



KAPREALIAN ENGINEERING
INCORPORATED

KEI-P88-1204.P8
September 14, 1992

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

Attention: Mr. Ed Ralston

RE: Work Plan/Proposal
Unocal Service Station #2512
1300 Davis Street
San Leandro, California

BACKGROUND

On July 28, 1992, Kaprealian Engineering, Inc. (KEI) collected soil samples following the removal of two 10,000 gallon underground gasoline storage tanks and one 280 gallon waste oil tank at the referenced site. Four soil samples, labeled A1, A2, B1, and B2, were collected from beneath the fuel tanks at depths of about 14 feet below grade. Two soil samples, labeled W01 and W01(15), were collected from beneath the waste oil tank at depths of 10 and 15 feet below grade, respectively. Six soil samples, labeled P1 through P6, were collected from beneath the product pipe trenches and dispensers at depths of about 3.5 feet below grade. Sample locations are shown on the attached Site Plan. All excavated soil was stockpiled on-site.

All soil and water samples were analyzed by Sequoia Analytical Laboratory in Concord, California. All samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/8015, and for benzene, toluene, xylenes, and ethylbenzene (BTX&E) by EPA method 8020. The soil sample (W01) collected beneath the waste oil storage tank was also analyzed for TPH as diesel using EPA method 3550/8015, total oil and grease (TOG) using Standard Method 5520 E&F, halogenated volatile organics (EPA method 8010), and metals cadmium, chromium, lead, nickel, and zinc. Sample W01(15), collected from beneath sample point location W01 at a depth of approximately 15 feet below grade, was analyzed only for TOG. Analytical results of the soil samples collected from the fuel tank pit indicated levels of TPH as gasoline ranging from non-detectable to 23 ppm. Analytical results of the soil samples collected from the product pipe trenches indicated levels of TPH as gasoline ranging from non-detectable to 91 ppm. The waste oil tank pit bottom sample (W01) showed 150 ppm of TPH as gasoline, 210 ppm

of TPH as diesel, and 3,000 ppm of TOG. However, sample WO1(15), collected beneath sample WO1 at a depth of 15 feet below grade, showed a level of TOG at 210 ppm. Analytical results are summarized in Table 1. Laboratory analyses and Chain of Custody documentation are attached to this work plan/proposal.

PROPOSED FIELD WORK

1. KEI proposes to perform additional soil sampling following additional excavation in the vicinity of sample point A1 (in the fuel tank pit), sample point WO1 (in the waste oil tank pit), and sample points P2 and P6 (in the product pipe trenches). The additional excavation is proposed in order to attempt to define the vertical and lateral extent of soil contamination. It is anticipated that the maximum amount of additional soil to be overexcavated will be approximately 200 cubic yards. Based on the monitoring data obtained in July at the referenced site, it is anticipated that ground water will be encountered in the tank pit excavation at a depth of about 17 feet below grade. If ground water is encountered, a ground water sample will be collected. It is anticipated that a maximum of 13 additional soil and 2 water samples will be collected and analyzed.
2. All additional soil samples will be analyzed for TPH as gasoline (EPA method 5030/8015) and for BTX&E (EPA method 5030/8020). In addition, the soil samples collected from the waste oil tank pit will be analyzed also for TPH as diesel, TOG, and EPA method 8010 constituents.
3. All excavated soil stockpiled on-site will be sampled to determine appropriate disposition. One composite sample will be collected from each 50 cubic yards of stockpiled soil. Each composite sample will consist of four individual grab samples taken at various locations and depths of about 2 feet into the stockpile, and will be composited by the laboratory as one sample. Composite samples will be analyzed for TPH as gasoline and BTX&E, and for any other tests required by the appropriate landfill. All excavated hazardous material (if any), as determined by composite sample laboratory results, will be sent to a Class I disposal site. All non-hazardous excavated soil will either be: 1.) sent to a Class II disposal site, 2.) retained on-site for treatment and re-sampling, or 3.) sent to a Class III landfill. The portion of non-hazardous stockpiled soil sent to each disposition location will be based on laboratory results and volume considerations.

4. Please note that, based upon previous soil contamination encountered near the southern portion of the former building, contamination may exist beneath the former building. Therefore, subsequent to the soil excavation work proposed in this work plan, KEI will prepare a separate work plan for a series of exploratory borings in the vicinity of the former building. It is anticipated that these borings will be used to determine the extent of contamination, if any, that exists beneath the former building.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

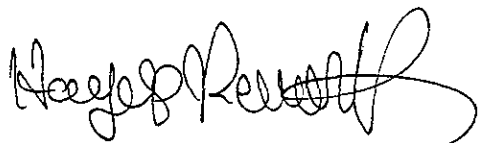
The results of this study will be based on the data obtained from the field and laboratory analyses obtained from a State certified laboratory. We will analyze this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services will be performed in accordance with generally accepted professional principles and practices existing for such work.

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Should you have any questions regarding this work plan/proposal,
please do not hesitate to call me at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.



Hagop Kevork
Staff Engineer



Timothy R. Ross
Project Manager

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Attachments: Table 1
Location Map
Site Plan

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TABLE 1
 SUMMARY OF LABORATORY ANALYSES
 SOIL

<u>Date</u>	<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-benzene</u>	<u>TOG</u>
7/28/92	A1	14	--	23	0.078	0.093	0.16	0.061	--
	A2	14	--	ND	ND	ND	ND	ND	--
	B1	14	--	3.2	0.0056	ND	0.023	ND	--
	B2	14	--	8.4	0.0086	0.019	0.054	0.069	--
	P1	3.5	--	ND	0.013	ND	0.0060	ND	--
	P2	3.5	--	5.8	0.042	0.022	0.11	0.024	--
	P3	3.5	--	ND	ND	0.012	0.025	ND	--
	P4	3.5	--	ND	ND	ND	0.0067	ND	--
	P5	3.5	--	6.8	ND	ND	1.7	0.21	--
	P6	3.5	--	91	0.72	0.32	1.4	0.34	--
	WO1*	10	210	150	0.61	3.3	12	1.8	3,000
	WO1(10)	15	--	--	--	--	--	--	210
Detection Limits			1.0	1.0	0.005	0.005	0.005	0.005	30

-- Indicates analysis was not performed.

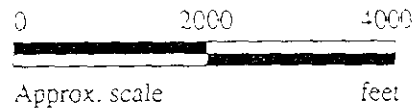
ND = Non-detectable.


* EPA method 8010 constituents were all non-detectable, except for 1-1-Dichloroethane at 120 ppb, tetrachloroethene at 86 ppb and 1,1,1-trichloroethane at 260 ppb. Cadmium, chromium, lead, nickel, and zinc were detected at concentrations of 0.95 ppm, 45 ppm, 5.8 pm, 42 ppm, and 40 ppm, respectively.

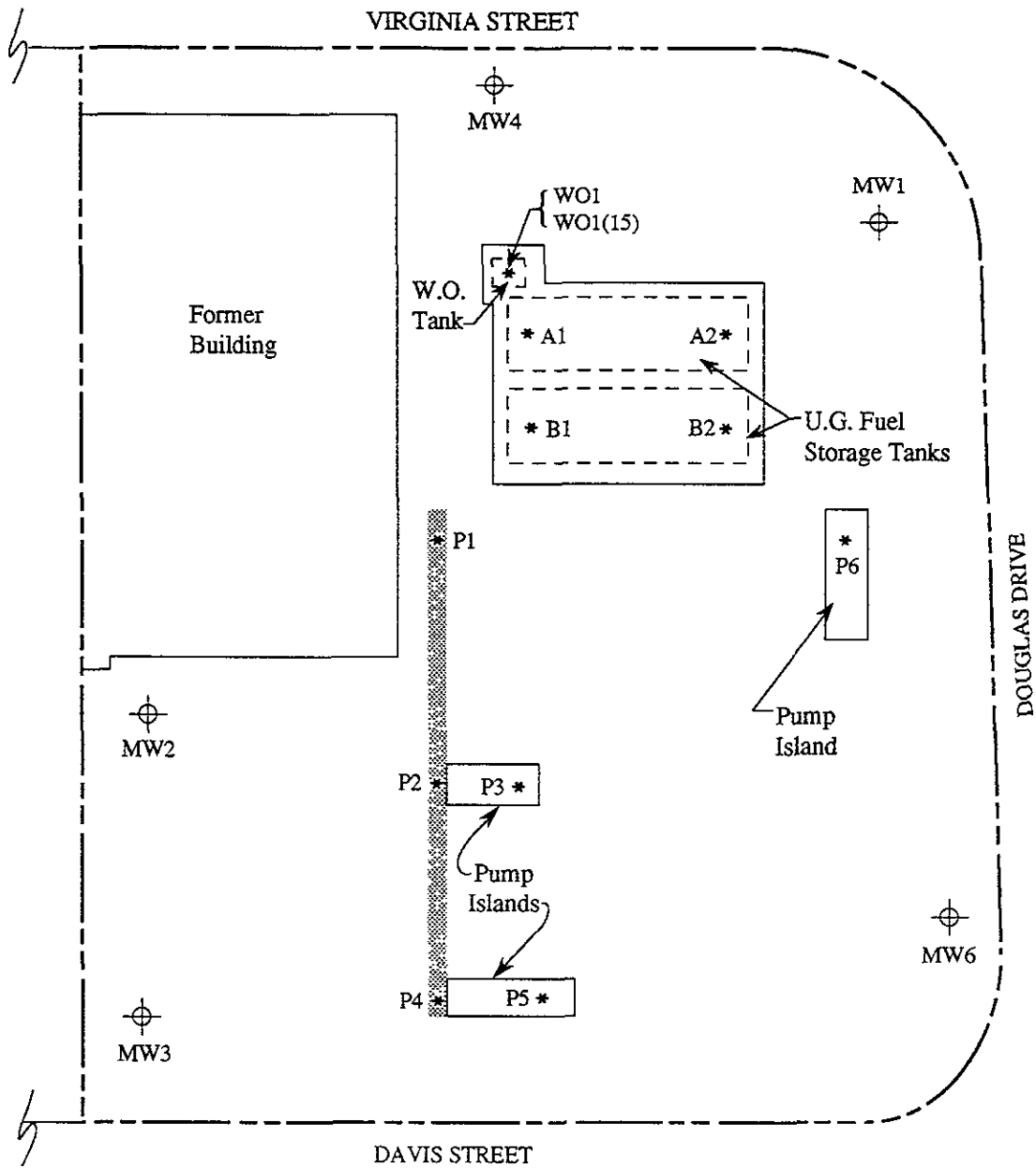
Results are in parts per million (ppm), unless otherwise indicated.



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



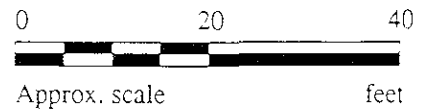
 <p>KAPREALIAN ENGINEERING INCORPORATED</p>	<p>UNOCAL SERVICE STATION #2512 1300 DAVIS STREET SAN LEANDRO, CA</p>	<p>LOCATION MAP</p>
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SITE PLAN

LEGEND

- ⊕ Monitoring well
- * Sample point location



UNOCAL SERVICE STATION #2512
1300 DAVIS STREET
SAN LEANDRO, CA

FIGURE
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