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CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
ENVIRONMENTAL ENGINEERING

111 Grand Avenue - 14th Floor
Mail: P.O. Box 23660
Oakland, CA 94623-0660

Cover sheet plus 12 pages to follow

Tank Removal Results

DATE : **June 21, 1995**

TO : **Barney Chan**

ORGANIZATION : **Alameda County Env Health**

TELEPHONE # :

FAX # : **337-9335**

FROM : **Ronald Dong**

TELEPHONE : **(510) 286-5631**

CALNET 8 - 541 - 5631

FAX # : (510) 286 - 5642
CALNET 8 - 541 - 5642

REMARKS : This is the text, map, and tabled results from the December 1994 Tank Removal Report. A hard copy will follow in the mail.

ATTACHMENT I

GHH ENGINEERING INC.

RCE #27011 LIC. #537901

TANK REMOVAL REPORT
CALTRANS OAKLAND
OAKLAND, CALIFORNIA

DECEMBER, 1994

Prepared by:

GHH Engineering, Inc.
8084 Old Auburn Road, Suite E
Citrus Heights, California 95610

Prepared for:

California Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623-0660

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GHH ENGINEERING INC.

RCE #27011 LIC. #537901

December 22, 1994

Mr. Barney Chan
Alameda County Environmental Health Department
1131 Harbor Park Way, Room #250
Alameda, California 94502

SUBJECT: TANK REMOVAL AND SOIL DISPOSAL REPORT
OAKLAND MAINTENANCE STATION
OAKLAND, CALIFORNIA

Dear Mr. Chan:

This report contains a summary of work completed to date at the California Department of Transportation (Caltrans) maintenance facility located in Oakland, California, as shown on Figures 1 and 2, per Contract No. 56S067 and Work Order No. 04-56S067-14.

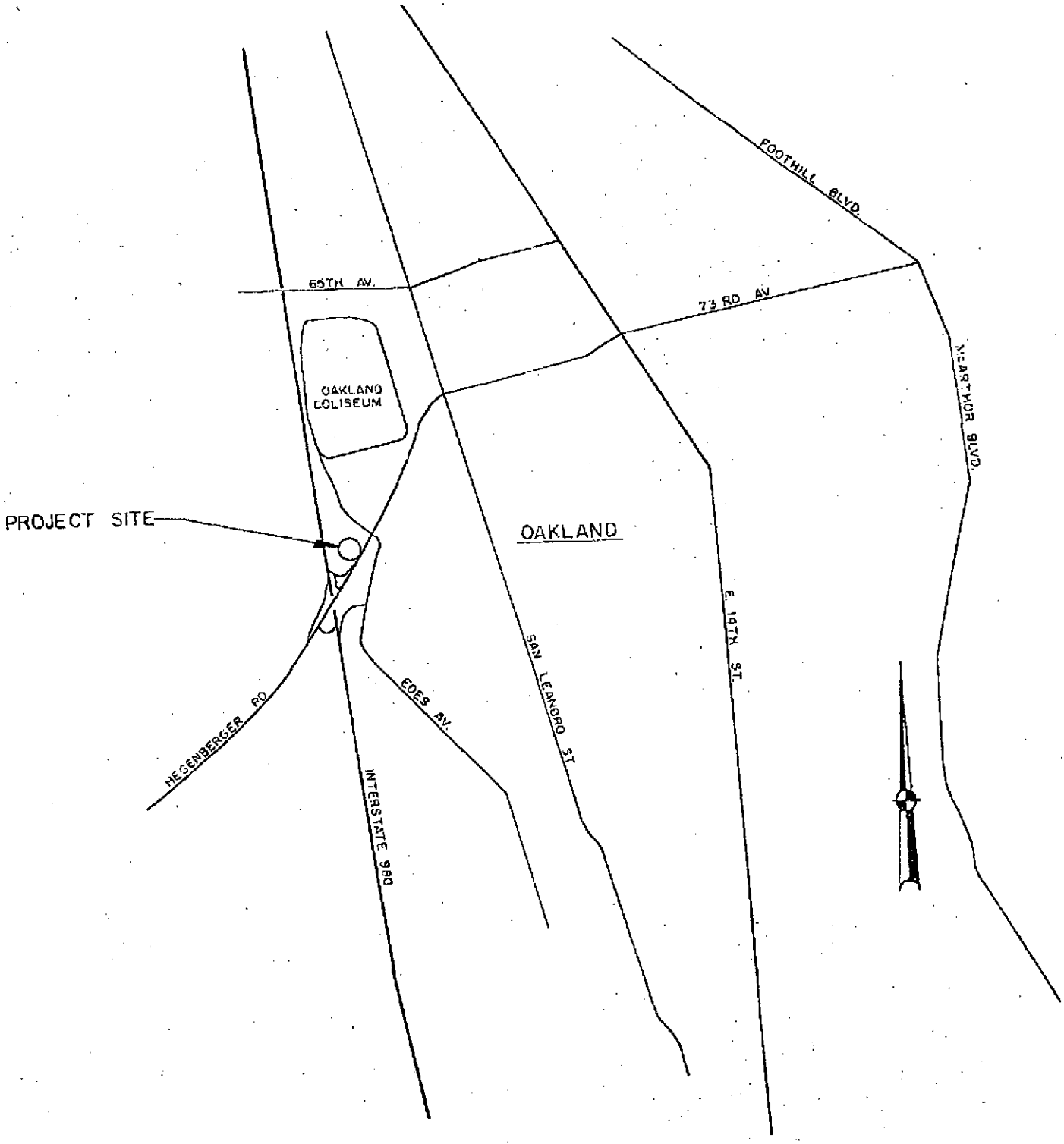
SCOPE OF WORK

The scope of work included the excavation, removal and disposal of two (2) 2,000-gallon steel diesel underground storage tanks (USTs); two (2) 6,500-gallon steel gasoline USTs; the disposal of all associated piping and residual product; and the disposal of approximately 393-tons (280 cubic yards) of petroleum impacted soil.

TANK REMOVAL

On September 19, 1994, site work was initiated to prepare the tanks for removal. The work was completed in accordance with our workplan dated August 19, 1994. The tanks were pumped of what appeared to be water with some residual product on September 21, 1994 by Evergreen Environmental, Inc. (Evergreen) of San Francisco, California.

FIGURE 1
CALTRANS-OAKLAND
SITE LOCATION MAP



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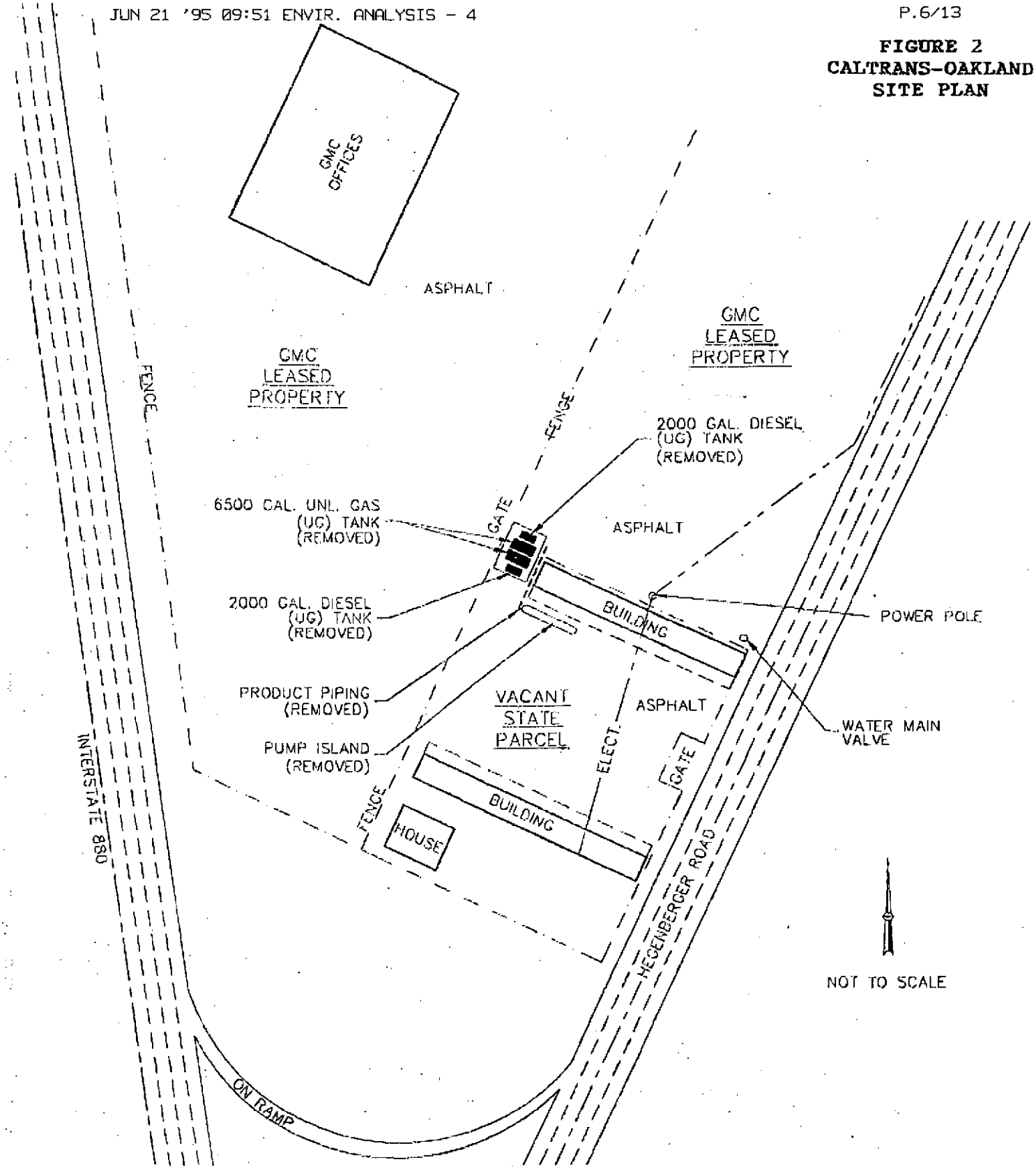
RCE #27011 LIC. #537901
Citrus Heights, CA 95610
(916) 723-7645

FIGURE 2
CALTRANS-OAKLAND
SITE PLAN



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8084 Old Auburn Road, Suite E Citrus Heights, CA 95610 (916) 723-7645

TANK REMOVAL REPORT
CALTRANS OAKLAND
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Approximately 8,100-gallons of water with product was pumped from the tanks. On September 22, 1994, approximately 600-pounds of dry ice was placed in each of the 6,500-gallon tanks and 150-pounds of dry ice was placed in each of the 2,000-gallon tanks to purge any volatiles from the tank.

When the lower explosive limit (LEL) and oxygen concentrations reached acceptable levels for tank removal, the USTs were removed from the excavations, inspected and loaded for transport to the Erickson, Inc. facility in Richmond, California as hazardous. All four tanks had holes along their bottom halves and the 6,500-gallon tanks had holes in their end seams. The tank destruction certificates hazardous waste manifests are contained in Appendix A.

SITE INVESTIGATION

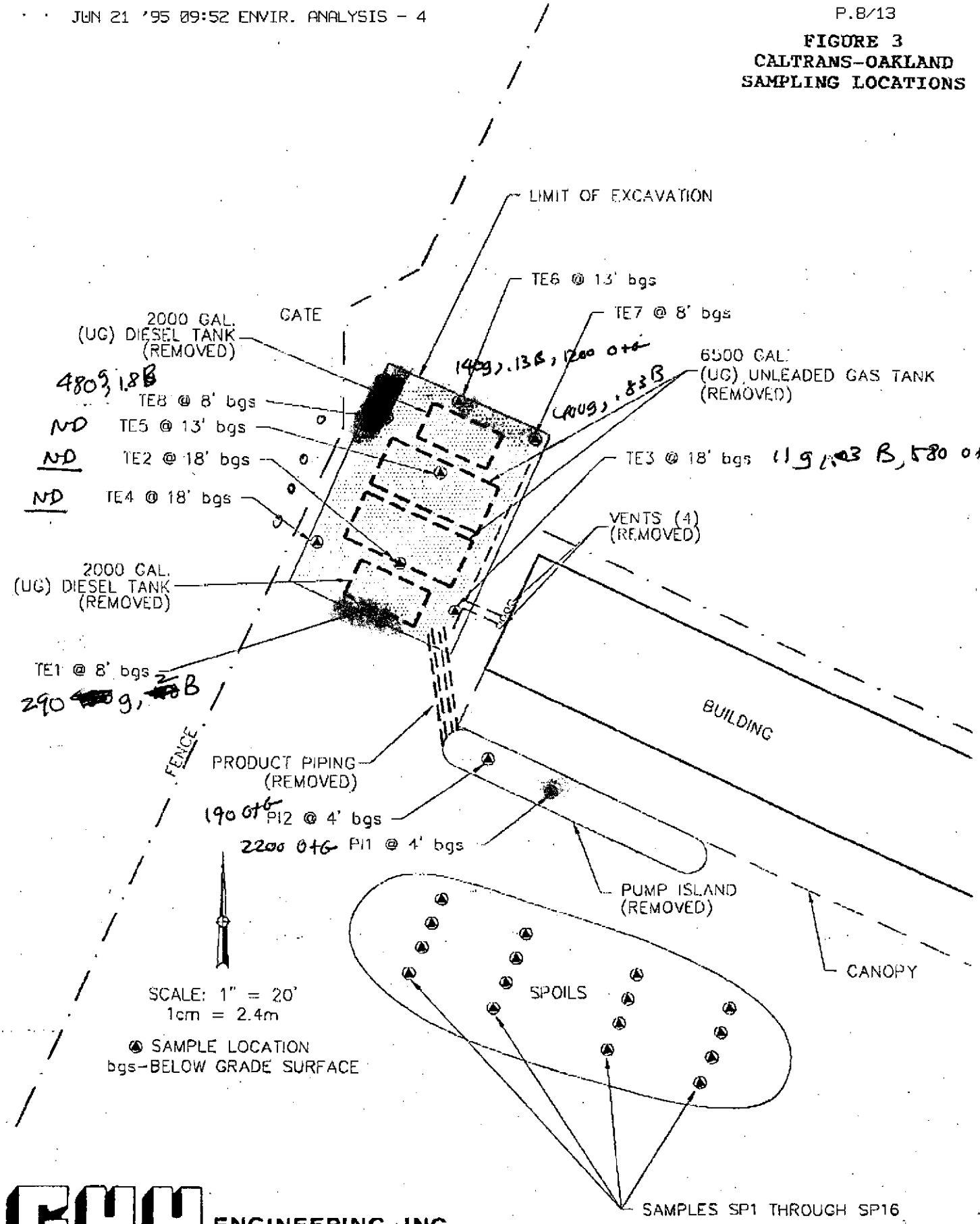
At the direction of the Alameda County Environmental Health Department (the County), soil samples were collected from the locations and depths shown on Figure 3.

The soil samples were transported under chain-of-custody (COC) to Sparger Technology, Inc. (Sparger). The samples were analyzed for total petroleum hydrocarbons in the gasoline and diesel ranges (TPH G & D; EPA Method 8015Modified) and benzene, toluene, ethylbenzene, and xylenes (BTEX; EPA Method 8020) oil and grease (O & G; EPA Method 5520 Modified) and total lead (EPA Method 7421), per the County's instructions.

Soil samples TE-2, TE-4, TE-5, PI-1, and PI-2 contained no detectable concentrations of TPH G. Sample TE-1 contained TPH G at concentrations of 290 parts per million (ppm), TE-3 contained TPH G at concentrations of 11 ppm, TE-6 contained TPH G at concentrations of 140 ppm, TE-7 contained TPH G at concentrations of 400 ppm, and TE-8 contained TPH G at concentrations of 480 ppm.

Samples TE-2, TE-4, TE-5, TE-6, TE-7, TE-8, and PI-2 contained no detectable concentrations of TPH D. Sample TE-1 contained TPH D at concentrations of 27 ppm, TE-3 contained TPH D at concentrations of 11 ppm and PI-1 contained TPH D at concentrations of 380 ppm. Analytical data are summarized in Table 1 and laboratory reports with COC documentation are contained in Appendix B.

FIGURE 3
CALTRANS-OAKLAND
SAMPLING LOCATIONS



GHH ENGINEERING INC.
RCE #27011 LIC. #537901
8084 Old Auburn Road, Suite E Citrus Heights, CA 95610 (916) 723-7645

TABLE I
SOIL ANALYTICAL DATA
CALTRANS OAKLAND MAINTENANCE STATION

SEPTEMBER 22, 1994

Sample ID	Benzene (ppm)	Toluene (ppm)	Ethyl-Benzene (ppm)	Xylenes (ppm)	TPH G (ppm)	TPH D (ppm)	O&G (ppm)
TE-1	2.0a	NDa	0.74a	1.2a	290a	27	1900
TE-2	ND	ND	ND	ND	ND	ND	200
TE-3	0.030	0.014	0.020	0.022	11	11	580
TE-4	NDb	NDb	NDb	NDb	NDb	ND	70
TE-5	ND	ND	ND	ND	ND	ND	80
TE-6	0.13b	NDb	0.51b	0.30b	140b	ND	1200
TE-7	0.83a	NDa	0.62a	1.2a	400a	ND	530
TE-8	1.8	0.51	7.6	8.7	480	ND	100
PI-1	NDb	NDb	0.18b	NDb	NDb	380c	2200
PI-2	0.076c	NDc	NDc	NDc	NDc	ND	190
SP(1-4) Comp	0.023	0.039	0.034	ND	6.1	13	110
SP(5-8) Comp	0.55	0.23	0.079	0.070	120	15	330
SP(9-12) Comp	1.010	0.005	ND	0.039	3.4	ND	200
SP(13-16) Comp	0.40d	0.95d	0.21d	0.33d	210d	12	180

TPH G Total petroleum hydrocarbons in the gasoline range
TPH D Total petroleum hydrocarbons in the diesel range
O&G Oil & grease
ppm Parts per million
ND Non-detectable
a 1:100 dilution
b 1:20 dilution
c 1:10 dilution
d 1:25 dilution

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CALTRANS OAKLAND
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Soil samples TE-2, TE-4 and TE-5 contained no detectable concentrations of BTEX. Sample TE-1 contained benzene at concentrations of 2.0 ppm, ethylbenzene at concentrations of 0.74 ppm and xylenes at concentrations of 1.2 ppm, but contained no detectable concentrations of toluene.

TE-3 contained benzene at concentrations of 0.030 ppm, toluene at concentrations of 0.014 ppm, ethylbenzene at concentrations of 0.020 and xylenes at concentrations of 0.022 ppm. TE-6 contained benzene at concentrations of 0.13 ppm, ethylbenzene at concentrations of 0.51 ppm and xylenes at concentrations of 0.30 ppm, but contained no detectable concentrations of toluene. TE-7 contained benzene at concentrations of 0.83 ppm, ethylbenzene at concentrations of 0.62 ppm and xylenes at concentrations of 1.2 ppm, but contained no detectable concentrations of toluene.

TE-8 contained benzene at concentrations of 1.8 ppm, toluene at concentrations of 0.51, ethylbenzene at concentrations of 7.6 ppm and xylenes at concentrations of 8.7 ppm. PI-1 contained ethylbenzene at concentrations of 0.18 ppm, but contained no detectable concentrations of benzene, toluene or xylenes. PI-2 contained benzene at concentrations of 0.076 ppm, but contained no detectable concentrations of toluene, ethylbenzene or xylenes. Analytical data are summarized in Table 1 and laboratory reports with COC documentation are contained in Appendix B.

TE-1 through TE-8 all contained oil and grease ranging in concentrations from 70 ppm up to 1,900 ppm as shown in Table 1. PI-1 contained O & G at concentrations of 2,200 ppm and PI-2 contained O & G at concentrations of 190 ppm, which are also summarized in Table 1. Laboratory reports and COC documentation are contained in Appendix B.

Lead was present at detectable concentrations but was consistent with background levels in all of the soil samples. Analytical data are summarized in Table 2 and laboratory reports with COC documentation are contained in Appendix B.

The soil generated during the tank removals was stockpiled and encapsulated with visquene at the locations shown on Figure 3. Four (4) four-tube composite samples were collected from the spoil pile at the locations shown on Figure 3. The samples were transported under COC to Sparger and analyzed for TPH G and D, BTEX, O & G and total lead.

The four composite samples were impacted with various concentrations of BTEX, TPH G, TPH D, and O & M as summarized in Table 1. The laboratory reports with COC documentation are also contained in Appendix B.

TABLE 2
SOIL ANALYTICAL DATA
CALTRANS OAKLAND MAINTENANCE STATION

SEPTEMBER 22, 1994

Sample ID	Lead (ppm)	Reporting Limit
TE-1	18	7.0
TE-2	12	7.0
TE-3	8.8	7.0
TE-4	7.6	7.0
TE-5	9.5	7.0
TE-6	11	7.0
TE-7	14	7.0
TE-8	8.9	7.0
PI-1	13	7.0
PI-2	13	7.0
SP(1-4) Comp	10	7.0
SP(5-8) Comp	19	7.0
SP(9-12) Comp	18	7.0
SP(13-16) Comp	8.1	7.0

ppm Parts per million
ND Non-detectable

Lead was present at detectable concentrations but was consistent with background levels in all of the spoils pile samples. Analytical data are summarized in Table 2 and laboratory reports with COC documentation are contained in Appendix B.

The excavation was backfilled and compacted with soil at Caltrans request. Class 2 aggregate base was compacted to further backfill the excavation. The excavation was then resurfaced with concrete to grade.

SOIL DISPOSAL

Because of the moderate levels of TPH G, TPH D and BTEX in the spoils pile, the soil was disposed of at BFI Vasco Road Landfill, a Class III facility, in Livermore, California. Approximately 393-ton (280 cy) of soil was transported and disposed of on November 21 and 22, 1994. The non-hazardous waste manifests are contained in Appendix C.

CONCLUSIONS

The preliminary data indicate that the soil is impacted at the site and a Soil Contamination Workplan (SCW) may be required. However, recommendations regarding remedial strategies for the potentially impacted soil at the site are beyond the scope of work of this project.

TANK REMOVAL REPORT
CALTRANS OAKLAND
DECEMBER, 1994

PREPARATION OF REPORT

Firm Preparing Report
GHH Engineering, Inc.
8084 Old Auburn Road, Suite E
Citrus Heights, California 95610

Report Prepared by:

This report was prepared by GHH Engineering, Inc. Mr. Gary H. Hall, RCE #27011, Principal Engineer, is the qualified person responsible for overseeing this project. This report was written by Mr. Andrew R. Van Allen for GHH Engineering, Inc.

The analyses and recommendations submitted in this report are based upon the best available information obtained from the field investigation, persons knowledgeable about the site, and local government agencies. All evidence presented is believed to be factual unless proven otherwise. This report was prepared to assist the property owner in the evaluation of the site.

Any conclusions and recommendations are based on our expertise and experience with the site. However, they may be rejected or revised by the regulatory agencies after they have reviewed and evaluated the data.

This report has been reviewed by Caltrans and they concur with the findings herein. If you have any questions or need additional information please call me at (916) 723-7645.

Thank You,

Gary H. Hall, P.E.

Andrew R. Van Allen
Environmental Specialist

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Dave Mohanty 1/6/95
Caltrans, District 4 Date

pc: Margaret Gabil, Caltrans, District 4
Mike Hilliard, Caltrans, District 4