



**BROWN AND CALDWELL**

Consultants

Post Office Box 8045  
Walnut Creek, California 94596-1220  
3480 Buskirk Avenue  
Pleasant Hill, California 94523-4342  
(510) 937-9010 • FAX (510) 937-9026

ALCO  
HAZMAT

93 NOV 30 AM 10: 14

**TRANSMITTAL MEMORANDUM**

	Date	11/29/93	Job No.	1016
To: Alameda Co. Health Care Services	Subject	Tank Closure Plan		
Department of Environmental Health	Contract No.	GS09P93KTC0071		
Hazardous Materials Division	Equipment No.			
Ms. Juliet Shin	Spec. Ref.	02061		
	Submittal No.	2		

**WE ARE SENDING YOU**       Attached       Under separate cover via \_\_\_\_\_ the following items:  
 Shop drawings       Prints       Plans       Samples       Specifications  
 Copy of letter       Change order       Other Tank Closure Plan

**THESE ARE TRANSMITTED AS CHECKED BELOW:**

- For approval
- For your use
- As requested
- For review and comment
- With submittal review action noted

**SUBMITTAL REVIEW ACTIONS:**

- No exceptions taken
- Make revisions
- Amend and resubmit
- Rejected--see Remarks
- None

Copies	Date	No.	Description
3	11/19/93		Tank Closure Plan - Alameda Federal Center

**REMARKS:** Enclosed please find 3 copies of the proposed tank work/closure plan as submitted by Serrano & Cone. As indicated in their attached letter, technical questions should be directed to T&T Earth Services. Also enclosed is a check from Serrano & Cone for \$906.00 for the Alameda County Fees for review of this plan. Any administrative questions can be directed to our offices, Jill Wienbar at 510-210-2439. This is a GSA Project at the Alameda Federal Center. Reviewed plan and comments should be returned to the following address:

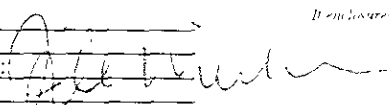
Mr. Wil Uclusin  
General Services Administration  
Design & Construction  
525 Market Street, 31st Floor  
San Francisco, CA 94105

Note that this plan is also being concurrently reviewed by Tran Pacific Geotech as a subconsultant to the Design Firm, Bay Architects, contracted by GSA.

cc:

*Enclosures are not as noted. Ref. to US as at case*

5117-02005 12/91

Signed: 

General Service Administration - Region 9  
 Design & Construction Division  
 525 Market Street  
 San Francisco, CA 94105

Page 1 of 1

Contract No. 6509P93KTC0071  
 Project: Alameda Tank & Parking Lot

Project No. RCA 21232  
 Location: Alameda Federal Center

Date: 11/23/93

To: Serrano & Core Inc.  
2092 Omega Road  
Suite F  
San Ramon, CA 94503

Your submittal, as referenced, has been reviewed and the following action taken.

Submittal No. 2 Spec. Sect: 02061 Dated: 11/19/93 Rec'd GSA NOV 25 1993

RECEIVED

No. of Copies	Description	Snp. draws.	Mats.	Manuf. Lit.	Samples	Certification	ACTION		
							Approved	Approved as noted	Not Approved
4	Tank Closure Plan							X	

TRAN PACIFIC GEOTECH / BAY ARCHITECTS, AND ALAMEDA COUNTY SHALL REVIEW THIS CLOSURE PLAN CONCURRENTLY.

Review Comments:

\* TRAN PACIFIC GEOTECH / BAY ARCHITECTS, AND ALAMEDA COUNTY SHALL REVIEW THIS CLOSURE PLAN CONCURRENTLY. 11/24/93

Reviewed by A/E: \_\_\_\_\_ Date: \_\_\_\_\_  
 Checked by: G. Pendergrass Date: 11/23/93  
 Approved by: [Signature] Date: 11/24/93

Copy to:  
 C.E. Wil McInnis  
 Coordinator: [Signature]



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**TRANSMITTAL MEMORANDUM**

To: Brown and Caldwell 3480 Buskirk Avenue Pleasant Hill CA 94523	Date <u>Nov 19, 1993</u>	Job No.
	Subject <u>Underground Tank Removal Project</u>	
	Contract No. <u>GS-09P-93-KTC-0071</u>	
	Equipment No.	
	Spec. Ref. <u>02061</u>	
Submittal No. <u>2</u>		

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:  
 Shop drawings  Prints  Plans  Samples  Specifications  
 Copy of letter  Change order  Other \_\_\_\_\_

THESE ARE TRANSMITTED AS CHECKED BELOW:  
 For approval  
 For your use  
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 For review and comment  
 With submittal review action noted

SUBMITTAL REVIEW ACTIONS:  
 No exceptions taken  
 Make revisions  
 Amend and resubmit  
 Rejected--see Remarks  
 None

Copies	Date	No.	Description
<u>4</u>	<u>Nov 19, 93</u>		<u>TANK Closure Plan</u>

REMARKS:

RECEIVED  
 NOV 23 1993

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Signed: \_\_\_\_\_

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

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# SERRANO & CONE INC.

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## General Engineering Contractors

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License #595036-A

November 29, 1993

Alameda County Health Care Services Agency  
Department of Environmental Health  
Haz. Mat. Division  
80 Swan Way, Room 200  
Oakland, CA 94621

Attn: Ms. Juliet Shin

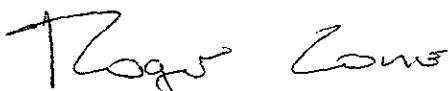
Dear Ms. Shin,

Enclosed are three copies of the proposed work plan and closure fee for removal/closure of three UST's at the Alameda Federal Center, 620 Central Ave., Alameda CA.

We would appreciate any expedition of the plan review that you may be able to afford us. Please contact Tim Smith of T & T Earth Services directly at 209 267-0903, if you have any questions.

Thank you for your attention to this proposal.

Sincerely,

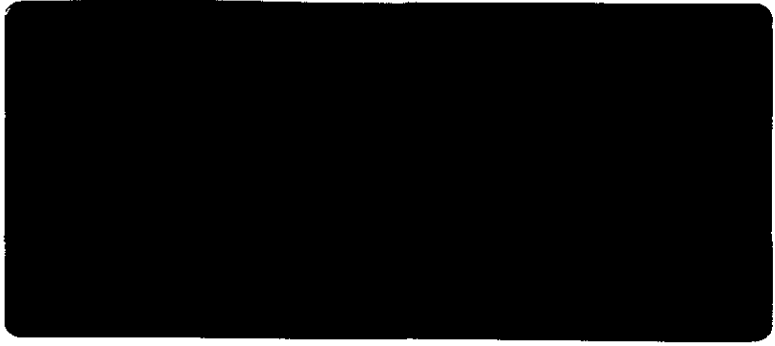


Roger Cone

ALCO  
HAZMAT  
93 NOV 31 PM 2:11

ALCO  
HAZMAT

93 NOV 30 AM 10: 14



1/13/94

Please regard comments &  
changes in red ink on  
addendum and on tank  
closure plan.

-Juliet Stein

P.S. Notify this office  
at least 48 hrs in  
advance of tank pull

GENERAL SERVICES ADMINISTRATION  
UNDERGROUND STORAGE TANK INVESTIGATION  
PROPOSED WORK PLAN:  
ALAMEDA FEDERAL CENTER,  
620 CENTRAL AVENUE, ALAMEDA, CA  
Prepared by Tim K. Smith

10-26-93

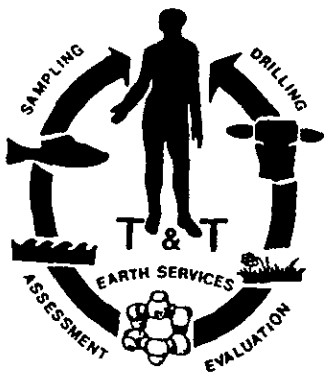
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### ALSO ATTACHED:

Appendices: Alameda County Tank Closure Forms  
Boring Logs  
Boring Location Map  
Tank Location Maps (#1,#2 and #3)

# T & T EARTH SERVICES



Tom Hunt  
P.O. Box 1121  
Jackson, CA 95642  
(209) 223-2811

Tim Smith  
P.O. Box 1618  
Sutter Creek, CA 95685  
(209) 267-0903

## UST INVESTIGATION

WORK PLAN FOR GENERAL SERVICES ADMINISTRATION  
ALAMEDA FEDERAL CENTER, 620 CENTRAL AVENUE, ALAMEDA CALIFORNIA

### SUMMARY OF PLAN

It is proposed to complete 2 underground tank closures by removal and 1 closure in place tank closure for at the Alameda Federal Center, 620 Central Avenue, Alameda California.

The site work will be completed in phases to accommodate high ground-water levels and possible high flow rates and to plan for potential excavation and ground-water pumping and disposal problems that are likely to occur during the removals.

The job is being completed according to Tri-Regional Board recommendations, Alameda County Health Care Services Agency-Department of Environmental Health-Hazardous Materials Division (ACDEH-Haz Mat) requirements and specifications as outlined under the United States General Services Administration, Project No. RCA21232 bid specifications.

### SITE LOCATION, OWNERSHIP AND CONTACT

Site Location: Alameda Federal Center, 620 Central Avenue, Alameda, California

Site Owner: General Services Administration, Design & Construction Division - 525 Market Street, 31st Floor, San Francisco, California 94105

For information call: Beverly Chin, Tel: (415) 744-5665

#### Site Contact: T&T EARTH SERVICES:

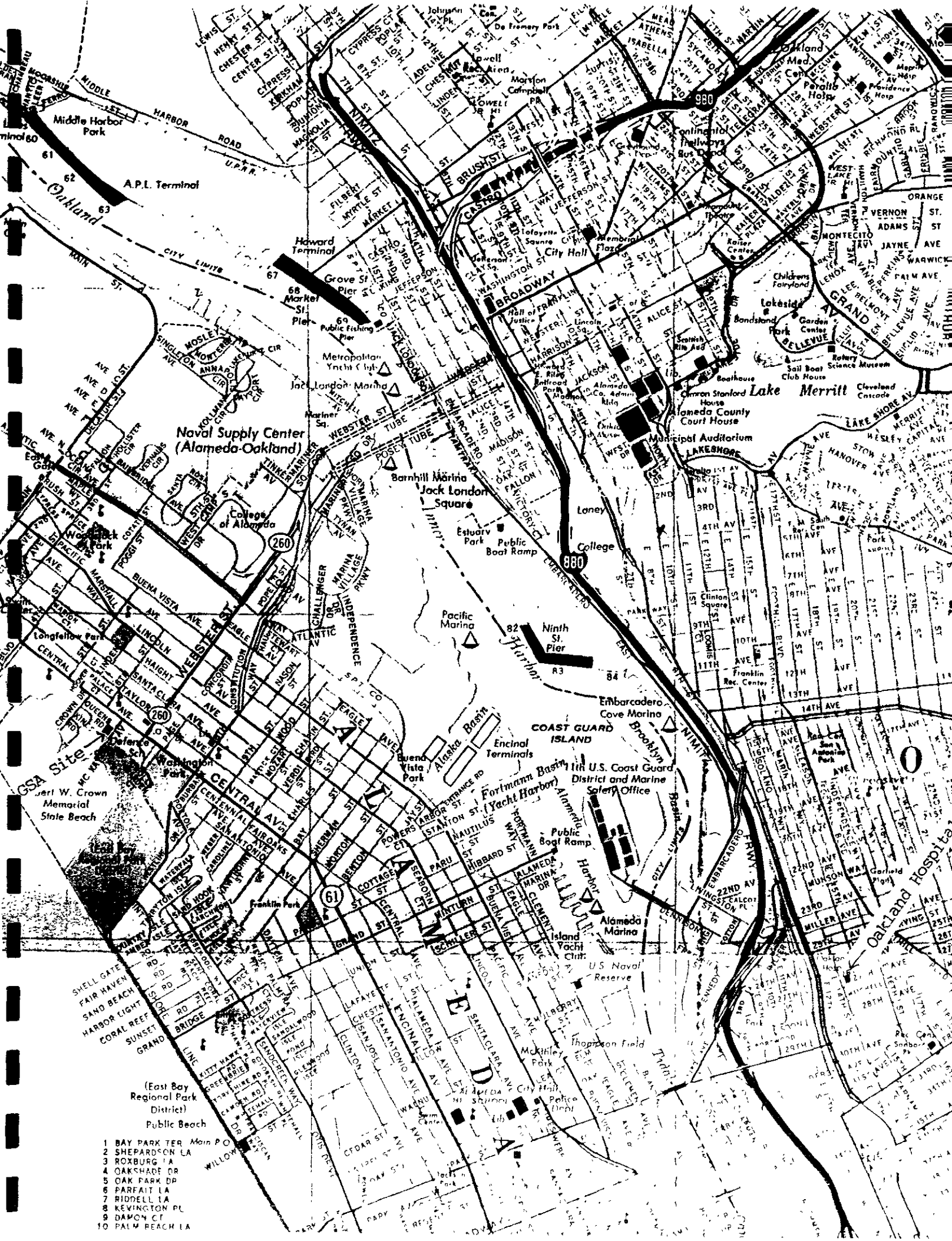
Tim K. Smith - P.O. Box 1618, Sutter Creek, CA 95685

Telephone: (209)267-0903 or

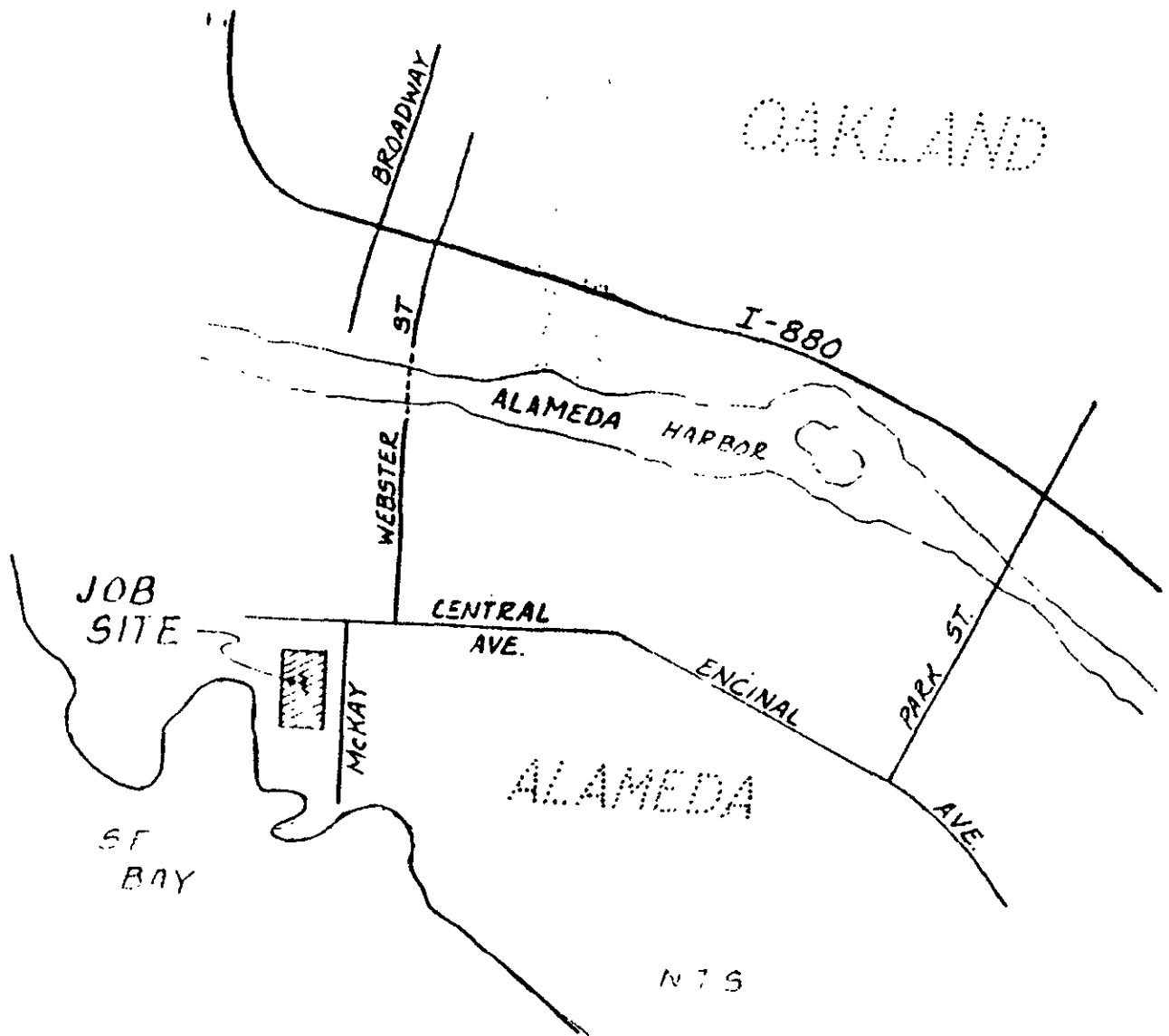
Thomas H. Hunt, III - P.O. Box 1121, Jackson, CA 95642

Telephone: (209)223-2811





- 1 BAY PARK TER Main P.O.
- 2 SHEPARDSON LA
- 3 ROXBURG LA
- 4 OAKSHADE DR
- 5 OAK PARK DP
- 6 PARFAIT LA
- 7 RIDDELL LA
- 8 KEVINGTON PL
- 9 DAMON CT
- 10 PALM BEACH LA



V I C I N I T Y M A P

## INVESTIGATORS QUALIFICATIONS

The project is being subcontracted from Serrano & Cone, Inc., general engineering contractors, by T & T EARTH SERVICES, a partnership between Hunt Drilling Co., Inc. and TKS Consulting Ltd. Hunt Drilling operates as a Class A General Engineering Contractor with Haz Mat Certificate and C-57 Water Well License # 563592. TKS Consulting operates with Tim K. Smith, Reg. Geologist #4013 and Registered Environmental Assessor #00291. Hunt has operated in California for 14 years and TKS has operated in California for 8½ years.

## WORK PROPOSED BY STAGES

The following stages are proposed for Tanks 1 and 2:

1. Backflush all product lines into tanks and triple rinse, pump and dry ice inert tanks.
2. Drill and complete 2 soil borings at each tank, one to be converted to a temporary monitoring well at each tank site to check ground-water quality and quantity adjacent to the two tanks. Sample soils at the water-soil interface and the water within the wells when completed. Complete slug tests on wells to determine approximate ground-water flow. Sample beneath product lines at 20 foot intervals.
- 3.A. Based on the results of the sampling showing no ground-water contamination and ground water flows at less than 60 gallons per minute, there will be extraction wells constructed to allow dewatering of the tank pits to a depth of 2 feet below the tank pit bottoms. This water will be discharged to the storm-sewer system on site.
- 3.B. If the ground-water sampling shows contamination, then a separate plan will be filed to handle and/or treat the water on site during tank removal.
4. Excavation of the tanks. This will take place during low tide periods. This will include sidewall excavation to 2 feet around the tanks, tank removal, and backfilling of the tank pits with #2 baserock or pea gravel. The tanks will be manifested, hauled as hazardous material by Erickson Inc. and disposed of appropriately.

The tank pit spoils will be sampled with one four point composite sample per 50 cubic yards of material. The spoils will be bermed and stored on site on plastic sheeting and covered securely with plastic sheeting pending results of the soil and water sample analysis. Clean spoils will be backfilled into the tank pits or hauled away at the owners discretion.

Contaminated spoils will be manifested and hauled to facility permitted to handle soils at the characterized contamination level.

The asphalt and concrete will be hauled to a class three disposal site.

#### Proposed Closure Alternatives for Tank # 3:

For closure of the #3 tank, it appears that substantial complications can be avoided and savings can be realized by closing this tank in place. This cost would be realized through savings in shoring which may be necessary to protect the retaining wall, dewatering and tank disposal fees.

Additionally, dewatering of the area could affect the relative buoyancy of the large swimming pool above and behind the retaining wall causing unavoidable damage even with shoring in place.

Therefore, the following alternatives are proposed for closing Tank #3 in place or by removal at the discretion of the site owner.

The tank is currently completely covered by asphalt and adjacent to a retaining with unknown separation.

#### Alternative 1

1. Locate tank product lines and backflush into tank. Locate fill spout and triple rinse pump and dry ice inert tank. Sample under product lines as appropriate.
2. Complete 2 temporary monitoring wells and sample soil quality at the water-soil interface. Sample water quality and slug test well upon completion of well development.
3. Complete 1 (one) slant soil boring beneath the tank center to check for soil contamination 2 feet below the tank.
4. Close tank in place by filling with cement-sand slurry.

5. Handle any contaminated soils or water associated with the tank in a soil/ground-water remediation plan approved by ACEHD-Haz Mat and GSA.

#### Alternative 2

1. Complete steps as 1 and 2 above.
2. Dewater tank pit of uncontaminated water to allow excavation of tank to proceed as in tanks #1 and #2.
3. Excavate and remove tank. Manifest and transport tank and soils to appropriate disposal facilities or backfill spoils into tank pit if no contamination exists based on soil boring results and tank pit examination during excavation.
4. Discontinue pumping and Backfill tank pit with clean onsite spoils or imported # 2 base rock material.

#### SITE MAPS

Included in the work completed is a location map showing the site in relationship to The City of Alameda and a site location map.

#### PREVIOUS INVESTIGATIONS

Sixteen geotechnical borings were completed by Trans Pacific Geotechnical Consultants. Field screening showed hydrocarbon vapors and detectable gasoline odor in the borings in the vicinity of tank # 3.

#### TANK AND PIPING LAYOUT

The tank layout is shown on the site location map. The exact piping layout is unknown at this time.

#### CURRENT SITE AND TANK STATUS

The three tanks are in ground with only tank #1 and # 2 being functional. Two are thought to be diesel and gasoline fuel storage tanks and one may possible be a waste oil storage tank.

## SITE TOPOGRAPHY, GEOLOGY AND HYDROLOGY

**GEOLOGY:** The area is underlain by loose sands with abundant shell material to about 12 feet. This is probably fill material. Underlying the sand is silty sand and clay units with lower permeability than the overlying sands. These are probably native soils.

**TOPOGRAPHY:** The area is a relatively flat tidal plane and falls off slowly to San Francisco Bay some 500 to 1000 feet to the southwest.

**HYDROLOGY:** According to the geotechnical borings completed and included in the appendices, the ground-water is 4 to 5½ below surface. The shallow surface units appear to have high permeability and therefore significant water flows are suspected. Tidal activity will affect ground-water in this area.

## PROPOSED SAMPLING PROCEDURES AND EQUIPMENT

In order to characterize and estimate ground-water flows for tank pit dewatering operations a temporary monitoring well will be constructed at each tank site. Any contamination in the soils will be evident in ground-water associated with the tank sites and will be recognized by water samples collected from wells.

It is proposed to complete 4 soil borings and convert 2 of them to temporary monitor wells at tanks 1 and 2. At tank 3, there will be three soil borings completed; one of which will be converted to a temporary monitoring well for ground-water quality and quantity work. One boring will be a slant boring very near or under the tank center.

The soil borings will be completed with an 8 inch hollow stem auger drill (Ingersoll-Rand A-200). The borings will be completed to a depth of approximately 15 feet. On soil borings 1 and 2 a soil sample will be taken at the water-soil interface. On tank #3, a soil sample will be taken below the tank through the slant boring and at the water-soil interface.

Upon completion of the slant borings they will be grouted with neat-cement slurry. Soil boring spoils will be contained on site in DOT drums until proper disposal is determined.

The three wells will be completed to a depth of about 15 feet.

The wells will be constructed with 2" Schedule 40 PVC pipe with flush joint threads. The interval from 10 feet below water table to 4 feet below surface will be screened with .020 inch factory slotted pipe. Filter pack will be installed through the hollow stem from the bottom of the hole to two feet above the screened interval. The filter pack to be used will be #2 Monterey sand unless site conditions dictate other filter pack material.

Six inches of bentonite chips will be applied above the filter pack and wetted with distilled water.

The remainder of the hole will be filled with a bentonite, neat cement grout. Temporarily, a traffic rated, water tight, bolt down monitor well designated monument will be installed over a water tight, locking top plug.

After forty eight hours of setting, the wells will be developed by use of a surge block and bailer. The wells will then be purged until the water is clear and the temperature and pH are stabilized. The purge water will be contained on site in DOT 55 gallon drums until proper disposal is determined. Spoils will be contained on site in DOT drums until proper disposal is determined.

#### SAMPLE HANDLING AND ANALYSIS

The soil samples will be taken with a 1½ inch split spoon sampler lined with three six-inch brass sleeves, driven ahead of the auger. Dependent upon the position of the sample in relationship to the water level, either the middle or bottom sleeve will be taken for analysis.

The adjacent brass tube will be checked for vapors with a FID-OVA, placed in a plastic bag and sealed for geologic logging purposes. The sample tube for analysis will be capped with aluminum foil under plastic end caps, taped, labeled and put on blue ice for shipment to the lab at 4°C under chain of custody.

The soil samples will be run for TPH-G and BTEX combined (CAL LUFT, DETECTION LIMIT 1.0 PPM/BTEX-8020, DETECTION LIMIT .005 PPM), and TPH-D (mod. 8015-D, DETECTION LIMIT 1.0 PPM). In addition, a sample in the borings furthest from the monitoring wells will be run for total lead (BY AA).

Water samples will be taken after the wells have stabilized, after development, for at least 12 hours. After examination for free product with a clear PVC bailer, the well will be purged of three well volumes with a bailer and sampled by a Top Fill 40 ml. VOA bailer for tgh g or a teflon bailer for diesel.

Water samples will be stored and shipped with zero head space at 4°C to the lab under chain of custody. They will be analyzed for TPH-G/BTEX (CAL LUFT, D. L. 50.0 PPB/BTEX-8020, D.L. .5 PPB), TPH-D (mod. 8015, D.L. 50 PPB) and total lead (CAL DOHS).

#### QUALITY CONTROL

All equipment will be steam cleaned after each boring. The split spoon samples will be washed with TSP, double rinsed with distilled water between each sampling and loaded with clean brass sleeves after they have been machine washed with TSP. All rinsate will be containerized in DOT 55 gallon drums for appropriate disposal.

The lab to be used will be CALIFORNIA LABORATORY SERVICES in Sacramento. They are a California certified lab #1233. As such, there will be method blanks and surrogates run and reported on all sample procedures per CAL LAB's Quality Assurance Program. In addition, one trip blank water sample will be included and run for TPH-G and BTEX.

Tim Smith, registered Geologist #4013 and R.E.A. #00291, will serve as on-site quality control officer.



HEALTH AND SAFETY PLAN - ALAMEDA FEDERAL CENTER  
620 CENTRAL AVENUE, ALAMEDA, CALIFORNIA

A COPY OF THIS PLAN IS TO BE POSTED CONSPICUOUSLY AT THE PROJECT WORK SITE AND AT THE AVAILABLE TELEPHONES

Tom Hunt will be on site safety officer. (40 hour OSHA trained with supervising credential, contracting engineer and C-57 licensed). He will be responsible for safe operation of equipment, monitoring of the site for toxic vapors, conducting tailgate H & S meetings on a daily basis, site security and appointment of a qualified site safety officer in his absence.

Daily meetings will consist of operational safety conditions, explanation of specific hazards to be aware of and individual job safety overviews with comments/questions from crew on specific hazards.

All hazardous materials will be in highly diluted concentrations in water or sorbed to soils and in gas phase. The NIOSH Guide to Chemical Hazards will be kept on site as a guide to the listed compounds for TWA, IDLH and LEL levels. Any free product which might be found at the water table will be evaluated as outlined in the LUFT Manual. On site operations will be halted when Organic Vapor Analyzer total exceeds 1000 ppm in any confined area.

Organic vapor cartridges used in half or full face respirators will be used if open air total organic vapor levels exceed 5 ppm for any continuous length of time in excess of one minute. Half face respirators will be used in combination with eye goggles.

Florescent streamers will be attached to poles 10 feet above site elevation on adjacent fence.

Material on site consists of diesel and gasoline motor fuel and it's components. (See table)

Site compounds known to cause cancer or reproductive abnormalities are highlighted on the table.

No overhead utility service exists in the area of the work site. U.S.A. Digs will mark any and all underground services.

A Century 128-GC Organic Vapor Analyzer will be continuously operated on site and will be calibrated 3 times daily to zero air and 95 ppm methane gas.

Level D OSHA protection will be worn at the site.

A first aid kit will be on hand in all vehicles and a map showing the nearest hospital will be provided to all workers.

Mobile telephones will be continuously available at the site and all personnel will be instructed in their use.

Decontamination will consist of disassembling the drilling tools and steam cleaning of all tool parts. This will be completed after drilling of each new boring. Decontamination of sample collection devices will be done after each sample is collected. All sample collection devices will be washed in Tri Sodium Phosphate and double rinsed in clean water. All personal protective equipment will be disposed of or decontaminated at the end of each day. All personnel will be required to wash before eating or drinking on site.

There will be no confined space entry on the job.

The site is completely surrounded with a locked chain link fence at night and the backfilled tank pit is surrounded with another chain link fence for personal safety of workers and visitors.

EMERGENCY      FIRE DIAL ----- 911  
                  AMBULANCE DIAL ----- 911  
                  POLICE DIAL ----- 911

YOUR ADDRESS IS 620 CENTRAL AVENUE, ALAMEDA, CALIFORNIA

I THE UNDERSIGNED HAVE COMPLETED THE OSHA HAZ MAT 40 HOUR SAFETY TRAINING AND AM ENROLLED IN A MEDICAL SURVEILLANCE PER 29 CFR 1910.120

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CHEMICAL COMPOSITION OF GASOLINE

C = KNOWN CARCINOGEN, R = KNOWN TO CAUSE REPRODUCTIVE TOXICITY

COMPOUND	# OF CARBONS	CONCENTRATION (WEIGHT %) (a)
<u>Straight Chain Alkanes</u>		
Propane	3	0.01 - 0.14
n-Butane	4	3.93 - 4.70
n-Pentane	5	5.75 - 10.92
n-Hexane (d)	6	0.24 - 3.50
n-Heptane	7	0.31 - 1.96
n-Octane	8	0.36 - 1.43
n-Nonane	9	0.07 - 0.83
n-Decane	10	0.04 - 0.50
n-Undecane	11	0.05 - 0.22
n-Dodecane	12	0.04 - 0.09
<u>BRANCHED ALKANES</u>		
Isobutane	4	0.12 - 0.37
2,2-Dimethylbutane	6	0.17 - 0.84
2,3-Dimethylbutane	6	0.59 - 1.55
2,2,3-Trimethylbutane	7	0.01 - 0.04
Neopentane	5	0.02 - 0.05
Isopentane	5	6.07 - 10.17
2-methylpentane	6	2.92 - 3.85
3-Methylpentane	6	2.4 (Vol)
2,4-Dimethylpentane	7	0.23 - 1.71
2,3-Dimethylpentane	7	0.32 - 4.17
3,3-Dimethylpentane	7	0.02 - 0.03
2,2,3-trimethylpentane	8	0.09 - 0.23
2,2,4-Trimethylpentane	8	0.32 - 4.58
2,3,3-Trimethylpentane	8	0.05 - 2.28
2,3,4-Trimethylpentane	8	0.11 - 2.80
2,4-Dimethyl-3-ethylpentane	9	0.03 - 0.07
2-Methylhexane	7	0.36 - 1.48
3-Methylhexane	7	0.30 - 1.77
2,4-Dimethylhexane	8	0.34 - 0.82
2,5-Dimethylhexane	8	0.24 - 0.52
3,4-Dimethylhexane	8	0.16 - 0.37
3-Ethylhexane	8	0.01
2-methyl-3-ethylhexane	9	0.04 - 0.13
2,2,4-Trimethylhexane	9	0.11 - 0.18
2,2,5-Trimethylhexane	9	0.17 - 5.89
2,3,3-Trimethylhexane	9	0.05 - 0.12
2,3,5-Trimethylhexane	9	0.05 - 1.09
2,4,4-Trimethylhexane	9	0.02 - 0.16

C = KNOWN CARCINOGEN, R = KNOWN TO CAUSE REPRODUCTIVE TOXICITY

COMPOUND	# OF CARBONS	CONCENTRATION (WEIGHT %) (a)
2-Methylheptane	8	0.48 - 1.05
3-Methylheptane	8	0.63 - 1.54
4-Methylheptane	8	0.22 - 0.52
2,2-Dimethylheptane	9	0.01 - 0.08
2,3-Dimethylheptane	9	0.13 - 0.51
2,6-Dimethylheptane	9	0.07 - 0.23
3,3-Dimethylheptane	9	0.01 - 0.08
3,4-Dimethylheptane	9	0.07 - 0.33
2,2,4-Trimethylheptane	10	0.12 - 1.70
3,3,5-Trimethylheptane	10	0.02 - 0.06
3-Ethylheptane	10	0.02 - 0.16
2-Methyloctane	9	0.14 - 0.62
3-Methyloctane	9	0.34 - 0.85
4-Methyloctane	9	0.11 - 0.55
2,6-Dimethyloctane	10	0.06 - 0.26
2-Methylnonane	10	0.06 - 0.41
3-Methylnonane	10	0.06 - 0.32
4-Methylnonane	10	0.04 - 0.26
<u>Cycloalkanes</u>		
Cyclopentane	5	0.19 - 0.58
Methylcyclopentane	6	Not Quantified
1-Methyl-cis-2-ethylcyclopentane	8	0.06 - 0.11
1-Methyl-trans-3-ethylcyclopentane	8	0.06 - 0.12
1-cis-2-dimethylcyclopentane	7	0.07 - 0.13
1-Trans-2-dimethylcyclopentane	7	0.06 - 0.20
1,1,2-Trimethylcyclopentane	8	0.06 - 0.11
1-Trans-2-cis-3-trimethylcyclopentane	8	0.01 - 0.25
1-Trans-2-cis-4-trimethylcyclopentane	8	0.03 - 0.16
Ethylcyclopentane	7	0.14 - 0.21
n-Propylcyclopentane	8	0.01 - 0.02
Isopropylcyclopentane	8	0.01 - 0.02
1-Trans-3-dimethylcyclohexane	8	0.05 - 0.12
Ethylcyclohexane	8	0.17 - 0.42

C = KNOWN CARCINOGEN, R = KNOWN TO CAUSE REPRODUCTIVE TOXICITY

COMPOUND	# OF CARBONS	CONCENTRATION (WEIGHT %) (a)
<u>Straight Chain Alkenes</u>		
cis-2-butane	4	0.13 - 0.17
trans-2-butane	4	0.16 - 0.20
Pentane-1	5	0.33 - 0.45
cis-2-pentane	5	0.43 - 0.67
trans-2-pentane	5	0.52 - 0.90
cis-2-hexene	6	0.15 - 0.24
trans-2-hexene	6	0.18 - 0.36
cis-3-hexene	6	0.11 - 0.13
trans-3-hexene	6	0.12 - 0.15
cis-3-heptene	7	0.14 - 0.17
trans-2-heptene	7	0.06 - 0.10

Branched Alkenes

2-Methyl-1-butene	5	0.22 - 0.66
3-Methyl-1-butene	5	0.08 - 0.12
4-Methyl-2-butene	5	0.96 - 1.28
2,3-Dimethyl-1-butene	6	0.08 - 0.10
2-Methyl-1-pentene	6	0.20 - 0.22
2,3-Dimethyl-1-pentene	7	0.01 - 0.02
2,4-Dimethyl-1-pentene	7	0.02 - 0.03
4,4-Dimethyl-1-pentene	7	0.06 (Vol)
2-Methyl-2-pentene	6	0.27 - 0.32
3-Methyl-cis-2-pentene	6	0.35 - 0.45
3-Methyl-trans-2-pentene	6	0.32 - 0.44
4-Methyl-cis-2-pentene	6	0.04 - 0.05
4-Methyl-trans-2-pentene	6	0.08 - 0.30
4,4-Dimethyl-cis-2-pentene	7	0.02
4,4-Dimethyl-trans-2-pentene	7	Not quantified
3-Ethyl-2-pentene	7	0.03 - 0.04

Cycloalkenes

Cyclopentene	5	0.12 - 0.18
3-Methylcyclopentene	6	0.03 - 0.08
Cyclohexene	6	0.03

C = KNOWN CARCINOGEN, R = KNOWN TO CAUSE REPRODUCTIVE TOXICITY

COMPOUND	# OF CARBONS	CONCENTRATION (WEIGHT %) (a)	
<u>Alkyl Benzenes</u>			
Benzene (d)	6	0.12 - 3.50	.....C
Toluene (d)	7	2.73 - 21.80	.....R
o-Xylene (d)	8	0.68 - 2.86	
m-Xylene (d)	8	1.77 - 3.87	
p-Xylene (d)	8	0.77 - 1.58	
1-Methyl-4-ethylbenzene	9	0.18 - 1.00	.....C
1-Methyl-2-ethylbenzene	9	0.19 - 0.56	.....C
1-Methyl-3-ethylbenzene	9	0.31 - 2.86	.....C
1-Methyl-2-n-propylbenzene	10	0.01 - 0.17	.....C
1-Methyl-3-n-propylbenzene	10	0.08 - 0.56	.....C
1-Methyl-3-isopropylbenzene	10	0.01 - 0.12	.....C
1-Methyl-3-t-butylbenzene	11	0.03 - 0.11	.....C
1 Methyl-4-t-butylbenzene	11	0.04 - 0.13	.....C
1,2-Dimethyl-3-ethylbenzene	10	0.02 - 0.19	.....C
1,2-Dimethyl-4-ethylbenzene	10	0.50 - 0.73	.....C
1,3-Dimethyl-2-ethylbenzene	10	0.21 - 0.59	.....C
1,3-Dimethyl-4-ethylbenzene	10	0.03 - 0.44	.....C
1,3-Dimethyl-5-ethylbenzene	10	0.11 - 0.42	.....C
1,3-Dimethyl-5-t-butylbenzene	12	0.02 - 0.16	.....C
1,4-Dimethyl-2-ethylbenzene	10	0.05 - 0.36	.....C
1,2,3-Trimethylbenzene	9	0.21 - 0.48	.....C
1,2,4-Trimethylbenzene	9	0.66 - 3.30	.....C
1,3,5-Trimethylbenzene	9	0.13 - 1.15	.....C
1,2,3,4-Tetramethylbenzene	10	0.02 - 0.19	.....C
1,2,3,5-Tetramethylbenzene	10	0.14 - 1.06	.....C
1,2,4,5-Tetramethylbenzene	10	0.05 - 0.67	.....C
Ethylbenzene (d)	8	0.36 - 2.86	.....C

C = KNOWN CARCINOGEN, R = KNOWN TO CAUSE REPRODUCTIVE TOXICITY

COMPOUND	# OF CARBONS	CONCENTRATION (WEIGHT %) (a)	
1,2-Diethylbenzene	10	0.57 .....	C
1,3-Diethylbenzene	10	0.05 - 0.38 .....	C
n-Propylbenzene	9	0.08 - 0.72 .....	C
Isopropylbenzene	9	<0.01 - 0.23 .....	C
n-Butylbenzene	10	0.04 - 0.44 .....	C
Isobutylbenzene	10	0.01 - 0.08 .....	C
sec-Butylbenzene	10	0.01 - 0.13 .....	C
t-Butylbenzene	10	0.12 .....	C
n-Pentylbenzene	11	0.01 - 0.14 .....	C
Isopentylbenzene	11	0.07 - 0.17 .....	C
Indan	9	0.25 - 0.34	
1-Methylindan	10	0.04 - 0.17	
2-Methylindan	10	0.02 - 0.10	
4-Methylindan	10	0.01 - 0.16	
5-Methylindan	10	0.09 - 0.30	
Tetralin	10	0.01 - 0.14	

Polynuclear Aromatic Hydrocarbons

Naphthalene (d)	10	0.09 - 0.49	
Pyrene	16	Not quantified	
Benz (a) anthracene	18	Not quantified .....	C
Benz (a) pyrene	20	0.19 - 2.8 mg/kg .....	C
Benzo (e) pyrene	20	not quantified .....	C
Benzo (g,h,i) perylene	21	Not quantified .....	C

C = KNOWN CARCINOGEN, R = KNOWN TO CAUSE REPRODUCTIVE TOXICITY

<u>COMPOUND</u>	<u># OF CARBONS</u>	<u>CONCENTRATION (WEIGHT %) (a)</u>
<u>Elements</u>		
Bromine		80 - 345 ug/g
Cadmium		0.01 - 0.07 ug/g ..... C
Chlorine		80 - 300 ug/g
Lead (b)		530 - 1120 ug/g ..... R
Sodium		<0.6 - 1.4 ug/g
Sulfur (c)		0.10 - 0.15 (ASTM)
Vanadium		<0.02 - 0.001 ug/g
<u>Additives</u>		
Ethylene dibromide (d)		0.7 - 177.2 ppm ..... C
Ethylene dichloride (d)		150 - 300 ppm ..... C
Tetramethyl lead		
Tetraethyl lead		

NOTE: similar compounds related to diesel fuel should be expected on the site in relative amounts differing from the gasoline related compounds.

- a. Conversion from other units assumed 0.75 specific gravity.
- b. ASTM specification, maximum, unleaded gasoline, 0.013 g/l maximum, conventional grade gasoline, 1.1 g/l. Title 13, CAC, Section 2253.2, Maximum, leaded gasoline other than leaded high octane gasoline, 0.8 g/gallon maximum, leaded high octane gasoline, 1.0 g/gallon. Federal standards, January 1, 1986, maximum, 0.1 g/gallon.
- c. ASTM maximum, unleaded gasoline, 0.10 weight percent. Conventional grade gasoline, 0.15 weight percent, Title 13, CAC, Section 2252, maximum 300 ppm by weight.
- d. Compounds for which AALs are being developed.



## INVESTIGATION REPORTING

TKS Consulting will complete a report of investigation upon completion of the proposed field investigation and within 30 days of receipt of chemical analysis from the laboratory. The report will include documentation of samples taken, chain of custody sheets, sample results, sample locations, boring and well logs, well construction diagrams, plan maps, cross-sections and recommendations for further work, if necessary.

Three copies of the report will be furnished to the Alameda County Health Care and Services, Department of Environmental Health and Hazardous Materials Division.

In addition, the Zone 7 Water Agency Drilling Permit Application will have been submitted prior to commencement of work.

Respectfully,



Tim K. Smith  
Registered Cal. Geologist #4013  
R. E. A. #00291  
October 26, 1993

APPENDIX A

Alameda County Tank Closure Forms

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY  
DEPARTMENT OF ENVIRONMENTAL HEALTH  
HAZARDOUS MATERIALS DIVISION  
80 SWAN WAY, ROOM 200  
OAKLAND, CA 94621  
PHONE NO. 510/271-4320

*Arthur Stein 11/13/74*  
*Please regard comments/changes in red ink.*

ACCEPTED

DEPARTMENT OF ENVIRONMENTAL HEALTH  
HAZARDOUS MATERIALS DIVISION  
80 SWAN WAY, ROOM 200  
OAKLAND, CA 94621  
PHONE NO. 510/271-4320

One copy of these accepted plans must be on the job and available to all contractors and craftsmen involved with the removal.

Any change or alterations of these plans and specifications must be submitted to this Department and to the fire and police departments prior to construction. If such changes are made, a copy of the revised plans must be submitted to this Department and to the fire and police departments prior to the start of the work.

**UNDERGROUND TANK CLOSURE PLAN**

\*\*\* Complete according to attached instructions \*\*\*

1. Business Name Alameda Federal Center  
Business Owner General Services Administration
2. Site Address 620 Central Avenue  
City Alameda Zip \_\_\_\_\_ Phone \_\_\_\_\_
3. Mailing Address GSA; Design & Construction Div., 525 Market St., 31st Fl  
City San Francisco, CA Zip 94105 Phone (415)744-5665
4. Land Owner Same as above.  
Address \_\_\_\_\_ City, State \_\_\_\_\_ Zip \_\_\_\_\_
5. Generator name under which tank will be manifested \_\_\_\_\_  
United States General Services Administration  
EPA I.D. No. under which tank will be manifested CAC000875408

6. Contractor Hunt Drilling Company  
Address P. O. Box 1121  
City Jackson, CA 95642 Phone (209) 223-2811  
License Type Class A.G.E. & C57 ID# 563952

\*Effective January 1, 1992, Business and Professional Code Section 7058.7 requires prime contractors to also hold Hazardous Waste Certification issued by the State Contractors License Board. Indicate that the certificate has been received, in addition, to holding the appropriate contractors license type.

7. Consultant T&T Earth Services/TKS Consulting, Ltd.  
Address P. O. Box 1618  
City Sutter Creek, CA 95685 Phone (209) 267-0903

8. Contact Person for Investigation  
Name Tim K. Smith Title Geologist, REA  
Phone (209) 267-0903

9. Number of tanks being closed under this plan 3  
Length of piping being removed under this plan Unknown  
Total number of tanks at facility 3

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

\*\* Underground tanks are hazardous waste and must be handled \*\*  
as hazardous waste

a) Product/Residual Sludge/Rinsate Transporter

Name Erickson, Inc. EPA I.D. No. CAD009466392  
Hauler License No. 0019 License Exp. Date N/A  
Address 255 Parr Blvd.  
City Richmond, State CA Zip 94801

b) Product/Residual Sludge/Rinsate Disposal Site

Name Gibson Oil & Refining EPA I.D. No. CAD043260702  
Address 475 SeaPort Blvd.  
City Redwood City State CA Zip 94606

c) Tank and Piping Transporter

Name Erickson, Inc. EPA I.D. No. CAD009466392  
Hauler License No. 0019 License Exp. Date N/A  
Address 255 Parr Blvd.  
City Richmond State CA Zip 94801

d) Tank and Piping Disposal Site

Name Erickson, Inc. EPA I.D. No. CAD009466392  
Address 255 Parr Blvd.  
City Richmond State CA Zip 94801

11. Experienced Sample Collector

Name Tim K. Smith  
Company TKS Consulting, Ltd.  
Address P. O. Box 1618  
City Sutter Creek State CA Zip 95685 Phone (209) 267-0903

✓ 12. Laboratory

Name California Laboratory Services *Used to be Environmental Lab Corp*  
*Americana Analytical Labs*  
Address 3249 Fitzgerald Road *George Hampton P. 916-638-7301*  
City Rancho Cordova State CA Zip 95742  
State Certification No. #1233 *(Hand certification. List) ✓*

13. Have tanks or pipes leaked in the past? Yes [XX] No [ ]

If yes, describe. Unknown: Suspected leak on Tank 3 due to  
odor detected during geotechnical borings.

14. Describe methods to be used for rendering tank inert

Triple rinse with steam cleaner, pump and haul rinsate,  
then dry ice purge with 20 pounds per thousand gallons to less  
than 1000 ppm organic vapors. *10 ppm LEL and O<sub>2</sub> on gas test.*

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, ground-water, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
5,000	Diesel/Gas	soil & ground-water <i>(A minimum of 2 soil samples)</i>	soil at soil-water interface
5,000	Gas	soil & ground-water <i>(A minimum of 2 soil samples)</i>	water from monitor wells
550	Waste oil	soil & ground-water <i>(a minimum of 3 soil samples. If water present, a minimum of 2 soil samples and 1 water sample)</i>	water from monitor wells

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
<b>Stockpiled Soil Volume (Estimated)</b> 2 piles @ 36yds <sup>3</sup> 1 pile @ 20 yds <sup>3</sup>	<b>Sampling Plan</b> Sample 1-4 point composite per pile.

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
TPH-G (purgeable)	CAL LUFT (5030)	CAL LUFT	1.0ppm in soil 5000 in water
TPH-D (Extractable)	CAL LUFT	CAL LUFT (Extractable)	1.0ppm in soil 50ppb in water
BTEX	5030	8020	0.005ppm in soil 0.50ppb in water
Tolx	5520 D-F		50ppm in soil 5,000ppb in water
Chlorinated Hyd.	8010 or 8240		
heavy metals. Cd, Cr, Pb, Zn, Ni.	ICAP or AA		
PCB, PCP, PNA, + Creosote	8270		

17. Submit Site Health and Safety Plan (See Instructions)

18. Submit Worker's Compensation Certificate copy

Name of Insurer Republic Indemnity

19. Submit Plot Plan (See Instructions)

20. Enclose Deposit (See Instructions)

21. Report any leaks or contamination to this office within 5 days of discovery. The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see Instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

Signature of Contractor

Name (please type) SERRANO & CONE, INC.

Signature [Handwritten Signature]

Date Nov 29, 1993

Signature of Site Owner or Operator

Name (please type) WIL UCLUSIN, COR.

Signature [Handwritten Signature]

Date 11/24/93



## INSTRUCTIONS

### General Instructions

- \* Three (3) copies of this plan plus attachments and deposit must be submitted to this Department.
- \* Any cutting into tanks requires local fire department approval.
- \* One complete copy of your approved plan must be at the construction site at all times; a copy of your approved plan must also be sent to the landowner.
- \* State of California Permit Application Forms A and B are to be submitted to this office. One Form A per site, one Form B for each removed tank.

### Item Specific Instructions

2. SITE ADDRESS  
Address at which closure is taking place.
5. EPA I.D. NO. under which the tanks will be manifested  
EPA I.D. numbers may be obtained from the State Department of Health Services, 916/324-1781.
6. CONTRACTOR  
Prime contractor for the project.
10. STATE REGISTERED HAZARDOUS WASTE TRANSPORTERS/FACILITIES
  - a) All residual liquids and sludges are to be removed from tanks before tanks are inerted.
  - c) Tanks must be hauled as hazardous waste.
  - d) This is the place where tanks will be taken for cleaning.
15. TANK HISTORY AND SAMPLING INFORMATION  
Use History - This information is essential and must be accurate. Include tank installation date, products stored in the tank, and the date when the tank was last used.  
  
Material to be sampled - e.g. water, oil, sludge, soil, etc.  
  
Location and depth of samples - e.g. beneath the tank a maximum of two feet below the native soil/backfill interface, side wall at the high water mark, etc.

16. CHEMICAL METHODS AND ASSOCIATED DETECTION LIMITS

See attached Table 2.

17. SITE HEALTH AND SAFETY PLAN

A site specific Health and Safety plan must be submitted. We advocate the site health and safety plan include the following items, at a minimum:

- a) The name and responsibilities of the site health and safety officer;
- b) An outline of briefings to be held before work each day to appraise employees of site health and safety hazards;
- c) Identification of health and safety hazards of each work task. Include potential fire, explosion, physical, and chemical hazards;
- d) For each hazard, identify the action levels (contaminant concentrations in air) or physical conditions which will trigger changes in work habits to ensure workers are not exposed to unsafe chemical levels or physical conditions;
- e) Description of the work habit changes triggered by the above action levels or physical conditions;
- f) Frequency and types of air and personnel monitoring - along with the environmental sampling techniques and instrumentation - to be used to detect the above action levels. Include instrumentation maintenance and calibration methods and frequencies;
- g) Confined space entry procedures (if applicable);
- h) Decontamination procedures;
- i) Measures to be taken to secure the site, excavation and stockpiled soil during and after work hours (e.g. barricades, caution tape, fencing, trench plates, plastic sheeting, security guards, etc.);
- j) Spill containment/emergency/contingency plan. Be sure to include emergency phone numbers, the location of the phone nearest the site, and directions to the hospital nearest the site;
- k) Documentation that all site workers have received the appropriate OSHA approved trainings and participate in appropriate medical surveillance per 29 CFR 1910.120; and
- l) Page for employees to sign indicating they have read and will comply with the site health and safety plan.

The safety plan must be distributed to all employees and contractors working in hazardous waste operations on site. A complete copy of the site health and safety plan along with any standard operating procedures shall be on site and accessible at all times.

NOTE: These requirements are excerpts from 29 CFR Part 1910.120(b)(4), Hazardous Waste Operations and Emergency Response; Final Rule, March 6, 1989. Safety plans of certain underground tank sites may need to meet the complete requirements of this Rule.

19. PLOT PLAN

The plan should consist of a scaled view of the facility at which the tank(s) are located and should include the following information:

- a) Scale;
- b) North Arrow;
- c) Property Lines;
- d) Location of all Structures;
- e) Location of all relevant existing equipment including tanks and piping to be removed and dispensers;
- f) Streets;
- g) Underground conduits, sewers, water lines, utilities;
- h) Existing wells (drinking, monitoring, etc.);
- i) Depth to ground water; and
- j) All existing tanks and piping in addition to the ones being pulled.

20. DEPOSIT

A deposit, payable to Alameda County for the amount indicated on the Alameda County Underground Storage Tank Fee Schedule, must accompany the plans.

21. Blank Unauthorized Leak/Contamination Site Report forms may be obtained in limited quantities from our office and from the San Francisco Bay Regional Water Quality Control Board (415/464-1255). Larger quantities may be obtained directly from the State Water Resources Control Board at (916) 739-2421.

22. TANK CLOSURE REPORT

The tank closure report should contain the following information:

- a) General description of the closure activities;
- b) Description of tank, fittings and piping conditions. Indicate tank size and former contents; note any corrosion, pitting, holes, etc.;

- c) Description of the excavation itself. Include the tank and excavation depth, a log of the stratigraphic units encountered within the excavation, a description of root holes or other potential contaminant pathways, the depth to any observed ground water, descriptions and locations of stained or odor-bearing soil, and descriptions of any observed free product or sheen;
- d) Description of sampling methods;
- e) Description of any remedial measures conducted at the time of tank removal;
- f) To-scale figures showing the excavation size and depth, nearby buildings, sample locations and depths, and tank and piping locations. Include a copy of the plot plan prepared for the Tank Closure Plan under item 19;
- g) Chain of custody records;
- h) Copies of signed laboratory reports;
- i) Copies of "TSDF to Generator" Manifests for all hazardous wastes hauled offsite (sludge, rinsate, tanks and piping, contaminated soil, etc.); and
- j) Tabulation of the volume and final destination of all non-manifested contaminated soil hauled offsite.

ALAMEDA COUNTY HAZARDOUS MATERIALS DIVISION  
Acknowledgement of Refund Recipient for Site Account

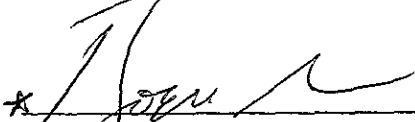
DEPOSITOR FILLS OUT PER SITE

-- REQUIRED --

The depositor will use this form to acknowledge that the property owner or his or her designee will receive any refund due at the completion of all deposit/refund projects at the site listed below.

SITE NUMBER/ADDRESS:		REFUND RECIPIENT-PROPERTY OWNER		
<u>RCA21232</u>				
Site Number				
<u>ALAMEDA FEDERAL CENTER</u>		<u>GENERAL SERVICES ADMINISTRATION</u>		
Company Name		Owner's Name		
<u>620 Central Avenue</u>		<u>525 Market St., 31st Floor</u>		
Street Address		Owner's Address		
<u>Alameda, California</u>		<u>San Francisco, CA 94105</u>		
City	Zip Code	Owner's City	State	Zip

I have read the description of the project Deposit/Refund Procedure, and have had an opportunity to ask questions about it. I understand that regardless of who deposits money into the site account, any deposit money remaining at the completion of all projects being conducted at this site will be refunded solely to the property owner or his or her designee.

  
Signature of Depositor

\* Nov 19, 1993  
Date

Serrano & Cone, Inc.  
Depositor Name

Serrano & Cone, Inc.  
Company Name

2092 Omega Rd., Ste. F  
Street Address

San Ramon, CA 94583  
City / Zip

ALAMEDA COUNTY HAZARDOUS MATERIALS DIVISION  
Declaration of Site Account Refund Recipient

SITE OWNER FILLS OUT PER SITE  
-- OPTIONAL --

The property owner will use this form to designate someone other than him- or her- self to receive any refund due at the completion of all deposit/refund projects at the site listed below. In the absence of this form, the property owner will receive any refund. Only one person at any one time may be designated to receive any refund.

SITE NUMBER/ADDRESS:		PROPERTY OWNER		
_____ Site Number		_____		
_____ Company Name		_____ Owner's Name		
_____ Street Address		_____ Owner's Address		
_____ City	_____ Zip Code	_____ Owner's City	_____ State	_____ Zip

I designate the following person to receive any refund due at the completion of all deposit/refund projects:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City / Zip

\_\_\_\_\_  
Property Owner Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Property Owner Name

RETURN FORM TO: Alameda County, Hazardous Materials Div.  
80 Swan Way, Rm 200  
Oakland, CA 94621-1439  
Phone: (510) 271-4320

APPENDIX B

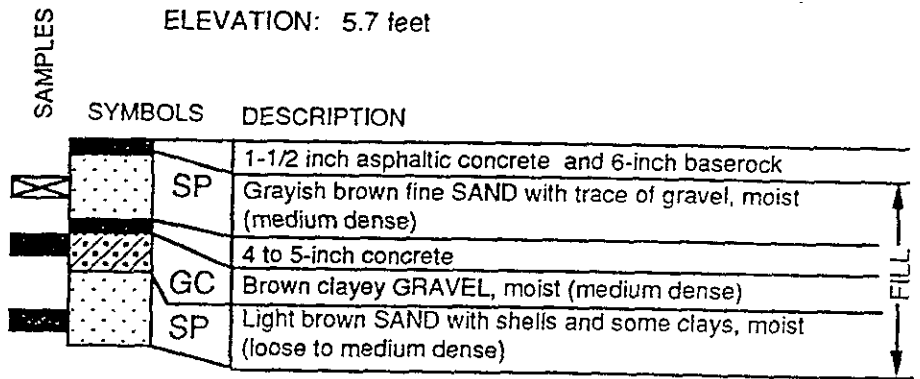
Boring Logs w/ Location Map

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
15	15	116	U	11 4"
19	19	97	U	37
5				25
10				

## BORING 1

DATE DRILLED: 4/28/92

ELEVATION: 5.7 feet



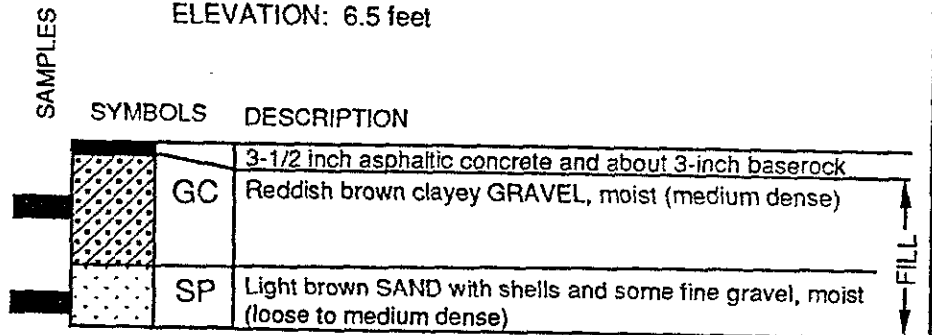
No groundwater encountered.

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
14	14	114	U	52
17	17	96	U	46
5				
10				

## BORING 2

DATE DRILLED: 4/28/92

ELEVATION: 6.5 feet



No groundwater encountered.

### NOTES:

1. Boring 1 terminated at a depth of 5-1/2 feet.
2. Boring 2 terminated at a depth of 5 feet.
3. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb hammer falling 30 inches after sampler has been seated 6 inches
4. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled
5. For an explanation of terms used see the Soils Classification Chart and Key to Test Data, Plate 3.

## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc.



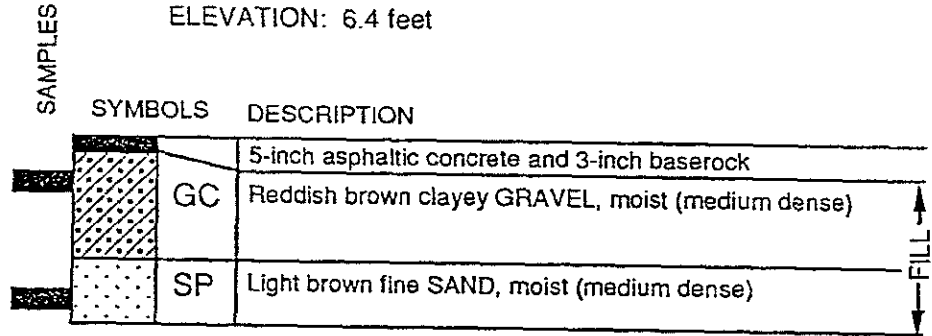
DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
10	10	124	U	32
5	5	102	U	38
10				

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
9	9	121	U	42
10	10	103	U	9
10				

### BORING 3

DATE DRILLED: 4/28/92

ELEVATION: 6.4 feet

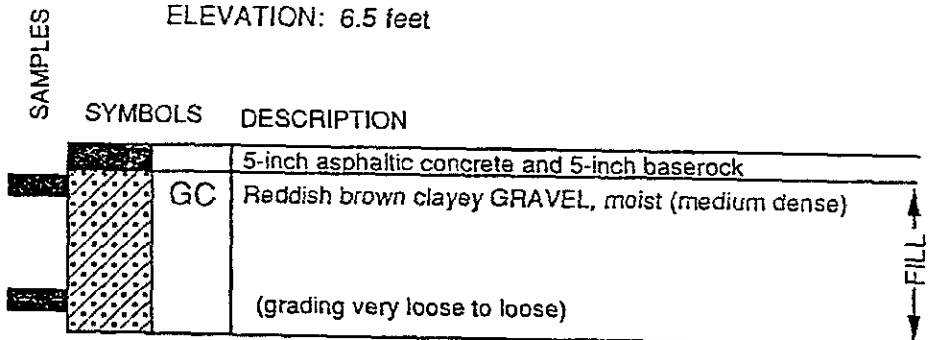


No groundwater encountered.

### BORING 4

DATE DRILLED: 4/28/92

ELEVATION: 6.5 feet



No groundwater encountered.

**NOTES:**

- 1 Boring 3 terminated at a depth of 5 feet
- 2 Boring 4 terminated at a depth of 5 feet
- 3 Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb hammer falling 30 inches after sampler has been seated 6 inches
- 4 Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled
- 5 For an explanation of terms used see the Soils Classification Chart and Key to Test Data, Plate 3

## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc.

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0	8	121	U	45
5	23	99	U	22
10				

## BORING 5

DATE DRILLED: 4/28/92

ELEVATION: 5.2 feet

SAMPLES	SYMBOLS	DESCRIPTION	FILL
		2-1/2 inch asphaltic concrete and 5-inch baserock	
	GW	Brown sandy GRAVEL, moist (medium dense)	
	SP	Brown fine SAND with shells, moist (loose)	

No groundwater encountered.

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0	8	124	U	44
5	16	88	U	34
10				

## BORING 6

DATE DRILLED: 4/28/92

ELEVATION: 5.1 feet

SAMPLES	SYMBOLS	DESCRIPTION	FILL
		3-inch asphaltic concrete and 3-inch baserock	
	GW	Brown sandy GRAVEL, moist (medium dense)	
	SP	Light brown SAND with trace of shells (medium dense)	

No groundwater encountered.

**NOTES:**

1. Boring 5 terminated at a depth of 5 feet.
2. Boring 6 terminated at a depth of 5 feet.
3. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb hammer falling 30 inches after sampler has been seated 6 inches.
4. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
5. For an explanation of terms see the Soils Classification Chart and Key to Test Data, Plate 3.

## LOG OF BORING

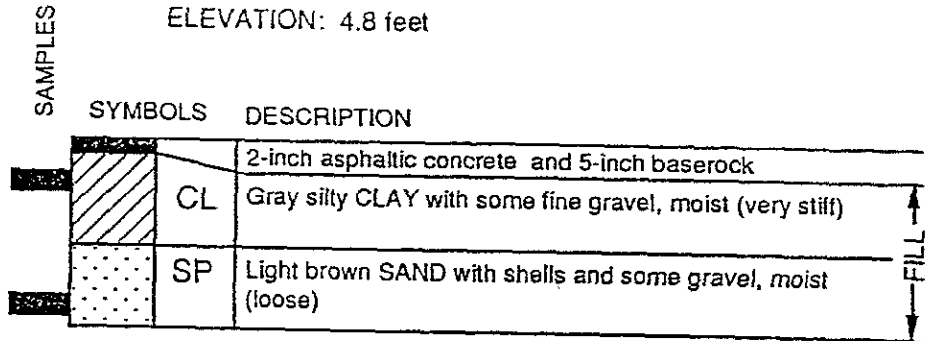
Trans Pacific Geotechnical Consultants, Inc

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0	49	72	U	36
5	16	98	U	15
10				

### BORING 7

DATE DRILLED: 4/28/92

ELEVATION: 4.8 feet



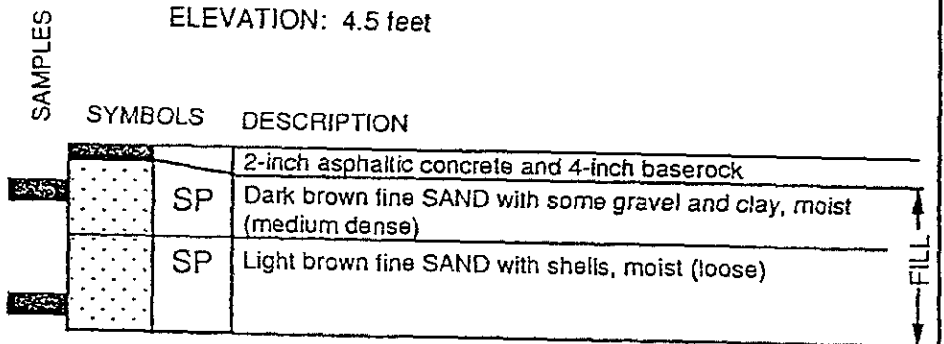
No groundwater encountered.

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0	21	96	U	42
5	4	115	U	18
10				

### BORING 8

DATE DRILLED: 4/28/92

ELEVATION: 4.5 feet



No groundwater encountered.

**NOTES:**

1. Boring 7 terminated at a depth of 5 feet.
2. Boring 8 terminated at a depth of 5 feet.
3. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
4. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
5. For an explanation of terms used see the Soils Classification Chart and Key to Test Data, Plate 3.

## LOG OF BORING

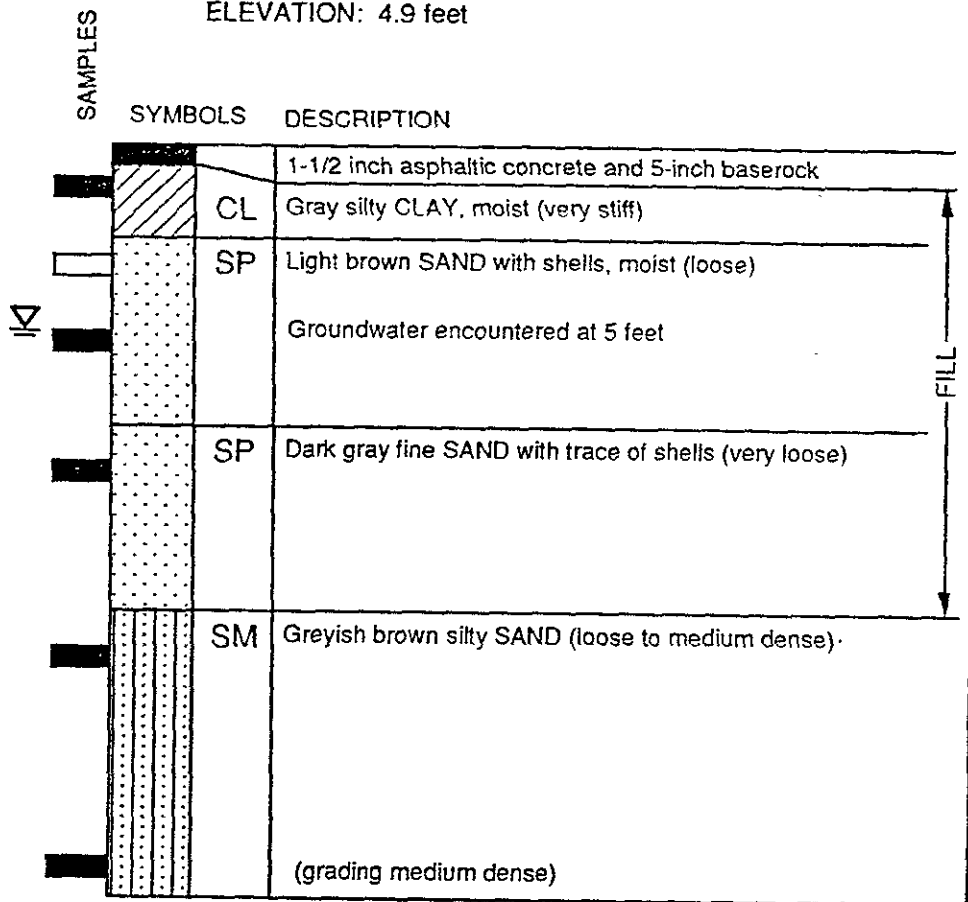
Trans Pacific Geotechnical Consultants, Inc.

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
	43	82	U	23
			U	18
5	23	98	U	10
	25	90	U	4
10				
	19	111	U	23
15				
	21	106	U	<u>34</u> 9"
20				
25				
30				
35				

# BORING 9

DATE DRILLED: 4/28/92

ELEVATION: 4.9 feet



**NOTES:**

1. Boring terminated at a depth of 20 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3.

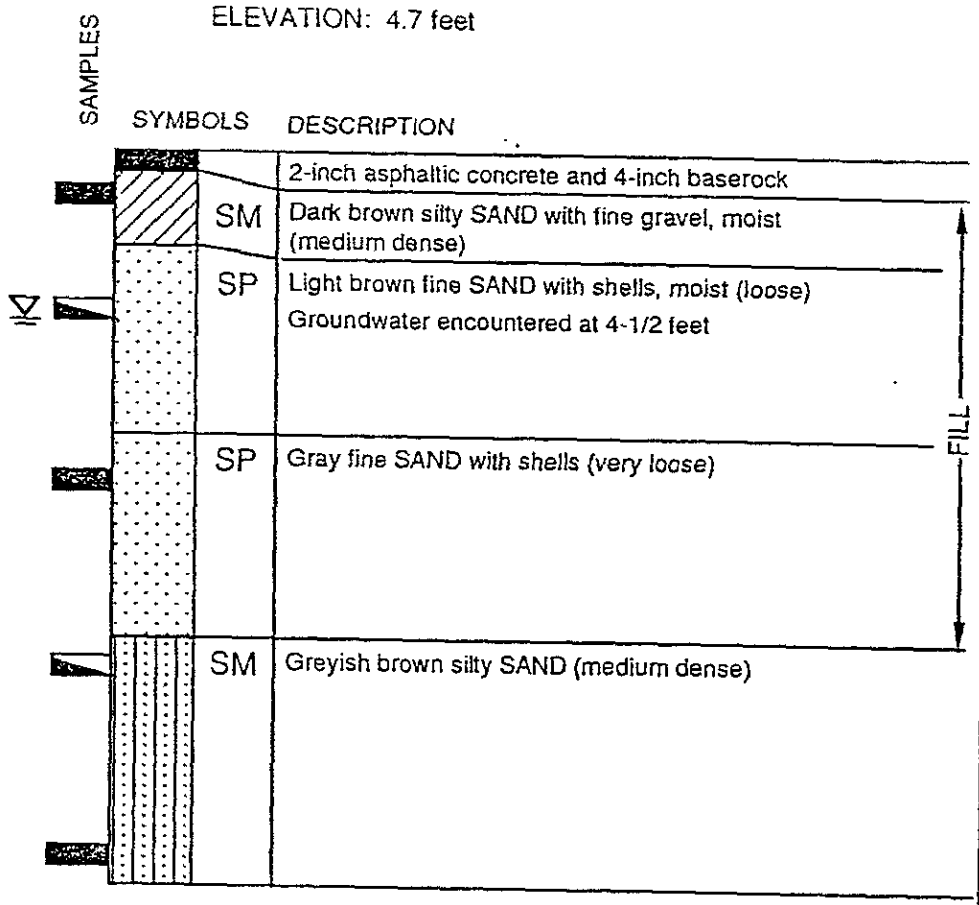
## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc.

# BORING 10

DATE DRILLED: 4/29/92  
 ELEVATION: 4.7 feet

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
11	114		U	39
20			SPT	6
22	102		U	2
19			SPT	14
23	106		U	58
30				
35				



**NOTES:**

1. Boring terminated at a depth of 19-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3.

## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc.

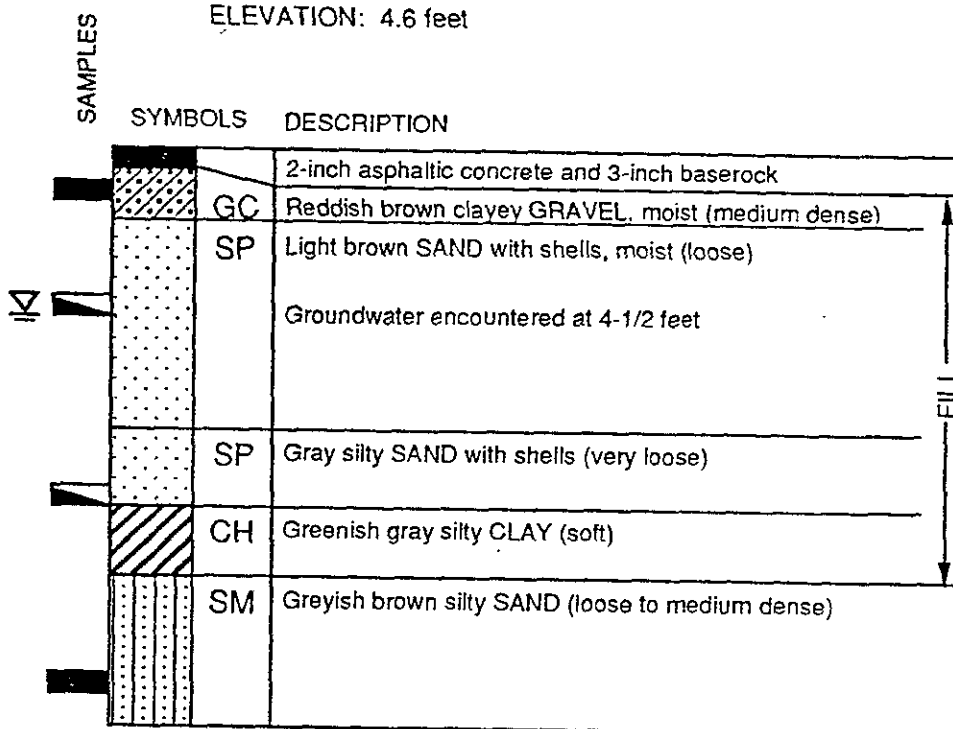
1417-uu1 General Services Administration, 620 Central Avenue, Alameda, California

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
15	15	108	U	46
21			SPT	7
5				
25	25		SPT	1
10	55			
15	21	104	U	26
20				
25				
30				
35				

# BORING 11

DATE DRILLED: 4/29/92

ELEVATION: 4.6 feet



### NOTES:

1. Boring terminated at a depth of 15-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3

## LOG OF BORING

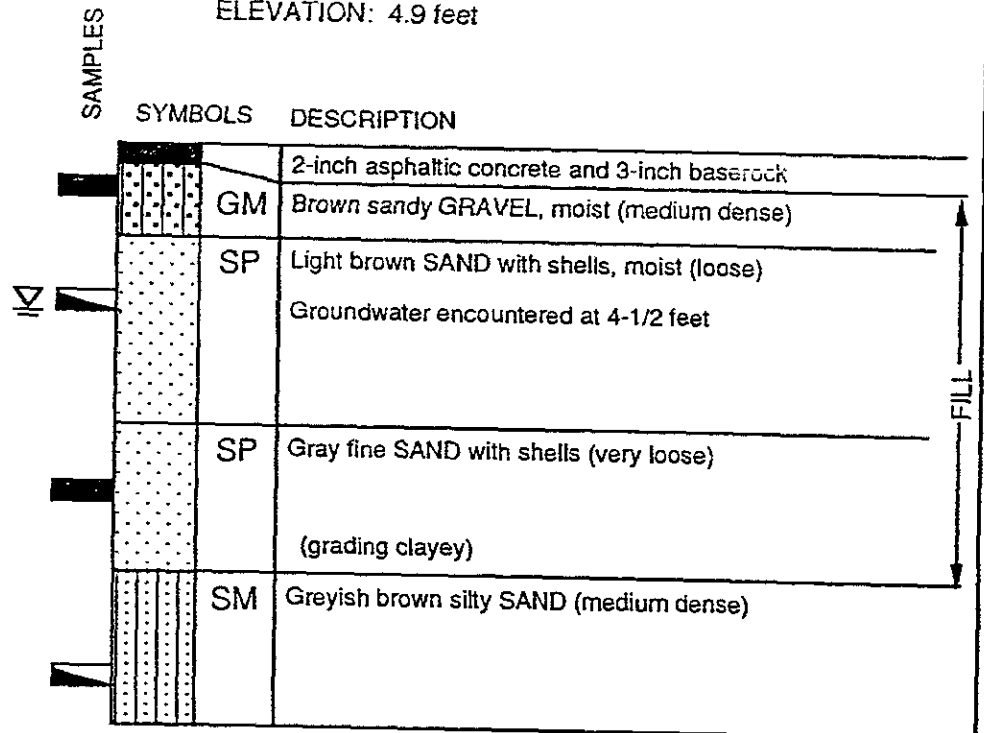
Trans Pacific Geotechnical Consultants, Inc

# BORING 12

DATE DRILLED: 4/29/92

ELEVATION: 4.9 feet

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
14	14	109	U	54
22			SPT	9
21	21	106	U	6
19			SPT	16
30				
35				



**NOTES:**

1. Boring terminated at a depth of 15-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3

## LOG OF BORING

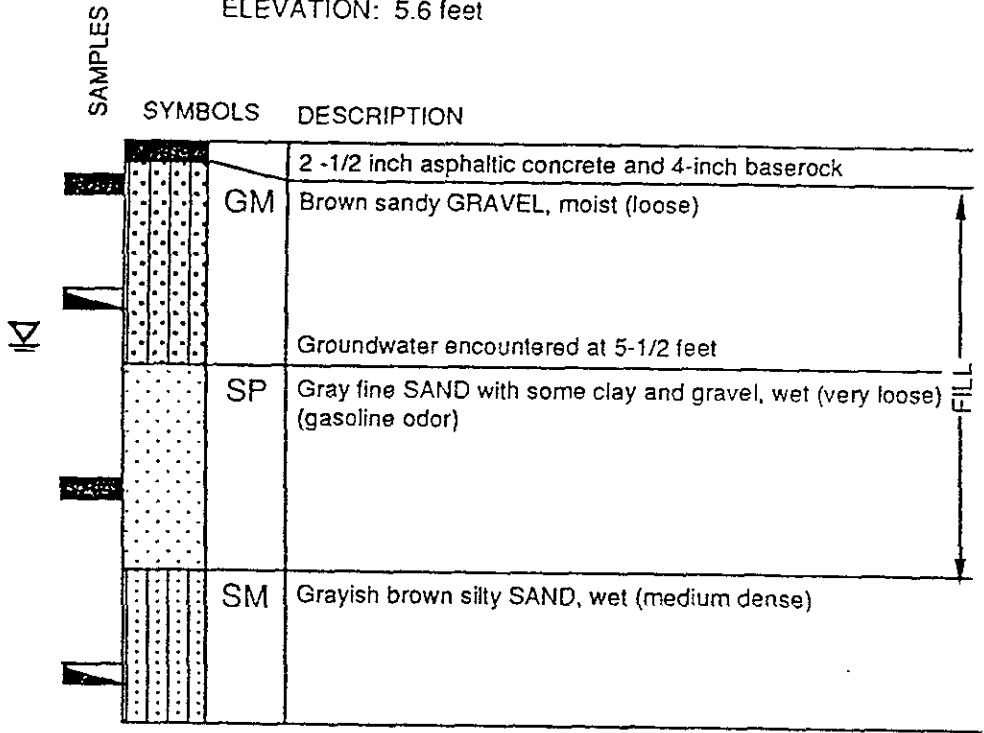
Trans Pacific Geotechnical Consultants, Inc.

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
13	13	112	U	11
14	14		SPT	5
25	25	92	U	5
21	21		SPT	28
30				
35				

# BORING 13

DATE DRILLED: 4/29/92

ELEVATION: 5.6 feet



Oil sheen observed on top of groundwater surface.

**NOTES:**

1. Boring terminated at a depth of 15-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3

## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc

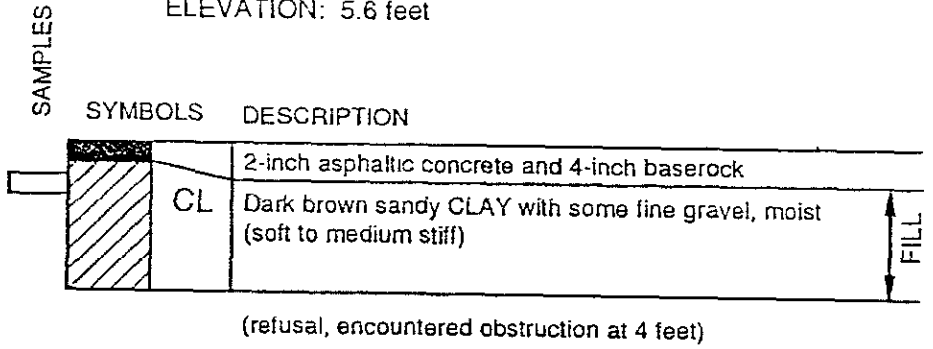


# BORING 14

DATE DRILLED: 4/29/92

ELEVATION: 5.6 feet

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0			U	11
5				
10				
15				
20				
25				
30				
35				



**NOTES:**

1. Boring terminated at a depth of 4 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3.

## LOG OF BORING

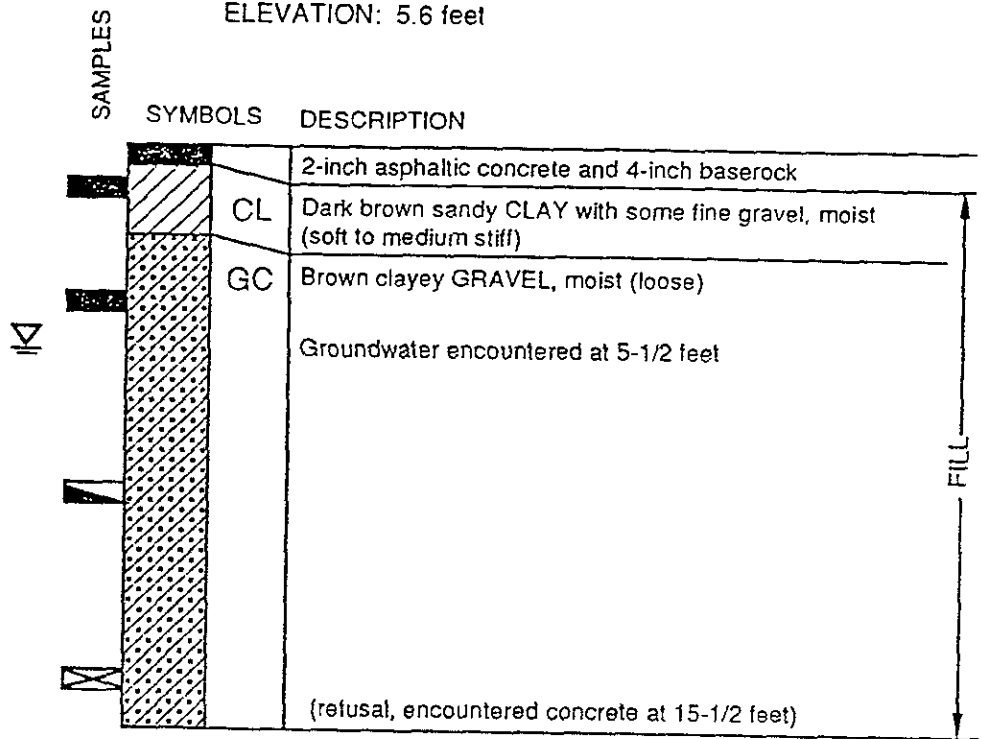
Trans Pacific Geotechnical Consultants, Inc.

# BORING 14A

DATE DRILLED: 4/29/92

ELEVATION: 5.6 feet

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
19	19	104	U	4
17	17	112	U	11
5				
18			SPT	8
15	15		U	$\frac{25}{9}$
20				
25				
30				
35				



**NOTES:**

1. Boring terminated at a depth of 15-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3

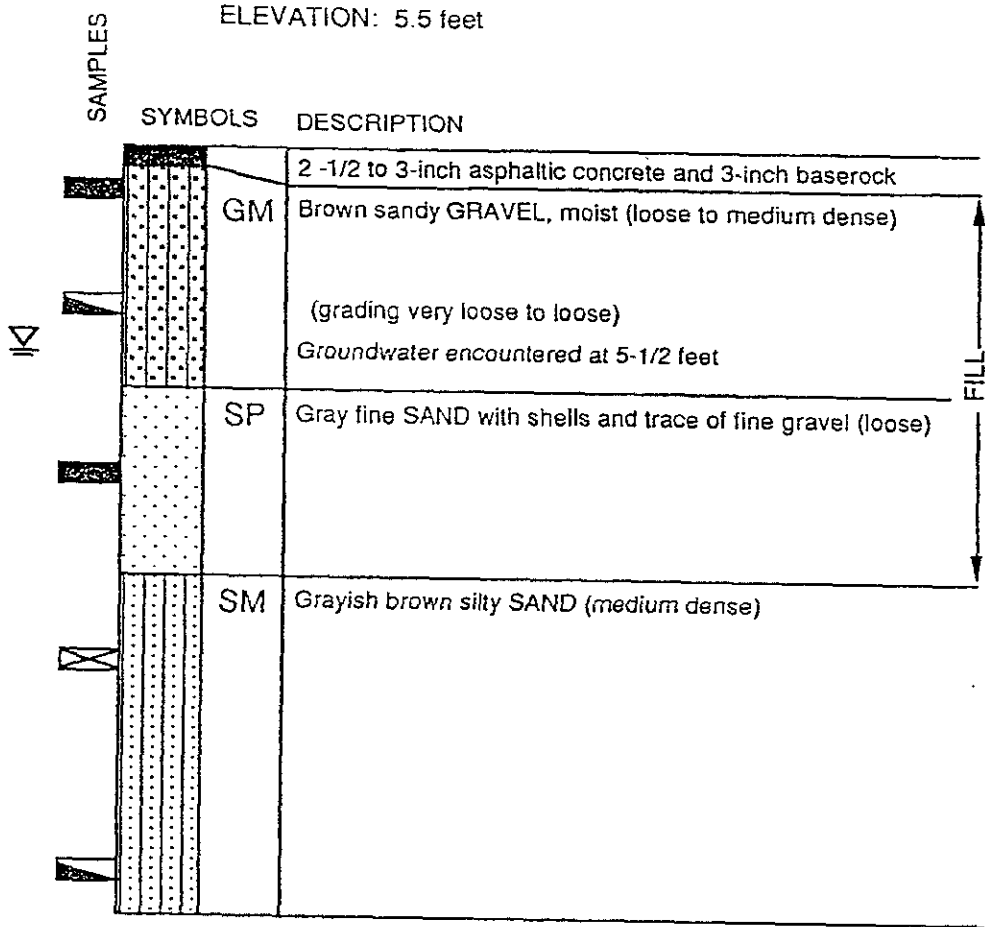
## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc

# BORING 15

DATE DRILLED: 4/29/92  
 ELEVATION: 5.5 feet

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
14	14	112	U	28
5	16		SPT	5
20	20	105	U	18
15	18		U	44 6"
22	22		SPT	27
25				
30				
35				



**NOTES:**

1. Boring terminated at a depth of 20-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data Plate 3.

## LOG OF BORING

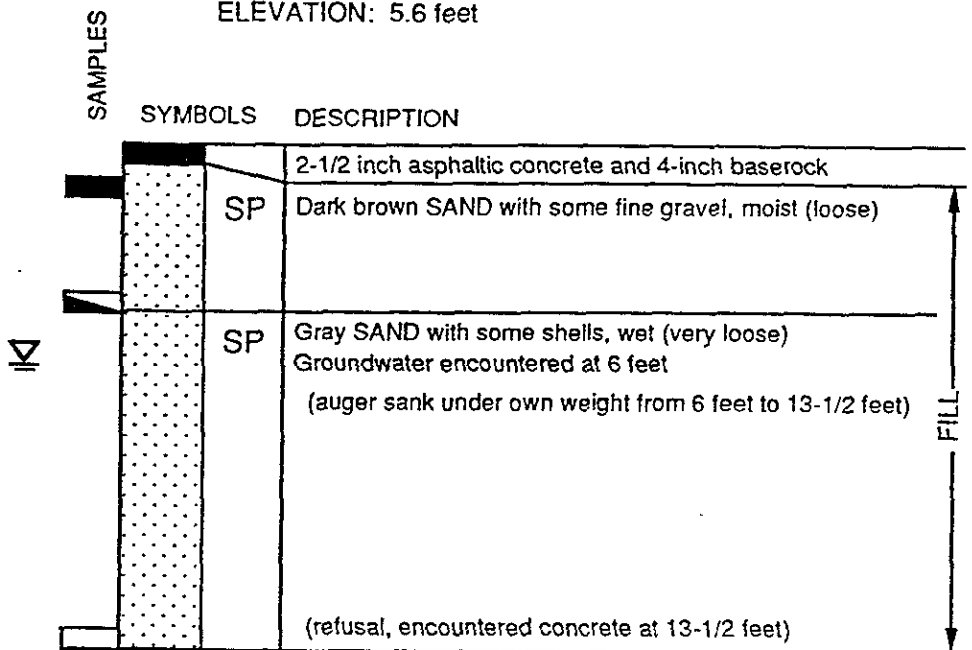
Trans Pacific Geotechnical Consultants, Inc.

# BORING 16

DATE DRILLED: 4/29/92

ELEVATION: 5.6 feet

DEPTH IN FEET	LAB DATA		SAMPLING	
	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLER TYPE	SAMPLING RESISTANCE
0				
14	14	87	U	17
31	31		U	1
5				
10				
15			U	50 1/2"
20				
25				
30				
35				



**NOTES:**

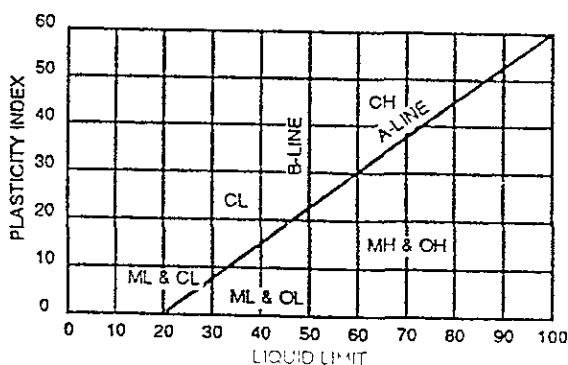
1. Boring terminated at a depth of 13-1/2 feet.
2. Sampling resistance is measured in blows per foot required to drive the sampler 12 inches with a 140 lb. hammer falling 30 inches after sampler has been seated 6 inches.
3. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled
4. For an explanation of terms used see the Soil Classification Chart and Key to Test Data, Plate 3

## LOG OF BORING

Trans Pacific Geotechnical Consultants, Inc.

SYMBOL	LETTER	DESCRIPTION	MAJOR DIVISIONS			
	GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	CLEAN GRAVELS (LITTLE OR NO FINES)	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE		
	GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES				
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)			
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES				
	SW	WELL-GRADED SAND OR GRAVELLY SANDS, LITTLE OR NO FINES	CLEAN SANDS (LITTLE OR NO FINES)		SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE  FOR VISUAL CLASSIFICATION, THE 1/4" SIZE MAY BE USED AS EQUIVALENT TO THE NO. 4 SIEVE SIZE	
	SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES				
	SM	SILTY SANDS, SAND-SILT MIXTURES	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)			
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES				
	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	SILTS & CLAYS LIQUID LIMIT LESS THAN 50			COARSE-GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS				
	OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY				
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	SILTS & CLAYS LIQUID LIMIT GREATER THAN 50	FINE-GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE  THE NO. 200 U.S. STANDARD SIEVE SIZE IS ABOUT THE SMALLEST PARTICLE VISIBLE TO THE NAKED EYE		
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS				
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS				
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS			

### SOIL CLASSIFICATION CHART



PLASTICITY CHART

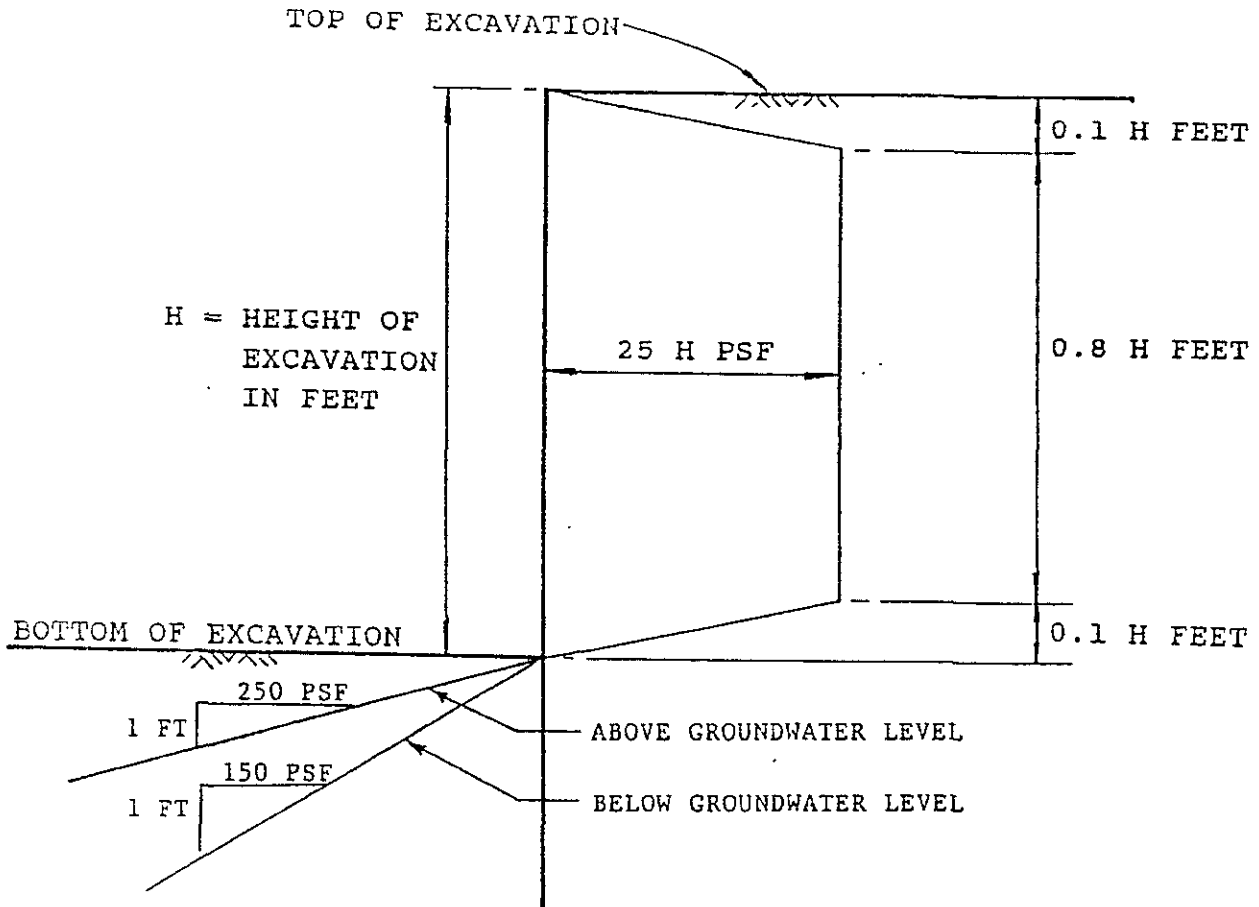
- INDICATES DEPTH OF UNDISTURBED SAMPLE
- INDICATES DEPTH OF DISTURBED SAMPLE
- INDICATES DEPTH OF SAMPLING ATTEMPT WITH NO RECOVERY
- INDICATES DEPTH OF STANDARD PENETRATION TEST

KEY TO SAMPLES

U - UNDERWATER SAMPLER  
 SPT - STANDARD PENETRATION TEST SAMPLER  
 U AND SPT SAMPLERS DRIVEN WITH 140 POUND  
 HAMMER WITH 30-INCH DROP

#### TYPES OF SOIL SAMPLERS

### SOIL CLASSIFICATION CHART & KEY TO TEST DATA



- NOTES:
- 1) FOR PASSIVE RESISTANCE, ASSUME AN EFFECTIVE WIDTH OF TWICE THE ACTUAL SOLDIER BEAM WIDTH.
  - 2) APPROPRIATE SURCHARGE FOR FOUNDATION LOADING FROM ADJACENT BUILDING SHOULD BE APPLIED.
  - 3) FACTOR OF SAFETY SHOULD BE APPLIED IN STRUCTURAL DESIGN.
  - 4) PSF = POUNDS PER SQUARE FOOT; FT = FEET
  - 5) DIAGRAM NOT TO SCALE.

RECOMMENDED EXCAVATION SHORING PRESSURES  
FOR  
BRACED EXCAVATIONS

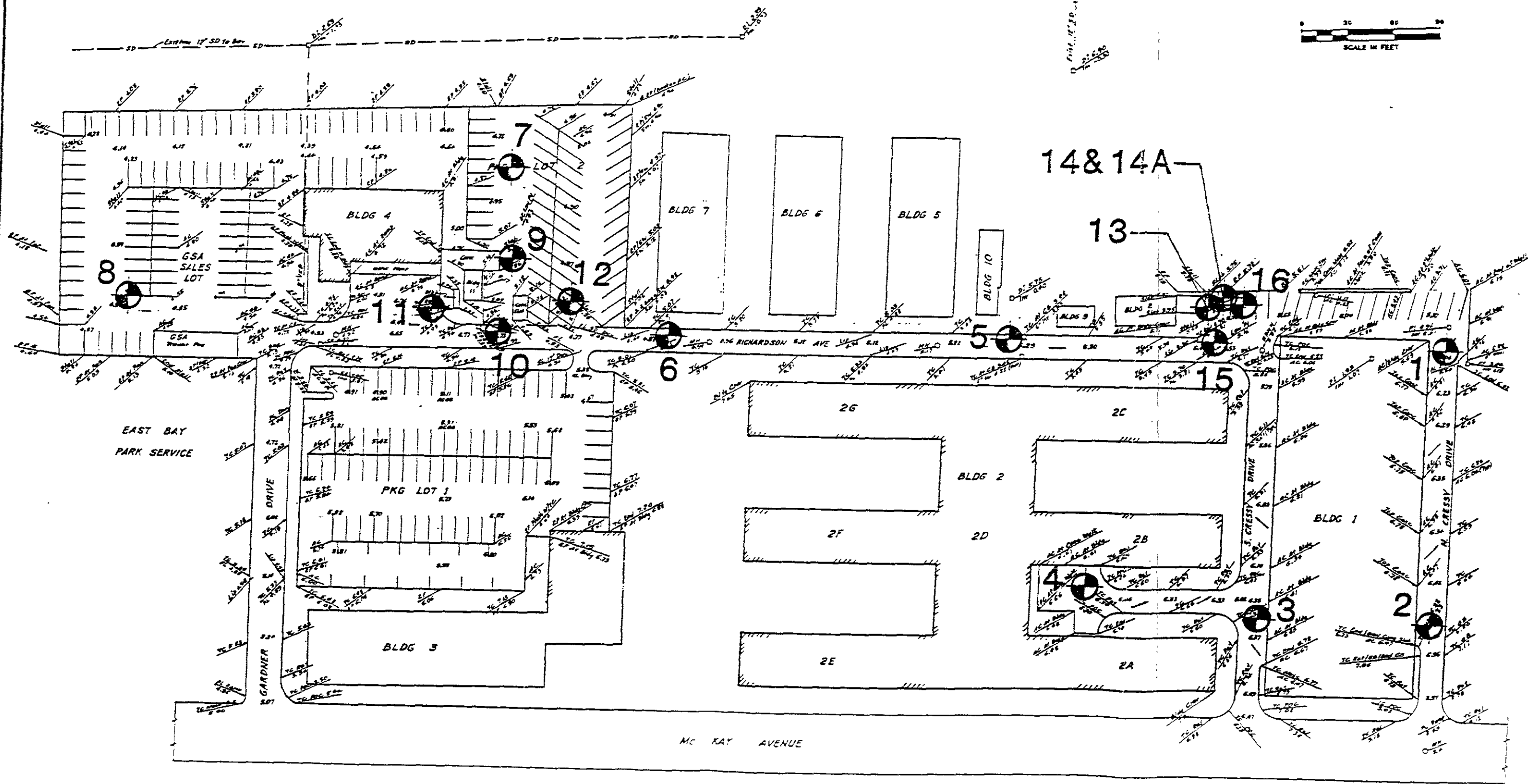
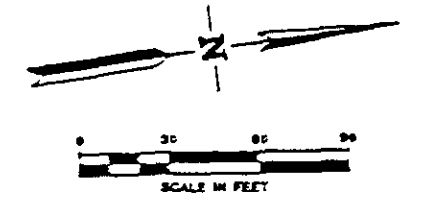
**TABLE 1**  
**ORGANIC VAPOR MONITOR READINGS**

Boring No.	Approximate Depth (ft)	Soil Description	OVM Reading (ppm)
9	1	Gray silty clay	1.2
9	4	Light brown fine sand	0.7
9	9	Dark gray fine sand	0.7
9	14	Grayish brown silty sand	0.7
10	1	Dark brown silty sand	0.7
10	2	Light brown fine sand	0.7
10	9	Dark gray fine sand	0.7
10	14	Grayish brown silty sand	0.7
11	1	Reddish brown clayey gravel	1.2
11	3	Light brown fine sand	0.7
11	10	Gray silty sand	0.7
11	13	Grayish brown silty sand	0.7
12	1	Brown sandy gravel	0.7
12	3	Light brown sand	0.7
12	9	Gray fine sand	0.7
12	12	Gray brown silty sand	0.7
13	1	Brown sandy gravel	1.2
13	7	Gray fine sand	24
13	10	Gray fine sand	3.6
13	12	Grayish brown silty sand	0.7
14	1	Dark brown sandy clay	1.2
14A	1	Dark brown sandy clay	1.2
14A	6	Brown clayey gravel	3.4
14A	8	Brown clayey gravel	34
14A	10	Brown clayey gravel	54
15	1	Brown sandy gravel	0.7
15	6-1/2	Gray fine sand	20
15	9	Gray fine sand	8.5
15	14	Grayish brown silty sand	0.7
16	1	Dark brown sand	0.7
16	5	Gray fine sand	8

NOTE: Background OVM Reading = 0.7 parts per million (ppm)

INSTRUMENT USED: Thermo Environmental Instrument, Organic Vapor Monitor 580B

1417 001 General Services Administration, 620 Central Avenue, Alameda, California



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JOB NO. N1093.10



BORING LOCATION

SITE PLAN

TRANS PACIFIC GEOTECHNICAL CONSULTANTS, INC

PLATE 1

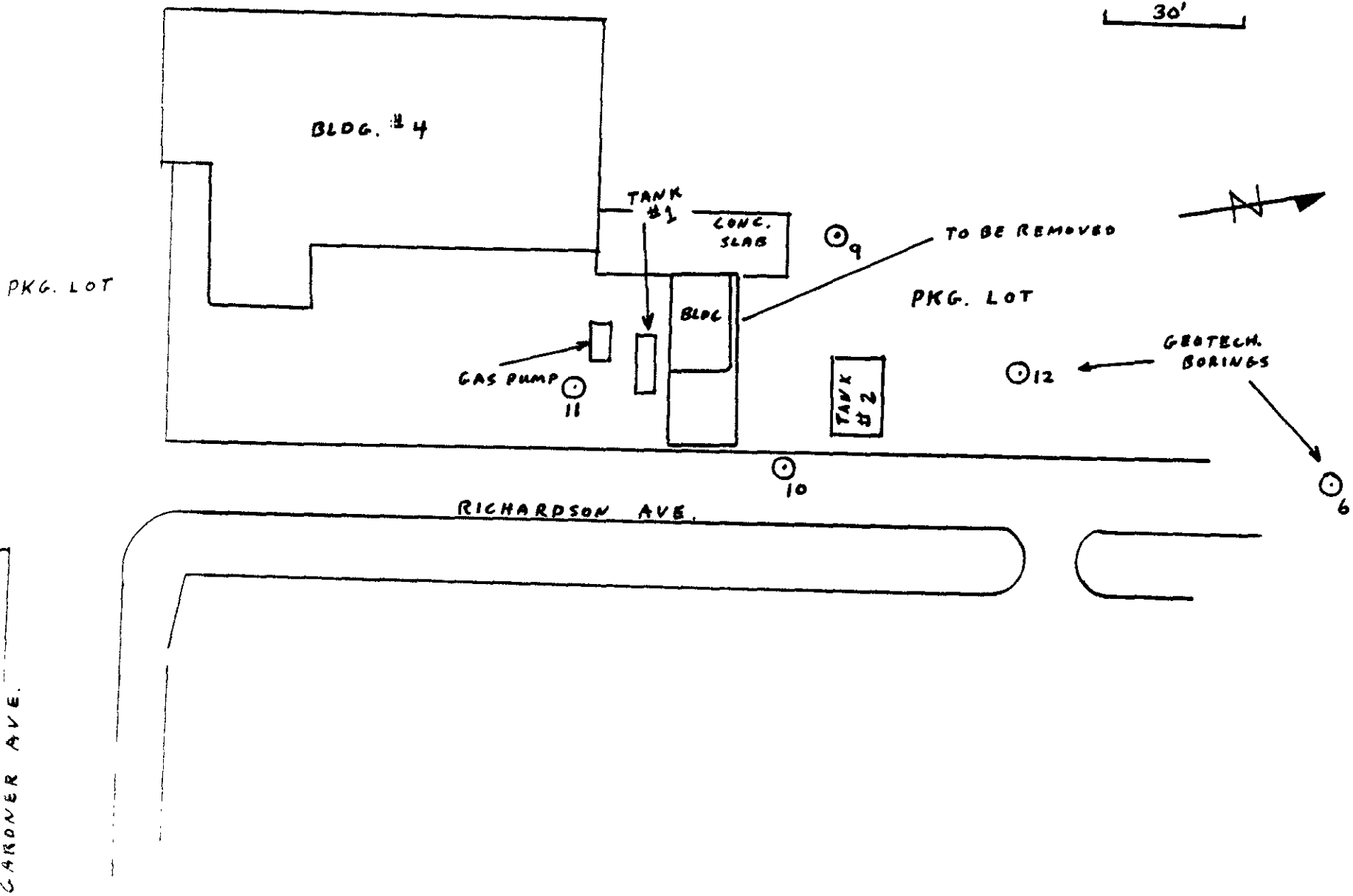


APPENDIX C

Tank Location Maps (#1, #2 and #3)

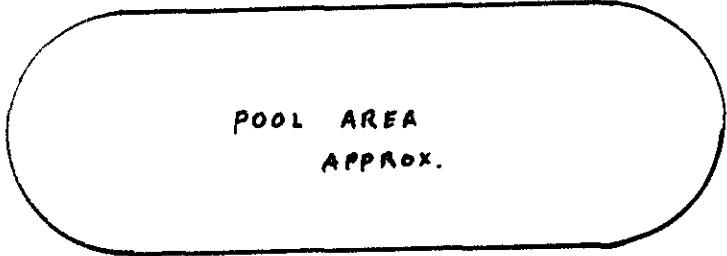
7

30'



GSA TANK #1, #2  
LOCATION MAP

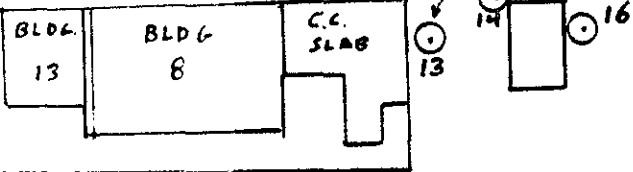
30'



POOL AREA  
APPROX.



GEOTECH. BORINGS      #3 TANK  
APPROX. LOCATION  
RETAINING WALL



15

RICHARDSON AVE

S. CRESSY DR.

BLDG. 1

N. CRESSY DR.

GSA TANK #3  
LOCATION MAP