McLaren Hart™

September 13, 1995

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6755

RE: REQUESTED INFORMATION 3810 BROADWAY, OAKLAND, CALIFORNIA

Dear Ms. Hugo:

As requested enclosed please find a copy of the February 26, 1992 Kaldveer Associates well installation report and Underground Storage Tank Unauthorized Release/Contamination Site Report.

If you have any questions regarding these materials please do not hesitate to contact me at (510) 748-5628.

Sincerely,

Saul Germanas, R.G.
Senior Associate Geoscientist

Attachments

1135 Atlantic Avenue, Alameda, CA 94501 (510) 521-5200 FAX (510) 521-1547

SOIL AND GROUND WATER QUALITY INVESTIGATION REPORT FOR 3810 BROADWAY OAKLAND, CALIFORNIA

Kaldveer Associates
Geoscience Consultants
Geotechnical and Environmental Engineering
Oakland, CA • San Jose, CA • Bellevue, WA • Tacoma, WA

February 26, 1992
KE1355-1A-1140, 20354

Friedkin-Becker
300 Grand Avenue
Oakland, California, 94610

Attention: Mr. Gerald S. Friedkin

RE: SOIL AND GROUND WATER
QUALITY INVESTIGATION REPORT
3810 BROADWAY
OAKLAND, CALIFORNIA

Dear Mr. Friedkin:

Kaldveer Associates, Inc. is pleased to submit our soil and ground water quality investigation report for the property at 3810 Broadway, in Oakland, California. The purpose of this investigation was to install an additional monitoring well and to test for the presence of waste oil related contaminants in both soil and ground water in the vicinty of the former waste oil tank site. The enclosed report contains a description of our investigation, results of soil and ground water sample analyses, and our conclusions and recommendations regarding site environmental quality.

We appreciate the opportunity to provide continued services to you on this project and trust this report meets your needs at this time. If you have any questions or require additional information, please don't hesitate to call.

Very truly yours,

KALDVEER ASSOCIATES, INC.

John R. Sutton, P.E./G.E.
Manager, Environmental/Hazardous
Waste Services
Associate

JRS:ms
Copies: Addressee (5)

SOIL AND GROUND WATER QUALITY
INVESTIGATION REPORT

For
3810 BROADWAY
OAKLAND, CALIFORNIA

To
Friedkin-Becker
300 Grand Avenue
Oakland, California 94610

February, 1992

TABLE OF CONTENTS

LIMITED SOIL AND GROUND WATER
QUALITY INVESTIGATION REPORT
FOR
3810 BROADWAY
OAKLAND, CALIFORNIA

I. INTRODUCTION

This report presents the results of the additional soil and ground water quality investigation performed at the property located at 3810 Broadway in Oakland, California. The property is presently occupied by the Precision Tune facility. The location of the site is shown on the Site Vicinity Map, Figure 1.

Kaldveer Associates previously constructed a monitoring well in the former waste oil tank location. The purpose of the present investigation has been to additionally assess the potential of contaminants from the waste oil tank impacting the ground water in the area of the former waste oil tank. The investigation included the installation of one additional ground water monitoring well at the site, and collecting soil and water samples from both wells for chemical analysis at a California Environmental Protection Agency - certified analytical laboratory. The field work was performed in accordance with Kaldveer Associates' "Work Plan for Monitoring Well Construction and Sampling - 3810 Broadway in Oakland, California", dated January, 1992, and accepted by Mr. Larry Seto of the Alameda County Department of Environmental Health (ACDEH).

II. BACKGROUND

Prior to the present occupancy by Precision Tune, the site was the location of a Texaco Service Station. At some time in the past, Texaco removed all of the fuel tanks but left the waste oil tank in place. In May of 1991, the waste oil tank was removed and soil samples were collected by SEMCO, the tank removal contractor. Their work identified hydrocarbon contaminated soils to a depth of about ten feet which they reportedly removed and disposed of offsite. The excavation was then backfilled with clean imported aggregate. No groundwater was reported to have been encountered during the tank removal.

In response to the discovery of hydrocarbon contaminated soils the ACDEH required that an investigation be performed to assess the possible impact of hydrocarbons to the ground water. In October 1991, Kaldveer Associates installed a monitoring well (MW-1) at

the location of the former UST. Ground water was encountered at 29 feet below the ground surface during drilling of MW-1. Soil samples from depths of 10½, 15½, 20½ and 25½ feet were tested for petroleum hydrocarbons, and purgeable aromatics of which none were detected. The water sample from MW-1 detected generally low levels of petroleum hydrocarbons, halogenated volatile organics, nickel and lead. In response to the detection of contaminants in the ground water the ACDEH required additional investigation of the soil and ground water to determine if ground water had been impacted by contaminants from the former waste oil tank. At a meeting at the offices of a ACDEH on December 20, 1991 among Mr. Seto, Mr. Eddie So of the Regional Water Quality Control Board, Mr. Friedkin and Mr. John Sutton of Kaldveer Associates, a scope of work for additional investigation, including a schedule of analysis was agreed upon.

III SCOPE OF SERVICES

The scope of services for the present investigation included three tasks to assess the possible impact of contaminants from the waste oil tank to the ground water. The work was performed according to the Tri-Regional Water Quality Control Boards' guidelines for addressing fuel leak sites, Permits were obtained as required by local agencies. Possible soil contamination was evaluated by collecting a soil sample from just above ground water and ground water quality was investigated by the installation and the sampling of both wells. The soil sample was analyzed for total petroleum hydrocarbons and gasoline. Ground water samples from the new well and existing well were analyzed for selected petroleum hydrocarbon and metal contaminants. The documentation of the investigation procedures, our evaluation of the accumulated field and analytical data and findings, conclusions and recommendations are presented in this report.

The specific tasks included:

Task A - Investigate Contamination Levels

1. Prior to the start of the field work Kaldveer Associates prepared a work plan, including a site Health and Safety Plan, which was reviewed and approved on January 21, 1992 by ACDEH. Specifically, ACDEH agreed to the proposed well location.

2. The field investigation began on January 28, 1992 and included a soil sampling program consisting of drilling one hollow stem auger exploratory boring to a depth of approximately 35 feet. Soil samples were collected at depth intervals of approximately every 5 feet or as

otherwise indicated by specific field conditions. Selected soil samples were appropriately packed, refrigerated and transported to the chemical laboratory for possible testing. The augers, samplers and equipments was steam-cleaned prior to the field investigation.

3. The ground water testing program consisted of converting the exploratory boring into a monitoring well with a depth of approximately 35 feet. Both the new well (MW-2) and the existing well (MW-1) were purged and then sampled. Applicable local regulations were followed in permitting and installing the well. Following well installation, the relative casing top elevations of MW-1 and MW-2 were surveyed.

Task B - Analytical Testing

1. As requested by ACEHD, the chemical testing program for soil consisting of analyzing a soil sample from about three feet above the first encountered ground water for the following: 1) total petroleum hydrocarbons as gasoline (TPHG), 2) benzene, toluene, ethylbenzene and xylene (BTEX) 3) total oil and grease and (4) petroleum hydrocarbons.

2. As requested by ACEHD, the chemical testing program for analyzing ground water samples from MW-1, and MW-2 consisted of 1) TPHG, 2) TPH as diesel (TPHD) , 3) total oil and grease, 4) BTEX, 5) halogenated volatile organics, and 6) total and soluble nickel.

Task C - Report Preparation

Submittal of this report presenting a description of our investigation, results of laboratory analyses and our conclusions and recommendations regarding site environmental quality.

IV. FIELD INVESTIGATION

A. Site Description

The site is located at 3810 Broadway, on the southeast corner of Broadway and 38th Street, in Oakland, California. The location of the site is shown on the Site Vicinity Map, Figure 1. The site is currently utilized by Precision Tune, an auto mechanic garage, located in a concrete block office and garage-bay building which occupies the west half of the property. The remaining half of the site is paved asphalt parking and driveway. The site has been

excavated into a hillside. There are retaining walls along the northeast and southeast property lines.

Our investigation has been performed in the area of the former waste oil tank at the front of the existing auto mechanic garage. As shown on our Site Location Map, Figure 2, the previously constructed MW-1, was located in the former tank area just in front, northwest of the existing structure. Monitoring well MW-2 is located approximately 12 feet northwest of MW-1. The topography of the site directs the drainage away from the structure towards Broadway in a northwesterly direction. Site grades are relatively steep. No areas of unusual surface conditions or spills were noted during our field investigation.

B. Drilling and Soil Sampling

The field investigation was conducted on January 28, 1992, and consisted of drilling an exploratory boring and converting it to a ground water monitoring well. Drilling Permit Application No. 92014 was obtained in advance from Alameda County Flood Control and Water Conservation District, Zone 7. A State of California Well Completion Report No. 427919 was prepared and issued to the California Department of Water Resources. Copies of both documents are included in Appendix A.

The boring was drilled at the approximate location shown on the Site Location Map, Figure 2. The soil boring was drilled with a truck-mounted drill rig equipped with 8-inch diameter hollow stem augers. Under the direction of Mr. Randy Rowley, R.G., the soils encountered during drilling were classified and logged in the field by Ms. Marcela Jimenez, Assistant Environmental Specialist, by visual examination in accordance with the Unified Soil Classification System (Figure A-1). The boring log for MW-2 is presented in Appendix A.

Soil samples were collected from the boring at intervals of every five feet to 35 feet using a 2-inch I.D. Modified California sampler containing thin brass liners. The sampler was driven with a simulated 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the last 12 inches of an 18-inch drive are recorded as the penetration resistance (blows/foot) on the boring logs. The augers were steam-cleaned by high pressure cleaner prior to the drilling, and before the use of the sampler and brass liners they were thoroughly cleaned with Liquinox, a clinical detergent to reduce the potential for cross-contamination.

Select soil samples from MW-2 were collected for possible chemical analysis. All samples were collected in 2-inch diameter, 6-inch long, brass liners. The samples were first examined for logging

purposes, then sealed with teflon-lined lids, labeled and immediately placed in refrigerated storage. A chain-of-custody form was initiated in the field and accompanied the samples to (QuanteQ Laboratories formerly Med-Tox Associates, Inc). of Pleasant Hill, California, a California Environmental Protection Agency certified laboratory.

C. Subsurface Conditions

The material encountered during drilling for MW-2 consisted of native tan to brown, moderately plastic, silty clay which extends to an approximate depth of thirty feet. Beginning at the depth of approximately 20 feet intermittent fine-grained, dry sand stringers were noted. Ground water was encountered at 31 feet depth in fine-grained sandy lenses in the clay. The clay with sandy lenses graded to a fine grained sand at a depth of approximately 33 feet. After a period of about five hours, the ground water level was found to be at a depth of approximately 23.5 feet below the existing ground surface.

During drilling and sample logging, the soil samples were observed for obvious signs of hydrocarbon contamination (ie, odor or discoloration). No samples from MW-2 exhibited any signs of contamination. The attached boring logs and related information (Appendix A) depict location-specific subsurface conditions encountered during our field investigation. The approximate location of the boring was determined measuring from nearby structures and should be considered accurate only to the degree implied by the method used. The passage of time could result in changes in the surface or subsurface conditions due to natural occurrences or human intervention.

D. Monitoring Well Construction

Monitoring Well 2 was installed at the site on January 28, 1992. The monitoring well was completed to a depth of approximately 35 feet, below ground surface using Schedule 40, 2-inch nominal, flush threaded, PVC well casing. The well was completed with one 10-foot section of 0.010-inch (10 slot) slotted well screen at the bottom. The sand filter pack extended to one foot above the slotted casing. The well seal was completed by adding 1.0 foot of 3/8-inch, bentonite pellets to the top of the filter pack then filling the remaining annular space with neat Portland cement grout mixture. The well was completed at the surface with an expansion plug with lock and a bolted, locking steel vault cover. Specific well construction details are presented along with the respective boring logs in Appendix A.

E. Well Development and Sampling

Both wells were sampled on January 30, 1992, using a teflon bailer. Prior to sampling, each well was developed using the Well Wizard pump to remove water until the pH, conductivity and temperature became constant entailing removal of about fifty gallons. Water samples from each well were then collected, labeled and placed in refrigerated storage, and delivered to the laboratory under chain-of-custody control. The bailer was thoroughly washed with laboratory grade detergent and rinsed with distilled water to reduce the potential for cross-contamination. Well development and sampling logs are attached to this report as Appendix B.

F. Ground Water

Based on the U.S.G.S. 7.5' Quadrangle topographic map series, Oakland West and East Sheets, the approximate elevation at the project site is 90 feet above Mean Sea Level, making the measured water depths and gradient surface elevation approximately 67 feet, Mean Sea Level.

As shown on the Site Vicinity Map (Figure 1), the Kaiser Permanente Medical Center (KPMC) is located approximately 500 feet southwest of the project site. As part of our investigation we have reviewed the file for the KPMC at the Regional Water Quality Control Board and found that there is an ongoing investigation of ground water at that site. The consultant, Geomatrix, has reported that ground water depths and gradient in the area was anomalous due to stratigraphic irregularities, but generally the direction of flow was west-southwest toward the San Francisco Bay.

V. ANALYTICAL RESULTS

A. Laboratory Procedures

Soil and ground water samples were analyzed by QuanteQ Laboratories, of Pleasant Hill, California. QuanteQ is certified by the California Environmental Protection Agency for the analyses performed. Both the soil sample and water samples were tested for oil and grease by EPA Method 5520E and hydrocarbons by 5520F, total petroleum hydrocarbons as gasoline (TPHG) by 5030 GCFID and purgeable aromatic compounds; benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020. The ground water samples were additionally tested for total petroleum hydrocarbons as diesel (TPHD) by 3510 GCFID, halogenated volatile organics by EPA Method 8010, and total and dissolved nickel by ICAP.

B. Analytical Results - Soil

As previously found in the samples from MW-1, the soil sample from MW-2 had no detectable concentrations of the contaminants for which we tested. The soil sample test results from the previous and present investigation are summarized in Table 1 and the laboratory reports for the present test results are attached to this report as Appendix C.

C. Analytical Results - Water

Similar to the previous water sample collected from MW-1 on October 19, 1991, the sample from MW-1 collected on January 30, 1992 detected low levels of petroleum hydrocarbons. The present testing in MW-1 identified 0.67 parts-per-million (ppm) of TPHD, 0.08 ppm of TPHG, and BTEX Components at 0.0007 ppm, 0.0005 ppm, ND, and 0.002 ppm respectively. Hydrocarbons and oil and grease were not detected in MW-1 this round, however, were detected in MW-2 water. Total and soluble nickel were detected at 0.25 ppm and 0.02 ppm respectively. Unlike the previous soil sample, no halogenated volatile organics were detected in this round of sampling.

The analytical results for MW-2 collected on January 30, 1992 detected various petroleum hydrocarbons. The analytical results identified 1.0 ppm of oil and grease, 0.9 ppm of hydrocarbons, 4.0 ppm of TPHG, 0.470 ppm of benzene, 0.560 ppm of toluene, 0.160 ppm of ethylbenzene and 0.540 ppm of xylene. Total and soluble nickel were detected at 0.43 ppm and 0.04 ppm respectively. The halogenated volatile organic compound 1,2 dichloroethane a gasoline additive was detected at a level of 0.002 ppm.

CONCLUSIONS AND RECOMMENDATIONS

A. Soil Quality

During the tank removal process, oil and grease contaminants were identified in the soil directly below the former waste oil tank. These contaminated soils were reported by SEMCO to have been excavated and removed. Soil samples that we collected during the construction of MW-1 had detected no hydrocarbon contaminants in the soils directly below the former tank excavation (10½ feet deep) to a depth of 25½ feet. The present soil sampling analysis of soil from MW-2 at the depth of 30 feet also had no detectable hydrocarbon contamination.

Moderate to high plasticity clays overly ground water, first encountered over 30 feet below ground. The soil quality directly below the former waste oil tank and just downslope of the former tank have been evaluated by our soil sampling and chemical testing

program and we have identified no hydrocarbon contamination in the soils. All of the contaminated soils which have been discovered at the site have been removed.

B. Water Quality

Ground water below the site has been found to be contaminated with low levels of gasoline, diesel, oil and grease and (1,2-Dichloroethane). Our subsurface investigation has identified that the clayey soils which extend to a depth of 25 to 30 feet form a confining aquitard. The ground water is first noted at a depth of about 30 feet and rises during drilling, stabilizing, at a depth of about 25 feet.

Samples from MW-1 show similar contaminant fingerprints in both rounds of sampling, though contaminant levels were lower by about an order of magnitude. The trace levels of halogenated organics noted in the first sampling round were not detected in the second.

The contaminant fingerprint in MW-2 is generally similar to that of BTEX, which for MW-2 are two to three orders of magnitude greater in MW-2. The presence of 1, 2-DCA and the high levels of BTEX in MW-2 as compared to MW-1 are suggestive of gasoline. However, the gasoline may be a component of waste oil.

RECOMMENDATIONS

The two monitoring wells should be resampled in the second quarter of 1992, and the results evaluated. At that time a consistent test results in MW-1 may be considered grounds for well closure. Further sampling of MW-2 should be made.

LIMITATIONS

Our services have been performed in accordance with our agreed scope of work and with generally accepted engineering and environmental principles and practices within the area at the time of our investigation. No other warranty, either expressed or implied as to the professional advice provided is made. The analysis and conclusions contained in this report are based on the site conditions as they existed at the time of our reconnaissance, discussions with governmental agents, owners or others familiar with the site or vicinity, review of documents and aerial photographs. Changes in the information or the data gained from these sources or in the proposed land use could result in changes in our conclusions. If such changes do occur, we should be advised so that we can review our report in light of those changes.

TABLES

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
PETROLEUM HYDROCARBONS
(reported in parts-per-million, ppm)

Chemical Constituent	MW-1 (October, 1991) Sample Depth in Feet 10-1/2	15-1/2	20-1/2	25-1/2	MW-2 (February, 1992) Depth in feet 1/30
Oil and Grease (5520 E)	ND	ND	ND	ND	ND
Hydrocarbons (5520 F)	ND	ND	ND	ND	ND
TPH Gasoline	ND	--	--	--	ND
Benzene	ND	--	--	--	ND
Toluene	ND	--	--	--	ND
Xylene	ND	--	--	--	ND
Ethylbenzene	ND	--	--	--	ND

Note:

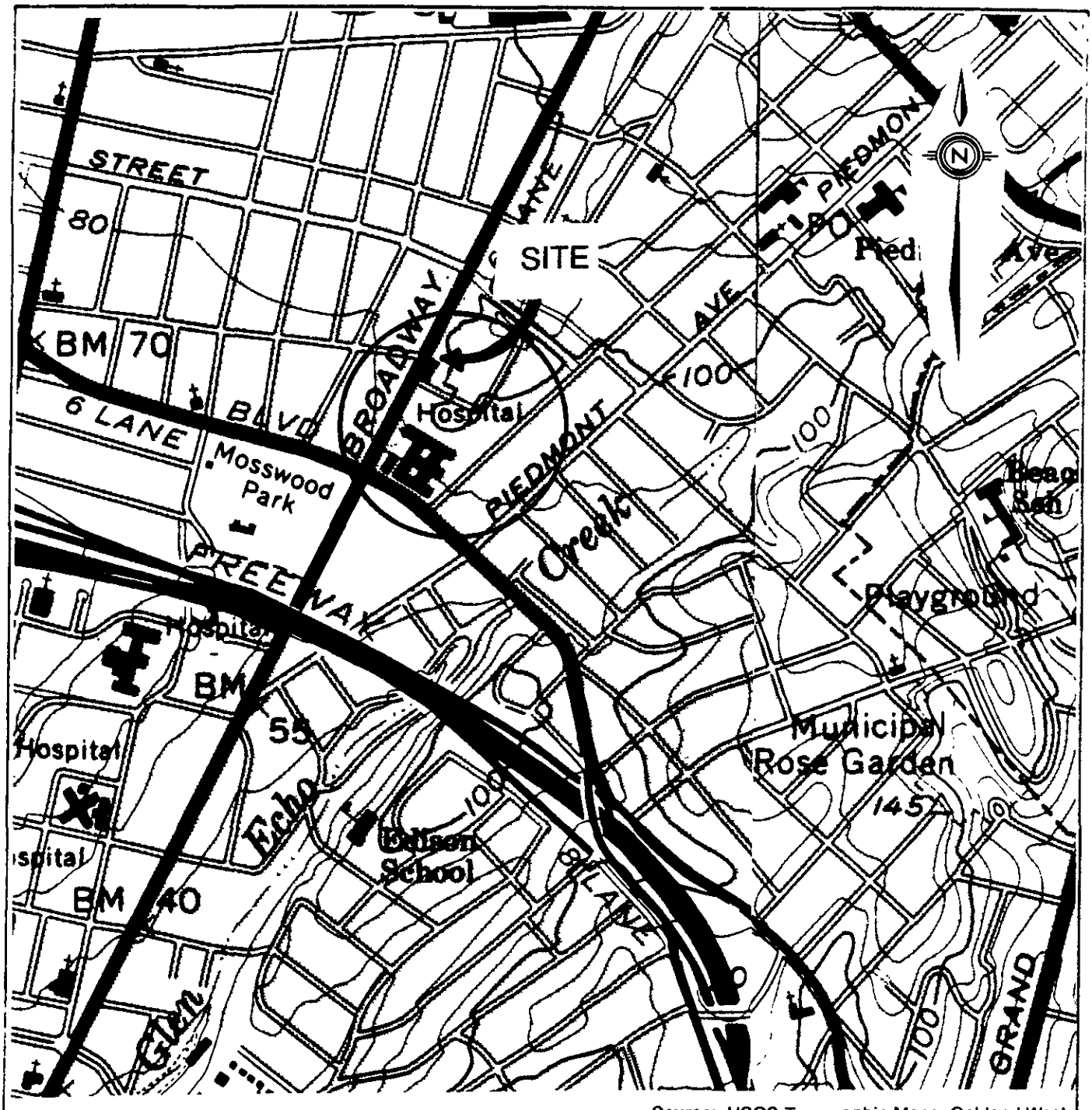
ND = Not Detected
-- = Not tested

TABLE 2

WATER SAMPLE ANALYTICAL RESULTS

Petroleum Hydrocarbons(ppm)	MW-1 (October, 1991)	MW-1 (February,	MW-2 1992)
Oil and Grease(ppm)	1.0	ND	1.0
Hydrocarbons(ppm)	ND	ND	0.9
Extractable hydrocarbons as oil (ppm)	0.4	- -	- -
TPH Gasoline(ppm)	0.3	0.08	4.0
TPH Diesel(ppm)	1.7	0.67	ND
Benzene(ppb)	4.1	0.7	470
Toluene(ppb)	ND	0.5	560
Xylene(ppb)	20	2	540
Ethylbenzene(ppb)	ND	ND	160
Halogenated Volatile Organics			
1,2-dichlorobenzene(ppb)	0.7	ND	ND
1,1-dichloroethane(ppb)	0.7	ND	ND
1,2-dichloroethane(ppb)	ND	ND	2
Methylene Chloride(ppb)	2.0	ND	ND
Semi-Volatile Organics(ppb)			
including PCB, PCP, PNA and creosote	ND	- -	- -
Metals			
Nickel - Total (ppm)	20	0.25	0.43
- Soluble (ppm)	- -	0.02	0.04
Zinc ppm	91	- -	- -

FIGURES



Source: USGS Topographic Maps, Oakland West and Oakland East sheets, 1980.

Approximate Scale in Feet

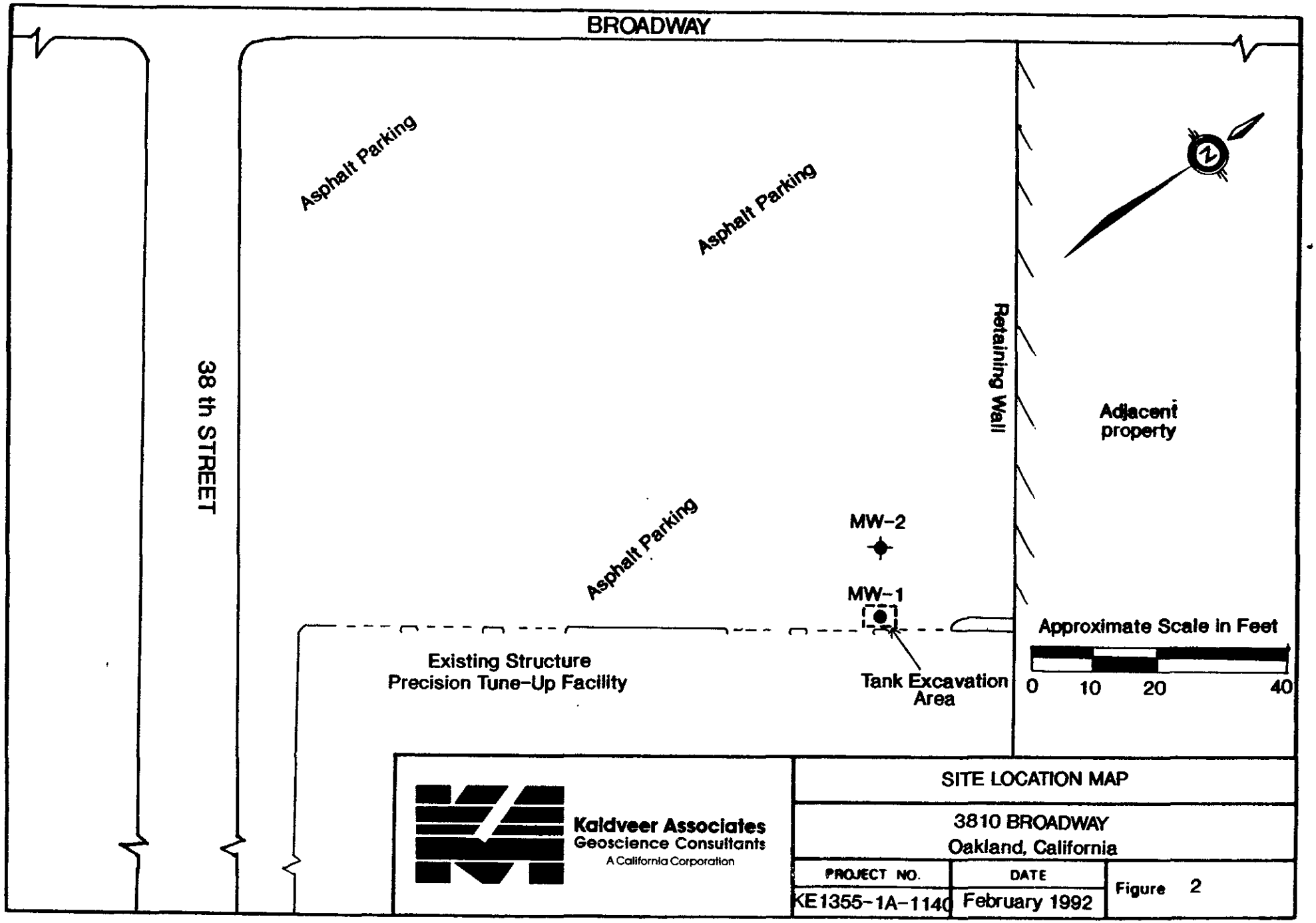
0 500 1000 2000

Kaldveer Associates
Geoscience Consultants
A California Corporation

SITE VICINITY MAP

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	
KE1355-1A-1140	February 1992	Figure 1



Kaldveer Associates
Geoscience Consultants
A California Corporation

SITE LOCATION MAP

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	Figure 2
KE1355-1A-1140	February 1992	

APPENDIX A

BORING LOG AND WELL CONSTRUCTION DETAILS
WELL CONSTRUCTION PERMITS

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description	Major Divisions		grf	ltr	Description
Coarse Grained Soils	Gravel And Gravely Soils		gw	Well-graded gravels or gravel sand mixtures, little or no fines	Fine Grained Soils	Silts And Clays LL < 50		ml	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			gp	Poorly-graded gravels or gravel sand mixture, little or no fines				cl	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			gm	Silty gravels, gravel-sand-silt mixtures				ol	Organic silts and organic silt-clays of low plasticity
			gc	Clayey gravels, gravel-sand-clay mixtures				mh	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
	Sand And Sandy Soils		sw	Well-graded sands or gravelly sands, little or no fines		Silts And Clays LL > 50		ch	Inorganic clays of high plasticity, fat clays
			sp	Poorly-graded sands or gravelly sands, little or no fines				oh	Organic clays of medium to high plasticity
			sm	Silty sands, sand-silt mixtures				pt	Peat and other highly organic soils
			sc	Clayey sands, and-clay mixtures	Highly Organic Soils				

SYMBOLS

- Standard penetration split spoon sample
- Modified California (Porter) sample
- Shelby tube sample
- Water level observed in boring
- Stable Water level in monitoring well
- Blank casing
- Screened Casing
- Cement grout
- Bentonite
- Filter Pack

Visual Relative Moisture Content
Increasing Moisture Content

Dry
Damp
Moist
Wet
Saturated

Note(1): Penetration resistance values are recorded as the number of blows of a 140-pound hammer falling 30-inches required to drive a sampler through the last 12 inches of an 18-inch drive. Blow count for samples obtained using a Modified California sampler (indicated by an asterisk) should be multiplied by a factor of 0.8 to obtain equivalent standard penetration resistance values.

Note(2): The lines separating strata on the logs represent approximate boundaries only. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

Kaldveer Associates
Geoscience Consultants
A California Corporation

BORING LOG LEGEND

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	FIGURE NO
KE1355-1A-1140	February 1992	A-1

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Tan-red Silty clay turning tan-brown, slight smell		25		30	0	Bentonite pellet plug 2/12 washed sand filter pack	
Same as above, grading sandy (fine-grained), red mottling, moist, black oxidation specks, no odor		30		22	5	2-inch PVC, Schedule 40 slotted (0.010-inch) casing	
SAND (SM/SC), tan-brown, fine-grained, with clay and silt, wet		35		N.C.	0		
Bottom of Boring = 35 feet. Notes: 1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual. 2. For an explanation of penetration resistance values marked with an asterisk (*), see first page Appendix A. 3. Ground water level was measured at 31 feet at time of drilling. After 24 hours, ground water level was measured at 22.5 feet.							

Kaldveer Associates
Geoscience Consultants
A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
3" Asphalt 3" **GRAVEL (GW)**, gray, sandy, fill material							
CLAY (CL), tan-red, damp, very stiff, silty, with some sand (fine-grained), light gray silt mottling, moderate to high plasticity, no odor		5		18	0	Well Construction Details Cement grout surface seal with steel, traffic rated cover 2-inch PVC, Schedule 40 solid casing	
Same as above, with black rootlets, red flecks, very stiff		10		26	0		
Silty Clay turning gray with tan-red mottling, black oxidation flecks		15		26	0		
Same as above, becoming moist, with sand (fine-grained)				20	0		

Kaldveer Associates
Geoscience Consultants
A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (510) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 3810 Broadway
Oakland

CLIENT
Name Friedkin- Becker
Address 300 Grand Ave Phone
City Oakland Zip 94610

APPLICANT
Name Marcela Jimenez
Kaldveer Associates
Address 425 Roland Way Phone 568-4001
City Oakland Zip 94621

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other X
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 20 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 1-13-92
ESTIMATED COMPLETION DATE 1-13-92

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Wyman Hong Date 1/8/92

FOR OFFICE USE

PERMIT NUMBER 92014
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 9 Jan 92
Wyman Hong

51991

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. MW-2

Date Work Began 1-28-92 , Ended 1-28-92

Local Permit Agency Zone 7, Alameda County

Permit No. 92014 Permit Date 9 Jan 92

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 427919

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 31 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*

TOTAL DEPTH OF BORING ___ (Feet)

TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

WELL OWNER

Name FRIEDKIN-BECKER

Mailing Address 300 GRAND AVE

CITY OAKLAND, CA 94610

CITY STATE ZIP

WELL LOCATION

Address 3810 BROADWAY

City OAKLAND

County ALAMEDA

APN Book ___ Page ___ Parcel ___

or

Township ___ Range ___ Section ___

or

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH

WEST

EAST

SEE ATTACHED SITE PLAN

SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

✓ MONITORING

WATER SUPPLY

___ Domestic

___ Public

___ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD HOLLOW STEM AUGER FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 22.5 (Ft.) & DATE MEASURED 1-28-92

ESTIMATED YIELD* ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	TYPE (✓) SCREEN	TYPE (✓) CON-DUCTOR	TYPE (✓) FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE: CEMENT (✓)	TYPE: BENTONITE (✓)	TYPE: FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME ___ (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS ___ CITY ___ STATE ___ ZIP

Signed ___ WELL DRILLER/AUTHORIZED REPRESENTATIVE ___ DATE SIGNED ___ C-57 LICENSE NUMBER

DWR 188 REV 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

APPENDIX B

MONITORING WELL DEVELOPMENT AND SAMPLING LOG

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 1/30/92
Project Number: KE1355-1A-1140 Sampler: MJ/JAF
Well Number: MW-1 Weather:
Well Location:

Well Construction:

Date Completed: 10/17/91
Total Depth of Well: 35 Feet
Diameter: 2 Inch
Well Elevation & Reference: 98.94 Feet
Based on arbitrary datum of 100.00 feet.

Groundwater Levels:

Initial: 23.48 Feet
Final: 25.14 Feet
Reference Point: Top of PVC casing
Well Volume of Water: 1.96 Gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Well Wizard
Method of Cleaning: Liquinox Rinse
pH Meter: Orion
Conductivity Meter: Orion
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
13:35	Began Pumping							
13:45		5	7.19	18.4		2.28	Tan Brown/ Silty-High	None
13:57		8	7.13	18.6		2.31	Tan Brown/ Silty-Mod.	"
14:09		15	7.47	18.3		2.26	"	"
14:36		25	6.98	18.3		2.23	Cloudy/Mod.	"
15:05		30	7.49	18.3		2.17	"	"
15:35	Sampled	40	7.06	18.1		2.27	"	"

Total Discharge: 40 Gallons
Casing Volumes Removed: 20.4 Volumes
Method of Disposal: To ground.

Comments: Sm amount of white foam appears when pumped out & then disapates.

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	Figure
KE1355-1A-1140	February 1992	MW-1

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 1/30/92
Project Number: KE1355-1A-1140 Sampler: MJ/JAF
Well Number: MW-2 Weather:
Well Location:

Well Construction:

Date Completed: 1/28/92
Total Depth of Well: 35 Feet
Diameter: 2 Inch
Well Elevation & Reference: 98.18 Feet
Based on arbitrary datum of 100.00 feet.

Groundwater Levels:

Initial: 22.78 Feet
Final: 24.51 Feet
Reference Point: Top of PVC casing
Well Volume of Water: 2.08 Gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Well Wizard
Method of Cleaning: Liquinox Rinse
pH Meter: Orion
Conductivity Meter: Orion
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
10:14	Begin Pumping	0						
10:17		2	7.08	18.0		2.83	Tan Brown/Very Silty-High	None
10:30		8	7.47	18.6		2.90	Tan Brn/Silty-Mod-High	"
10:40		11	7.33	18.6		2.89	Tan/Silty Mod.	"
10:55		17	7.28	18.5		2.96	Tan/Mod. Silty	"
11:05		20	7.45	17.8		2.82	"	"
11:15		25	7.31	17.8		2.79	"	"
11:25		28	7.26	17.6		2.82	"	"
11:39		31	7.24	18.2		2.82	Tan/Cloudy Mod	"
11:46		35	7.14	18.2		2.79	Cloudy/Sl. Mod	"

Total Discharge: 46 Gallons
Casing Volumes Removed: 22.1 Volumes
Method of Disposal: To ground.

Comments: Fine silt & sand in H_2O.

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG
3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	Figure
KE1355-1A-1140	February 1992	MW-2

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 1/30/92
Project Number: KE1355-1A-1140 Sampler: MJ/JAF
Well Number: MW-2 Weather:
Well Location:

Well Construction:

Date Completed: 1/28/92
Total Depth of Well: 35 Feet
Diameter: 2 inch
Well Elevation & Reference: 98.18 Feet
Based on arbitrary datum of 100.00 feet.

Groundwater Levels:

Initial: 22.78 Feet
Final: 24.51 Feet
Reference Point: Top of PVC casing
Well Volume of Water: 2.08 gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Well Wizard
Method of Cleaning: Liquinox Rinse
pH Meter: Orion
Conductivity Meter: Orion
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
11:57		40	7.01	18.5		2.81	Tan/Slight	None
12:08		44	7.03	18.6		2.80	Cloudy/Slight	"
12:10	Sampled	46						

Total Discharge: 46 Gallons
Casing Volumes Removed: 22.1 Volumes
Method of Disposal: To ground.

Comments:

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	Figure
KE1355-1A-1140	February 1992	MW-2

APPENDIX C

CHAIN OF CUSTODY RECORD
LABORATORY ANALYTICAL RESULTS

QuanteQ Laboratories

An Ecologics Company

Certificate of Analysis

DOHS CERTIFICATION NO. E772

AIHA ACCREDITATION NO 332

KALDVEER ASSOCIATES, INC.
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: MARCELLA JIMENEZ

CLIENT PROJ. ID: KE1355-1A-1149

REPORT DATE: 02/07/92

DATE SAMPLED: 01/28/92

DATE RECEIVED: 01/28/92

QUANTEQ JOB NO: 9201210

ANALYSIS OF: SOIL SAMPLE

Sample Identification Client Id.	Lab No.	Oil & Grease (mg/kg)	Hydrocarbons (mg/kg)
MW2 @ 30	01A	ND	ND
Detection Limit		10	10
Method:		5520E	5520F

Instrument: IR

Date Extracted: 01/30/92
Date Analyzed: 01/31/92

ND = Not Detected

Andrew Bradeen, Manager
Organic Laboratory

Results FAXed 02/06/92

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW2 @ 30
CLIENT PROJ. ID: KE1355-1A-1149
DATE SAMPLED: 01/28/92
DATE RECEIVED: 01/28/92
REPORT DATE: 02/07/92

QUANTEQ LAB NO: 9201210-01A
QUANTEQ JOB NO: 9201210
DATE ANALYZED: 01/31/92
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	1
Toluene	108-88-3	ND	1
Ethylbenzene	100-41-4	ND	1
Xylenes, Total	1330-20-7	ND	3
PURGEABLE HYDROCARBONS AS:			
Gasoline		ND mg/kg	0.2 mg/kg

ND = Not Detected

QUALITY CONTROL DATA

DATE EXTRACTED: 01/30/92
DATE ANALYZED: 01/31/92
CLIENT PROJ. ID: KE1355-1A-1149

QUANTEQ JOB NO: 9201210
SAMPLE SPIKED: 9201210-01A
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
(SOIL MATRIX)

ANALYTE	MS Conc. (mg/kg)	Sample Result (mg/kg)	MS Result (mg/kg)	MSD Result (mg/kg)	Average Percent Recovery	RPD
Oil	218	ND	218	218	100.0	0.0

CURRENT QC LIMITS (Revised 01/09/92)

Analyte	Percent Recovery	RPD
Oil	(84-113)	8.1

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

DATE ANALYZED: 01/31/92
SAMPLE SPIKED: 9201210-01A
CLIENT PROJ. ID: KE1355-1A-1149

QUANTEQ JOB NO: 9201210
INSTRUMENT: H

MATRIX SPIKE RECOVERY SUMMARY
METHOD 5030 w/GCFID/8020
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	25.1	ND	25.5	27.0	104.6	5.7
Toluene	104	ND	105	109	102.9	3.7
Hydrocarbons as Gasoline	1040	ND	986	1040	97.4	5.3

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Benzene	(80.8-125.2)	9.6
Toluene	(82.7-119.1)	10.2
Gasoline	(54.0-120.1)	14.8

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

R-5, 5-C

Page _____ of _____

Lab Job # 9201210

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name	Location
KE1355-1A-1149	3310 Broadway	Oakland

Sampler's Name (printed): M. JIMENEZ

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests	Method 8015 - TPH as Gasoline + BTEX	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil - O/G + GREASE	Metals - 5520 C+F				Remarks
MW-1C-3C	01A	1/28	X		2X6 BRASS	X	~~X~~					X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	1/28/92 4:45	Kim Flores	1/28/92 4:45
Kim Flores	1/28/92 5:25		
	1-28-92 1725	Received for Laboratory by: (Signature) Gina Gillespie	

Ship To: MED-TOX

Attention: _____

Phone No: _____

Requested Turnaround Time: NORMAL

Kaldveer Assoc. Contact: M. JIMENEZ

Remarks: Randy Rackley

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

Quanteq Laboratories

An Ecologics Company

FEB 19 1992
FORMERLY MED-TOX

Certificate of Analysis

DOHS CERTIFICATION NO. E772

AIHA ACCREDITATION NO. 332

KALDVEER ASSOCIATES, INC.
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: RANDY ROWLEY

CLIENT PROJ. ID: KE1355-1A-1140

REPORT DATE: 02/12/92

DATE SAMPLED: 01/30/92

DATE RECEIVED: 01/30/92

QUANTEQ JOB NO: 9201233

ANALYSIS OF: WATER SAMPLES

Sample Identification Client Id.	Lab No.	Extractable Hydrocarbons as Diesel (mg/L)	Oil & Grease (mg/L)	Hydrocarbons (mg/L)	Total Nickel (mg/L)	Dissolved Nickel (mg/L)
MW-1	01D	0.67	---	---	---	---
MW-1	01I	---	ND	ND	---	---
MW-1	01K	---	---	---	0.25	---
MW-1 *	01L	---	---	---	---	0.02
MW-2	02D	ND	---	---	---	---
MW-2	02I	---	1	0.9	---	---
MW-2	02K	---	---	---	0.43	---
MW-2 *	02L	---	---	---	---	0.04
Detection Limit		0.05	0.5	0.5	0.01	0.01
Method:		3510 GCFID	5520C	5520F	6010	6010
Instrument:		C	IR	IR	ICP	ICP
Date Extracted:		01/31/92	02/04/92	02/04/92	---	---
Date Analyzed:		02/03/92	02/05/92	02/05/92	02/07/92	02/07/92

ND = Not Detected

* Samples were filtered through a 0.45 um filter and preserved with HNO_3 on 01/30/92.

Andrew Bradeen, Manager
Organic Laboratory

Sherri Moore, Manager
Inorganic Laboratory

Results FAXed 02/10/92

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW-1
CLIENT PROJ. ID: KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-01F
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/04/92
INSTRUMENT: G

EPA METHOD 8010 (WATER MATRIX)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	75-34-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.5
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	156-69-4	ND	0.5
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	75-09-2	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	79-01-6	ND	0.5
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW-2
CLIENT PROJ. ID: KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-02F
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/04/92
INSTRUMENT: G

EPA METHOD 8010 (WATER MATRIX)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	75-34-3	ND	0.5
1,2-Dichloroethane	**107-06-2**	**2**	**0.5**
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	156-69-4	ND	0.5
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	75-09-2	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	79-01-6	ND	0.5
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID MW-1
CLIENT PROJ. ID KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-01A
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/07/92
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	0.7	0.3
Toluene	108-88-2	0.5	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, Total	1330-20-7	2	1
PURGEABLE HYDROCARBONS AS:			
Gasoline		0.08 mg/L	0.05 mg/L

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID MW-2
CLIENT PROJ. ID KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-02A
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/07-10/92
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	470	0.3
Toluene	108-88-2	560	0.3
Ethylbenzene	100-41-4	160	0.3
Xylenes, Total	1330-20-7	540	1
PURGEABLE HYDROCARBONS AS:			
Gasoline		4.0 mg/L	0.05 mg/L

ND = Not Detected

QUALITY CONTROL DATA

DATE EXTRACTED: 02/04/92
DATE ANALYZED: 02/05/92
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
(WATER MATRIX)

ANALYTE	MS Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Oil	6.49	ND	6.04	6.19	94.2	2.5

CURRENT QC LIMITS (Revised 01/09/92)

Analyte	Percent Recovery	RPD
Oil	(87-112)	5.4

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

DATE EXTRACTED: 01/29/92
DATE ANALYZED: 01/30/92
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: C

METHOD SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE WATERS
METHOD 3510 GCFID
(WATER MATRIX; EXTRACTION METHOD)

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	2.52	ND	1.44	1.52	58.7	5.4

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Diesel	(49.3-101.4)	29.0

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

DATE ANALYZED: 02/07/92
SAMPLE SPIKED: 9201233-01A
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
INSTRUMENT: F

MATRIX SPIKE RECOVERY SUMMARY
METHOD 5030 w/GCFID/8020
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	13.6	0.7	14.4	14.5	101.0	0.7
Toluene	56.1	0.5	56.0	57.1	99.9	1.9
Hydrocarbons as Gasoline	519	80.0	516	549	87.2	6.2

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Benzene	(77.7-118.0)	10.3
Toluene	(80.7-116.2)	10.1
Gasoline	(72.5-110.7)	13.6

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

INSTRUMEMT: G

QUANTEQ JOB NO: 9201233

CLIENT PROJ. ID: KE1355-1A-1140

SURROGATE STANDARD RECOVERY SUMMARY

METHOD 8010/8020
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab No.	Bromochloro-methane	1-Bromo-2-chloro-propane	1-Chloro-2-fluoro-benzene
02/04/92	MW-1	01F	99.6	106.7	96.8
02/04/92	MW-2	02F	101.2	126.1	90.6

CURRENT QC LIMITS (Revised 01/06/92)

ANALYTE	PERCENT RECOVERY
Bromochloromethane	(70-127)
1-Bromo-2-chloropropane	(71-128)
1-Chloro-2-fluorobenzene	(76-124)

QUALITY CONTROL DATA

DATE ANALYZED: 02/04/92
INSTRUMENT: G
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
SAMPLE SPIKED: D.I. WATER

METHOD SPIKE RECOVERY SUMMARY

METHOD 8010/8020
WATER

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	ND	39.9	40.1	80.0	0.5
Trichloroethene	50.0	ND	47.0	47.4	94.4	0.8
Benzene	50.0	ND	50.1	51.0	101.1	1.8
Toluene	50.0	ND	50.2	51.3	101.5	2.2
Chlorobenzene	50.0	ND	42.6	42.5	85.1	0.2

CURRENT QC LIMITS (Revised 01/06/92)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(58-116)	8.2
Trichloroethene	(76-130)	5.0
Benzene	(84-114)	5.0
Toluene	(81-114)	5.0
Chlorobenzene	(64-116)	5.0

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

MATRIX: WATER

QUANTEQ JOB NO: 9201233

CLIENT PROJ. ID: KE1355-1A-1140

SAMPLE SPIKED: 9202010-01E

MATRIX SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	SAMPLE RESULT	SPIKE ADDED	OBSERVED RECOVERIES (mg/L) MS	MSD	% REC.	RPD	QC CONTROL LIMITS REC. % LIMIT	RPD LIMIT
Ni, Nickel	ICP/6010	0.013	0.50	0.489	0.496	95.8	1.51	74.6-108.7	5.0

R4, S-E
R-3, S-3

Page _____ of _____

Lab Job # 9201233

CHAIN-OF-CUSTODY RECORD

Project Number: KE1355-1A-1140

Project Name: 3810 BROADWAY

Location: OAKLAND

Sampler's Name (printed): M JIMENEZ, J FIELLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Method 8015 - TPH as Gasoline + BTEX	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil - 5520E+F	Metals - 6010 NICKEL TOTAL + SOLUBLE	Remarks
MW-1	01A-C			X	3 VOAS	X								
	DE			X	2 L AMBER		X							
	F-H			X	3 VOAS				X					
	IJ			X	2 L AMBER						X			
	KL			X	1 PLASTIC							X		
MW-2	01A-C			X	3 VOAS	X								
	DE			X	2 L AMBER		X							
	F-H			X	3 VOAS				X					
	IJ			X	2 L AMBER						X			
	KL			X	1 PLASTIC							X		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
M Jimenez	1/30/92 5:00	Kim Flores	1/30/92 5:00
Kim Flores	1/30/92 5:45		
		Received for Laboratory by: (Signature) Anna Gillespie	

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: _____

Remarks:

Kaldveer Assoc. Contact: Marcela Jimenez, Randy Randy

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation