



KAPREALIAN ENGINEERING
INCORPORATED

KEI-P93-0603.R3
February 8, 1996

Paradiso Mechanical, Inc.
P.O. Box 1836
San Leandro, CA 94577

Attention: Mr. Rick Montesano

RE: Soil Sampling Report
Berkeley Land Company
5100 Telegraph Avenue
Oakland, California

RECEIVED
FEB 13 1996
MOUNTAIN VIEW

Dear Mr. Montesano:

This report summarizes the results of soil sampling performed by Kaprealian Engineering, Inc. (KEI) at the referenced site. All work was performed in compliance with the guidelines established by the Regional Water Quality Control Board (RWQCB) and the Alameda County Health Care Services (ACHCS) Agency.

The scope of the work performed by KEI consisted of the following:

Coordination with the regulatory agencies

Collection of soil and water samples from the excavations performed in the vicinity of the former underground storage tanks

Delivery of soil and water samples with proper Chain of Custody documentation to a certified analytical laboratory

Technical review and preparation of this report

SITE HISTORY AND BACKGROUND

The subject property was reported to have contained a 'street car barn' for the "Key System," a former regional public transit system. All buildings and above ground improvements have been removed from the property. Five on-site monitoring wells (MW1 through MW5) have been installed. Twenty-one exploratory borings (EB1 through EB6A, and EB6B through EB20) were drilled and sampled by KEI at the site on July 26 through July 30, 1993. Soil sampling and excavation was conducted by KEI at and around the locations of seven of these exploratory borings (EB3, EB6A, EB6B, EB8, EB15, EB16, and EB20) during September and October of 1993. Approximately 1,500 gallons of ground water were pumped from the excavation in the vicinity of exploratory boring EB3. The water was properly transported and disposed of off-site.

KEI's extensive file reviews at the Regional Water Quality Control Board (RWQCB) and site reconnaissance indicate that a number of nearby sites, including two dry cleaners, two service stations, and a public utility facility, are situated within 100 to 1,000 feet of the subject Berkeley Land Company (BLC) site. The file reviews indicate that a regional volatile organic compounds (VOC) problem appears to exist in the upgradient vicinity of the subject BLC property.

A site description, detailed background information including a summary of all of the soil and ground water subsurface investigation/remediation work conducted to date, site hydrogeologic conditions, and tables that summarize all of the soil and ground water sample analytical results are presented in KEI's reports (KEI-P93-0603.R2 and "Site Investigation Summary Report") dated November 9, 1993, and February 8, 1994, respectively.

In a letter dated March 2, 1994, the Alameda County Health Care Services (ACHCS) Agency noted that the site no longer posed a threat to human health. The ACHCS also acknowledged the potential for a regional VOC contaminant plume upgradient of the BLC property and directed the implementation of a quarterly ground water monitoring and sampling plan for the subject site, for one year, in order to address this issue. On March 16, 1994, KEI submitted a work plan/proposal (KEI-P93-0603.P3) for the implementation of a ground water monitoring and sampling program.

The five wells (MW1 through MW5) are monitored and sampled quarterly by MPDS Services, Inc. of Concord, California. Documentation of the recent quarter of monitoring and sampling of the monitoring wells at the referenced site is present in KEI's quarterly report (KEI-P93-0603.QR4) dated December 4, 1995.

Berkeley Land Company is currently in the process of commercial development of the subject property with the building of a shopping center. Redevelopment of this property was previously approved by the ACHCS in their letter dated March 2, 1994.

RECENT FIELD ACTIVITIES

During site grading activities, three 500 gallon underground fuel storage tanks were encountered by the contractor. The tanks were made of steel and were apparently used for kerosene storage. Another consultant was present on October 6, 1995, during the removal of the initial two tanks encountered, and KEI was present during the third tank removal. It is KEI's understanding that a representative of the ACHCS was present during the removal of the initial two tanks. The reported locations of the tanks are shown on the attached Figure 1. Copies of the analytical results of the

samples collected by the other consultant from beneath the initial two tanks are included in the attached Appendix A.

KEI's recent field work began on October 23, 1995, when one 500 gallon underground storage tank (apparently used for kerosene storage) was removed from the site by Paradiso Mechanical, Inc. of San Leandro, California. Tank removal and soil sampling were performed in the presence of Mr. Dale Klettke of the ACHCS. The tank was made of steel, and no apparent holes or cracks were observed in the tank.

One soil sample, labeled BT(8), was collected from beneath the former storage tank at a depth of approximately 8 feet below grade. The undisturbed soil sample was collected from bulk material excavated by backhoe. The sample was placed in a clean, two-inch diameter brass tube, sealed with Teflon-lined plastic caps, and stored in a cooled ice chest for delivery to a state-certified laboratory. The sample location is shown on the attached Figure 1. Due to observed contamination in the vicinity of the former tank pit, additional excavation was scheduled to be performed.

On November 1, 1995, KEI collected one water sample, labeled Water-E1, from the former excavation in the vicinity of two former 500 gallon underground storage tanks (removed by others). Ground water was observed at a depth of about 17 feet below the surface of the west sidewall of the excavation. The water sample was collected using a clean Teflon bailer. The sample was decanted into four clean glass VOA vials and three one-liter amber bottles, which were then sealed with Teflon-lined screw caps and stored in a cooler, on ice, until delivery to a state-certified laboratory.

On November 2, 3, and 4, 1995, KEI collected eight soil samples, labeled SW-1 through SW-8, from the sidewalls of the excavations performed by Bogard Construction, Inc. of Santa Cruz, California. The soil samples were collected at depths ranging from 13 to 14 feet below the surface of the east sidewall of the excavations, except for samples SW-5 and SW-6, which were collected at depths of about 17.5 feet and 17 feet, respectively, below the surface of the north sidewall. It should be noted that sample depth measurements were taken from the existing grade of the excavation sidewalls. Mr. Klettke of the ACHCS was again present during sampling activities. These soil samples were also collected and handled as described above. The sample point locations and excavated areas are shown on the attached Figure 1.

Also on November 4, 1995, one additional water sample, labeled Water-2, was collected from the excavation. Ground water was observed at a depth of approximately 18 feet below the surface of the west sidewall of the excavation. This water sample was

collected in four clean glass VOA vials and four one-liter amber bottles and handled as previously described.

All excavated soil was stockpiled separately on-site and sampled for further disposition. The excavations were backfilled and compacted with clean imported fill by the contractor (Bogard Construction, Inc.)

SUBSURFACE CONDITIONS

The subsurface soils exposed in the excavation consisted primarily of clayey silt, except for sand and gravel encountered in the vicinity of sample point SW-1. Ground water was encountered in the excavation at depths of about 17 feet and 18 feet below the surface of the west sidewall of the excavation on November 1 and 4, 1995, respectively.

ANALYTICAL RESULTS

All soil and water samples were analyzed by Sequoia Analytical Laboratory in Walnut Creek, California, and were accompanied by properly executed Chain of Custody documentation. All soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/modified 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method 8020, TPH as diesel, TPH as kerosene and TPH as motor oil (except sample BT[8]) by EPA method 3550/modified 8015, and total oil and grease (TOG) by Standard Methods 5520E&F. In addition, sample SW-1 was also analyzed for halogenated volatile organic compounds by EPA method 8010, and the metals cadmium, chromium, lead, nickel, and zinc. The water samples were analyzed for TPH as gasoline, BTEX, TPH as diesel, TPH as motor oil, TPH as kerosene, TOG by Standard Method 5520B&F, and lead. In addition, sample Water-2 was also analyzed for EPA method 8010 constituents, cadmium, chromium, nickel, and zinc. The results of the soil analyses are summarized in Table 1, and the results of the water analyses are summarized in Table 2. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

DISCUSSION AND RECOMMENDATIONS

Based upon the analytical results of the final soil samples collected from the excavations performed in the former storage tank pit (Table 1), it appears that the majority of the known accessible significant hydrocarbon contaminated soil that was initially detected in the vicinity of the recently removed kerosene storage tanks has been excavated. The excavated soil from the initial excavations (approximately 300 cubic yards sampled on October 23, 1995) showed concentrations of TPH as kerosene ranging from 290

mg/kg to 900 mg/kg. The overexcavated soil (approximately 700 cubic yards sampled on November 4, 1995) showed concentrations of TPH as kerosene ranging from 170 mg/kg to 250 mg/kg. KEI understands that disposal of the stockpiled soil that had been generated following tank removal and excavation activities will be handled and documented by others.

The final confirmatory sidewall soil samples showed concentrations of TPH as kerosene ranging from non-detectable to 110 mg/kg, with non-detectable concentrations of benzene. The ground water samples collected from the excavations on November 1 and 4, 1995, showed TPH as kerosene at 190 $\mu\text{g/L}$ and 330 $\mu\text{g/L}$, respectively (Table 2).

KEI recommends the continuation of the current ground water monitoring and sampling program at the site. The five existing monitoring wells (MW1 through MW5) are monitored and sampled on a quarterly basis. The ground water samples are analyzed for TPH as gasoline, BTEX, TOG, and EPA method 8010 constituents. In addition, KEI recommends that ground water samples from nearby monitoring well MW5 also be analyzed for TPH as kerosene.

DISTRIBUTION

A copy of this report should be sent to the ACHCS, and to the RWQCB, San Francisco Bay Region.

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.

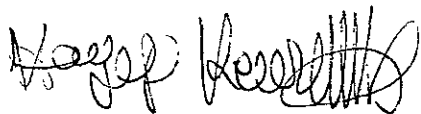
The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, 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.

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Should you have any questions regarding this report, please feel free to call me at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.

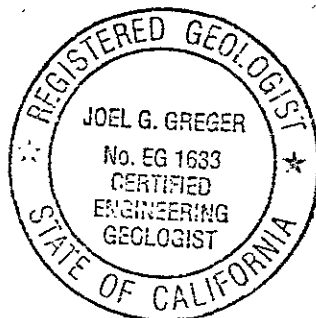


Hagop Kevork
Staff Engineer



Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. EG 1633
Exp. Date 8/31/96



Robert H. Kezerian
Project Manager

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Attachments: Tables 1 & 2
Location Map
Figure 1
Laboratory Analyses
Chain of Custody documentation
Appendix A