



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P. O. BOX 913

BENICIA, CA 94510

(707) 746-8915 (707) 746-8916

FAX: (707) 746-5581

KEI-P89-0805.P3
November 30, 1989

Proposal

to

UNOCAL CORPORATION

for

Unocal Service Station #0746

at

3943 Broadway Street

Oakland, California

Submitted By:

A handwritten signature in cursive script, appearing to read 'Mardo Kaprealian'.

Mardo Kaprealian
President

1.0 INTRODUCTION

In August, 1989, Kaprealian Engineering, Inc. (KEI) was hired to obtain soil samples from beneath two underground fuel storage tanks and a waste oil tank during replacement of the existing tanks. The soil samples from the fuel tank pit were taken from the sidewalls because of the presence of ground water at a depth of approximately 9.5 feet. The soil sample from beneath the waste oil tank was taken at a depth of 8 feet. The results of the soil analyses for total petroleum hydrocarbon (TPH) as gasoline from the sidewalls of the fuel storage tank excavation ranged from 13 to 290 ppm. Subsequent excavation and sampling produced soil samples showing non-detectable concentrations of TPH as gasoline and BTX&E. The sample from beneath the waste oil tank showed non-detectable for all constituents analyzed. Water samples collected from the fuel tank pit after pumping 1,500 gallons showed 4,700 ppb TPH as gasoline and 180 ppb benzene, and after pumping 5,000 gallons, showed 1,200 ppb TPH as gasoline and 12 ppb benzene. Since the results of the laboratory analyses exceed the level set by the Regional Water Quality Control Board (RWQCB), additional investigation is necessary.

2.0 SCOPE OF WORK

Per our recommendations described in KEI's report (KEI-P89-0805.R4) dated November 30, 1989, additional investigation is necessary to comply with the State and Local Regulatory Agency regulations. Therefore, per the RWQCB guidelines, KEI proposes to perform the work as outlined below:

New Well Installation:

- 2.1 Coordination with regulatory agencies.
- 2.2 Installation and construction of three monitoring wells as shown on attached Site Plan.
- 2.3 Collection of soil samples during the well construction. Soil samples will be collected at five foot intervals starting at a depth of 5 feet. Soil sampling will continue until the first water table is encountered or to a maximum depth of 50 feet. Selected soil samples will be analyzed for TPH as gasoline and benzene, toluene, xylenes and ethylbenzene (BTX&E).

- 2.4 The monitoring wells will be observed for free product and sheen. Water samples will be taken from all monitoring wells and analyzed for TPH as gasoline and BTX&E per the RWQCB guidelines. All analyses will be performed by a state certified laboratory.
- 2.5 Evaluation of results of the sample analyses as to the current and potential impact on the ground water.
- 2.6 Preparation and submission of a technical report within 45 days of completion of the soil and water sampling. The report will document the field work performed, chemical analyses of soil/ground water, and offer discussion and recommendations.

Ongoing Pumping, Monitoring and Sampling:

- 2.7 Purge all monitoring wells on-site on a monthly basis. Record the elevation of the water table and any abnormal conditions noted during inspection, including presence of product and sheen.
- 2.8 Purge and sample ground water from all monitoring wells, and analyze for TPH as gasoline and benzene, toluene, xylenes and ethylbenzene on a quarterly basis. Prior to sampling, water table elevation will be recorded as well as the presence of any free product.
- 2.9 Preparation and submission of quarterly technical reports summarizing the field activity water sampling and analyses with discussion and recommendations.

The purging of ground water and sampling should continue for 12 months. This proposed monitoring program should be re-evaluated after 12 months.

3.0 SCHEDULING

KEI is prepared to start the work as soon as this proposal is accepted by the client.



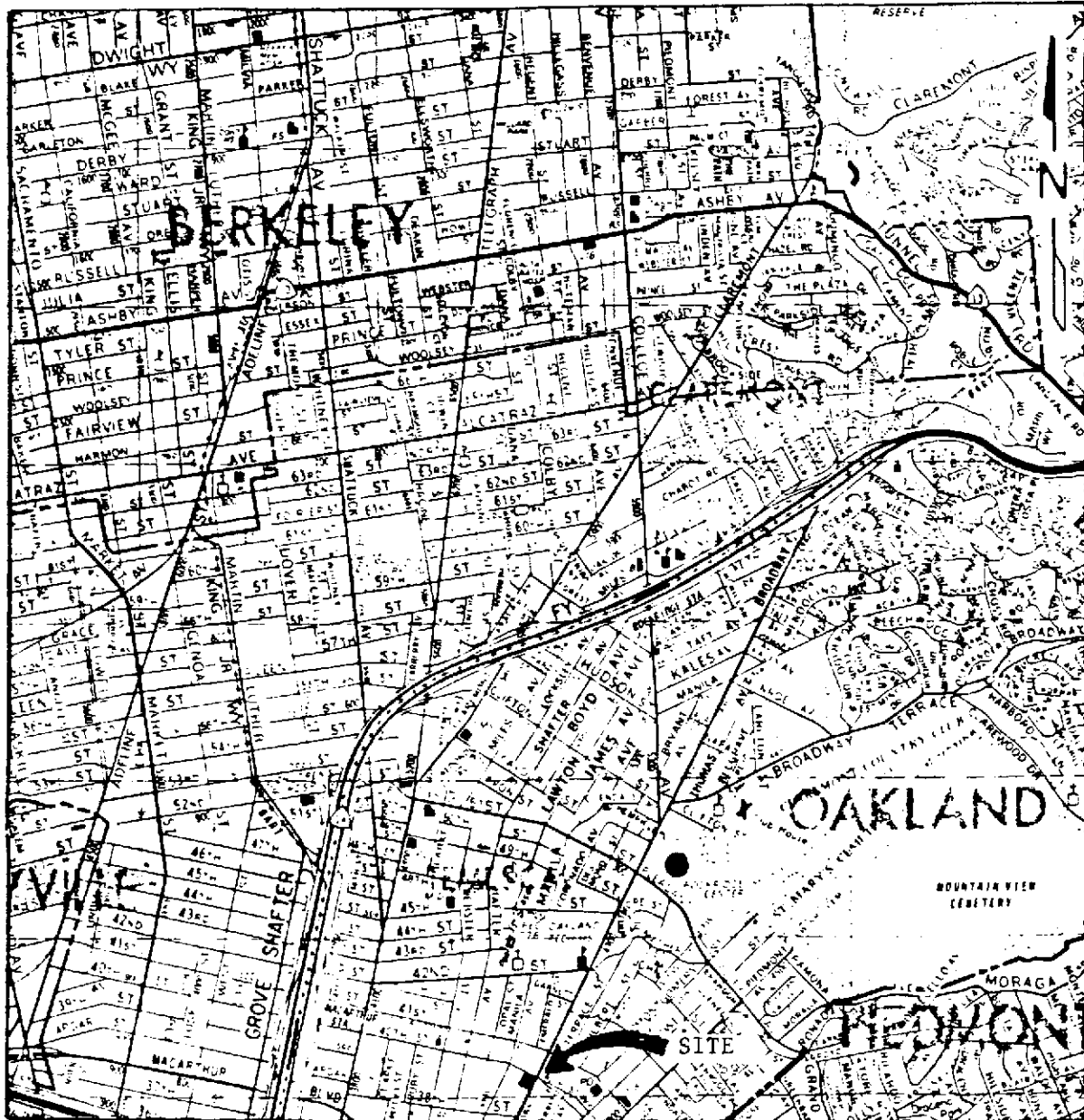
KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P. O. BOX 913

BENICIA, CA 94510

(707) 746-6915



LOCATION MAP

Unocal Service Station #0746
3943 Broadway Street
Oakland, California



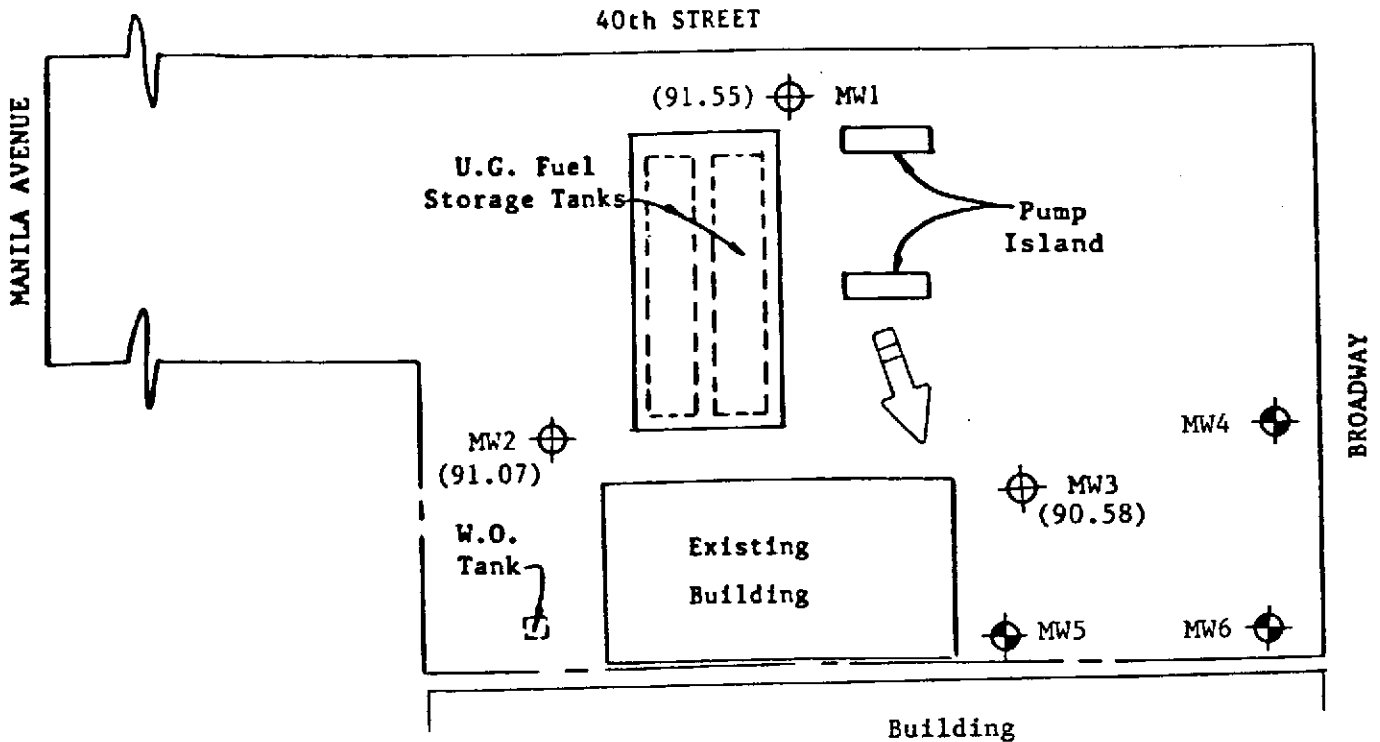
KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P. O. BOX 913

BENICIA, CA 94510

(707) 746-6915



SITE PLAN

LEGEND



Monitoring Well (Proposed)

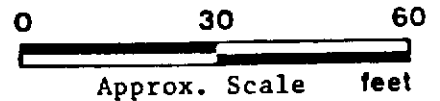


Monitoring Well (Existing)

() Ground water surface elevation on 11/1/89. MW1 well cover assumed 100.00' as datum.



Direction of ground water flow on 11/1/89.



Unocal Service Station #0746
3943 Broadway Street
Oakland, California