ALLCAL PROPERTY SERVICES, INC.
ENVIRONMENTAL INVESTIGATIONS

January 20, 1999

Morris F. Donnelly
Jeffery W. Kerry
Kerry & Associates
151 Callan Avenue, Suite 202
San Leandro, CA 94577

WORK PLAN FOR PRELIMINARY SITE ASSESSMENT

RE: Palace Garage, 14336 Washington Avenue, San Leandro, CA 94587

Dear Messrs. Donnelly and Kerry:

Thank you for contracting with Allcal Property Services, Inc. (ALLCAL) to write this letter work plan for a preliminary soil and groundwater site assessment. The assessment is to be conducted in the area of a former underground, 550-gallon, gasoline tank at the above-referenced property and is required by the Alameda County Health Care Services Agency (ACHCSA)

BACKGROUND

The following background regarding tank closure and soil remediation is summarized from information provided by you (Client).

On February 11, 1991, an underground, 550-gallon, single-walled, steel, gasoline tank was removed by Verl's Construction, Inc. (Verl) The tank and its associated dispenser and piping were located at the northeast corner of the Palace Garage building (see attached SITE PLAN). Examination of the tank, after its removal, revealed four small holes at the top of the southerly end of the tank. **Two holes were pin size and the other two were about .25 and .5 inches in diameter.** The piping appeared in good condition. Soil in the tank excavation contained gasoline contamination based on visual observations, the presence of odor, and head-space analysis using a photo-ionization detector (PID). One discrete soil sample (SS-1) was collected for chemical analysis from native soil directly below the tank at a depth of about 10 feet below grade. Results of chemical analyses detected total petroleum hydrocarbons as gasoline (TPHG) at a concentration of 19 parts per million (ppm). Benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected at concentrations of .21 ppm, .41 ppm, .043 ppm, and .14 ppm, respectively. Organic lead was detected at a concentration of 7 ppm.

On the day of the tank removal, additional soil excavation (overexcavation) was conducted to remove contaminated soil. It is reported (June 8, 1994, Kerry & Associates letter) that additional soil was removed to the depth that the on-site backhoe could reach, about 18 to 20 feet. A March 7, 1991, tank closure report prepared by Century West Engineering Corporation (Century West) included PID head-space measurements, from 5 to 12.5 feet deep, that were recorded during overexcavation activities. The head-space measurements showed increasing field vapors, from 170 ppm at 5 feet below grade to 880 ppm at 12.5 feet below grade. A February 25, 1991, letter from Verl indicates that soil samples from the bottom of the final excavation had vapor concentrations "substantially" lower than those shallower in the excavation; however, there is no documentation of these lower concentrations. One composite soil sample (SS-2.1, 2.2, and 2.3) was collected for chemical analysis from the stockpiled soil (resulting from tank removal and overexcavation activities) to assess disposal options. Results of chemical analyses detected concentrations of TPHG at 1,900 ppm. BTEX were detected at concentrations of 1.2 ppm, 14 ppm, 11 ppm, and 67 ppm, respectively. Organic lead was detected at a concentration of 9.9 ppm.

After conducting remedial overexcavation, the hole was lined with plastic and backfilled with pea gravel.

No groundwater was encountered during the tank removal or overexcavation activities.

The excavated soil was spread and aerated on site. After aeration, Century West sampled and characterized the soil for off-site disposal. Verl hauled and disposed of the soil to a landfill in Richmond, California.

PROPOSED WORK PLAN FOR FURTHER SITE ASSESSMENT

As a further investigation of gasoline contamination of the vadose zone soil and groundwater, ALLCAL proposes to drill up to 4 soil borings for the collection and analysis of soil and "grab" groundwater samples.

The following scope of work is proposed:

- Submit this work plan to the Client and ACHCSA for their comment and approval.
- Obtain a soil boring permit from the Alameda County Public Works Agency (ACPWA) and notify Underground Service Alert (USA).
- **Drill up to 4 exploratory soil borings and continuously log the soil profile.**
- **Collect up to 3 soil samples from each boring beginning at a depth of about 10 feet below grade for chemical analysis.**

- Collect a "grab" groundwater sample from each boring for chemical analysis.
- **Analyze all soil and groundwater samples for TPHG, BTEX, and MTBE.**
- Seal all borings to ground surface with neat Portland cement and/or bentonite.
- Prepare a report.

Details of the proposed scope of work are presented below.

Pre-field Activities:

Prior to drilling soil borings, ALLCAL will: (1) obtain approval of this work plan, (2) obtain a soil boring permit from the ACPWA, (3) visit the site to mark the locations of the proposed soil borings and notify Underground Service Alert, (4) subcontract a "direct push" driller having a C57 license to drill the soil borings, and (5) give 48 hours notice to the ACHCSA prior to drilling the borings.

Locations of Soil Borings:

ALLCAL proposes to drill up to 4 soil borings (SB-1 through SB-4) to further evaluate vadose zone soil and groundwater contamination by TPHG, BTEX, and MTBE at the approximate locations shown in the attached SITE PLAN. **The boring locations were chosen based on drill rig accessibility and the estimated direction of regional groundwater flow** (southwest to south-southwest, see attached Groundwater Elevation Map). Direction of regional groundwater flow was obtained from Woodward-Clyde Consultants' December 29, 1993, report of HYDROGEOLOGY OF CENTRAL SAN LEANDRO AND REMEDIAL INVESTIGATION OF REGIONAL GROUNDWATER CONTAMINATION, SAN LEANDRO PLUME, SAN LEANDRO, CALIFORNIA, VOLUME I. Also, ALLCAL has measured groundwater flow direction to be south-southwest at 601 Aladdin Street in San Leandro (see attached Groundwater Elevation Map-San Leandro Plume Study Area). Site topographic gradient (taken from San Leandro Quadrangle, 7.5 Minute Series Topographic Map, Photorevised 1980), as an indirect indicator of groundwater flow direction, is also southwesterly.

This work plan proposes to drill soil borings SB-1, SB-2, and SB-3; boring SB-4 is proposed as an optional boring, to be drilled only if apparent significant contamination is detected by field-screening techniques in soil samples collected from boring SB-1.

Soil boring SB-1 is located in the estimated downgradient direction from the former underground tank to assess if a groundwater plume is present. The boring will also allow further evaluation of soil contamination that may have originated from the former piping and dispenser. Soil borings SB-2 and SB-3 are located cross-gradient to the direction of estimated groundwater flow. These borings are intended to assess the cross-gradient, lateral extent of potential soil and groundwater contamination. Boring SB-2 is located on the northwesterly property line of the subject site. Optional boring SB-4 is located about 20 feet in the estimated downgradient direction of proposed

boring SB-1 and is proposed to be drilled only if field-screening techniques detect apparent significant gasoline contamination in soil and/or groundwater samples collected from boring SB-1.

Soil and Groundwater Assessment Methodology:

The following discussion proposes soil boring and soil and groundwater sampling procedures. See Attachments A, B, and C for ALLCAL's sample handling procedures, quality assurance and quality control procedures, and waste handling and decontamination procedures.

(1) Soil Boring and Soil and Groundwater Sampling Procedures

The exploratory borings are proposed to be drilled to a depth of about 25 feet, based on an estimated depth to groundwater of 20 feet. The borings will be drilled with the Geoprobe System, small diameter (about 1-inch) drill casing, direct-push technology. Soil samples will be continuously collected as core into a polyethylene terephthalate glycol (PETG) liner in 3- or 4-foot depth intervals. The liner is contained within the 1-inch drill casing. The drill casing and enclosed PETG liner will be pushed or hydraulically driven by drill rods in 3- or 4-foot depth intervals to the total depth of each boring. After driving the 3- or 4-foot interval, the drill casing and enclosed liner will be retrieved and the soil core will be examined for contamination and construction of lithologic logs.

Up to three soil samples will be selected from each boring and preserved for chemical analysis. Soil samples are proposed to be selected for chemical analysis from the depth intervals of 5 to 10 feet, 10 to 15 feet, and 15 to 20 feet. Soil samples will be collected at locations in each 5-foot interval (beginning at a depth of about 5 feet below grade) where the most apparent gasoline contamination, if any, is present. **Apparent gasoline contamination will be evaluated based on visible staining, the presence of odor, and by head-space analysis using a PID.** Head-space analysis will be conducted by placing a handful of soil in a quart-size plastic bag, sealing the bag air tight, and allowing at least 15 minutes for gasoline vapors from the soil to volatilize into the head-space of the bag. The probe of the PID will then be inserted into the head-space of the bag, while minimizing the entrance of fresh air, and the concentration of vapors will be recorded in ppm.

To minimize the potential for cross-contamination, the drill casing will be cleaned with trisodium phosphate or Alconox type detergent and rinsed with clean tap water between sampling events and prior to beginning each boring.

After encountering groundwater, a "grab" groundwater sample will be collected by using a Geoprobe, stainless-steel, discrete water sampler. "Grab" samples are obtained by using an expendable drive point to drive the sampler to the sampling depth; then an internal screen is exposed to allow water to enter the sampler. Water is collected from the sampler with a stainless-steel bailer or plastic tubing with attached ball cock. If water is slow to enter the sampler, the sampler may be retrieved and polyvinyl chloride screen and casing may be installed, and the boring will be allowed to fill with groundwater. A "grab" groundwater sample will be collected using a clean bailer or tubing, as above.

After all soil and groundwater samples are collected, each boring will be sealed to grade with neat

Portland cement and/or bentonite.

Boring logs will be prepared for each soil boring. The soil will be logged according to the Unified Soil Classification System by a California Registered Geologist.

Drill cuttings and rinsate will be stored on site in labeled, 5-gallon pails. The labels will show contents, date stored, suspected contaminant, expected date of removal, company name, contact person, and telephone number. Maintenance and security of the pails and their contents are the Client's responsibility. After the soil and groundwater samples are characterized by chemical analysis, ALLCAL, at the Client's request, can assist in properly disposing of the pails and their contents at an additional cost.

(2) Sample Handling Methods

Soil samples selected for chemical analysis will be preserved in PETG liners with no headspace by quickly covering the open ends with Teflon sheeting or aluminum foil and capping them with plastic end-caps. The samples will be labeled to show site name, project number, date, time, sample name, depth collected, and sampler name; sealed in quart-size plastic bags; and stored in an iced-cooler.

"Grab" groundwater samples will be stored in laboratory-provided, 40-milliliter, HCL-preserved VOAs having Teflon-lined plastic caps. Each sample will be labeled and stored as above.

(3) Chemical Analyses

All soil and groundwater samples will be delivered under chain-of-custody to a California Department of Health Services certified laboratory for chemical analysis for TPHG, BTEX, and MTBE by EPA Methods GCFID, 5030/8015, 8020, and 8020, respectively.

Report:

ALLCAL will document the work conducted and analytical results in a report. The report will include: copies of all permits required to conduct the work, a site plan showing location of the soil borings, graphic boring logs, results of chemical analyses, and copies of certified analytical reports with chains-of-custody.

The report will be certified by a California Registered Geologist.

SITE HEALTH AND SAFETY PLAN

A Site Health and Safety Plan for conducting work under this work plan is attached.

TIME SCHEDULE

The projected time schedule for implementation of the activities described in this work plan is

presented below. The schedule reflects a relatively problem-free program. However, delays in the work plan review, permitting, or laboratory analyses could lengthen the project schedule. Access difficulties, adverse weather, and regulator review could also delay the proposed time schedule. ALLCAL will make every effort to adhere to the project schedule.

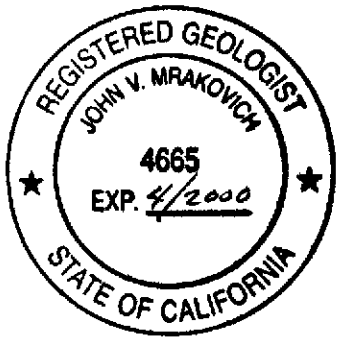
Week 1:	Client/ALLCAL submits work plan to ACHCSA for approval and permit to ACPWA for soil borings. Work plan approved; soil boring permit received; and drilling company subcontracted.
Week 2:	ALLCAL drills the soil borings and submits soil and groundwater samples for chemical analyses.
Week 3:	Chemical analyses are received.
Week 5:	ALLCAL submits a letter report to Client and ACHCSA.

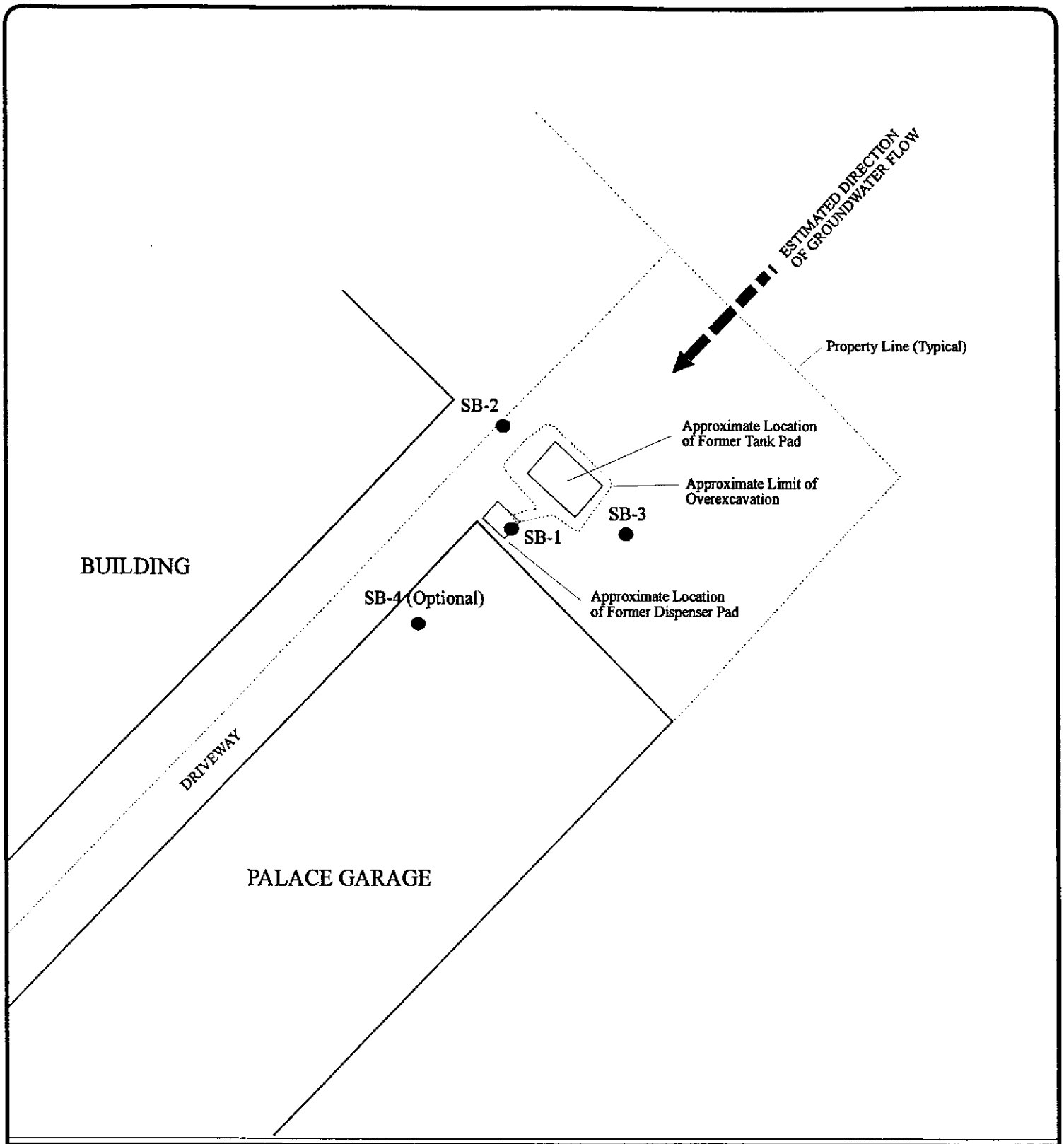
If you have any questions, please call me at (510) 581-2320.

Sincerely,

John V. Mrakovich

John V. Mrakovich, Ph.D.
Registered Geologist No. 4665





Legend

SB-1
● Proposed Name and Location of Soil Boring

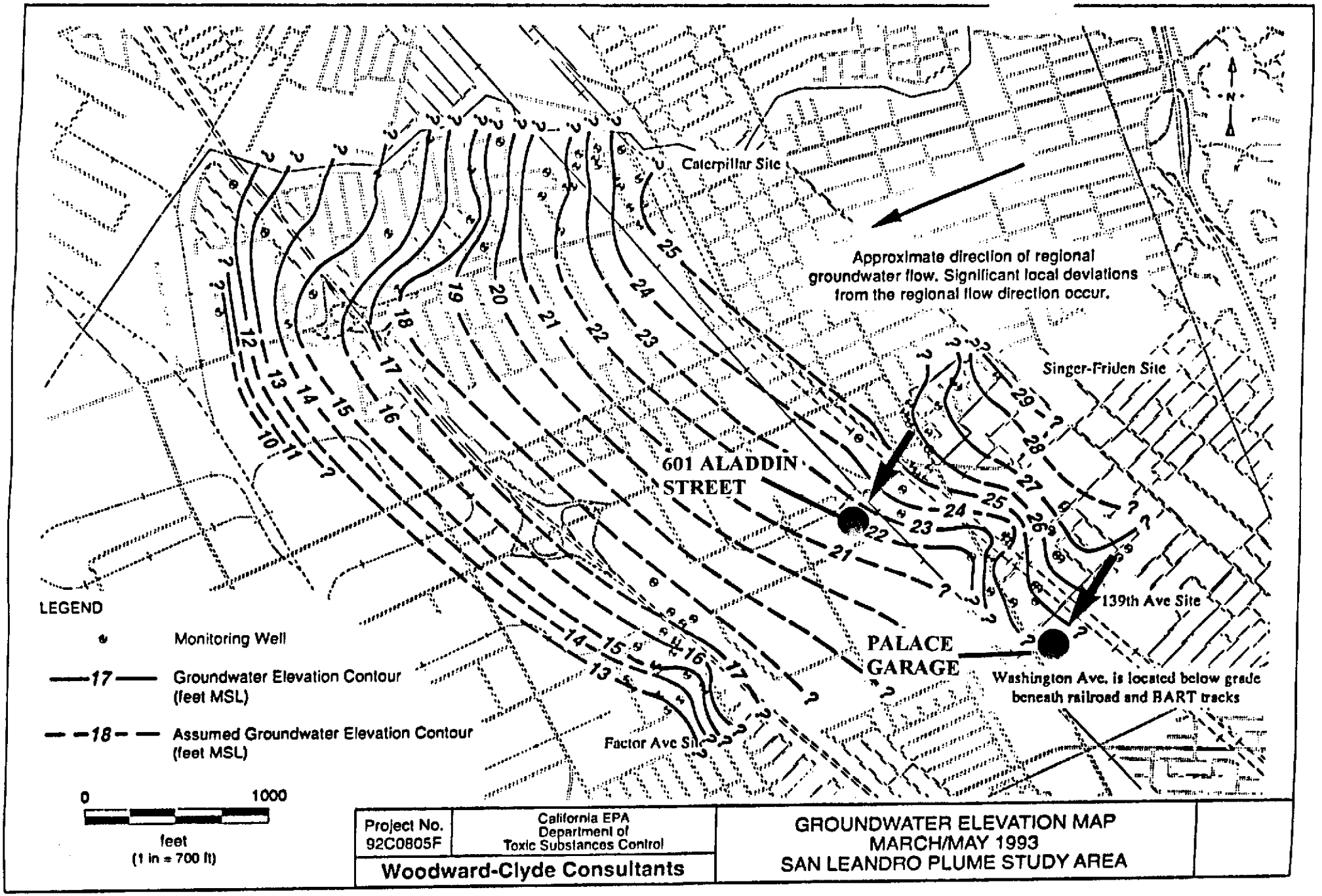
0 20
Approximate Scale (ft)

N

ALLCAL PROPERTY SERVICES

SITE PLAN

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CA 94577


Caterpillar Site
Approximate direction of regional groundwater flow. Significant local deviations from the regional flow direction occur.
Singer-Friden Site
601 ALADDIN STREET
139th Ave Site
PALACE GARAGE
Washington Ave. is located below grade beneath railroad and BART tracks
Factor Ave Site
N
LEGEND
Monitoring Well
17 Groundwater Elevation Contour (feet MSL)
18 Assumed Groundwater Elevation Contour (feet MSL)
0
1000
feet
(1 in = 700 ft)
Project No. 92C0805F
California EPA Department of Toxic Substances Control
Woodward-Clyde Consultants
GROUNDWATER ELEVATION MAP
MARCH/MAY 1993
SAN LEANDRO PLUME STUDY AREA

ATTACHMENT A

SAMPLE HANDLING PROCEDURES

Soil and groundwater samples will be packaged carefully to avoid breakage or contamination and will be delivered to the laboratory in an iced-cooler. Sample bottle/sleeve lids will not be mixed. All sample lids will stay with the original containers.

Samples will be stored in iced-coolers to maintain custody, control temperature, and prevent breakage during transportation to the laboratory. Ice, blue ice, or dry ice will be used to cool samples during transport to the laboratory. Water samples will be cooled with crushed ice.

Each sample will be identified by affixing a label on the container(s). This label will contain the site identification, sample identification number, date and time of sample collection, and the collector's initials.

Soil samples collected in brass or stainless-steel tubes or PETG liners will be preserved by covering the ends with Teflon tape and capping with plastic end-caps. The tubes and liners will be labeled, sealed in quart-size bags, and placed in an iced-cooler for transport to the laboratory.

All groundwater sample containers will be precleaned and will be obtained from a State Department of Health Services certified analytical laboratory.

A chain-of-custody form will be completed for all samples and accompany the sample cooler to the laboratory. All sample transfers will be documented in the chain-of-custody. All field personnel are personally responsible for sample collection and the care and custody of collected samples until the samples are transferred or properly dispatched.

The custody record will be completed by the field technician or professional who has been designated as being responsible for sample shipment to the appropriate laboratory. The custody record will include the following information: site identification, name of person collecting the sample(s), date and time sample(s) were collected, type of sampling conducted (composite/grab), location of sampling station, number and type of containers used, and signature of the person relinquishing samples to another person with the date and time of transfer noted.

ATTACHMENT B

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling, and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples, and trip and field blanks. Chain-of-custody forms, use of a qualified laboratory, acceptable detection limits, and proper sample preservation and holding times also provide assurance of accurate analytical data.

A quality assurance and quality control (QA/QC) program may be conducted in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

Field Samples: Additional samples may be taken in the field to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip blanks, field blanks, and duplicate samples.

Trip blanks are a check for cross-contamination during sample collection, shipment, and laboratory analysis. They are water samples that remain with the collected samples during transportation and are analyzed along with the field samples to check for residual contamination. Analytically confirmed organic-free water will be used for organic parameters and deionized water for metal parameters. Blanks will be prepared by the laboratory supplying the sample containers. The blanks will be numbered, packaged, and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is not to be opened by either the sample collectors or the handlers.

The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water sample is poured into appropriate containers to simulate actual sampling conditions. Contamination due to air exposure can vary considerably from site to site.

The laboratory will not be informed about the presence of trip and field blanks, and false identifying numbers will be put on the labels.

Duplicate samples are identical sample pairs (collected in the same place and at the same time), placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory's precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false identifying information. Data quality will be evaluated on the basis of the duplicate results.

Laboratory QA/QC: Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC tests designed to measure the amount of random and systematic errors and to signal when correction of these errors is needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and the United States Environmental Protection Agency-certified standards), duplicates, replicates, and sample spikes. Internal QC also requires adherence to written methods, procedural documentation, and the observance of good laboratory practices.

ATTACHMENT C

WASTE HANDLING AND DECONTAMINATION PROCEDURES

Decontamination: Any drilling, sampling, or field equipment that comes into contact with soil or groundwater will be decontaminated prior to its use at the site and after each incident of contact with the soil or groundwater being investigated. Decontamination is essential to obtain samples that are representative of environmental conditions and to accurately characterize the extent of soil and groundwater contamination. Hollow-stem auger flights, the drill bit, and all other soil boring devices will be steam-cleaned between the drilling of each boring.

All sample equipment, including the split-spoon sampler and brass or stainless-steel tubes, will be cleaned by washing with trisodium phosphate or Alconox type detergent, followed by rinsing with tap water. Where required by specific regulatory guidelines, a nonphosphate detergent will be used.

Waste Handling: Waste materials generated during site characterization activities will be handled and stored as hazardous waste and will be stored on site in appropriately labeled containers. Waste materials anticipated include: excavated soil, drill cuttings, development and purge water, water generated during aquifer testing, water generated during decontamination, and used personnel protection equipment such as gloves and Tyvek. The site owner will be responsible for providing the storage containers and will be responsible for the disposal of the waste materials. Drill cuttings from individual borings will be stored separately in drums or covered by plastic sheeting, and the appropriate disposal procedure will be determined by the site owner following receipt of the soil sample analytical results. Storage containers will be labeled to show material stored, known or suspected contaminant, date stored, expected removal date, company name, contact, and telephone number.

SITE HEALTH AND SAFETY PLAN

Site: **Palace Garage**
14336 Washington Avenue
San Leandro, CA 94578

Plan Prepared by: **John Mrakovich** Date: **1/20/99**

1.0 KEY PERSONNEL AND RESPONSIBILITIES

Project Manager:	**John Mrakovich**	**(510) 582-2320**
Site Safety Manager:	**John Mrakovich**	
Alternate Site Safety Manager:	**N/A**	
Field Team Members:	**N/A**	

Agency Reps: **Alameda County Health Care Services Agency (510) 567-6783**

2.0 JOB HAZARD ANALYSIS

2.1 OVERALL HAZARD EVALUATION

Hazard Level: High ( ) Moderate ( ) Low (X) Unknown ( )
Hazard Type: Liquid (X) Solid (X) Sludge ( ) Vapor/Gas (X)

Known or suspected hazardous materials present on site:

Gasoline Chemicals.

Characteristics of hazardous materials included above (complete for each chemical presents):

Corrosive ( ) Ignitable ( ) Toxic (X) Reactive ( )
Volatile (X) Radioactive ( ) Biological Agent ( )

Exposure Routes: Inhalation (X) Ingestion (X) Contact (X)

2.2 JOB-SPECIFIC HAZARDS

For each labor category specify the possible hazards based on information available (eg., Task-driller, Hazards-trauma from drill rig accidents, etc.). For each hazard, indicate steps to be taken to minimize the hazard.

Driller/Helper/Geologist-Trauma from drilling rig accidents- wear hard hat, gloves, steel-toed boots.

The following additional hazards are expected on site (i.e., snake infested area, extreme heat, etc.):

Temporary open boreholes.

Measures to minimize the effects of the additional hazards are:

Protect with barricades, caution tape, or traffic cones when unattended.

3.0 MONITORING PLAN

3.1 (a) Air Monitoring Plan

Action levels for implementation of air monitoring. Action levels should be based on published data available on contaminants of concern. Action levels should be set by persons experienced in industrial hygiene.

Level (i.e., .5 ppm)	Action Taken (i.e., commence perimeter monitoring)
5 ppm	**Stop work and monitor until air level drops below 5 ppm.**

(b) Air Monitoring Equipment

Outline the specific equipment to be used, calibration method, frequency of monitoring, locations to be monitored, and analysis of samples (if applicable).

If air monitoring is not to be implemented for this site, explain why:

3.2 Personnel Monitoring (Include hierarchy of responsibilities decision making on the site)

N/A

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Equipment used by employees for the site tasks and operations being conducted. Be Specific (eg., hard hat, impact resistance goggles, other protective gloves, etc.).

Hard hat, protective gloves (when necessary), steel-toed boots.

5.0 SITE CONTROL AND SECURITY MEASURES

The following general work zone security guidelines should be implemented:

- Work zone shall be delineated with traffic cones.
- Boreholes shall be delineated with traffic cones when drilling and sampling activities are not actually taking place.
- Visitors will not be allowed to enter the work zone unless they have attended a project safety briefing.

6.0 DECONTAMINATION PROCEDURE

List the procedures and specific steps to be taken to decontaminate equipment and PPE.

Wash equipment with a trisodium phosphate or Alconox solution and rinse with clean potable water.

7.0 TRAINING REQUIREMENTS

Prior to mobilization at the job site, employees will attend a safety briefing. The briefing will include the nature of the wastes and the site, donning personal protection equipment, decontamination procedures and emergency procedures.

8.0 MEDICAL SURVEILLANCE REQUIREMENTS

If any task requires a very high personnel protection level (OSHA Level A or B), personnel shall provide assurances that they have received a physical examination and they are fit to do the task. Also personnel will be instructed to look for any symptom of heat stress, heat stroke, heat exhaustion or any other unusual symptom. If there is any report of that kind it will be immediately followed through, and appropriate action will be taken.

9.0 STANDARD OPERATION PROCEDURES

Allcal Property Services, Inc. (ALLCAL) is responsible for the safety of its employees on site. Each contractor shall provide all the equipment necessary to meet safe operation practices and procedures for their personnel on site and be responsible for their safety.

A "Three Warning" system is utilized to enforce compliance with Health and Safety procedures practices which will be implemented at the site for worker safety:

- Eating, drinking, chewing gum or tobacco, and smoking will be allowed only in designated areas.
- Wash facilities will be utilized by workers in the work areas before eating, drinking, or use of the toilet facilities.
- Containers will be labeled identifying them as waste, debris, or contaminated clothing.
- All drilling work will comply with regulatory agency requirements.
- All site personnel will be required to wear hard hats and advised to take adequate measures for self protection.
- Any other action which is determined to be unsafe by the site safety officer will be taken.

10.0 CONFINED SPACE ENTRY PROCEDURES

No one is allowed to enter any confined space operation without proper safety measures. Specifically in case of an excavated tank pit no one should enter at any time.

11.0 EMERGENCY RESPONSE PLAN

Relevant phone numbers:

Person	Title/Phone No.
Morris Donnelly	Owner (510) 357-9835
John Mrakovich	Project Manager (510) 581-2320
Fire	911
Police	911
Ambulance	911

HEALTH AND SAFETY COMPLIANCE STATEMENT

I have received and read a copy of the project Health and Safety Plan.

I understand that I am required to have read the aforementioned document and have received proper training under the Occupational Safety and Health Act (29 CFR, Part 1910.120) prior to conducting site activities at the site.

_____ _____

Signature Date

_____ _____

Signature Date

Nearby Hospital:

San Leandro Hospital
13855 East 14th Street
San Leandro, CA 94578
Emergency (510) 667-4545