials, which are about 2.5 feet thick. The soil materials are underlain by greenish-brown to yellowish brown highly weathered to slightly weathered shale, which varies from soft to moderately hard with abundant fractures (both clay healed and relatively open).

The results of the drilling activities at the site indicated that bedrock materials underlying the site are composed of brown and gray shale, which is slightly to highly weathered. The depth to the bedrock materials appears to vary considerably from about 5 to 6 feet below grade in the vicinity of well MW1 and boring EB2, to about 21.5 feet in the vicinity of well MW2, to greater than 22 feet in the vicinity of well MW3 (maximum depth explored). However, bedrock commonly underlies that site at a depth of about 8 to 10 feet as encountered in the majority of the borings at the site and as exposed in the old tank pit excavation.

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 MW2, MW3 and MW5, indicate non-detectable levels of TPH as gasoline and BTX&E. Also, TPH as gasoline was non-detectable in well MW1. Analytical results of the ground water sample, collected from MW4, indicate a level of TPH as gasoline at 44 ppb. Benzene was detected in monitoring wells MW1 and MW4 at concentrations of 0.90 ppb and 0.74 ppb, respectively. 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 and no evidence of free product or sheen in any of the wells, KEI recommends the continuation of the current monitoring and sampling program of the existing wells per KEI's proposal (KEI-P89-1106.P3) dated June 11, 1990.

DISTRIBUTION

A copy of this report should be sent to the ACHCS, and to the Regional Water Quality Control Board, 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.

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

Sincerely,

Kaprealian Engineering, Inc.

for Wade P Weston

Wade P. Weston
Geologist

Thomas J. Berkins
Senior Environmental Engineer

Don R Braun

Don R. Braun
Certified Engineering Geologist

License No. 1310
Exp. Date 6/30/92

Timothy R. Ross

Timothy R. Ross
Project Manager

\bam:jad

Attachments: Tables 1 through 10
Location Map
Site Plans - Figures 1 through 5
Laboratory Analyses
Chain of Custody documentation

KEI-P89-1106.QR2
April 15, 1991

TABLE 1

SUMMARY OF MONITORING DATA

Date	Well No.	Ground Water Elevation (feet)	Depth to Water (feet)	Product Thickness	Sheen	Water Bailed (gallons)
3/11/91	MW1	172.50	8.57	0	None	15
	MW2	173.42	8.86	0	None	15
	MW3	172.43	6.08	0	None	15
	MW4	172.70	6.55	0	None	15
	MW5	171.89	7.13	0	None	15
2/11/91	MW1	172.22	8.85	0	None	0
	MW2	173.16	9.12	0	None	0
	MW3	NOT ACCESSIBLE DUE TO A PARKED CAR ABOVE WELL COVER				
	MW4	172.42	6.83	0	None	0
	MW5	171.62	7.40	0	None	0
1/11/91	MW1	172.04	9.03	0	None	0
	MW2	172.97	9.31	0	None	0
	MW3	171.65	6.86	0	None	0
	MW4	172.33	6.92	0	None	0
	MW5	171.36	7.66	0	None	0

Well #	Surface Elevation* (feet)
MW1	181.07
MW2	182.28
MW3	178.51
MW4	179.25
MW5	179.02

* Elevation of top of well covers surveyed to Mean Sea Level (MSL).

KEI-P89-1106.QR2
April 15, 1991

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample Number	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
3/11/91	MW1	ND	0.90	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	44	0.74	ND	0.15	3.2
	MW5	ND	ND	ND	ND	ND
12/12/90	MW1	34	1.6	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	0.73	ND	ND	ND
	MW5	ND	ND	ND	ND	ND
8/27/90	MW1	ND	3.2	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	1.1	0.50	0.89	0.54
	MW4	ND	0.34	ND	ND	ND
	MW5	ND	ND	ND	ND	ND
3/22/90	MW1	32	4.2	ND	1.1	0.36
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4*	ND	ND	ND	ND	ND
Detection Limits		30	0.3	0.3	0.3	0.3

* Sample MW4 is a duplicate of sample MW2 only on date indicated.

ND = Non-detectable.

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

KEI-P89-1106.QR2
April 15, 1991

TABLE 3

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on August 13, 1990)

Sample Number	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
MW4(5)	5	ND	ND	ND	ND	ND
MW5(9.5)	9.5	ND	ND	ND	ND	ND
MW5(13.5)	13.5	ND	ND	ND	ND	ND
Detection Limits		1.0	0.0050	0.0050	0.0050	0.0050

ND = Non-detectable.

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

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TABLE 4

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on April 24 & 25, 1990)

Sample Number	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
EB1(5)	ND	0.0063	0.042	0.011	ND
EB1(9.5)	4.9	0.0078	0.24	0.11	0.028
EB1(13.5)	ND	0.0087	0.048	ND	ND
EB2(5)	ND	0.0053	0.020	0.013	0.0068
EB2(10)	ND	0.0059	0.026	0.013	0.0050
EB3(5)	ND	0.0069	0.031	0.017	ND
EB3(9)	ND	0.0093	0.023	ND	ND
EB4(5)	ND	0.0091	0.034	ND	ND
EB4(10)	ND	0.0090	0.27	ND	ND
EB4(14)	1.7	0.0079	0.43	ND	ND
EB5(5)	ND	0.0095	0.015	ND	ND
EB6(5)	5.0	0.066	0.021	0.11	0.032
EB6(10)	ND	0.0086	0.060	0.014	0.0052
EB6(13)	ND	0.0080	0.16	0.24	0.0092
EB7(5)	3.0	0.040	0.056	0.073	0.034
EB7(9.5)	ND	0.0081	0.078	0.025	0.015
EB7(13.5)	ND	0.0054	0.085	0.012	ND
EB8(5)	2.7	0.023	0.067	0.078	0.013
EB8(10)	ND	0.0072	0.056	0.019	0.0050
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-P89-1106.QR2
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TABLE 5

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on November 14 & 16, 1989)

Sample	Depth (feet)	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
A1	13.5	ND	2.4	ND	ND	ND	ND
A2	13.5	ND	ND	ND	ND	ND	ND
B1	13.5	--	1.9	ND	ND	ND	ND
B2	13.5	--	11	ND	ND	ND	ND
C1	13.5	--	1.5	ND	ND	ND	ND
C2	13.5	--	7.5	ND	ND	ND	ND
SW1	10.5	--	140	0.31	0.12	3.0	0.88
SW2	10.5	ND	ND	ND	ND	ND	ND
SW3	10.5	ND	ND	ND	ND	ND	ND
SW4	9.5	24	160	0.33	6.4	30	9.4
SW5	9.5	--	3.5	0.06	0.27	0.76	0.19
SW6	10	--	29	0.12	0.21	2.0	0.58
WO1(11)*	11	ND	5.9	ND	ND	ND	ND
Detection Limits		1.0	1.0	0.05	0.1	0.1	0.1

* TOG and all EPA method 8270 constituents were non-detectable. All EPA method 8010 constituents were non-detectable, except 1,1-dichloroethene at 55 ppb. Metal concentrations were as follows: cadmium was detected at 2.5 ppm, chromium at 39 ppm, lead at 1.1 ppm, and zinc at 45 ppm.

ND = Non-detectable.

-- Indicates analysis not performed.

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

KEI-P89-1106.QR2
April 15, 1991

TABLE 7

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on February 14, 1990)

Sample	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
P1	4.0	87	0.33	0.17	10	2.3
P2	2.5	6.0	0.23	ND	0.33	0.11
P3	3.0	10	0.47	0.11	1.1	0.32
Detection Limits		1.0	0.05	0.1	0.1	0.1

ND = Non-detectable.

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

KEI-P89-1106.QR2
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TABLE 8

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on March 9, 1990)

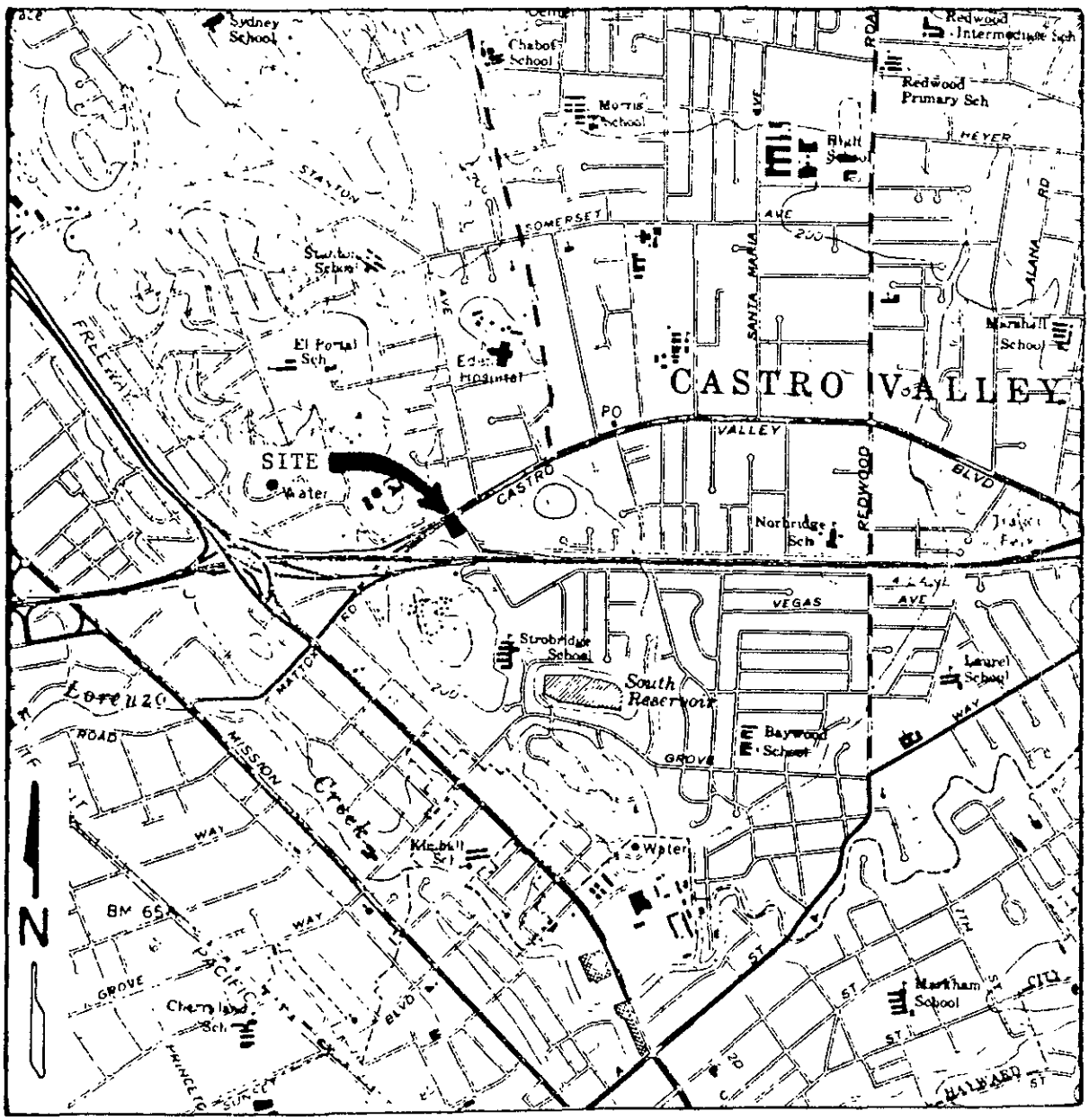
Sample	Depth (feet)	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
SWB*	8.0	<10	37	0.10	0.10	0.74	0.25
SWC*	9.0	ND	ND	ND	ND	ND	ND
SWD*	9.0	<10	ND	ND	ND	ND	ND
Detection Limits		1.0	1.0	0.05	0.1	0.1	0.1

* TOG and all EPA method 8010 constituents were non-detectable.

ND = Non-detectable.

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

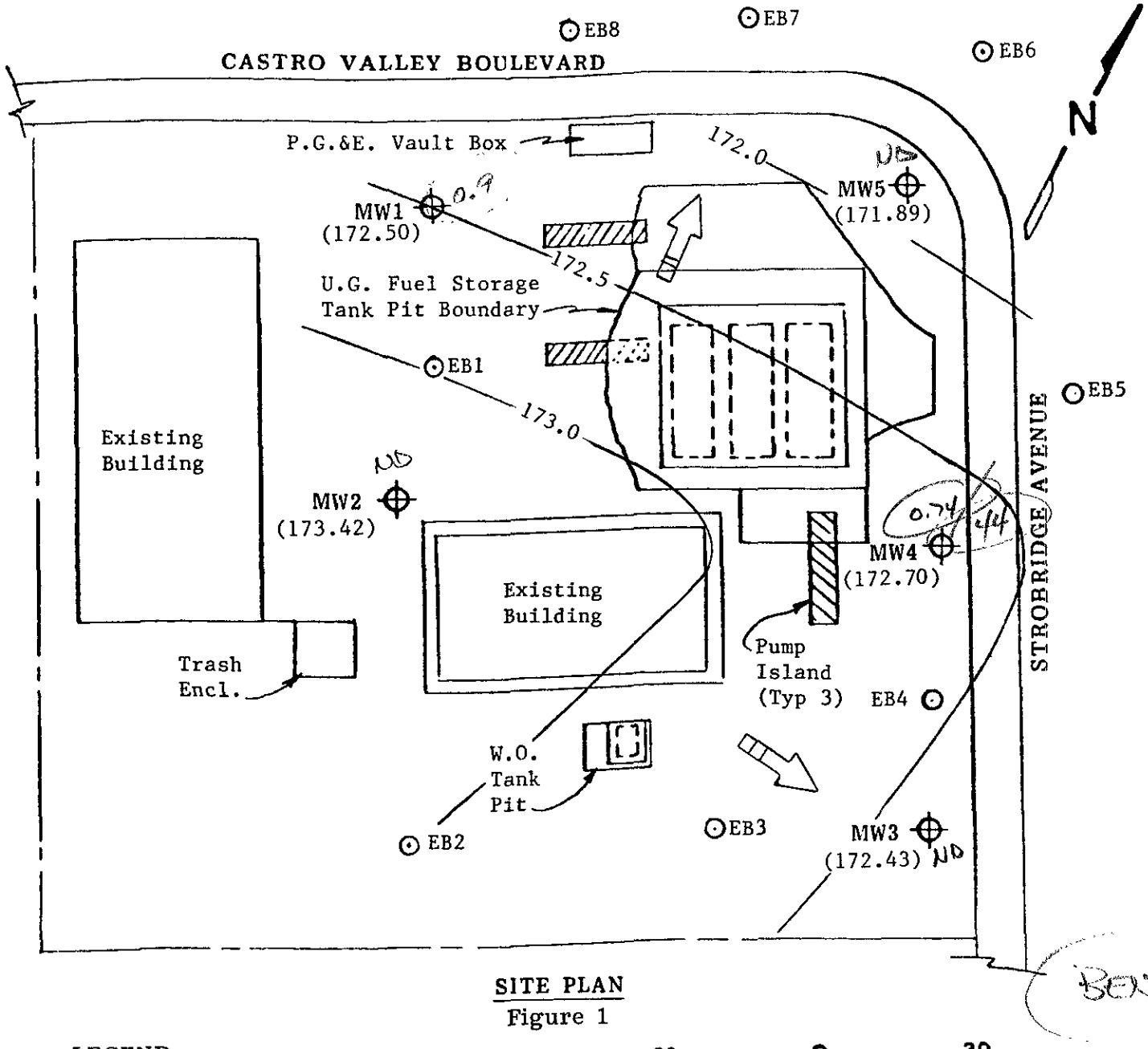
KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



LOCATION MAP

Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA

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



SITE PLAN
Figure 1

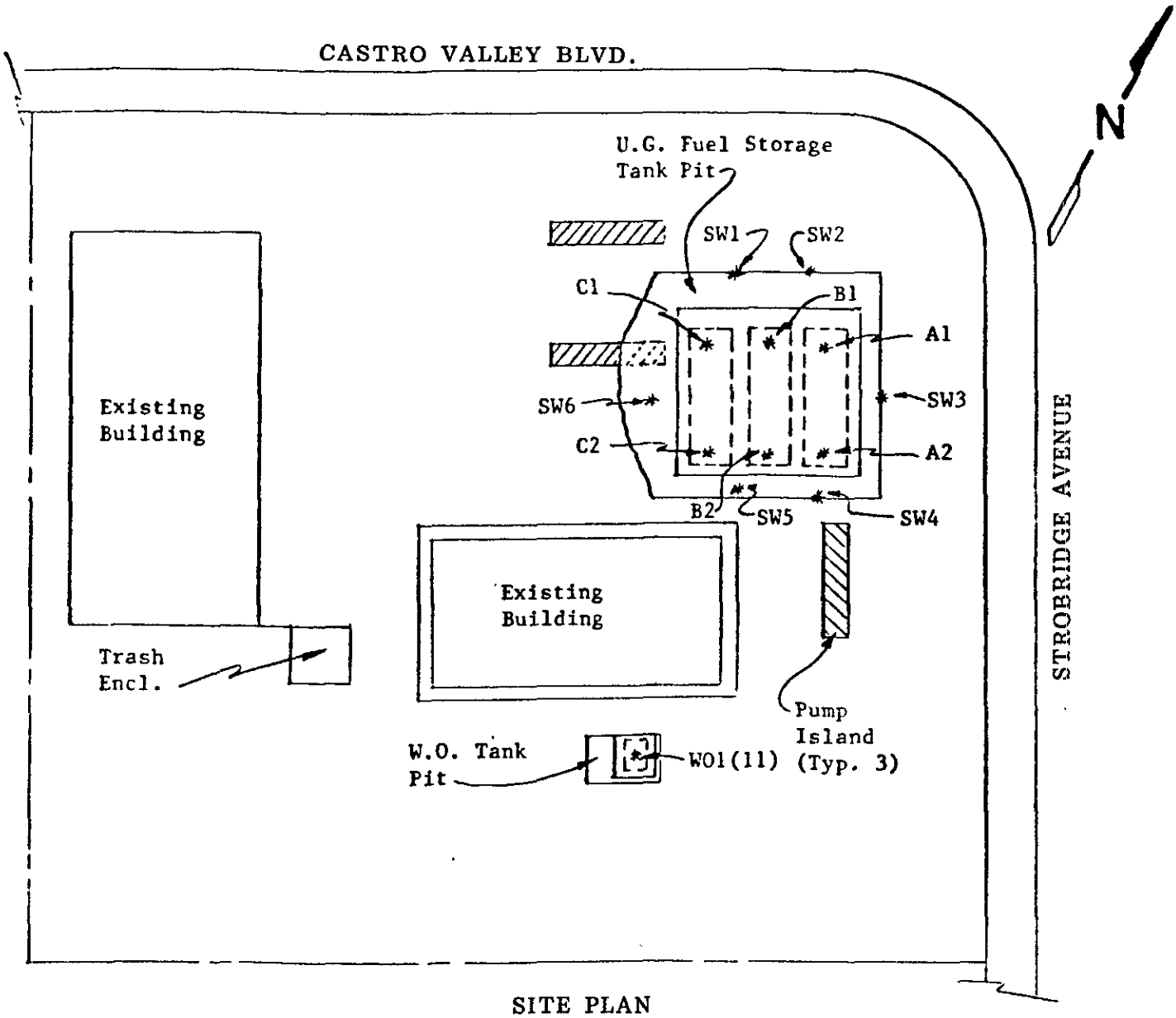
LEGEND

- Monitoring Well
- Exploratory Boring
- Ground Water Flow Direction
- ( ) Ground Water Elevation in feet (MSL) on 3/11/91
- Contours on ground water surface in feet above Mean Sea Level

30 0 30
Approx. Scale feet

Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

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

30 0 30
Approx. Scale feet

LEGEND

* Sample Point Location

Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA

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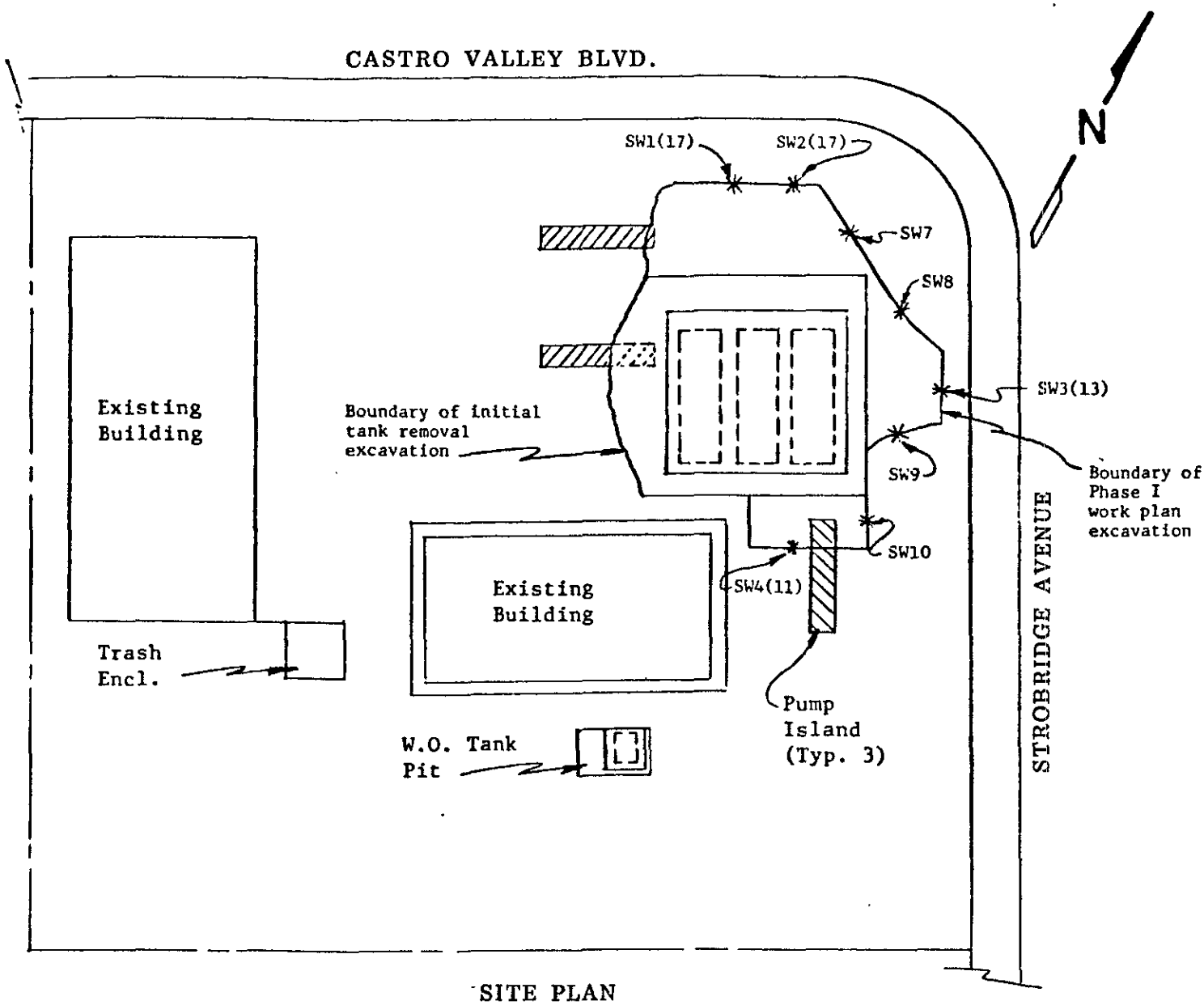

SITE PLAN
Figure 3

30 0 30
Approx. Scale feet

LEGEND

* Sample Point Location

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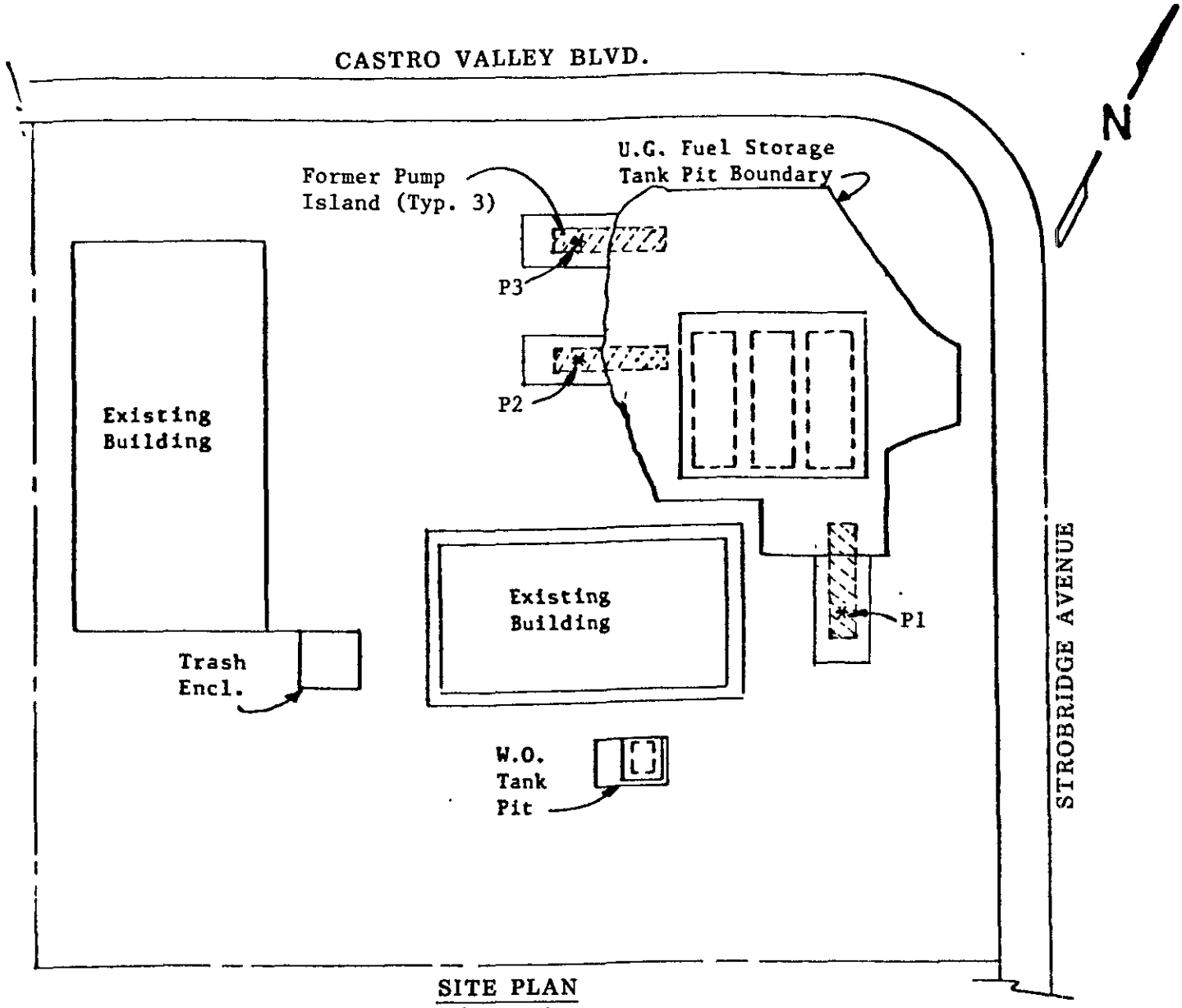

SITE PLAN
Figure 4

LEGEND

* Sample Point Location

30 0 30
Approx. Scale feet

Unocal S/S #3072
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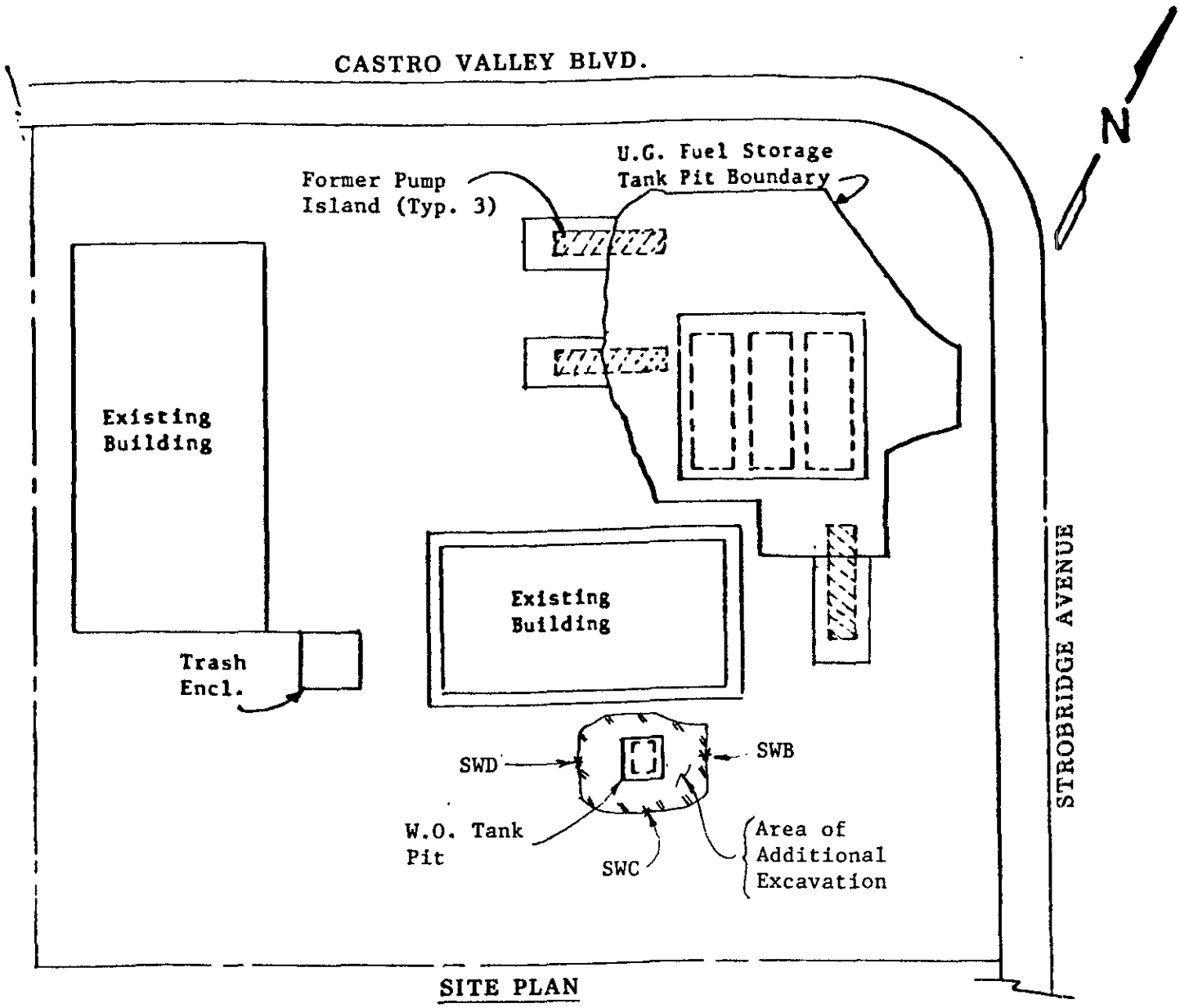

SITE PLAN
Figure 5

LEGEND

* Sample Point Location

30 0 30
Approx. Scale feet

Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 2445 Castro Valley Blvd., Castro Valle	Sampled:	Mar 11, 1991
P.O. Box 996	Matrix Descript:	Water	Received:	Mar 13, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	3/18-3/19/91
Attention: Mardo Kaprealian, P.E.	First Sample #:	103-0394 A-B	Reported:	Mar 19, 1991

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)
103-0394 A-B	MW-1	N.D.	0.90	N.D.	N.D.	N.D.
103-0395 A-B	MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
103-0396 A-B	MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
103-0397 A-B	MW-4	44	0.74	N.D.	3.2	0.15
103-0398 A-B	MW-5	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

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

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

LER: SOF
ESSING AGENCY:

SITE NAME & ADDRESS: Unocal / Castro Valley
2945 Castro Valley Blvd.

ANALYSES REQUESTED: TPHG, BTXE

TURN AROUND TIME: Regular

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
MW-1	3/11/91			✓	✓		2	MW	VOAs preserved 10305394
MW-2	"	11:30		✓	✓		2	"	395
MW-3	"			✓	✓		2	"	396
MW-4	"	10:05		✓	✓		2	"	397
MW-5	"	10:05		✓	✓		2	"	398

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	3/11/91	K. Wall 3/11 3:20
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

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? DC
4. Were samples in appropriate containers and properly packaged? ✓

Signature: (illegible) Title: S+K Date: 3/11