Kaldveer Associates
Geoscience Consultants

TRANSMITTAL

TO Alameda County Health

80 Swan Way

Oakland, California 94621

DATE 1/21/92

VIA Hand Delivery

JOB NO. KE1355-1A-1140

ATTENTION Mr. Larry Seto

PROJECT 3810 Broadway

DESCRIPTION Work Plan for additional monitoring well.

ACTION

☐ As requested
☒ For your review and comment
☐ For your use
☐ For your use; please return when finished
☐ Other

cc: Gerald Friedkin

Friedkin-Becker

KALDVEER ASSOCIATES

By John R. Sutton

If enclosures are not as noted, kindly notify us at once.

425 Roland Way • Oakland, California 94621 • (415) 568-4001
A California Corporation

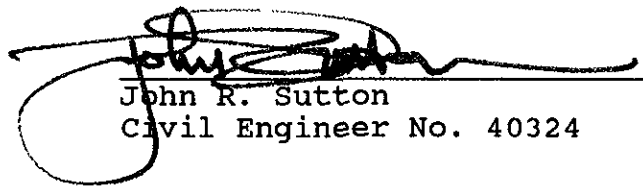
WORK PLAN FOR MONITORING WELL CONSTRUCTION AND SAMPLING 3810 BROADWAY OAKLAND, CALIFORNIA

Jan 92

WORK PLAN FOR MONITORING WELL CONSTRUCTION AND SAMPLING

3810 BROADWAY
OAKLAND, CALIFORNIA

To
Friedkin - Becker
300 Grand Avenue
Oakland, California 94610



John R. Sutton
Civil Engineer No. 40324

January, 1992

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WORK PLAN FOR MONITORING WELL
CONSTRUCTION AND SAMPLING
3810 BROADWAY
OAKLAND, CALIFORNIA

INTRODUCTION

The proposed work will be performed at a site in Oakland, California that is currently owned by Friedkin - Becker. The site is located at 3810 Broadway in Oakland, Ca. The approximate site location is shown on the Site Location Map, Figure 1. The site is currently developed as an automobile tune-up facility.

A waste oil tank and associated contaminated soil to a depth of 10 feet was removed from the site in May, 1991. Kaldveer Associates installed a ground water monitoring well in the former tank site in October 1991 and collected a ground water sample which identified low levels of contamination. The Alameda County Health Agency (ACDEH) and the Regional Water Quality Control Board (RWQCB) attribute the contamination to waste oil, as was in the tank. The County Environmental Health Agency at a meeting on December 20, 1991 required additional soil and water sampling to provide additional data to determine if ground water has been impacted by the former tank. This work plan provides an outline of the proposed program to install and sample a ground water monitoring well and resample the existing well.

BACKGROUND

The facility was formerly a Texaco Station. At some time in the past, Texaco removed all of the fuel tanks but left the waste oil tank. The waste oil tank was removed by SEMCO in May of 1991. Soil samples were collected by SEMCO. It is reported to us that the identified contaminated soils to a depth of ten feet were removed and disposed of offsite and that the excavation was backfilled with clean imported soil. No groundwater was reported to have been encountered. Kaldveer installed a monitoring well in the former tank site in October 1991. Ground water in the well was encountered at 29 feet below the ground surface. A groundwater sample shows low levels of contamination and that ACDEH and the RWQCB attribute to waste oil, as was in the tank.

The ACDEH, at a meeting with RWQCB and Kaldveer Associates on December 20, 1991, required additional soil and water sampling to provide additional data to determine if ground water has been impacted by any spillage or leakage from the former tank. A modified sample analysis program was authorized.

WORK PLAN

This work plan describes three tasks which will assess the potential impact to the ground water in the area of the former waste oil tank. The work will be performed according to the Tri-Regional Water Quality Control Boards' guidelines for addressing fuel leak sites and permitted as required by local agencies. Shallow ground water quality will be investigated by the installation and sampling of an additional ground water monitoring well. Ground water samples from new well and existing well will be analyzed for selected petroleum hydrocarbon and metal

contaminants. Our evaluation of the accumulated field and analytical data and then documentation of the investigation procedures, findings and conclusions will be presented in a report at the end of our investigation.

Our work plan is based on our past work at the site, discussions with ACDEH personnel, and our experience performing environmental investigations in the area.

Task A - Investigate Contamination Levels

1. Prior to the start of the field work at the site, this work plan, which includes a Health and Safety Plan, will be reviewed and approved by ACDEH. Specifically, ACDEH concurrence on well location will be sought. The Health and Safety Plan is prepared only for the proposed work at the subject property. A copy of the Health and Safety Plan is attached as Appendix A. All work conducted at the property will be performed in accordance with this work plan and the site Health and Safety Plan as well as Federal and Cal/OSHA regulations.

2. The field investigation is scheduled to begin in late January, 1992 and will include a soil sampling program consisting of drilling a hollow stem auger boring to a depth of approximately 35 feet. The proposed well locations is shown on the attached Figure 2. Soil samples will be collected at depth intervals of approximately every 5 feet or as otherwise indicated by specific field condition. Selected soil samples would be appropriately packed, refrigerated and transported to the chemical laboratory for testing. The augers,

samplers and equipments will be steam-cleaned prior to the field investigation. See Appendix B for details.

The ground water testing program will consist of converting the boring into a monitoring well to a depth of approximately 35 feet and then developing the well and sampling the water. Additionally, the existing well will be purged and sampled. Applicable local regulations will be followed in permitting and installing the well. See Appendix C for details. Details of exploratory boring procedures are provided in Appendix B and details of the monitoring well construction are presented in Appendix C.

Task B - Analytical Testing

1. A chemical testing program consisting of analyzing selected soil and ground water samples for the following: 1) total petroleum hydrocarbons as gasoline (TPH-G), 2) TPH as diesel, 3) total oil and grease, 4) benzene, toluene, ethylbenzene and xylene, 5) chlorinated hydrocarbons, 6) and total and soluble nickel as requested by the agencies. A California Department of Health Services approved analytical laboratory will be utilized. See Appendix C for details.

We plan to analyze one soil sample from a depth three to five feet above the first encountered ground water and analyze for total petroleum hydrocarbons. The ground water samples will be analyzed for the analytes mentioned above. Other soil samples will be screened in the filed using a photoinization detector. If the test results indicate that the significant contamination is present,

additional samples may be tested for the selected compounds if the owner so authorizes.

Task C - Report Preparation

Kaldveer Associates will prepare a report presenting a description of the investigation, the results of the laboratory analyses, and our conclusions and recommendations regarding the findings.

PROJECT SCHEDULE

We anticipate beginning Task A (Investigate the Extent of Contamination) in late January (after the draft work plan approval). The task will include an estimated maximum of 2 field days. Our investigation report would be submitted approximately six weeks later.

PERSONNEL

Project Manger for the investigation will be Randy P. Rowley, R.G./R.E.A., Senior Engineering Geologist/Environmental Specialist. John R. Sutton, P.E./G.E., Manager of Environmental/ Hazardous Waste Services will be the Associate-in-Charge.

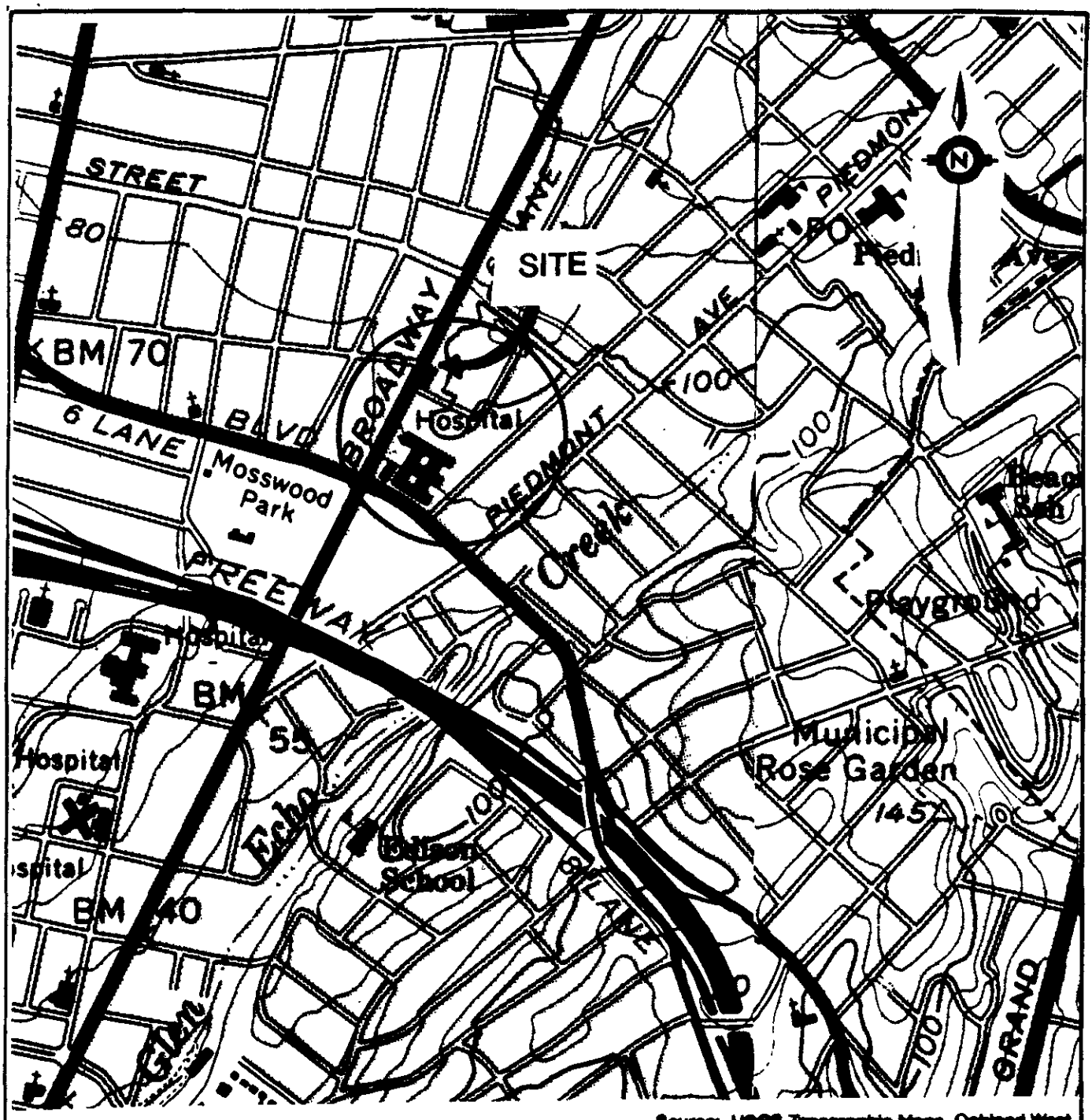
LIMITATIONS

This work plan has been prepared according to the scope in our proposal as well as to generally accepted geologic, geotechnical and environmental engineering practices. No other warranty, either expressed or implied is made. The bases of the work plan are our previous work at the site, and our discussion with the ACDEH personnel. Changes in the information or data gained from any of

these sources could result in changes in our recommended scope of work and work plan. If such changes do occur, we should be advised so that we can review our work plan in light of these changes.

* * * * * * * * * * * * * * * * * *

FIGURES



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

Approximate Scale in Feet

0 500 1000 2000

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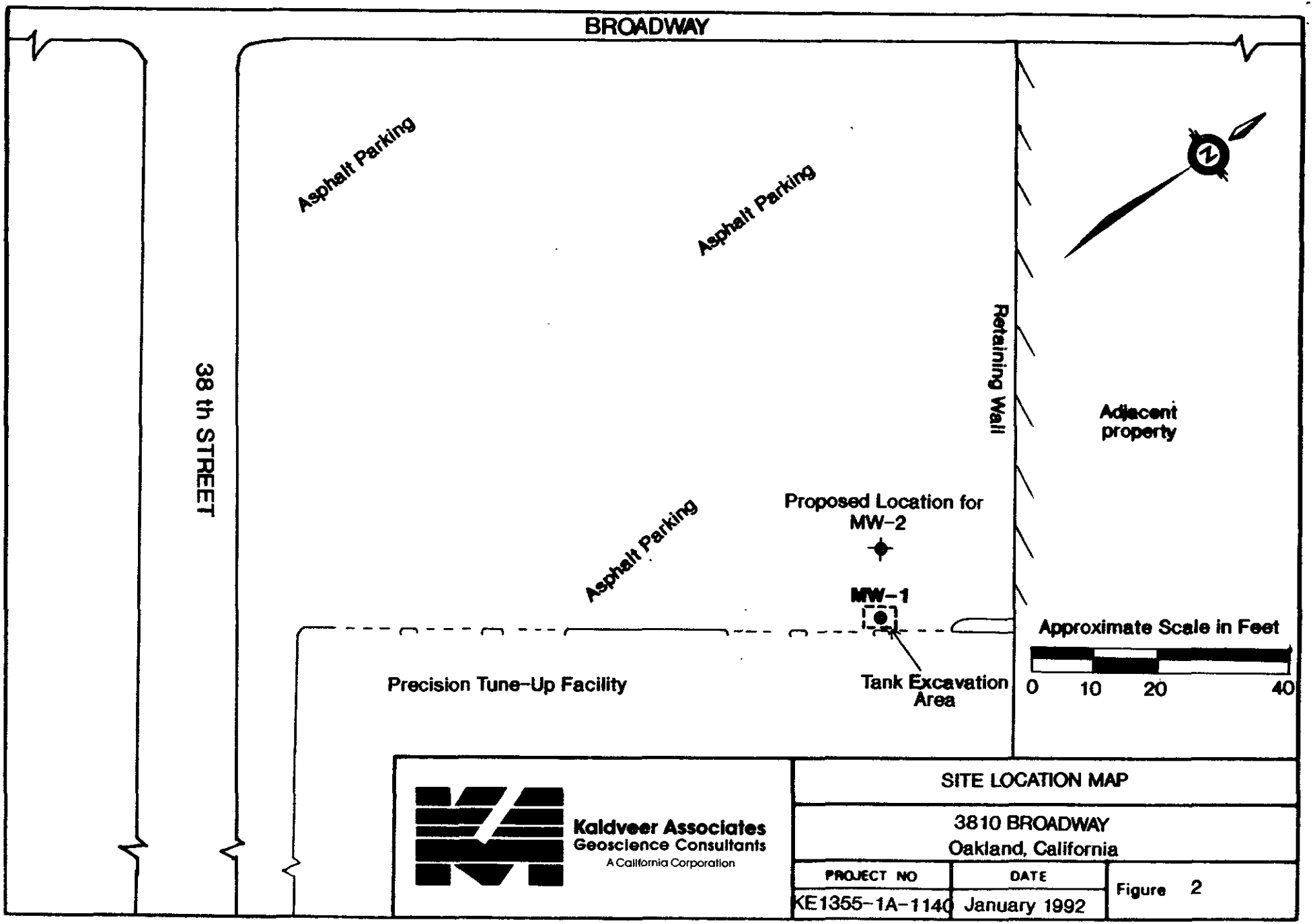
SITE VICINITY MAP

3810 BROADWAY
Oakland, California

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



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SITE LOCATION MAP

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	
KE1355-1A-1140	January 1992	Figure 2

APPENDIX A

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

PROJECT NO: KE1135-1A-1140 **FIELD ACTIVITIES DATE:** Begin January 1992

CLIENT: Friedkin-Becker
Address: 300 Grand Avenue, Oakland, 94610

CONTACT PERSON: Gerald S. Friedkin **TELEPHONE NO:** 465-7500

JOB LOCATION: 3810 Broadway, Oakland, California

PROJECT DESCRIPTION: A ground water investigation of a former waste oil tank site (Tank and soil have been removed).

PROJECT MANAGER: Randy P. Rowley

SITE HEALTH & SAFETY OFFICER: Randy P. Rowley or designee

BACKGROUND: In October, 1991, Kaldveer Associates installed a monitoring well in the former tank site. The water sample collected from the monitoring well contained low levels of petroleum hydrocarbons, halogenatad hydrocarbons and nickel.

CHEMICAL HAZARDS

Chemical Name	Description	Persons Exposed; Potential Routes of Exposure	Symptoms of Acute Exposure
Petroleum hydrocarbons	Liquid or semi-liquid in soil	Drilling and sampling personnel: Dermal and inhalation	nausea headache dizziness
Halogenated hydrocarbons	Liquid or semi-liquid in soil	Drilling and sampling personnel: Dermal and inhalation	skin irritation

Note:

Motor fuels may contain low quantities of benzene. Benzene is a California Proposition 65 listed chemical, known to the State to cause cancer or reproductive harm.

PHYSICAL HAZARDS: Normal drilling hazards ie: trip/fall, handling heavy equipment, possible contaminated dust.

SITE CONTROL MEASURES: Follow all site safety procedures discussed herein for normal working operations (drilling - sampling - clean-up). No smoking, eating or drinking in the work area.

AIR MONITORING STRATEGY (INCLUDING ACTION LEVELS): Hnu or OVA vapor detectors for work area monitoring and soil sample characterization. (Action Level 10 ppm above background)

PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED: This site is designated PPE Level D. While drilling and sampling use as a minimum steel toed boots and hardhats. If odorous liquids or saturated soils are encountered add neoprene boots/gloves and poly coated Tyvek. If in dusty conditions use 1/2 face respirator with dust cartridge.

If Hnu or OVA reading reaches the action level of 10 ppm above background (AB) vacate the site, contact project manager and client. If the action level of 10 ppm persists then Level C PPE would be required to complete the work. This includes full face respirator or 1/2 face respirator with organic vapor cartridge and dust prefilter and eye protection.

TRAFFIC CONTROL (Pedestrian): Limited pedestrian traffic is anticipated. Traffic cones and barricades will be utilized to divert pedestrians from the area of operations.

TRAFFIC CONTROL (Motor Vehicle): Operations will take place on private property with no public access and limited site traffic. No traffic control measures are necessary.

DECONTAMINATION PROCEDURES (PERSONAL AND EQUIPMENT): Sampling Equipment - TSP and water, Drilling Equipment - steam cleaning, (decon area will be designated at the site on the day of drilling); Dermal Exposure - soap and water.

PARAMEDIC: 911 **FIRE DEPT:** 911 **POLICE DEPT:** 911

HOSPITAL/CLINICS: Kaiser Hospital **Telephone** 510-428-5000

HOSPITAL ADDRESS: 280 W. MacArthur Boulevard, Oakland.

KALDVEER ASSOCIATES: 415-568-4001 (Contact: Mr. Randy Rowley or Mr. John Sutton)

EMERGENCY PROCEDURES: Evacuate to open air. First Aid equipment (ie: First Aid Kit, Fire extinguisher, emergency eye wash) located with site safety officer.

Prepared by Randy P. Rowley, R.G.

Reviewed by John Sutton, P.E.

Read by _____ **Date**_____

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Read by _____ **Date**_____

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APPENDIX B

SOIL SAMPLING AND DRILLING

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SOIL SAMPLING AND DRILLING

The exploratory borings will be permitted as required by the Alameda County Flood Control and Water Conservation District-Zone 7 and Alameda County Environmental Health Department. The drilling will be performed by a California C57-licensed drilling contractor. A geologist working under the supervision of a California Registered Geologist will log the borings and collect the soil samples.

A truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers will be utilized to complete the borings. Soil samples will be collected from each exploratory boring by driving a Modified California split-spoon sampler equipped with clean brass liners. The penetration resistance will be recorded on the boring log for each driven sample. The penetration resistance is measured as the number of blows required to drive sampler the final 12 inches of a 18 inches, drive using a 140 pound hammer falling 30 inches. Each sample will be observed and logged by the field geologist according to the Unified Soil Classification Chart.

All equipment will be steam-cleaned prior to drilling. The sampler will be cleaned with TSP (tri-sodium phosphate) detergent and rinsed with clear and then distilled water between samples. Thus, cross-contamination will be minimized. All borings will be located by taped measurements from obvious structures such as building corners or fence corners.

Soil cuttings will be contained in drums within the fence-secured site until soil samples from the borings have been analyzed. Then if the sample analysis indicate clean soils, the cutting may be left at the site. If the borings identify contamination, additional evaluations will have to be performed to determine the appropriate disposal requirements for the cuttings.

Soil samples collected from the exploratory borings will be field screened for volatile organic compounds (VOC) utilizing a HNU photoionization detector (PID). All soil samples collected are to be used for logging purposes, and possibly submitted for analysis dependent upon observed or detected conditions.

Field documentation will include the recording the following information on boring logs and/or daily exploration logs:

- Sample number, both on sample and log sheet
- Sample location
- Sample description
- Sample date and time
- Boring location noted on site plan
- Depth of sample
- Pertinent observations/descriptions
- Names of sampling personnel

APPENDIX C

MONITORING WELL CONSTRUCTION, DEVELOPMENT, AND SAMPLING

APPENDIX C

MONITORING WELL CONSTRUCTION, DEVELOPMENT AND SAMPLING

Three exploratory borings will be converted to monitoring wells, utilizing 2" schedule 40 threaded PVC pipe and slotted screen. The perforations will extend approximately 10 to 15 feet below, and 5 feet above the upper zone of saturation. The perforated section annulus will be packed with clean graded sand to a level approximately two feet above the highest screen slots, and a one foot thick bentonite plug will be placed above the sand pack. The remaining annulus will be backfilled with a cement/bentonite slurry to grade.

The wells will be finished with a Cristy-type concrete or metal box grouted to match the existing grade. The well will be completed with a locking, water-tight cap to guard against vandalism and outside contamination. No solvents or glues will be used during monitoring well construction. Relative top-of-casing elevations will be obtained by level survey.

After installation (about 48 hours after completion), the wells will be developed using a well development pump or bailer. Development will consist of removing several well volumes of water until field characteristics (i.e. temperature, pH, and specific conductance) have stabilized and the water exhibits relatively low turbidity. Water will be contained in 55 gallon drums for storage onsite pending receipt of analytical results.

At least 24 hours following the monitoring well development, ground water sampling will be performed. Following an initial water level measurement and inspection for floating product and prior to sample collection, a minimum of four casing volumes will be purged from each well. Should the well become completely evacuated during purging, samples will not be collected until after the well has recovered to 80 percent of its initial water elevation. Water will be contained in 55 gallon drums for onsite storage pending receipt of analytical results.

Following the well purging the ground water will be sampled using a teflon bailer, or bladder or hand pump. All samples collected will be placed in containers approved for the type of analyses required. Following the addition of any preservatives required per EPA approved sampling protocols, the samples will be labeled and immediately placed in refrigerated storage.

All samples will be labeled in such a manner as to maintain client confidentially. A chain-of-custody form will be initiated by the sampler and accompany the samples to the analytical laboratory. Water samples collected from each well will be delivered to the laboratory approved for the type of analysis to be performed by the California Department of Health Services.

ANALYSES

Ground water samples will be analyzed as follows in accordance with Tri Regional Water Quality Control Board, Table 2 guidelines.

Test Name	Test Method
Total Petroleum Hydrocarbons as Gasoline	(GCFID) 5030
Total Petroleum Hydrocarbons as Diesel	(GCFID) 3510
Benzene, toluene, ethylbenzene, and xylene	602
Oil and Grease	5520 C & F