Pre-Assessment of new UST location.

KAPREALIAN ENGINEERING, INC.
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KEI-P89-0301.R1
March 13, 1989

Unocal Corporation
2175 N. California Blvd., Suite 650
Walnut Creek, CA 94569

Attention: Mr. Tim Ross

RE: Preliminary Subsurface Investigation at
Unocal Service Station #6277
15803 East 14th Street
San Leandro, California

Dear Mr. Ross:

This report presents the results of our subsurface investigation for the referenced site. The purpose of the investigation was to determine if the subsurface soil in the vicinity of the proposed new tank installation has been impacted at the site. The work performed consisted of the following:

Coordination with regulatory agencies.

Drilling two exploratory borings.

Soil sampling.

Laboratory analyses.

Data analyses, interpretation and report preparation.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station. Site description is shown on the attached Site Plan. The existing underground storage tanks at the site are scheduled to be removed. New underground tanks are to be installed in the northwest corner of the site (see attached Site Plan). The borings were installed at the request of Alameda County. Sampling was undertaken to explore for the possible presence of soil contamination in the vicinity of the proposed underground storage tank pit location (Site Plan).

FIELD ACTIVITIES

On March 6, 1989, two exploratory borings (designated as EB1 and EB2 on the attached Site Plan) were drilled at the site. Subsurface materials penetrated and the depths at which soil samples were collected are shown in the attached Boring Logs.

The two borings were drilled to depths of 10.5 and 13.5 feet. Ground water was encountered at a depth 11 to 12 feet beneath the surface. Soil samples were collected at a depth of five and ten feet in each of the borings. Undisturbed soil samples were collected by driving a California-modified split-spoon sampler ahead of the drilling augers. The clean, 2" diameter brass tubes holding the samples were sealed with aluminum foil, plastic caps and tape, and stored in a cooled ice chest for delivery to a state certified laboratory. After the soil samples were collected, the borings were backfilled to the surface with drill cuttings due to their location within an area to be excavated in one week.

ANALYTICAL RESULTS

Samples were analyzed at Sequoia Analytical Laboratory in Redwood City, California, and were accompanied by properly executed Chain of Custody documentation. Samples from EB1 and EB2 were analyzed for total petroleum hydrocarbon as gasoline (TPH) using EPA method 5030 or 3810 in conjunction with modified 8015 and benzene, toluene, xylenes and ethylbenzene (BTX&E) using EPA methods 5030 and 8020. Soil sample analyses from the two borings show levels of TPH ranging from non-detectable to 620 ppm, and benzene ranging from non-detectable to 2.3 ppm. The results of the soil analyses are summarized in Table 1. Copies of the laboratory analyses and Chain of Custody documentation are attached to this report.

HYDROLOGY AND GEOLOGY

Ground water is present at the site at a depth of 11 to 12 feet below the surface in the vicinity of the borings.

Subsurface formations encountered in the borings consist of fill to a depth of about one foot, followed by clayey sand gravel to about four feet. Clay occurs from four to 13.5 feet in depth.

DISCUSSION

The data indicate that soil contamination occurs from nine to 11 feet in the vicinity of EB1 and EB2.

Prior to installation of the new underground storage tanks, the contractor will excavate the tank pit to a depth of approximately 13 feet. Soil removed from the excavation will be stockpiled on site for further sampling and proper disposal. If ground water is encountered in the new tank pit during excavation, a water sample will be collected and analyzed for TPH and BTX&E.

Following analysis of soil samples (and ground water if encountered) taken from below the existing underground tanks, KEI will submit a report describing the analytical results and a proposal/work plan as appropriate to further investigate soil and ground water contamination at this site.

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 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 investigations. 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, 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 feel free to call me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.

Doug Lee
Geologist

Gary S. Johnson
Registered Geologist

License #4315
Exp. Date 6/30/90

Mardo Kaprealian
President

Attachments: Table 1
Site Plan
Boring Logs
Laboratory Results
Chain of Custody documentation

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TABLE 1

SUMMARY OF LABORATORY ANALYSES
SOIL

(Results in ppm)
(Collected on March 6, 1989)

Sample Number	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
EB1(5)	2.1	ND	0.11	ND	0.14
EB1(10)	200	2.3	7.7	5.7	33
EB2(5)	ND	ND	ND	ND	ND
EB2(10)	620	2.2	20	13	78

ND = Non-detected

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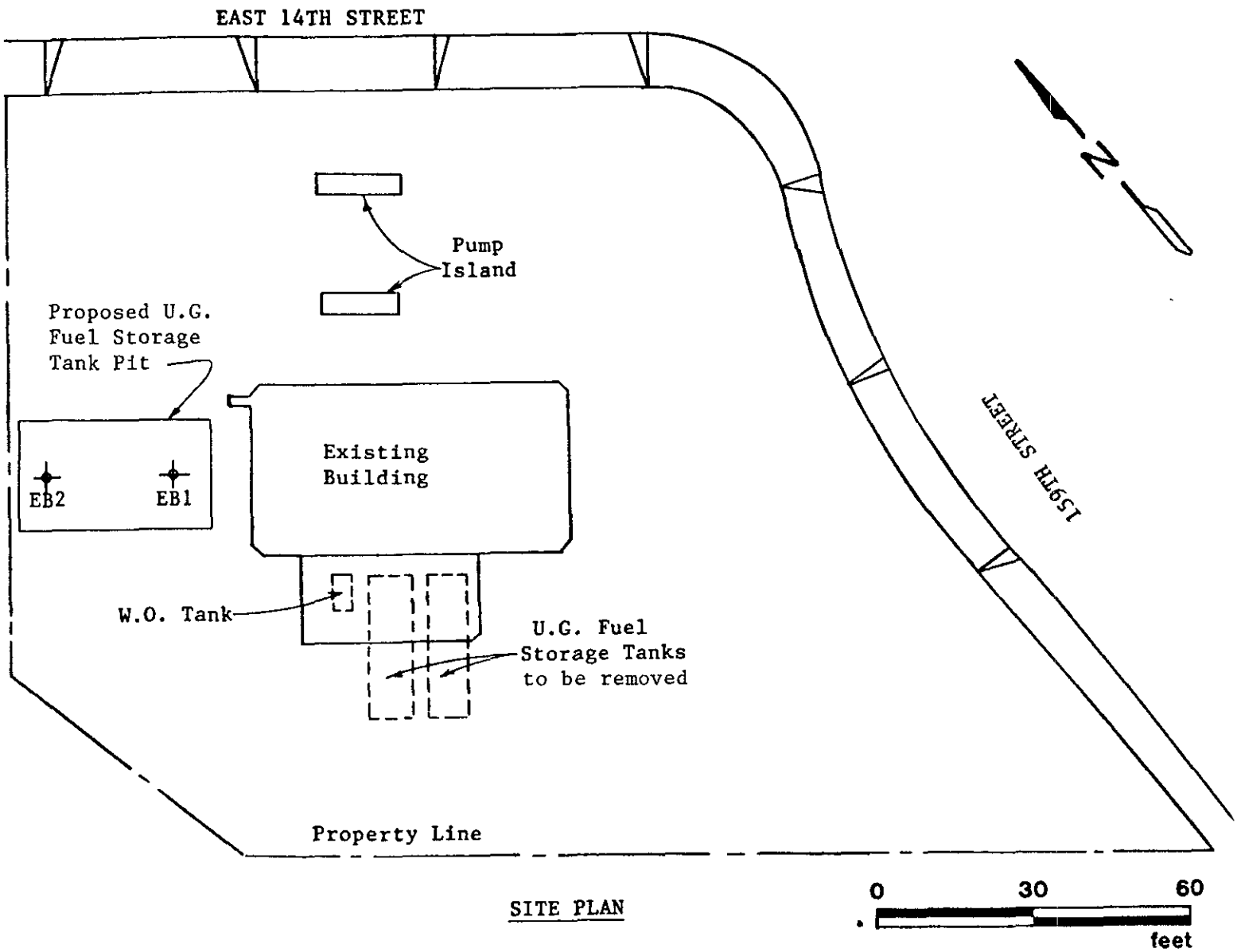

SITE PLAN

⊕ Exploratory Boring

Unocal Service Station #6277
15803 East 14th Street
San Leandro, California

B O R I N G L O G

Project No.	Boring & Casing Diameter	Logged By
KEI- J89-0301	9" 2"	Doug Lee
Project Name Unocal, E. 14th, San Leandro	**Well Head Elevation** N/A	**Date Drilled** 3/6/89
Boring No. EB-1	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		Asphalt & concrete pavement and gravel base
			GC	Clayey sandy gravel, reddish brown, very stiff to hard, moist, gravel to 2"
4/6/8		5	OH	Gravelly sandy clay, very dark gray, stiff, moist, high plasticity
4/6/8	▼	10	OH	Clay, some silt and sand, black, stiff, moist, high plasticity
3/6/9			CH	Clay, with silt, grayish brown, firm, very moist
		15		
		20		
		25		
		30		TOTAL DEPTH 13.5'

B O R I N G L O G

Project No. KEI-	**Boring & Casing Diameter** 9" 2"	**Logged By** Doug Lee
Project Name Unocal, E. 14th, San Leandro	**Well Head Elevation** N/A	**Date Drilled** 3/6/89
Boring No. EB-2	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		Asphalt & concrete pavement and gravel base
			GC	Clayey sandy gravel, reddish brown, very stiff, moist
4/9/8		5	OH	Gravelly clay, very dark gray, very stiff, moist, high plasticity
4/8/9		10	OH	Clay, some sand and silt, black, stiff, moist, high plasticity
		15		
		20		
		25		
		30		
				TOTAL DEPTH 10.5'

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, San Leandro, East 14th St.	Sampled:	Mar 6, 1989
P.O. Box 913	Matrix Descript:	Soil	Received:	Mar 7, 1989
Benicia, CA 94510	Analysis Method:	EPA 5030 or 3810/8015/8020	Analyzed:	Mar 7, 1989
Attention: Mardo Kaprealian, P.E.	First Sample #:	903-0468	Reported:	Mar 8, 1989

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
903-0468	EB1- (5)	2.1	N.D.	0.11	N.D.	0.14
903-0469	EB1- (10)	200	2.3	7.7	5.7	33
903-0470	EB2- (5)	N.D.	N.D.	N.D.	N.D.	N.D.
903-0471	EB2- (10)	620	2.2	20	13	78
Detection Limits:		**1.0**	**0.05**	**0.1**	**0.1**	**0.1**

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

Arthur G. Burton
Laboratory Director

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CHAIN OF CUSTODY

SAMPLER: [signature] (signature)

DATE/TIME OF COLLECTION: 3-6-89

TURN AROUND TIME: 24 hr.

SAMPLE DESCRIPTION AND PROJECT NUMBER: Union San Leandro East 14th St

SAMPLE #	ANALYSES	GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/ WATER
EB1-(5)	TPH-G/BTX+E	G	1	S
EB1-(10)	TPH-G/BTX+E	G	1	S
EB2-(5)	TPH-G/BTX+E	G	1	S
EB2-(10)	TPH-G/BTX+E	G	1	S

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
1. [signature] (KEI)	8:45AM/3-7-89	Tim McLain 84E	3/7/89
2. Tim McLain 10" 3/7/89		C Smith	10:30am 3/7/89
3.			
4.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: