Woodward-Clyde
Engineering & sciences applied to the earth & its environment

ENVIRONMENTAL PROTECTION
96 JAN 12 PM 12:56

January 8, 1996
941366NA

Ms. Susan Hugo
Senior Hazardous Materials Specialist
1131 Harbor Bay Parkway
Alameda, California 94501

Re: Report on Removal of Two Underground Fuel Storage Tanks and Associated Piping, Emeryville Fire Station #2, Emeryville, California

Dear Ms. Hugo:

Attached is the above-noted removal report. This was prepared in compliance with Section 22 of the underground tank closure plan approved by your office on October 2, 1995. The approved closure plan is included in Appendix A of the report.

If you have any questions regarding this submittal please call the undersigned or Mr. David Wallenstein at (510) 893-3600.

Sincerely,

David Wallenstein

for Linda Locke, P.E.
Task Manager

Xinggang Tong, Ph.D.
Project Manager

Enclosure

cc: Ignacio Dayrit, Emeryville Redevelopment Agency
George Warren, Emeryville Fire Department
Lester Feldman, Regional Water Quality Control Board

Woodward-Clyde Consultants • A subsidiary of Woodward-Clyde Group, Inc.
500 12th Street, Suite 100 • Oakland, California 94607-4014
510-893-3600 Fax 510-874-3268

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1.0 INTRODUCTION

This report describes the removal of two underground storage tanks (USTs), dispenser, and associated piping; the collection and analysis of soil samples from the excavations; and the results of ambient air monitoring at Emeryville Fire Station #2 in Emeryville, California (Figures 1 and 2). Woodward-Clyde Consultants (WCC) prepared permit applications, observed the contractor's work, and coordinated soil sampling. The prime contractor, Acutite Environmental Engineering (Acutite) performed the tank removal and backfilling, subcontracted with Erickson Environmental for transportation and recycling the tanks and subcontracted with Smith Emery to perform compaction tests.

UST removal activities were conducted on October 12, 1995. Additional backfilling and paving was conducted on October 20 and 23.

The site is owned by the City of Emeryville (City) and the City of Emeryville Redevelopment Agency authorized and funded the UST removal. WCC's services were performed in accordance with a professional services agreement dated October 2, 1995. Acutite's services were performed in accordance with their contract with the City. The work was directed and supervised by the City of Emeryville Fire Department and the Alameda County Department of Environmental Health.

1.1 SITE DESCRIPTION AND BACKGROUND

The site is located at the northwest corner of Hollis and 63rd Streets in Emeryville, as shown on Figure 1. The facility is located in a mixed use area with light commercial and residential structures in the area. The site address is 6303 Hollis Street. A commercial building is located immediately north of the site. The site is located at an approximate elevation of 15 feet above mean sea level and about one-half mile east of San Francisco Bay.

A drawing from the City files, prepared in 1949, shows the planned construction of the Fire Station on this site. It is believed that the Fire Station was constructed in about 1949, and has been in continuous use since that time. It is likely that the USTs were installed after 1949. One gas and one diesel UST had been at the site in the locations shown in Figure 2. Both USTs removed were

single-walled steel tanks. The unleaded gasoline UST may have been replaced in 1989 and the diesel UST may have been replaced in 1982. However actual replacement documents are unavailable.

1.2 PREVIOUS INVESTIGATIONS

Activities to investigate and characterize the nature and extent of petroleum hydrocarbons in soil and ground water at the Site began in March 1995.

WCC Phase I and Phase II Investigations

In March 1995 WCC performed Phase I sampling of soil and groundwater. The investigation included five borings and collection of soil samples and two grab groundwater samples in the immediate vicinity of the USTs. Groundwater was encountered at a depth of 12 below ground surface. The samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Total Petroleum Hydrocarbons as diesel (TPHd), and Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX). Results of the investigation indicated that some of the soil and groundwater in the vicinity of the tanks was impacted by gasoline-range petroleum hydrocarbons but not by diesel-range hydrocarbons. The highest reported detection of gasoline was 540 mg/kg in a soil boring adjacent to the gasoline tank.

In July 1995 WCC performed Phase II sampling of soil and groundwater. The investigation included seven borings drilled to 11 feet and collection of soil samples and grab groundwater samples from each of the borings. The samples were analyzed for TPH as gasoline and BTEX. The borings were located around the gasoline tank but at distances farther from the UST than previous borings. Results of the investigation indicated that some of the soil and groundwater in the vicinity of the tanks was impacted by gasoline range petroleum hydrocarbons. Gasoline and BTEX were detected in four of the samples at a depth of 5.5 feet, however none of the samples had detectable levels of gasoline at the lowest sample location, either 11 or 13 feet. The highest reported detection of gasoline was 480 mg/kg at 5.5 feet in a soil boring south and west of the gasoline tank.

Based on the results of these investigations and discussions with the Alameda County Department of Environmental Health (ACDEH), some remedial actions may be necessary at this site. WCC will present corrective action alternatives in a separate report.

1.3 OBJECTIVES OF THIS INVESTIGATION

The objective of the removal activities described in this report was to remove the USTs and associated piping in accordance with agency requirements.

2.0
PREPARATION FOR UST REMOVAL

WCC obtained a tank removal permit from the Emeryville Fire Department, an encroachment Permit from the City of Emeryville, and notified the Bay Area Quality Management District of the UST removal activities. WCC completed an underground tank closure plan application which was approved by the ACDEH. WCC also submitted California State Water Resources Control Board UST permit Application Forms A and B to the ACDEH with the closure plan. Copies of permits and notification forms are included in Appendix A.

Acutite notified Underground Services Alert of proposed excavation activities, and retained a utility location service to clear proposed excavation locations.

The USTs, the underground piping, and the soil overlying the USTs and piping were removed by Acutite. Field activities were performed under the health and safety plan prepared for the site investigation in accordance with the approved closure plan.

3.1 REMOVAL OF TANKS AND UNDERGROUND PIPING

Soils overlying the USTs and piping were excavated using a backhoe and stockpiled on site. The stockpiles were on and covered with plastic sheeting. Before the tanks and piping were removed from the site, sludges were pumped out of the tanks into 55-gal drums and then the insides of the tank were rinsed with water. Residual sludge and rinse water was then pumped out of the tanks and placed in 55-gal drums. Acutite subcontracted Enviro Pur for the sludge and rinse water disposal. Approximately 110 gallons of liquid was removed from the USTs. Afterward, dry ice was placed inside the USTs to render the tanks inert by displacing any explosive gases inside.

Ms. Susan Hugo of the ACDEH was present during the removal of the USTs. As requested by City of Emeryville Fire Department, Ms. Hugo took lower explosive limits and oxygen measurements of gases inside the tanks. After the USTs and associated piping had been removed from the excavations, they were transported to Erickson, Inc. of Richmond, California, a licensed hazardous waste facility. USTs were transported under an uniform hazardous waste manifest, a copy of which is included in Appendix B. Appendix B also contains Certificates of condition for the USTs. The gasoline and diesel dispenser and associated conduit is currently stored at Acutite's yard in South San Francisco. It will be recycled as non-hazardous material when Acutite has sufficient volume of material for recycling.

Figure 3 shows the approximate boundaries of the two excavations.

The depth of both excavations was approximately 7.5 feet. Groundwater was observed at an approximate depth of 7 feet.

3.2 SOIL EXCAVATION AND BACKFILLING

WCC personnel recorded flame ionization detector (FID) readings per the Site HSP and recorded visual and olfactory observations of excavated soils.

Soils surrounding the gasoline tank consisted of moist, fine-grained sandy fill material in the first 2 to 3 feet overlying silty clay below the ground surface. The diesel UST was surrounded by native sandy clay soil. Some soil surrounding the gasoline UST was stained black, however the soil surrounding the diesel soil did not seem visually to be impacted.

Approximately 35 cubic yards of soil were excavated from the gasoline UST area and 19 cubic yards were excavated from the diesel UST area. The soils from the two excavations were placed in two separate stockpiles. Each stockpile was on plastic sheeting and covered with plastic sheeting when not in use. The stockpiles were sampled as described in Section 4.1. No excavated soil was left in a stockpile for more than one working day.

Visual and FID observations of the gasoline stockpile indicated the presence of some level of gasoline contamination. However it was assumed that this level would not be significantly larger than the level of contamination found in the soil during the phase I and phase II investigations. Since a remediation of the soils at the site is still pending, it was agreed by Ms. Hugo that remediation of the potentially-gasoline-contaminated soil would be efficient and cost effective if done in-situ with the remaining contaminated soil. Ms. Hugo allowed the soil from the gasoline and diesel excavations to be placed back in the gasoline tank excavation, with the stipulation that if the analytical results on the excavated soil were significantly higher than the surrounding soil, the City would remove this soil again and dispose off-site in accordance with applicable disposal regulations.

After sampling (described in Section 4.1), the gasoline UST excavation was backfilled with soils from the gasoline tank excavation and the soils from the diesel tank excavation. A layer of 6 mil plastic was placed in the excavation to separate the backfilled soil from the undisturbed soil. The diesel tank excavation was backfilled with imported soil from the Gallagher and Burk Inc. quarry. A plastic layer was also placed between the clean backfill soil and the undisturbed soil.

3.3 OBSERVATIONS OF TANKS AND UNDERGROUND PIPING

The gasoline UST was constructed of steel with fiberglass coating. The tank measured 12 feet long and 4 feet in diameter. The gasoline UST appeared to be in good shape with no obvious holes. A filler pipe to the tank was loose.

The diesel UST was constructed of steel with a tar covering. The tank measured 12 feet long and 4 feet in diameter. The diesel UST appeared to be in good shape with no obvious holes, although some pitting was observed.

Underground piping associated with the USTs consisted of recently-used and previously-abandoned product piping, vapor recovery piping, and vent piping.

Ms. Susan Hugo of the ACDEH inspected the tanks after they were removed from the ground. A copy of the ACDEH Hazardous Materials Inspection Form is included in Appendix D.

3.4 COMPACTION OF BACKFILL SOILS

Excavated soil from both the gasoline and diesel excavations was placed in lifts in the gasoline excavation and compacted with the backhoe vibratory plate, without compaction testing. Visual observations of the compaction process by a registered professional engineer from Acutite indicate that the compaction is generally adequate for later area use as a parking lot.

Imported soil was placed in lifts in the diesel UST excavation and compacted with a compactor on the backhoe arm. Personnel from Smith-Emery GeoServices collected samples of the uncompacted soil and measured field density in accordance with ASTM D2922. Field density testing was also performed by Smith-Emery on the compacted soil. The soil achieved 90% compaction relative to ASTM D2922 results.

Compaction data from both Acutite and Smith-Emery and included in Appendix E.

4.1 SOIL SAMPLING

Soil samples from the floor of each end of the UST excavation were collected after the tanks were removed. Sampling locations, shown in Figure 3, were selected in the field by Ms. Susan Hugo of the ACDEH. Samples were identified with two letters, a number, and the depth. The first letter indicates whether the sample was from the gasoline tank (G) or from the diesel tank (D). The second letter indicates what end of tank the sample was taken from either north (N), south (S), east (E) or west (W). The first number indicates the number of the sample collected at each location; in this case there was only one sample at each location. The depth indicates the depth in the excavation that the samples were collected from. In total four samples were collected from the excavations. To avoid excavation stability maintenance required when someone enters a fire front or deeper excavation, each soil sample was collected by driving a clean brass tube into soil in the backhoe bucket.

Two composite soil samples were collected from the gasoline UST excavated material, and one composite sample was collected from the diesel UST excavated material. The samples were prepared by driving the sample tube into the excavated materials at different locations in the soil pile.

All samples were sealed, labeled, and placed in an ice-chilled cooler for transportation to the analytical laboratory under chain-of-custody protocol.

4.2 AIR MONITORING

During soil excavation and tank removal activities, a FID was used to check organic vapor concentrations in the work area, breathing zone, and around the site perimeter. The FID was also used near the excavated soil stockpiles.

4.3 GROUNDWATER SAMPLING

As noted in the approved closure plan, groundwater samples were not collected from the excavations because groundwater samples had been collected in previous site investigations.

5.1 LABORATORY TESTING

Laboratory analysis of the soil samples was conducted by ChromaLab, Inc. of Pleasanton, California, a state-certified environmental analytical laboratory. The soil samples from the gasoline tank excavation were tested for BTEX, Methyl Tert-Butyl Ether (MTBE), and TPHg. The soil samples from the diesel tank excavation were tested for BTEX and TPHd. Table 1 shows the analytical methods and results. Appendix C contains laboratory certificates and a QA/QC review of laboratory data.

5.2 SOIL SAMPLE ANALYSIS RESULTS

Gasoline Tank Excavation

TPHg was detected at 380 ppm in sample GE-1-7, which had been collected from the east end of the tank excavation floor, but was not detected in sample GW-1-7 (detection limit of 1 ppm), which had been collected from the west end of the tank excavation floor. TPHg was detected in both stockpile samples at 140 ppm in sample Stock-Gas-1 and 560 ppm in sample Stock-Gas-2.

BTEX compounds were detected at low levels in one of the soil samples taken from the excavation (GE-1-7) and both of the stockpile samples. Benzene was also not detected in Stock-Gas-1 with a reporting limit of 0.1 ppm. The highest concentration of benzene detected was 0.58 ppm in Stock-Gas-2. The highest concentration of toluene detected was 4.2 ppm in GE-1-7. The highest concentration of ethylbenzene was 12 ppm in Stock-Gas-2. The highest concentration of total Xylenes was 56 ppm in Stock-Gas-2.

MTBE was detected at 0.28 ppm in GW-1-7 but was not detected in any of the other four samples four samples from this excavation. However, because the reporting limits were 0.37 ppm in Stock-Gas-1, 1.3 ppm in Stock-Gas-2, and 3.9 ppm in GE-1-7', MTBE may have been higher in the other samples than in the GW-1-7' sample.

Diesel Tank Excavation

The samples from the diesel UST excavation were analyzed for TPHd. TPHd was not detected in any of the samples with a reporting limit of 1 ppm.

It was requested on the chain-of-custody form that the samples from the diesel excavation also be analyzed for MTBE. However, the laboratory did not perform this test and the holding time had passed by the time the mistake was noted. MTBE was not an additive to diesel fuel, there were no detections of diesel in the soil samples analyzed, and the soil in the diesel stockpile was placed in the gasoline tank excavation where future remediation will be performed. For those reasons, it was decided that resampling of the excavation and the excavated soils for MTBE analysis was not warranted.

5.3 AIR MONITORING RESULTS

Measurements recorded using the FID in the work area were below the action level of 10 ppm in the breathing zone described in the site HSP, and were typically 1-3 ppm around the site perimeter, except for occasional instantaneous measurements of elevated volatile organic compound (VOC) concentrations. These measurements were recorded at up to 30 ppm downwind of the work area, and up to 10 ppm at the perimeter. VOC concentrations were measured between 15 and 60 ppm within 3 inches of freshly excavated soil from the gasoline UST area. VOC concentrations were below 3 ppm within 3 inches of freshly excavated soil from the diesel UST area.

6.0
SUMMARY

One 1,000 gallon gasoline UST and one 1,000 gallon diesel UST and associated piping were removed from the Site and disposed of at a licensed hazardous waste facility under hazardous waste manifests. No holes were observed in either tank, however the diesel tank had some pitting and the gasoline tank had a loose filler pipe. Approximately 19 cubic yards of soil was removed from the diesel tank excavation and 35 cubic yards of soil was removed from the gasoline tank excavation. Excavated soil was backfilled and compacted into the gasoline tank excavation. The diesel tank excavation was backfilled with imported fill. The surface of the gasoline tank area was repaved with asphalt and the concrete sidewalk over the diesel tank was replaced.

In soil samples collected from the UST excavations base and excavated soil, TPHg was detected at concentrations of up to 560 ppm; TPHd was not detected; benzene was detected at concentrations up to 0.58 ppm; toluene was detected at concentrations up to 4.2 ppm; ethylbenzene was detected at concentrations up to 12 ppm; total Xylenes were detected at concentrations up to 56 ppm. These concentrations are at the same levels as measured in surrounding soil in previous investigations. MTBE was detected at up to 0.28 ppm. Reporting limits for MTBE were as high as 3.9 ppm.

7.0
LIMITATIONS

This report has been prepared by the staff of Woodward-Clyde Consultants solely for the use of the client. The scope was limited to the contract-specified scope of work as defined by the client.

The data, information, interpretations, conclusions, and recommendations contained in this report are presented solely as preliminary bases and guides to the existing environmental conditions of the site. The conclusions and professional opinions presented herein were developed by Woodward-Clyde Consultants within the limits prescribed by the client and in accordance with generally accepted engineering practice in Northern California at the time this investigation was performed. As with all environmental and geotechnical reports, the opinions expressed here are subject to revisions in light of new information which may be developed in the future, and no warranties are expressed or implied. Any reliance on this report by third parties shall be at such party's sole risk.

Soil deposits may vary in type, strength and many other important properties between points of observation and exploration. Additionally, changes can occur in groundwater and soil moisture conditions due to seasonal variations, or for other reasons. Furthermore, the distribution of chemical concentrations in the soil and groundwater can vary spatially and over time. The chemical analysis results, valid as of the time of collection, are based on data collected at the sampling locations only. Therefore, it must be recognized that Woodward-Clyde Consultants does not and cannot have complete knowledge of the subsurface conditions underlying the subject site. The opinions presented are based upon the findings at the points of exploration and upon interpretative data, including interpolation and extrapolation of information obtained at points of observation.

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS
CITY OF EMERYVILLE
FIRE STATION NO. 2

Sample No.	TPH[a] Gasoline (mg/kg)	TPH[b] Diesel (mg/kg)	Benzene[c] (mg/kg)	Toluene[c] (mg/kg)	Ethylbenzene[c] (mg/kg)	Xylenes[c] (mg/kg)	MTBE[c] (mg/kg)
GE-1-7'	380	---	0.34	4.2	8.7	42	<3.9
GW-1-7'	<1.0	---	<0.005	<0.005	<0.005	<0.005	0.28
STOCK-GAS-1	140	---	<0.1	0.22	1.6	6.6	<0.37
STOCK-GAS-2	560	---	0.58	1.8	12	56	<1.3
STOCK-DIESEL-1	---	<1.0	---	---	---	---	---
DN-1-7.5'	---	<1.0	---	---	---	---	---
DS-1-7.5'	---	<1.0	---	---	---	---	---

Notes:

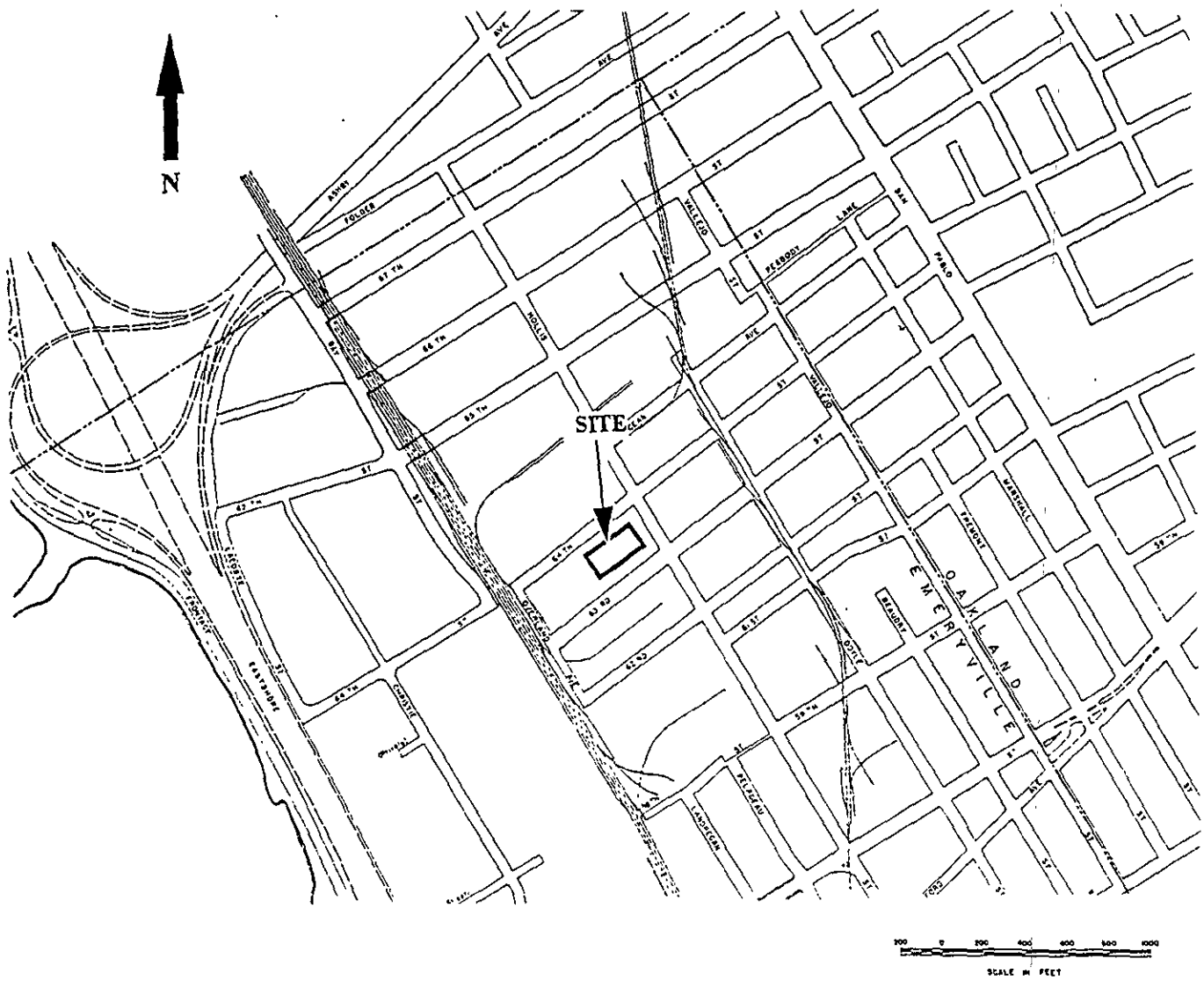
[a] Total petroleum hydrocarbons by EPA Method 8015 (Mod.), quantified as gasoline.

[b] Total petroleum hydrocarbons by EPA Method 8015 (Mod.), quantified as diesel.

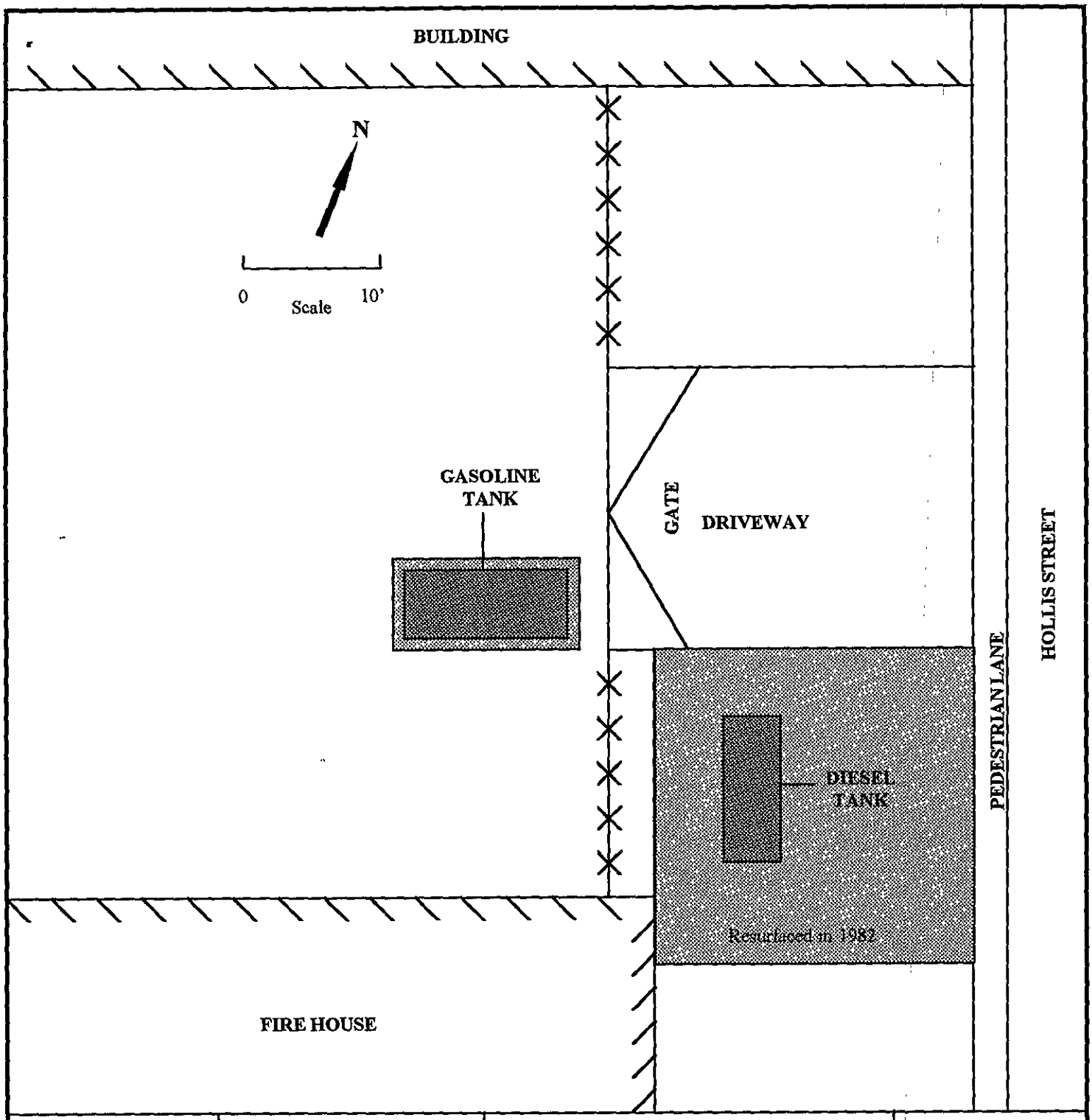
[c] Benzene, toluene, ethylbenzene, xylenes, and MTBE by EPA Method 8020.

--- Not analyzed

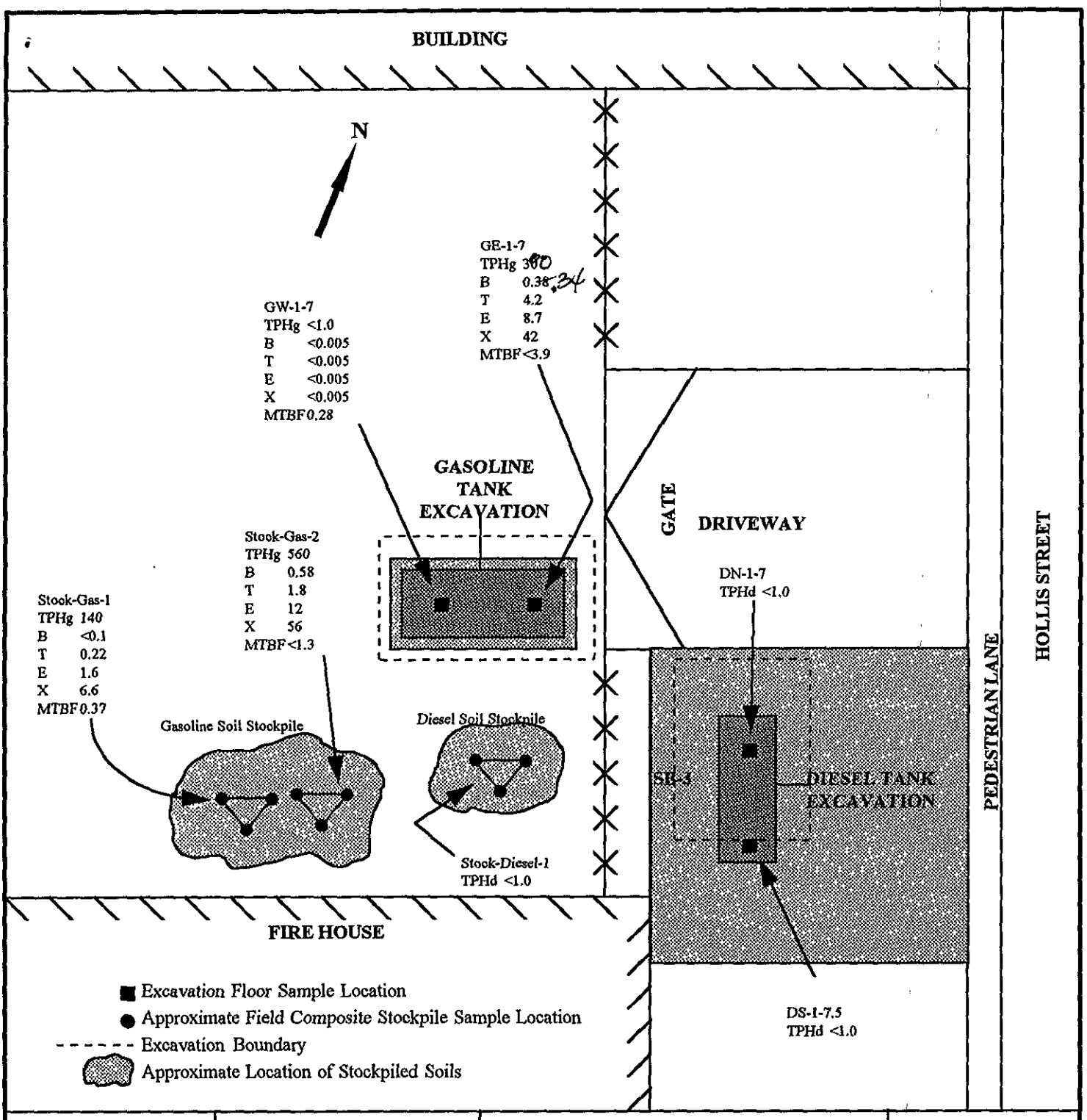
FIGURES



Project No. 94166NA	CITY OF EMERYVILLE Fire Station Number 2	SITE LOCATION	Figure 1
Woodward-Clyde Consultants			December 1995



Project No. 941366NA	CITY OF EMERYVILLE Fire Station Number 2	**SITE PLAN SHOWING FORMER UNDERGROUND STORAGE TANK LOCATIONS**	Figure 2
Woodward-Clyde Consultants			December 1995



Project No. 941366NA	CITY OF EMERYVILLE Fire Station Number 2	**SITE PLAN SHOWING UST EXCAVATIONS, SOIL SAMPLE LOCATIONS AND TPH, BTEX, AND MTBE CONCENTRATIONS**	Figure 3
Woodward-Clyde Consultants			December 1995

APPENDIX A
PERMITS AND NOTIFICATION FORMS

PERMIT NO. _____

(FORM REVISED OCTOBER 1995)

ENCROACHMENT PERMIT

CITY OF EMERYVILLE PUBLIC WORKS DEPARTMENT
2200 POWELL ST., 12TH FLR. (510) 596-4330
EMERYVILLE, CA 94608

DATE 10/5/95

PROPERTY OWNER City of Emeryville Redevelopment Agency

CONTACT PERSON Ignacio Dayrit PHONE NO. (510) 596-3750

ADDRESS 2200 Powell St., Suite 1200, Emeryville CA 94608

CONTRACTOR Accutite Environmental Engineering

CONTACT PERSON ~~Ignacio~~ T. Jani Malaek PHONE NO. (415) 952-5551

ADDRESS 35 South Lincoln Ave South San Francisco, CA

LOCATION OF WORK (INCLUDE ADDRESS AND STREET NAME AND CROSS STREETS)

6303 Hollis Street between 63rd and 64th Streets

PLANNED DATE OF COMMENCEMENT 10/12/95

PLANNED DATE OF COMPLETION 10/13/95

DESCRIPTION OF WORK (INCLUDE AVERAGE DEPTH OF EXCAVATION, MAXIMUM DEPTH, AVERAGE WIDTH, LENGTH, AND ESTIMATED COST OF WORK)

- Removal of 1000 gallon underground storage tank
- Excavation approx 10 ft deep, 12 ft long, 6 ft wide
- Cost estimated at $10,000

☐ 24 HR NOTICE PRIOR TO START OF WORK ☐ MONUMENTS TO BE REPLACED ☐ PLAN SUBMITTED

CURRENT BUSINESS LICENSE ON FILE ✓ YES? ___ NO?

REMARKS proof of insurance attached

NOTE: PROOF OF ADEQUATE INSURANCE MUST BE PRESENTED PRIOR TO START OF WORK OR THIS PERMIT IS VOID.

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
ENVIRONMENTAL PROTECTION DIVISION
1131 HARBOR BAY PARKWAY, RM 250
ALAMEDA, CA 94502-6577
PHONE # 510/567-6700
FAX # 510/337-9335

STID 3998

SUSAN L. HUGO
Project Specialist

ACCEPTED

Underground Storage Tank Closure Permit Application
Alameda County Division of Hazardous Materials
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

These closure/removal plans have been received and found to be acceptable and essentially meet the requirements of State and Local Health Laws. Changes to your closure plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction/destruction.

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

Any changes or alterations of these plans and specifications must be submitted to this Department and to the Fire and Building Inspections Department to determine if such changes meet the requirements of State and local laws. Notify this Department at least 72 hours prior to the following required inspections:

✓ Removal of Tank(s) and Piping
✓ Sampling
___ Final Inspection

Issuance of a) permit to operate, b) permanent site closure, is dependent on compliance with accepted plans and all applicable laws and regulations.

THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.

Contact Specialist:

Please note change made on page 4 & 5.
Susan L. Hugo
10/2/95

UNDERGROUND TANK CLOSURE PLAN
*** * * Complete according to attached instructions * * ***

1. Name of Business Emeryville Fire Department

   Business Owner or Contact Person (PRINT) Ignacio Dayrit

2. Site Address 6303 Hollis Street

   City Emeryville Zip 94608 Phone (510) 596-3750

3. Mailing Address 2200 Powell Street, Suite 1200

   City Emeryville Zip 94608 Phone (510) 596-4350

4. Property Owner City of Emeryville

   Business Name (if applicable) ________

   Address 2200 Powell Streeet, Suite 1200

   City, State Emeryville, CA Zip 94608

5. Generator name under which tank will be manifested

   City of Emeryville

   EPA ID# under which tank will be manifested C A C D 0 0 7 5 3 3 2 8

rev 4/6/95

6. Contractor Accutite Environmental Engineering

Address 35 So. Lincoln Avenue

City South San Francisco, CA Phone (415) 952-5551

License Type* hazrdous waste ID# 643881

***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.**

7. Consultant (if applicable) Woodward-Clyde Consultants

Address 500 12th Street, Suite 100

City, State Oakland, CA Phone (510) 893-3600

8. Main Contact Person for Investigation (if applicable)

Name Xingang Tong Title Project Manager

Company Woodward-Clyde Consultants

Phone (510) 874-3060

9. Number of underground tanks being closed with this plan 2

Length of piping being removed under this plan unknown

Total number of underground tanks at this facility (**confirmed with owner or operator) 2

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

**** Underground storage tanks must be handled as hazardous waste ****

a) Product/Residual Sludge/Rinsate Transporter

Name Erickson Inc. EPA I.D. No. CAD009466392

Hauler License No. _____ License Exp. Date _____

Address 255 Parr Blvd.

City Richmond State CA Zip 94801

b) Product/Residual Sludge/Rinsate Disposal Site

Name Erickson, Inc. EPA ID# CAD009466392

Address 255 Parr Blvd.

City Richmond State CA Zip 94801

c) Tank and Piping Transporter

Name Erickson, Inc. EPA I.D. No. CAD009466392

Hauler License No. 0019 License Exp. Date 7/31/96

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. Sample Collector

Name David Wallenstein

Company Woodward-Clyde Consultants

Address 500 12th Street, Suite 100

City Oakland State CA Zip 94607 Phone (510) 874-1777

12. Laboratory

Name Chromalab, Inc. (ph (510) 484-1919)

Address 1220 Quarry Lane

City Pleasanton State CA Zip 94566

Federal ~~State~~ Certification No. 68-0140157

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

If yes, describe. soil and groundwater samples in the area of the tanks indicate the presence of TPH gasoline, but not diesel

14. Describe methods to be used for rendering tank(s) inert:

dry ice purge

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 permanently plugged.

The Bay Area Air Quality Management District, 415/771-6000, along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of a combustible gas indicator to verify tank inertness. **It is the contractor's responsibility to bring a working combustible gas indicator on-site to verify that the tank is inert.**

15. Tank History and Sampling Information *** (see instructions) ***

Tank		Material to be sampled (tank contents, soil, groundwater)	Location and Depth of Samples
Capacity	Use History include date last used (estimated)		
1000 gal	tank was used to store diesel fuel	soil (or groundwater if encountered)	no deeper than 2 ft beneath both ends of tank
1000 gal	tank was used to store unleaded gasoline	soil (or groundwater if encountered) Soil samples only. Groundwater samples will be waived based on data from PSA 1 & PSA 11 Groundwater was impacted; will require MW's.	no deeper than 2 ft beneath both ends of tank

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

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (estimated) 10 cu yd- stockpiled separately from each tank excavation	**Sampling Plan** 4 discrete samples from each stockpile to be composited in the laboratory into one sample for each stockpile (two samples total) for analysis

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

Will the excavated soil be returned to the excavation immediately after tank removal? [ ] yes [ ] no [XX] unknown

If yes, explain reasoning _____

If unknown at this point in time, please be aware that excavated soil may not be returned to the excavation without prior approval from Alameda County. This means that the contractor, consultant, or responsible party must communicate with the Specialist IN ADVANCE of backfilling operations.

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.

17. Submit Site Health and Safety Plan (See Instructions) Will be working under site health and safety plan submitted with work plan for phase II investigation (6/20/95)

Contaminant Sought	EPA or Other Sample Preparation Method Number	EPA or Other Analysis Method Number	Method Detection Limit
TPH as gasoline/ BETX	EPA 5030 soil	EPA Modified 8015/8020	soil gas 1mg/kg BETX 10ug/kg water gas 0.1mg/L BETX 1ug/L
TPH as diesel	EPA 3550 for soil EPA 3510 for water	EPA Modified 8015	1mg/kg-soil 0.05 mg/L-water
MTBE		8020	

18. **Submit Worker's Compensation Certificate copy**

Name of Insurer ~~Kemper Insurance Co.~~ Reliance National Indemnity Co.

19. **Submit Plot Plan ***(See Instructions)***** plot plan and depth to groundwater included in work plan for phase II soil and groundwater investigation (submitted June 20, 1995)

20. **Enclose Deposit (See Instructions)**

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

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

23. **Submit State (Underground Storage Tank Permit Application) Forms A and B (one B form for each UST to be removed) (mark box 8 for "tank removed" in the upper right hand corner)**

I declare that to the best of my knowledge and belief that 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 approval from the Environmental Protection Division 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.

CONTRACTOR INFORMATION

Name of Business Accutite Environmental Engineering

Name of Individual Sami Malaeb

Signature Sami Malaeb Date 9/26/95

PROPERTY OWNER OR MOST RECENT TANK OPERATOR (Circle one)

Name of Business City of Emeryville

Name of Individual Ignacio Dayrit

Signature Date 9-26-95

acord CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY): 09-21-95

PRODUCER

MARSH & MCLENNAN INCORPORATED
1166 AVENUE OF THE AMERICAS
NEW YORK. NY 10036

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

WOODWARD-CLYDE CONSULTANTS
4582 S. ULSTER ST. PARKWAY
SUITE 600
DENVER. CO 80237

COMPANIES AFFORDING COVERAGE

COMPANY LETTER **A**	RELIANCE NATIONAL INDEMNITY COMPANY
COMPANY LETTER **B**	
COMPANY LETTER **C**	
COMPANY LETTER **D**	
COMPANY LETTER **E**	

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIABILITY LIMITS IN THOUSANDS	EACH OCCURRENCE	AGGREGATE
A	**GENERAL LIABILITY** X COMPREHENSIVE FORM X PREMISES/OPERATIONS X UNDERGROUND EXPLOSION & COLLAPSE HAZARD X PRODUCTS/COMPLETED OPERATIONS X CONTRACTUAL X INDEPENDENT CONTRACTORS X BROAD FORM PROPERTY DAMAGE X PERSONAL INJURY	NGB1720592 CONTRACTUAL LIAB. INCLUDED AS RESPECTS THOSE ACTS COVERED BY GENERAL LIAB. INS. $100,000 SIR	07-01-95	07-01-96	BODILY INJURY	$	$
					PROPERTY DAMAGE	$	$
					BI & PD COMBINED	$ 1000	$
					PERSONAL INJURY		$
A	**AUTOMOBILE LIABILITY** X ANY AUTO ALL OWNED AUTOS (PRIV PASS) ALL OWNED AUTOS (OTHER THAN PRIV PASS) HIRED AUTOS NON OWNED AUTOS GARAGE LIABILITY	NKA0101624-3	01-01-95	01-01-96	BODILY INJURY PER PERSON	$	
					BODILY INJURY PER ACCIDENT	$	
					PROPERTY DAMAGE	$	
					BI & PD COMBINED	$ 100	
A	**EXCESS LIABILITY** X UMBRELLA FORM OTHER THAN UMBRELLA FORM	NUA1253668 EXCESS GEN. & AUTO LIAB.	01-01-95	01-01-96	BI & PD COMBINED	$ 2000	$
A	**WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY**	NWA0101623-3	01-01-95	01-01-96	STATUTORY		
					$ 1000 (EACH ACCIDENT)		
					$ 1000 (DISEASE-POLICY LIMIT)		
					$ 1000 (DISEASE-EACH EMPLOYEE)		
	OTHER						

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

PROJECT NO. 941366NA: CITY OF EMERYVILLE REDEVELOPMENT AGENCY. ALL OPERATIONS OF THE INSURED.

CERTIFICATE HOLDER

4453

EMERYVILLE REDEVELOPMENT AGENCY
AGENCY EXECUTIVE DIRECTOR
2200 POWELL STREET. 12TH FLOOR
EMERYVILLE. CA 94608

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

CITY OF EMERYVILLE
FIRE DEPARTMENT
6303 HOLLIS STREET
EMERYVILLE,CA.,94608
(510) 596-3750

APPLICATION AND PERMIT

THIS APPLICATION IS YOUR PERMIT WHEN PROPERLY FILLED OUT, SIGNED, VALIDATED AND FEES PAID.

ADDRESS: 500 12th Street, Suite 100

BUSINESS NAME : Woodward-Clyde Consultants

CONTACT PERSON : Linda Locke

TELEPHONE NUMBER : (510) 874-3161

DESCRIPTION OF OPERATION: removal of 2 underground fuel tanks from Fire Station No. 2 6303 Hollis Street

APPLICANT READ AND SIGN BELOW:

I CERTIFY THAT I HAVE READ THIS APPLICATION AND STATE THAT THE INFORMATION GIVEN IS TRUE AND CORRECT. I AGREE TO COMPLY WITH ALL LOCAL ORDINANCES AND STATE LAWS THAT RELATE TO THIS PERMIT. I HEREBY AUTHORIZE REPRESENTATIVES OF THE CITY TO ENTER UPON THE ABOVE MENTIONED PROPERTY TO VERIFY COMPLIANCE WITH THE CONDITIONS OF THIS PERMIT, AT ANY REASONABLE TIME.

☒ Building Owner Ignacio Dayrit
☐ Business Operator :
Date of Application :

FIRE DEPARTMENT USE ONLY

FPB-1095-16
(PERMIT NUMBER)

Application Received :
Date: 10-5-95 Signed: JW

Permit Issued:
Date: 10-6-95 Signed: JW

EFD Permit Type(s) :
(see reverse)

Expiration Date :

TOTAL FEES DUE: ~~$125.00~~ Waived JW
Tank

MAKE CHECK PAYABLE TO THE CITY OF EMERYVILLE.

FEES ARE ESTABLISHED THRU THE CITY OF EMERYVILLE MASTER FEE SCHEDULE ADOPTED JUNE 1, 1993. COPY AVAILABLE ON REQUEST.

Occupancy Group/Division: (per UBC Table 5A)

OCCUPANCY TYPE:

Commercial	☐	Assembly	☐
Industrial	☐	Educational	☐
Residential	☐	H-class	☐

Other ☐ Specify : _____

THIS PERMIT MUST BE AVAILABLE FOR INSPECTION AT ALL TIMES

REVOCATION OF PERMIT

THE CHIEF IS AUTHORIZED TO SUSPEND/REVOKE A PERMIT WHEN THE CHIEF HAS DETERMINED THAT SECTION 4.107, 1991 UFC HAS BEEN VIOLATED.

POSTING OF PERMIT

PERMIT(S) SHALL BE KEPT ON THE PREMISES DESIGNATED AT ALL TIMES AND SHALL BE AVAILABLE FOR INSPECTION AT ANY TIME BY ANY PERSON(S) WHO ARE AUTHORIZED BY THE CHIEF OF THE EMERYVILLE FIRE DEPARTMENT.

DATE	INSPECTION NOTES/COMMENTS	INSPECTOR
9-21-95	Application & EFD-UGST Removal Reqts mailed to Ms Linda Locke, Woodward-Clyde Assoc., 500-12th St., #100, Oakland, 94607.	JW
10/6/95	pull set for Thurs., 10/12/95 and/or Fri., 10/13/95 (0530)	JW
	~~Fee Waived~~ X	JW

White: Applicant Yellow: EFD Pink: Finance

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

REGULATION 8, RULE 40 NOTIFICATION FORM

Check √ ☒ Removal or Replacement of Tanks
☐ Excavation of Contaminated Soil

SITE INFORMATION

Site Address: 6303 Hollis Street

City, State: Emeryville, CA Zip: 94608

Owner Name: City of Emeryville

Specific location of project: north and northwest of Fire Station No. 2 building

Tank Removal

Scheduled startup date: 9/29/95

Vapors removed by:

- ☐ Water wash
- ☒ Vapor freeing (CO^2)
- ☐ Ventilation

Indicate below if an A/C was obtained for tank replacement:

Yes_____ No X If yes, A/C or P/O #_____

Contaminated Soil Excavation

Scheduled Startup Date _____

Stockpiles will be covered? Yes_____ No_____.

Indicate below the method used to comply with Regulation 8, Rule 40, Section 402.4:

Check (√) 8-40-301 ☐ 8-40-302 ☐ (permit required)

A/C or P/O #_____

A/C = Authority to Construct P/O = Permit to Operate

What other public agency have you notified (e.g., Fire District, Hazardous Materials Department, City or County)?

Agency: Alameda County Dept of Environmental Health Contact: Susan Hugo Phone # (510) 567-6780

CONTRACTOR INFORMATION

BAAQMD #_____

Name: Accutite Environmental Engineering Contact: Sami Malaeb

Address: 35 So. Lincoln Avenue Phone (415) 952-5551

City, State, Zip: South San Francisco, CA 94080

CONSULTANT INFORMATION (if applicable)

Name: Woodward-Clyde Consultants Contact: Xinggang Tong

Address: 500 12th Street, Suite 100 Phone (510) 874-3060

City, State, Zip: Oakland, CA 94607

FOR OFFICE USE ONLY

Date Received Fax: Date Postmarked:

Inspector No.: Date: By_____

Update: Contact Name Date: By_____

Update: Contact Name Date: By_____

See reverse for instructions

APPENDIX B
UNIFORM HAZARDOUS WASTE MANIFEST FORMS AND RELATED CORRESPONDENCE

DAY OR NIGHT TELEPHONE (510) 235-1393

CERTIFICATE

CERTIFIED SERVICES COMPANY

255 Parr Boulevard • Richmond, California 94801

NO. 18067

CUSTOMER ACCUTITE

JOB NO. 966797

FOR: ERICKSON, INC. TANK NO. 16680

LOCATION: RICHMOND DATE: 95/10/16 TIME: 10:52

TEST METHOD VISUAL GASTECH/1314 SMPN LAST PRODUCT D

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 1000 GALLON TANK CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9% LOWER EXPLOSIVE LIMIT LESS THAN 0.1%
ERICKSON, INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS WASTE FACILITY.
ERICKSON, INC. HAS THE APPROPRIATE PERMITS FOR, AND HAS ACCEPTED THE TANK SHIPPED TO US FOR PROCESSING.

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration that permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

REPRESENTATIVE TITLE INSPECTOR

CP5995

DAY OR NIGHT
TELEPHONE
(510) 235-1393

CERTIFICATE

CERTIFIED SERVICES COMPANY

255 Parr Boulevard • Richmond, California 94801

NO. 18068

CUSTOMER
ACCUTITE
JOB NO.
966797

FOR: ERICKSON, INC. TANK NO. 16681

LOCATION: RICHMOND DATE: 95/10/16 TIME: 10:53

TEST METHOD VISUAL, GASTECH/1314 SMPN LAST PRODUCT UG

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 1000 GALLON TANK CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9% LOWER EXPLOSIVE LIMIT LESS THAN 0.1%
ERICKSON, INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS WASTE FACILITY.
ERICKSON, INC. HAS THE APPROPRIATE PERMITS FOR, AND HAS ACCEPTED THE TANK SHIPPED TO US FOR PROCESSING.

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration that permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

REPRESENTATIVE _____ TITLE _____ INSPECTOR _____

CP5995

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

96797

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
CAC000753289	24012		

3. Generator's Name and Mailing Address	A. State Manifest Document Number
Emeryville Fire Dept, 2300 Powell st suite 1200 Emeryville CA 94608 / site address 6303 Hollis st. Emeryville CA 94608	95592402
4. Generator's Phone 510 596-4350	B. State Generator's ID
5. Transporter 1 Company Name: ERICKSON INC	6. US EPA ID Number: CAD009466392
	C. State Transporter's ID 616591
	D. Transporter's Phone (510) 235-1393
7. Transporter 2 Company Name	8. US EPA ID Number
	E. State Transporter's ID
	F. Transporter's Phone
9. Designated Facility Name and Site Address: Erickson, Inc. 255 Parr Blvd, Richmond, CA. 94801	10. US EPA ID Number: CAD009466392
	G. State Facility's ID: CAD009466392
	H. Facility's Phone (510)235-1393

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON-RCRA Hazardous Waste Solid Waste Empty Storage Tank.	1	T	2000	P	State 512 EPA/Other NONE
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above	K. Handling Codes for Wastes Listed Above	
1 Qty. 2 Empty Storage Tank(s)# 11680, 11681 Tank(s) have been filled with 15 lbs Dry Ice Per 1000 Gallon Capacity.	a. 01	b.
	c.	d.

15. Special Handling Instructions and Additional Information

Keep away from sources of ignition. Always wear hardhats when working around U.G.S.T.'s 24 Hr. Contact Name IGNACIO DAVILA Phone (510) 596-3750

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Capt James Barton		10	12	95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials				
Printed/Typed Name: DAVID BUNCE	Signature	Month: 10	Day: 12	Year: 95
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
DAVID SATO		10	13	95

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (1/95)
EPA 8700—22

DTSC SENDS THIS COPY TO DTSC WITHIN 30 DAYS
To P.O. Box 3000, Sacramento, CA 95812

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

GENERATOR

APPENDIX C
LABORATORY CERTIFICATES AND QUALITY ASSURANCE/ QUALITY CONTROL REVIEW OF LABORATORY DATA

CHROMALAB, INC.

Environmental Services (SDB)

October 23, 1995 Submission #: 9510188

WOODWARD-CLYDE/OAKLAND
500 12th St., Suite 100
Oakland, CA 94607-4014

Attn: X. Tong/D. Wallenstein

RE: Analysis for project 941366NA.

REPORTING INFORMATION

Samples were received cold and in good condition on October 13, 1995. They were refrigerated upon receipt and analyzed as described in the attached report. ChromaLab followed EPA or equivalent methods for all testing reported.

Deviation from standard conditions was found in the following:

- For sample GE-1-7' the G/BTEX surrogate recovery above control limit was affected by high analyte cocentration.

Client Sample ID	Matrix	Date collected	Sample #
COMP A,B,C,D	SOIL	October 12, 1995	106498
DN-1-7.5'	SOIL	October 12, 1995	106497
Unknown hydrocarbons found in the Diesel range quantified at 11 mg/Kg.			
DS-1-7.5'	SOIL	October 12, 1995	106496
GE-1-7'	SOIL	October 12, 1995	106493
GW-1-7'	SOIL	October 12, 1995	106494
STOCK-DIESEL-1	SOIL	October 12, 1995	106495
STOCK-GAS-1	SOIL	October 12, 1995	106491
STOCK-GAS-2	SOIL	October 12, 1995	106492

Jill Thomas
Quality Assurance Manager

for Eric Tam
Laboratory Director

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 20, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: 941366NA
Received: October 13, 1995

re: 3 samples for Diesel analysis.
Method: EPA 3550/8015M

Sampled: October 12, 1995 *Matrix:* SOIL *Extracted:* October 16, 1995
Run: 8926-K *Analyzed:* October 16, 1995

Spl #	Sample ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
106495	STOCK-DIESEL-1	N.D.	1.0	N.D.	72
106496	DS-1-7.5'	N.D.	1.0	N.D.	72

Sampled: October 12, 1995 *Matrix:* SOIL *Extracted:* October 16, 1995
Run: 8926-K *Analyzed:* October 17, 1995

Spl #	Sample ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
106497	DN-1-7.5'	N.D.	1.0	N.D.	72

For above sample: *Unknown hydrocarbons in the Diesel range, conc.= 11 mg/Kg.*

Kayvan Kimyai
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 20, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: 941366NA
Received: October 13, 1995

re: **Matrix spike** report for Diesel analysis.

Matrix: SOIL *Extracted:* October 16, 1995
Lab Run#: 8926 *Instrument:* GC2-EXT-K *Analyzed:* October 16, 1995
Method: EPA 3550/8015M

Analyte	Spiked Sample Result	Spike Amt	% Spike Rec	Dup Spike Rec	Control Limits	% RPD	% RPD Lim
DIESEL	N.D. mg/Kg	6.7 mg/Kg	78.0	70.4	60-130	10	20

Sample Spiked: 106496
Submission #: 9510188
Client Sample ID: DS-1-7.5'

SPK1

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.
Environmental Services (SDB)

October 20, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: 941366NA
Received: October 13, 1995

re: **Surrogate** report for 3 samples for Diesel analysis.

Matrix: SOIL *Extracted:* October 16, 1995
Lab Run#: 8926 *Analyzed:* October 16, 1995
Method: EPA 3550/8015M

Sample#	Client Sample ID	Surrogate	% Recovered	% Limits
106495	STOCK-DIESEL-1	O-TERPHENYL	94	60-120
106496	DS-1-7.5'	O-TERPHENYL	90	60-120
106497	DN-1-7.5'	O-TERPHENYL	95	60-120

Sample#	QC Sample Type	Surrogate	% Recovered	% Limits
106751	*Method blank (MDB)*	O-TERPHENYL	95	60-120
106752	*Blank Spike (BSP)*	O-TERPHENYL	101	60-120
106758	*Matrix spike (MS)*	O-TERPHENYL	97	60-120
106759	*Matrix spike duplicate (MSD)*	O-TERPHENYL	91	60-120

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 20, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **STOCK-GAS-1**
Sample #: 106491 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	140	20	N.D.	89
BENZENE	N.D.	100	N.D.	115
TOLUENE	220	100	N.D.	111
ETHYL BENZENE	1600	100	N.D.	112
XYLENES	6600	100	N.D.	110
MTBE	N.D.	370	N.D.	101

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 23, 1995

Submission #: 9510188
Revised from 10/20/95 report

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **STOCK-GAS-2**
Sample #: 106492 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	560	63	N.D.	89
BENZENE	580	320	N.D.	115
TOLUENE	1800	320	N.D.	111
ETHYL BENZENE	12000	320	N.D.	112
XYLENES	56000	320	N.D.	110
MTBE	N.D.	1300	N.D.	101

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 24, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **GE-1-7'**
Sample #: 106493 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	380	40	N.D.	89
BENZENE	340	200	N.D.	115
TOLUENE	4200	200	N.D.	111
ETHYL BENZENE	8700	200	N.D.	112
XYLENES	42000	200	N.D.	110
MTBE	N.D.	3900	N.D.	101

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 23, 1995

Submission #: 9510188
Revised from 10/20/95 report

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **GW-1-7'**
Sample #: 106494 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	N.D.	1.0	N.D.	89
BENZENE	N.D.	5.0	N.D.	115
TOLUENE	N.D.	5.0	N.D.	111
ETHYL BENZENE	N.D.	5.0	N.D.	112
XYLENES	N.D.	5.0	N.D.	110
MTBE	280	20	N.D.	101

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 20, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: 941366NA
Received: October 13, 1995

re: **Matrix spike** report for Gas/BTEX with Methyl Tert-Butyl Ether analysis.

Matrix: SOIL
Lab Run#: 8927 *Instrument:* GC1-4 *Analyzed:* October 17, 1995
Method: EPA 5030/8015M/8020

Analyte	Spiked Sample Result	Spike Amt	% Spike Rec	Dup Spike Rec	Control Limits	% RPD	% RPD Lim
GASOLINE	N.D. mg/Kg	5 mg/Kg	89	--	70-130	N/A	N/A
BENZENE	N.D. ug/Kg	25 ug/Kg	120	114	70-130	5.1	20
TOLUENE	N.D. ug/Kg	25 ug/Kg	116	110	70-130	5.3	20
ETHYL BENZENE	N.D. ug/Kg	25 ug/Kg	116	112	70-130	3.5	20
XYLENES	N.D. ug/Kg	50 ug/Kg	114	110	70-130	3.6	20

Sample Spiked: 106494
Submission #: 9510188
Client Sample ID: GW-1-7'

SPK1

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

October 20, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND

Atten: X. Tong/D. Wallenstein

Project: 941366NA
Received: October 13, 1995

re: **Surrogate** report for 4 samples for Gas/BTEX with Methyl Tert-Butyl Ether analysis.

Matrix: SOIL
Lab Run#: 8927 *Analyzed:* October 17, 1995
Method: EPA 5030/8015M/8020

Sample#	Client Sample ID	Surrogate	% Recovered	% Limits
106491	STOCK-GAS-1	TRIFLUOROTOLUENE	128	70-130
106492	STOCK-GAS-2	TRIFLUOROTOLUENE	116	70-130
106493	GE-1-7'	TRIFLUOROTOLUENE	152[3]	70-130
106494	GW-1-7'	TRIFLUOROTOLUENE	109	70-130

Sample#	QC Sample Type	Surrogate	% Recovered	% Limits
106753	*Method blank (MDB)*	TRIFLUOROTOLUENE	104	70-130
106754	*Blank Spike (BSP)*	TRIFLUOROTOLUENE	100	70-130
106756	*Matrix spike (MS)*	TRIFLUOROTOLUENE	105	70-130
106757	*Matrix spike duplicate (MSD)*	TRIFLUOROTOLUENE	106	70-130

Note 3: Surrogate recovery affected by high analyte concentration.

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Federal ID #68-0140157

188/106491 - 106498

24394

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. ~~94114NA~~ 94136NA

SAMPLERS: (Signature) David Wallenstein

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	ANALYSES: EPA Method 8015 Modified	EPA Method 8015 Mod.	EPA Method BTEX	EPA Method MTBE	Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
10-12	15:00	Stock-Gas-1	S		X		X		
	15:05	Stock-Gas-2			X				
	15:10	Stock-diesel-1		X					
		GE-1-7'			X				
		GW-1-7'			X				
		DS-1-7.5'		X					
		DN-1-2.5'		X					
		comp B							On hold
		comp A							
		comp C							
		comp D							
								11	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY (Signature)	DATE TIME	RECEIVED BY (Signature)	RELINQUISHED BY (Signature)	DATE TIME	RECEIVED BY (Signature)
David Wallenstein	10-12 4:38				

METHOD OF SHIPMENT	SHIPPED BY (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY (Signature)	DATE TIME
Fed Ex			Chroma Lab	10/13/95 10:00

Received @ 6°C

CHROMALAB, INC.

Environmental Services (SDB)

November 2, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND *Revised from report sent October 24, 1995*

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **GE-1-7'**
Sample #: 106493 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	380	40	N.D.	89
BENZENE	0.34	0.20	N.D.	115
TOLUENE	4.2	0.20	N.D.	111
ETHYL BENZENE	8.7	0.20	N.D.	112
XYLENES	42	0.20	N.D.	110
MTBE	N.D.	3.9	N.D.	101

Dilution factor for MTBE is 200 and for all other analyte 40

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

November 2, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND *Revised from report sent October 24, 1995*

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **STOCK-GAS-1**
Sample #: 106491 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	140	20	N.D.	89
BENZENE	N.D.	0.10	N.D.	115
TOLUENE	0.22	0.10	N.D.	111
ETHYL BENZENE	1.6	0.10	N.D.	112
XYLENES	6.6	0.10	N.D.	110
MTBE	N.D.	0.37	N.D.	101

Dilution factor is 20

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

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(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

November 2, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND *Revised from report sent October 24, 1995*

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **STOCK-GAS-2**
Sample #: 106492 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	560	63	N.D.	89
BENZENE	0.58	0.32	N.D.	115
TOLUENE	1.8	0.32	N.D.	111
ETHYL BENZENE	12	0.32	N.D.	112
XYLENES	56	0.32	N.D.	110
MTBE	N.D.	1.30	N.D.	101

Dilution factor is 63

Billy Thach
Chemist

Ali Khaarazi
Organic Manager

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

November 2, 1995 *Submission #:* 9510188

WOODWARD-CLYDE/OAKLAND *Revised from report sent October 24, 1995*

Atten: X. Tong/D. Wallenstein

Project: Not provided *Project#:* 941366NA
Received: October 13, 1995

re: One sample for Gas/BTEX with Methyl Tert-Butyl Ether analysis.
Method: EPA 5030/8015M/8020

SampleID: **GW-1-7'**
Sample #: 106494 *Matrix:* SOIL
Sampled: October 12, 1995 *Run:* 8927-4 *Analyzed:* October 17, 1995

Analyte	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE RESULT (%)
GASOLINE	N.D.	1	N.D.	89
BENZENE	N.D.	0.005	N.D.	115
TOLUENE	N.D.	0.005	N.D.	111
ETHYL BENZENE	N.D.	0.005	N.D.	112
XYLENES	N.D.	0.005	N.D.	110
MTBE	0.28	0.020	N.D.	101

Dilution factor is 1

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

QA/QC REVIEW OF ANALYTICAL DATA

Introduction

Soil samples were submitted to Chromalab, Inc. for the following analyses:

- Total petroleum hydrocarbons (TPH) as diesel (modified EPA Method 8015).
- TPH as gasoline (modified EPA Method 8015).
- Benzene, toluene, ethylbenzene, xylene (BTEX) and methyl tert-butyl ether (MTBE) (EPA Method 8020).

The analytical results were subjected to a thorough QA/QC review, which included the following:

- Holding Time Review- Check for exceedences in prescribed analysis and/or extraction holding times.
- Blank Review- Review method blank analysis results for evidence of contamination by target analytes.
- Matrix Spike, Surrogate Spike and Laboratory Control Sample Review- Review spike recoveries and spike duplicate relative percent differences (RPDs) to evaluate analytical accuracy and precision.
- Elevated Detection Limits- Identify samples with elevated detection limits (due to sample dilution or small sample volume), with results reported as non detected (ND).
- Analyte Identification- Review petroleum hydrocarbon fraction identifications for false positives.

Each QA/QC check is discussed in detail in this section.

Holding Time Review

The sample extraction and/or analysis holding times were reviewed. No samples analyzed exceeded their prescribed method holding times.

Blank Review

Method blanks were analyzed with each sample batch. No target analytes were detected in the method blanks, indicating no sample contamination from laboratory procedures.

Matrix Spike and Laboratory Control Sample Review

Matrix spike (MS), duplicate (MSD) and laboratory control sample (LCS) recoveries were reviewed for compliance with laboratory control limits. The spike recovery and the control limits for each analysis are provided in the table below:

Spike	Analysis	Spike Recovery (%)	Recovery Control Limits (%)
MS/MSD	TPH-d	70.4-78	60-130
	TPH-g with BTEX and MTBE	89-120	70-130
LCS	TPH-d	72	75-125
	TPH-g with BTEX and MTBE	89-115	75-125

The spike recoveries were within the control limits and indicate acceptable analytical accuracy.

MS and MSD relative percent differences (RPDs) were reviewed for compliance with laboratory control limits of ± 20%. The RPD for the TPH-d MS/MSD was 10%; the RPDs for TPH as gasoline with BTEX and MTBE ranged from 3.5-5.3%. The RPDs were within the control limits and indicate acceptable analytical precision.

Surrogate Recoveries

Spike recoveries were reviewed for compliance with laboratory control limits. The surrogate compounds used for each analysis and their control limits are listed in the table below. Also provided is the surrogate recovery range for the samples:

Analysis	Surrogate Compound	Surrogate Recoveries (%)	Recovery Control Limits (%)
TPH-d	o-Terphenyl	90-101	60-130
TPH-g with BTEX and MTBE	Trifluorotoluene	100-152	70-130

The surrogate recoveries were within the control limits, except for the trifluorotoluene recovery of 152% for sample GE-1-7'. Since the recovery was above the upper control limit, indicating a high bias, the TPH-g with BTEX analytical results were qualified as "J", estimated, since the analytes were detected in the sample. The MTBE results, which were reported as ND, did not require qualification.

The surrogate recoveries indicate acceptable sample-specific accuracy, with the above exception.

Elevated Detection Limits

Some of the samples analyzed for TPH as gasoline with BTEX and MTBE required dilution prior to analysis because of high target analyte concentrations or matrix interference. The diluted samples which had one or more analytes reported as ND are as follows:

Sample	Dilution Factor
GE-1-7'	40 for gas/BTEX, 200 for MTBE (ND)
STOCK-GAS-1	20
STOCK-GAS-2	63

The analytical results for analytes reported as ND for the above samples should be interpreted carefully and reported in conjunction with their elevated reporting limits.

Analyte Identification

The laboratory noted that the TPH pattern for sample DN-1-7.5' did not match the standard diesel chromatogram and that the reported concentration was due to an unknown hydrocarbon peak in the diesel range. However, the concentration due to the unknown peak was not quantified as diesel in the analytical results.

QA/QC Summary

The results of the QA/QC review may be summarized as follows: The sample extraction and/or analysis holding times were met for each sample. Method blanks were free of target analytes, indicating no sample contamination from laboratory procedures. Spike recoveries and RPDs were within laboratory control limits and indicate acceptable analytical accuracy and precision. The trifluorotoluene recovery for sample GE-1-7' was above the control limits; consequently, the TPH-g with BTEX analytical results should be considered as estimates. Diluted samples with one or more analytes reported as ND have been identified in this QA/QC review. The TPH as diesel analysis for sample DN-1-7.5' detected a discrete peak not representative of diesel fuel. The concentrations due to the peak were not reported as diesel in the analytical results.

Overall, The results of the QA/QC review indicate that the data are of acceptable quality.

APPENDIX D
ACDEH HAZARDOUS MATERIAL INSPECTION FORM

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

Hazardous Materials Inspection Form

1131 Harbor Bay Pkwy
Alameda CA 94502
510/567-6700

II, III

Site ID # 3998 Site Name Emeryville Fire Station #2 Today's Date 10/12/95

Site Address 6303 Hollis Street

City Emeryville Zip 94608 Phone

_____ MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

____ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
___/ II. Hazardous Materials Business Plan, Acutely Hazardous Materials
X III. Underground Storage Tanks

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

* All pipings associated w/the tanks must be removed & permanently capped.

Comments: TANKS' HAULER = ERICKSON # 61659 9/96 5/96
MANIFEST # = 95592402
2 USTs Removed: Emeryville Fire Dept. not present
requested ACDEH to check the LEL & O2 levels

Tank #1 (near the sidewalk) 1000 gal diesel; steel with tar wrappings; LEL = 0% & O2 = 5%
No obvious holes although some pittings observed.
(DN 7.5 ft) (DS 7 ft) 2 soil samples collected; one from each end of the tank.
Tank #2 (inside the parking lot) 1000 gal unleaded gasoline; steel with fiberglass coating; LEL = 2% & O2 = 3%
(GW 7 ft) (GE 7 ft) Tank appeared to be in good shape. no obvious holes. 2 soil samples collected; one from each end of the tank.

Groundwater is present in both excavation but water sample will be waived due to PSA I & PSA II investigation requiring groundwater investigation (permanent wells).

Diesel tank excavation will be backfilled with clean fill after laying the visqueen liner. Gasoline tank excavation will be backfilled w/the stockpiled soil after laying the visqueen liner. Stockpiled soil must be sampled (1 sample per 20 cu yds.)

II, III

Contact _____

Title _____ Inspector SUSAN L. HUGO.

Signature Daniel Wickham Signature Susan L. Hugo

If the analytical results of stockpiled soil should higher concentration than what was previously identified in PSA I & II then the stockpiled soil must be removed.

APPENDIX E
COMPACTION DATA

ACCUTITE
Contractor's License #643881

Accutite Environmental Engineering

35 So. Linden Avenue, South San Francisco, CA 94080-6407 Tel: (415) 952-5551 Fax: (415) 952-7631 Tank Testing: (415) 952-0327

November 8, 1995

Ms. Linda Locke
Woodward-Clyde
500 12th Street, Suite 100
Oakland, California 94607-4014

Subject: Soil Compaction at The Emeryville Fire Station, 6303 Hollis Street

Dear Ms. Locke:

On October 12, 1995, Accutite removed two underground storage tanks (USTs) from the subject site. After the UST removal, Accutite backfilled and compacted both excavations. The former diesel tank excavation (located on the sidewalk) was backfilled with imported soil. The compaction method used was the nuclear gauge method, ASTM D2922. The compaction test results were sent to Woodward-Clyde in an earlier submittal.

At the request of Woodward-Clyde's Engineer, the former gasoline tank excavation (inside the parking lot) was backfilled with the same excavated soil. This soil was wet. Because of the high moisture content of this soil, Accutite determined that it was not feasible to achieve the project compaction level of 95 %. Therefore, the excavation was compacted with the backhoe vibratory plate without compaction testing. Based on Accutite's observations, said compaction was adequate to provide firm stable surface for light to moderate traffic.

Thank you for the opportunity to provide you with our services. If you have any questions, please call me at (415) 952-5551.

Sincerely,
Accutite Environmental Engineering

Sami Malaeb, P.E., R.E.A.
Project Manager

6303HLT.DOC

SMITH-EMERY GEOSERVICES
A MEMBER OF THE SMITH-EMERY COMPANIES, ESTABLISHED 1904
HUNTERS POINT SHIPYARD, BUILDING 114
P.O. BOX 880550
SAN FRANCISCO, CALIFORNIA 94188-0550
PHONE 415/330-3000
FAX 415/330-3030

November 3, 1995

SEG File No.: 90745
SEG Report No.: 95-389a

Accutite Environmental
35 South Linden Avenue
South San Francisco, California 94080

Attention: Mr. Sami MelaebSami Melaeb

Re: Fire Station #2
Emeryville, CA

SUBJECT: COMPACTION TESTING

REPORT OF TESTS

This project consisted of two tank pit backfills, one at the north side and one at the south side of the fire station building. The east pit received an engineered backfill of imported fill, soil type #2, reported in Table 1.

The north pit was backfilled with soil type #1, derived on-site, consisting of a brown silty clay with gravel. Accutite's site supervisor, Mr. Willie Green, determined that the over-moist condition of the stockpiled soil made it unfeasible to achieve the project's compaction specification. Mr. Green completed the backfill, requesting that our inspector provide only a written record of the backfill compaction. Said compaction was adequate to provide a firm and stable surface capable of supporting light to moderate traffic loads on a short-term temporary basis.

Respectfully submitted,
SMITH-EMERY GEOSERVICES

Geoservices Manager
Northern California

KGD:ld

SMITH-EMERY GEOSERVICES
A MEMBER OF THE SMITH-EMERY COMPANIES, ESTABLISHED 1904
HUNTERS POINT SHIPYARD, BUILDING 114
P.O. BOX 880550
SAN FRANCISCO, CALIFORNIA 94188-0550
PHONE 415/330-3000
FAX 415/330-3030

November 3, 1995

SEG File No.: 90745
SEG Report No.: 95-389

Accutite Environmental
35 South Linden Avenue
South San Francisco, California 94080

Attention: Mr. Willie Green

Re: Fire Station #2
Emeryville, CA

SUBJECT: COMPACTION TESTING

REPORT OF TESTS

In compliance with your request, Smith-Emery Geoservices has conducted standard compaction testing for the above referenced project.

Field density tests to determine relative compaction were conducted in accordance with ASTM D2922, nuclear gauge method.

Test locations and results are presented on the attached Table 1. Maximum density/optimum moisture determinations were performed on representative samples in accordance with ASTM D1557, five layer method. Test results are presented on the attached Table 2.

Respectfully submitted,
SMITH-EMERY GEOSERVICES

KEITH D. GILLIAM
Geoservices Manager
Northern California

KGD:ld

NOTE:
This report contains a weekly summary of compaction test results only and it should not be submitted to City or County grading departments as a certified compacted earth fill report.

November 3, 1995

SEG File No.: 90745
SEG Report No.: 95-389

Project : Fire Station #2
Emeryville, California

ELEVATION / LOCATION KEY

SG-Subgrade FSG-Finish Subgrade AB-Aggregate Base TBF-Trench Backfill
FG-Finish Grade FAB-Finish Agg. Base BTM-Bottom

METHOD KEY

SC-Sandcone DT-Drive Tube
NG-Nuclear Gauge

RESULTS OF DENSITY TESTS

Test No.:	Empl. No.:	Date	Location	Test Type	Elev./ Depth (ft.)	Moisture Content (%)	Dry Density (p.c.f.)	Rel. Compaction Field (%)	Rel. Compaction Specified (%)	Soil Type
1	1932	10/2/1995	CENTER OF E. PIT	NG	top -6'	6.7	109.0	87	95	2
2	1932	10/2/1995	CENTER OF E. PIT	NG	top -4'	7.0	112.2	90	95	2
3	1932	10/2/1995	CENTER OF E. PIT	NG	top -3'	7.8	116.5	93	95	2
4	1932	10/2/1995	E. PIT CENTER 3' S. OF N. WALL	NG	top -1'	7.9	112.5	90	95	2

SMITH-EMERY GEOSERVICES

November 3, 1995

SEG File No.: 90745
SEG Report No.: 95-389

Re: Fire Station #2
Emeryville, CA

RESULTS OF MAXIMUM DENSITY/OPTIMUM MOISTURE TESTS

Soil Type	Classification	Maximum Density (PCF)	Optimum Moisture, (%)
#2	Reddish brown sandy silt with gravel	125.2	10.5

SMITH-EMERY GEOSERVICES - SAN FRANCISCO
TABLE 2