

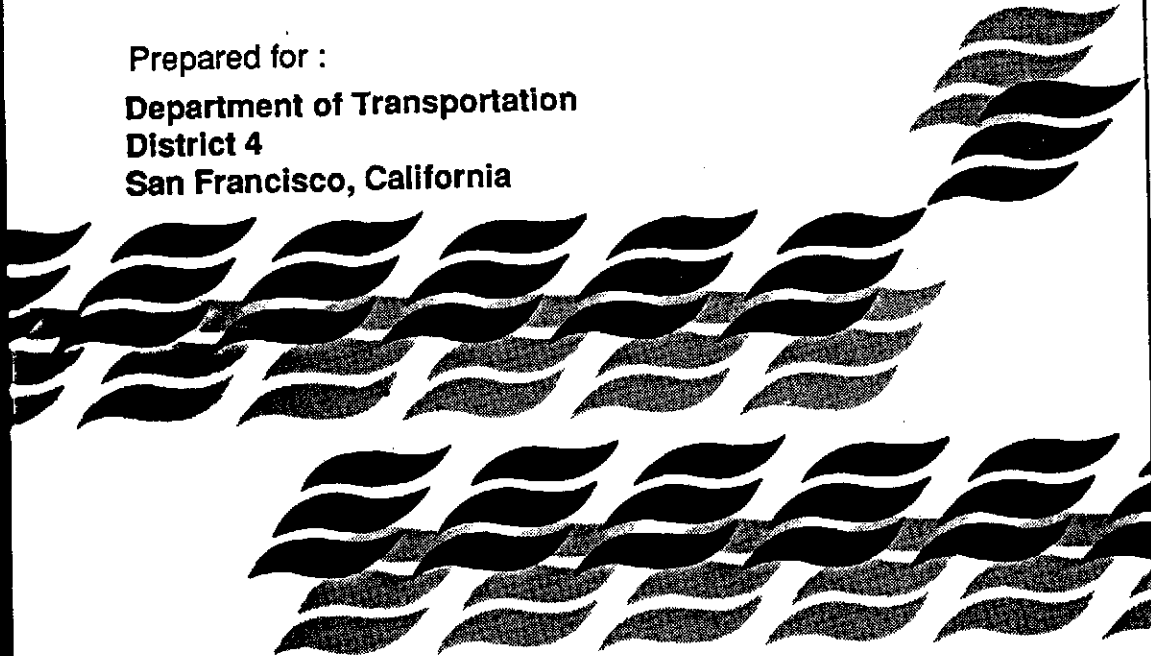
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1689-019-00

SITE INVESTIGATION REPORT - AREA 1
Department of Transportation
T.O. Number : 04-192201-01
Highway 880, Cypress Reconstruction
Oakland, California

August 1992

Prepared for :
Department of Transportation
District 4
San Francisco, California



 **Geo/Resource Consultants, Inc.**

GEOLOGISTS / ENGINEERS / ENVIRONMENTAL SCIENTISTS
505 BEACH STREET, SAN FRANCISCO, CALIFORNIA 94133

Lips Propellers
1899 7th Street
Oakland, California 94607

The Lips Propeller Company constructs propellers for various applications and has been in operation since at least 1951. A Caltrans environmental coordinator indicated that leaks have occurred around the compressor located in the rear of the property. During a site reconnaissance conducted by GRC and Caltrans personnel on May 28, soil was observed to be stained around the location of the compressor. Two open pits (sumps) were observed near the compressor which are used to dispose of excess oil. These sumps appear to be underlain by a wood floor.

It was not possible during the site reconnaissance to observe activities within the Lips building facility. It is not known where potential cleaning activities involving the use of solvents may take place on the property.

Cal-East Foods
505 Cedar Street
Oakland, California 94607

There is an underground storage tank (UST) that has stored unleaded gasoline on the east side of the property and has not been in use since approximately October, 1991. Conversations with Mr. Schroeder of Cal-East suggest that the tank capacity is 10,000 gallons (Personal communication, May 28, 1992). During a site reconnaissance conducted by GRC on June 19, 1992, Cal-East personnel indicated the east-west orientation of the UST prior to siting the proposed boring locations.

Vacant Building
1851 5th Street
Oakland, California 94607

Two USTs, an 1,800-gallon fuel oil tank, and a 10,000-gallon gasoline tank were removed from the property in June, 1988. A water sample below the gasoline tank was found to contain benzene at 6 microgram/liter (ug/l), toluene at 10 ug/l, ethyl benzene at 4.8 ug/l, and xylene at 17 ug/l. One soil sample at the bottom

of the gasoline tank excavation contained 100 microgram/kilogram (ug/kg) total petroleum hydrocarbons (TPH) as gasoline.

The water sample collected below the fuel oil excavation contained 84 milligram/liter (mg/l) TPH as diesel, and a soil sample collected at 8 feet below the surface in the excavation contained 111 mg/l TPH as motor oil. Three months later, samples were collected in the same area by the fuel tank excavation and all samples showed non-detection (ND). Two stockpiles, presumably from the fuel tank excavation, were sampled and they contained 215 milligram/kilogram (mg/kg) and 40 mg/kg Oil & Grease.

to investigate potential leakage from the existing UST (See Figure 3). Borings CE/B-1, CE/B-2, CE/B-3 and CE/H-1 were terminated at 11.5 feet, 10.5 feet, 8.5 feet, and 11.5 feet bgs, respectively. Soil samples were generally collected at 1 foot, 5 feet, and 10 feet bgs. Specific sampling locations are depicted in the Lithologic Logs included in Appendix B.

One ground-water sample was collected from a depth of approximately 15 feet bgs from CE/H-1 using the "Hydropunch" technique.

Upon completion of the soil and ground-water sampling, the borings were backfilled with cement grout and the cuttings were disposed of in 55-gallon U.S. DOT approved drums.

2.3 VACANT BUILDING

On June 22, 1992, two soil borings (VB/H-1 and VB/W-1) were drilled using a drill rig equipped with 8-inch-diameter, hollow-stem augers. The purpose of these borings were to investigate potential leakage from the removed USTs (See Figure 4). Borings VB/H-1 and VB/W-1 were terminated at 8.5 feet and 15 feet bgs, respectively. Soil samples were collected at 1 foot, 5 feet, and 7 feet bgs in boring VB/H-1 and at 1 foot and 3 feet bgs in boring VB/W-1. Specific sampling locations are depicted in the Lithologic Logs included in Appendix B.

One ground-water sample was collected from boring VB/H-1 at a depth of approximately 10 feet bgs using the "hydropunch" technique.

Upon completion of the soil and ground-water sampling, boring VB/H-1 was backfilled with cement grout and the cuttings were disposed of in 55-gallon U.S. DOT approved drums.

A 2-inch-diameter monitoring well was constructed at boring VB/W-1. The well was screened between 5 feet and 15 feet bgs and was constructed of 0.020-inch slotted Polychloride Vinyl (PVC). The annular space was filled with No. 3 Monterey sand to a depth of 3 feet bgs and bentonite pellets were placed to a depth of approximately 1.5 feet bgs. The remainder of the annular space

was filled with cement grout and an underground locking monument well box was cemented into place.

The monitoring well was developed on June 26, 1992 using the surge and bail technique. Approximately 50 gallons of water was purged from the well during development. Well development logs are included in Appendix C.

The monitoring well was sampled on July 2, 1992. Prior to sampling, the water level was measured and the well was subsequently purged of 15 gallons of water. Ground-water parameters, pH, electrical conductivity, and temperature were measured during purging. Water sampling logs are included in Appendix C.

Soil cuttings, development water and purge water were disposed of in 55-gallon U.S. DOT APPROVED drums.



sandy gravel layer was observed from 0.5 feet bgs to approximately 4 feet bgs at boring CE/B-1. A 6-inch-thick concrete layer was encountered at ground surface in all of the borings. In boring CE/B-3, debris, including glass fragments, was observed between 0 and 5 feet bgs and roots were observed at approximately 7 to 8.5 feet bgs. These observations suggest that the soil within the area of investigation is fill in origin.

Saturated conditions were generally observed at approximately 6 feet bgs.

HnU readings were relatively low (below 15 parts/million; ppm) at boring CE/B-1. HnU readings ranged between 0 and 40 ppm in CE/B-2, from 15 to 100 ppm in CE/B-3 and from 120 to 200 ppm in CE/H-1. Higher readings generally occurred near ground surface, although the 200 ppm measurement was in CE/H-1 taken from 5 feet bgs.

3.1.3 Vacant Building

The area investigated at the Vacant Building is underlain by light brown to orange-brown silty sand (See Figures B-7 and B-8; Appendix B). Most of the soils encountered are interpreted to be fill in origin, particularly at VB/W-1 where the boring, located within the presumed tank backfill, encountered pea gravel.

During drilling, wet conditions were encountered at approximately 7 feet bgs. On July 2, 1992, ground water was measured to be approximately 5 feet below ground surface at VB/W-1.

HnU readings indicated background (0 to 1 ppm) levels in all of the samples tested.

3.2 ANALYTICAL FINDINGS

Soil and ground-water samples were submitted to CKY, Inc. (CKY) for chemical analyses based on site background and suspected contaminants. The analytical results are summarized on Tables 1, 2, and 3, and are included in Appendix D. The findings are briefly described below.

3.2.3 Vacant Building

Soil boring VB/W-1 was drilled to 15 feet bgs. Three soil samples collected from the unsaturated zone and a ground-water sample collected from VB/W-1 were chemically analyzed for TPH-G by EPA Method 8015M, TPH-D by EPA Method 8015M, and BTEX by EPA Method 8020. Soil boring VB/H-1 was drilled to 8.5 feet. Three soil samples collected from the unsaturated zone and a "Hydropunch" ground-water sample were chemically analyzed for TRPH by EPA Method 418.1.

Soils

TPH-G was detected at two feet bgs in soil boring VB/W-1 at 10 mg/kg. No other organic compounds were detected in soil boring VB/W-1. TRPH was detected in all three soil samples collected from VB/H-1 at concentrations of 7 mg/kg at 6 and 8 feet and 11 mg/kg at two feet.

Ground Water

No TRPH was detected in the "Hydropunch" ground-water sample collected from VB/H-1. A ground-water sample collected from monitoring well VB/W-1 did not contain TPH-G, TPH-D, benzene, toluene, ethyl benzene, or xylenes above laboratory detection limits.

Many of the metals detected in ground water, particularly lead and mercury, were found to be in excess of MCLs. However, it is unlikely that the ACWD or ACDEH would consider this industrial area to be a potential source of potable water. Additionally, ground-water samples were not filtered prior to testing and probably represent the effects of suspended solids.

4.2 CAL-EAST FOODS

Soil

Concentrations of TPH-D found in some soil borings (CB/B-1 and CE/H-1) at Cal-East may be considered hazardous waste (greater than 1,000 mg/kg) by the RWQCB. Concentrations of TPH-G found in some soil borings (CE-/B-3 and CE/H-1) may be considered as designated wastes (containing between 100 mg/kg and 1,000 mg/kg TPH).

The volatile organic compounds detected in soils at Cal-East are not listed under CCR Title 22 and cannot be used to classify soils as hazardous.

Ground Water

TPH was detected in ground water at Cal-East in soil boring CE/H- at 0.8 mg/l. The relative significance of this concentration, as viewed by the CalEPA and RWQCB, is not known.

VOCs detected in ground water at Cal-East include ethyl benzene and xylenes. These compounds were found at levels which do not exceed the State MCLs or Action Levels.

4.3 VACANT BUILDING

Soil

Based on the low concentrations of hydrocarbons detected at the site, and waste characterization standards for TPH, soils located within the area of investigation at the Vacant Building is not considered hazardous waste.

Ground Water

Based on the low concentrations of hydrocarbons detected in the ground water at the site, ground water underlying the area of investigation at the Vacant Building are not considered hazardous waste.

Based on an assumed localized condition of soil contamination, potential soil contamination within the vadose zone is estimated to extend approximately 20 feet in each direction from the UST. The measured depth to ground water is 5 feet (measured at a monitoring well installed at the Vacant Building), at the Cal-East facility. Thus, depth of contaminated soil within the vadose zone is estimated at 5 feet bgs. As the UST is located in proximity to the street in the eastern direction, the volume of soil requiring remediation on the property is limited in this direction. Thus, approximately 300 cubic yards (approximately 400 tons) could require disposal at either a Class II landfill or recycling facility. However, as the investigation was limited to four borehole locations adjacent to the UST, the lateral extent of contamination spreading from the UST or associated piping, is not known and the volume of contaminated soil could be a multiple of the amount estimated.

Ground Water

Hydrocarbons in ground water occur at relatively low concentrations, thus, remediation of ground water is not anticipated. However, it is expected that at least one ground water monitoring well will be required by ACWD and ACDEH to monitor ground-water quality over a period of at least four quarters. Therefore, it is recommended that one 2-inch diameter well be installed to approximately 15 feet bgs and that at least four quarters of ground-water sampling be conducted.

5.3 VACANT BUILDING

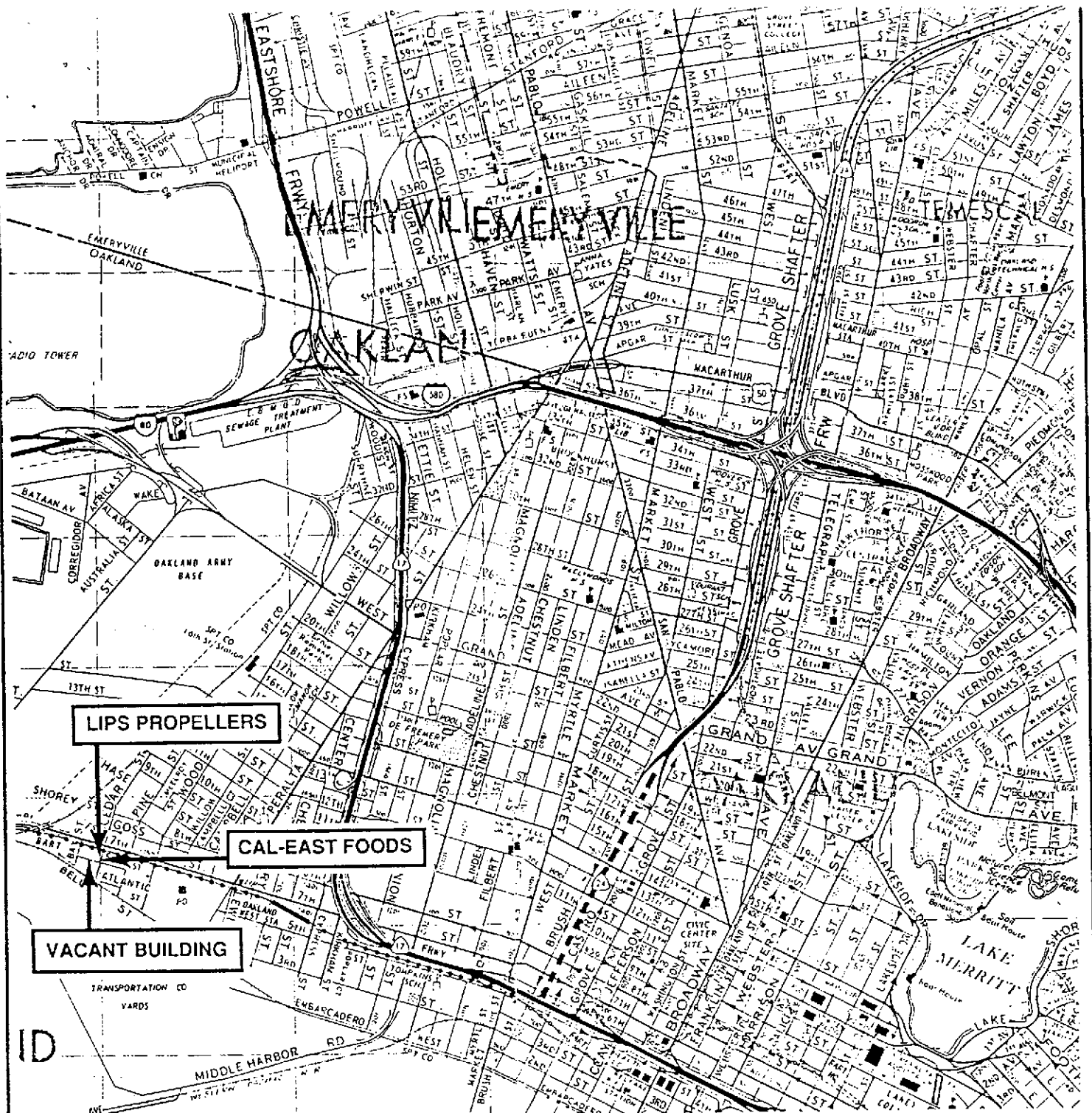
Low levels of TRPH were detected in soil samples from boring VB/H-1 (within the waste oil UST backfill) and TRPH was not present above laboratory limits in the ground water sample collected from VB/H-1. Hydrocarbons were also not present above laboratory detection limits at VB/W-1 (within the gasoline UST backfill) or in the ground-water sample collected from the well. Thus, it is not anticipated that either soil or ground-water remediation will be required in these locations within the Vacant Building property.

6.0 CONCLUSIONS

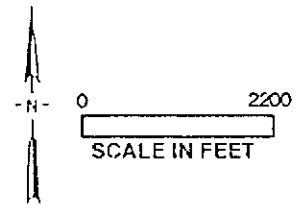
Soil samples collected at Lips Propellers contained hydrocarbon and metal concentrations above hazardous waste levels. Soil samples collected at Cal-East contained hydrocarbon concentrations over designated levels. Based on the very limited data available it is estimated a volume of approximately 550 cubic yards (approximately 715 tons) of contaminated soil would require removal and disposal from Lips to a Class I landfill or recycling facility. An estimated volume of approximately 300 cubic yards (approximately 400 tons) of contaminated soil would require removal and disposal from Cal-East to a Class II landfill or recycling center.

Ground water at the Lips and Cal-East facility may not require remediation; however, County or State discharge limitations may need to be addressed if dewatering is necessary at these sites. Also, the installation of a monitoring well(s) would probably be required by the ACWD and RWQCB near the UST at Cal-East.

Neither soil or groundwater contained significant hydrocarbon concentrations in the areas investigated at the Vacant Building. Therefore, these areas will probably not require remediation.



REFERENCE : Thomas Bros Maps,
Alameda, Contra Costa Counties



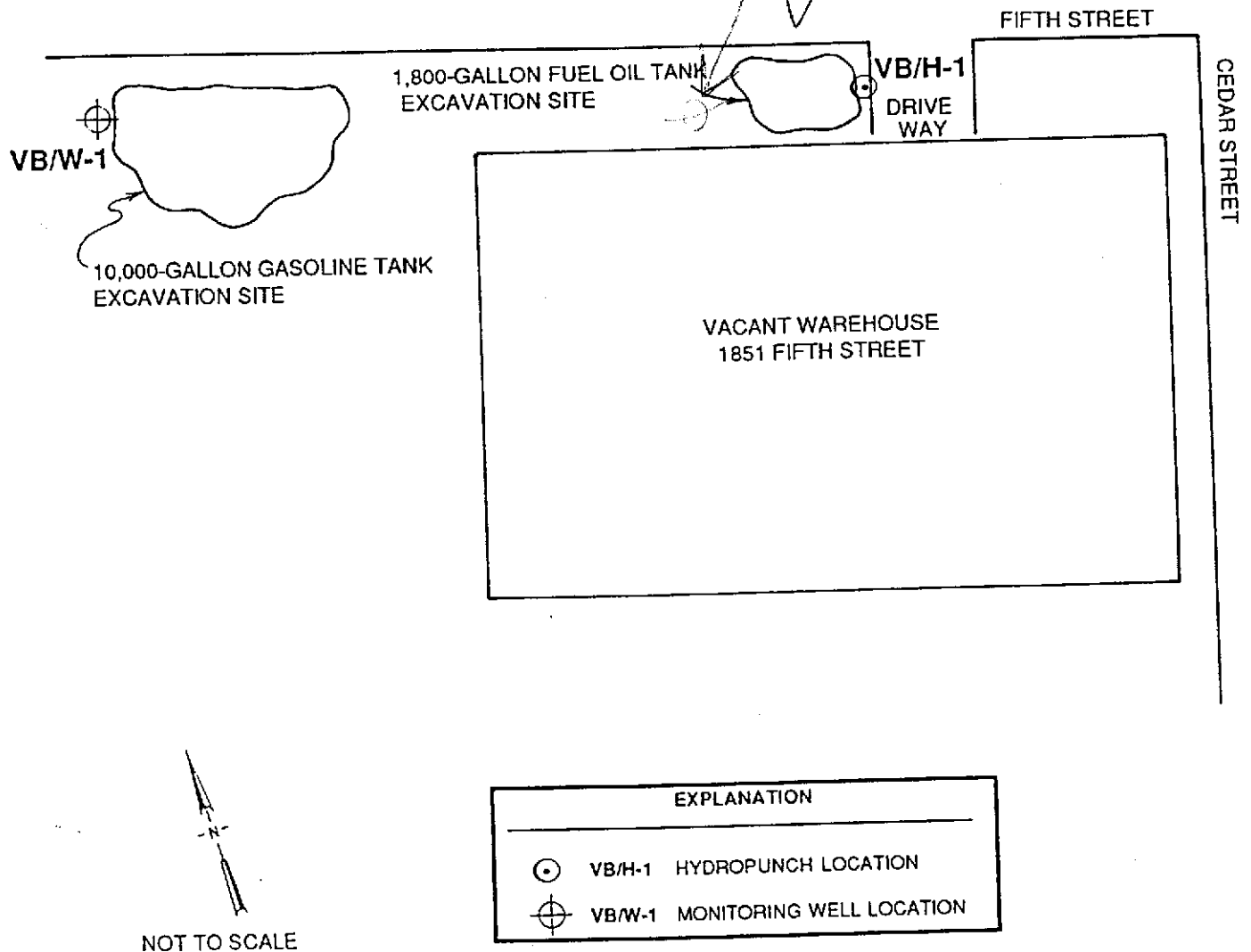
Geo/Resource Consultants, Inc.
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VICINITY MAP - AREA No.1
SITE INVESTIGATION REPORT
DEPARTMENT OF TRANSPORTATION
INTERSTATE 880,
CYPRESS STRUCTURE RECONSTRUCTION
OAKLAND, CALIFORNIA

FIGURE
1

Job No. 1689-019-00 Appr. _____ Date 7/22/92

mw should have been here



Reference : Caltrans, May 4, 1992



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Job No. 1689-019-00 Appr. Date 1/13/92

SITE PLAN - AREA 1
VACANT BUILDING - PARCEL No.11
SITE INVESTIGATION REPORT
D.O.T. - INTERSTATE 880
CYPRESS STRUCTURE RECONSTRUCTION
OAKLAND, CALIFORNIA

FIGURE

4

TABLE 3 AREA 1

DOT - CYPRESS

SUMMARY OF ANALYTICAL RESULTS - GROUND WATER

	EPA No.	LP/H-2	CE/H-1			DETECTION LIMIT	MCLs
Antimony (mg/L)	6010	0.49	-	-	-	0.10	NA
Arsenic (mg/L)	6010	2	-	-	-	0.20	0.050
Barium (mg/L)	6010	18	-	-	-	0.05	1.0
Beryllium (mg/L)	6010	0.09	-	-	-	0.01	NA
Cadmium (mg/L)	6010	0.94	-	-	-	0.01	0.010
Chromium-Total (mg/L)	6010	8.7	-	-	-	0.01	NA
Cobalt (mg/L)	6010	1.5	-	-	-	0.02	NA
Copper (mg/L)	6010	4.6	-	-	-	0.01	1.0
Lead (mg/L)	6010	6.7	-	-	-	0.10	0.005
Mercury (mg/L)	6010	0.007	-	-	-	0.0002	0.002
Molybdenum (mg/L)	6010	0.10	-	-	-	0.01	NA
Nickel (mg/L)	6010	8.9	-	-	-	0.05	NA
Selenium (mg/L)	6010	ND	-	-	-	0.20	0.010
Silver (mg/L)	6010	ND	-	-	-	0.01	0.050
Thallium (mg/L)	6010	ND	-	-	-	0.20	NA
Vanadium (mg/L)	6010	5.8	-	-	-	0.02	NA
Zinc (mg/L)	6010	7.7	-	-	-	0.01	NA
TRPH (mg/L)	418.1	30	-	ND ✓	-	1.0 ppm	NA
TPH-G(mg/L)	8015m	-	0.8	-	ND ✓	0.1 ppm	NA
TPH-D(mg/L)	8015m	-	ND	-	ND ✓	1.0 mg/kg	NA
Benzene(ug/L)	602	-	ND	-	ND ✓	1	1
Toluene(ug/L)	602	-	ND	-	ND ✓	1	100
Ethyl Benzene (ug/L)	602	-	1.5	-	ND ✓	1	680
Xylenes(ug/L)	602	-	18	-	ND ✓	1	1750
Volatile Organics (ug/L)	624	ND	-	-	-	1 - 10	NL
Pesticides(ug/L)	608	ND	-	-	-	0.05 -1.0	NL
PCBs(ug/L)	608	ND	-	-	-	1.0	NA

7-6-98
↓

NOTES: ND = Not Detected at Detection Limit on Laboratory Data Sheets

- = Not analyzed

TRPH = Total Recoverable Petroleum Hydrocarbons

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

MCLs = State Maximum Concentration Levels, Primary and Secondary, provided for comparison purposes only, includes State Action Levels

NL = Not Listed

Laboratory Analyses performed by CKY

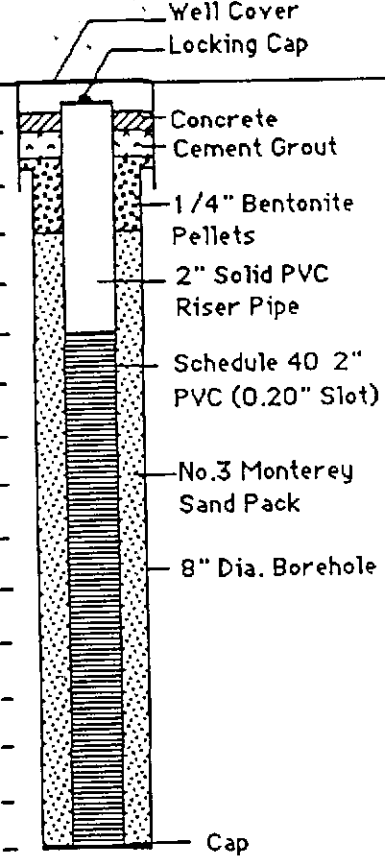
TABLE 1
AREA 1
DOT - CYPRESS
SUMMARY OF ANALYTICAL RESULTS - SOIL
GENERAL

UNITS EPA No.	TRPH mg/kg 418.1	TPH-G mg/kg 8015m	TPH-D mg/kg 8015m	BENZENE ug/kg 8020	TOLUENE ug/kg 8020	ETHYL BENZENE ug/kg 8020	XYLENES ug/kg 8020	VOLATILE ORGANICS ug/kg 8240	PESTICIDES mg/kg 8080	PCBs mg/kg 8080
LIPS PROPELLERS										
-Hand Auger										
LP/A-1-1	6,200	-	-	-	-	-	-	ND	ND	ND
LP/A-1-3	32	-	-	-	-	-	-	ND	ND	ND
LP/A-1-10	43	-	-	-	-	-	-	ND	ND	ND
-Hydropunch										
LP/H-2-1	12,000	-	-	-	-	-	-	ND	ND	ND
LP/H-2-3	45,000	-	-	-	-	-	-	ND	ND	ND
LP/H-2-8.5	2,100	-	-	-	-	-	-	ND	ND	ND
CAL-EAST FOODS										
-Boring										
CE/B-1-1.5	-	60	2,800	100	110	460	380	-	-	-
CE/B-1-6	-	ND	ND	ND	ND	ND	ND	-	-	-
CE/B-1-11	-	ND	ND	ND	ND	ND	ND	-	-	-
CE/B-2-2	-	ND	ND	10	ND	20	ND	-	-	-
CE/B-2-4	-	13	25*	ND	ND	50	380	-	-	-
CE/B-2-7	-	ND	ND	ND	ND	ND	ND	-	-	-
CE/B-3-1.5	-	320*	240	ND(25)	30(25)	250(25)	2,000(25)	-	-	-
CE/B-3-4	-	80	18*	500(10)	280(10)	1,100(10)	6,000(10)	-	-	-
CE/B-3-8	-	ND	ND	15	50	25	120	-	-	-
-Hydropunch										
CE/H-1-1.5	-	650*	1,040	750(50)	1,200(50)	7,500(50)	4,500(50)	-	-	-
CE/H-1-6	-	250*	31*	70(125)	200(125)	250(125)	1,500(125)	-	-	-
CE/H-1-11	-	ND	ND	ND	ND	ND	ND	-	-	-
VACANT BUILDING										
-Hydropunch										
VB/H-1-2	11	-	-	-	-	-	-	-	-	-
VB/H-1-6	7	-	-	-	-	-	-	-	-	-
VB/H-1-8	7	-	-	-	-	-	-	-	-	-
-Well										
6-23-92 VB/W-1-2	-	ND ✓	10 ✓	ND ✓	ND	ND	ND	-	-	-
VB/W-1-4	-	ND ✓	ND ✓	ND ✓	ND	ND	ND	-	-	-
DETECTION LIMIT										
LIMIT	6.0 - 750	6.0 - 250	5.0	5	5	5	5	6 - 100	0.01 - 0.1	0.1

NOTES: ND = Not Detected at Detection Limit on Laboratory Data Sheets
 - = Not analyzed
 * = Does not contain volatile aspects of gasoline, according CKY Laboratory Data Sheets
 () = Detection Limit
 TRPH = Total Recoverable Petroleum Hydrocarbons
 TPH-G = Total Petroleum Hydrocarbons as Gasoline
 TPH-D = Total Petroleum Hydrocarbons as Diesel
 Laboratory Analyses performed by CKY

LOG OF BORING VB/W-1

Well Installation Diagram



Blows/ft.	Hnu Readings (ppm)
26	1
13	0
5	
7	

Equipment Hollow Stem Auger
 Elevation N.A. Date 6/22/92

Depth (ft.)
 Sample pnts.

0
 SILTY SAND (SM)
 orange to dark brown, dry, loose to medium dense

5
 color changes to dark brown, moist

7
 wet @ 7 feet
 pea gravel (tank backfill) material encountered between 5 and 7 feet below ground surface, no sample recovery

10

15

20

25

30

Fill

Boring terminated @ 15.0 feet.
 Ground water measured @ 4.7 feet July 2, 1992.



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LOG OF BORING VB/W-1
 SITE INVESTIGATION REPORT
 DEPARTMENT OF TRANSPORTATION
 INTERSTATE 880
 CYPRESS RECONSTRUCTION
 OAKLAND, CALIFORNIA

FIGURE
B-7

Job No. 1689-019-00 Appr: AOT Date 7/1/92

LOG OF BORING VB/H-1

Equipment Hollow Stem Auger

Elevation N.A. Date 6/22/92

Laboratory Analysis

Blows/ft.
OVA
Readings
Hnu
Readings
(ppm)

Depth (ft.)
Sample pnts.

0
5
10
15
20
25
30

SILTY SAND (SM)
light brown, dry, medium dense,
rock fragments

CLAYEY SAND (SC)
dark brown, damp to moist,
very loose to loose, rock fragments

SILTY SAND (SM)
slightly mottled light brown-gray, wet, loose to
medium dense, trace clay

Fill

Boring terminated @ 8.5 feet.
Sample pushed to 10 feet for hydropunch.
Ground water encountered @ 10.0 feet during drilling.



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LOG OF BORING VB/H-1
SITE INVESTIGATION REPORT
DEPARTMENT OF TRANSPORTATION
INTERSTATE 880
CYPRESS RECONSTRUCTION
OAKLAND, CALIFORNIA

FIGURE

B-8

Job No. 1689-019-00 Appr: AOT Date 7/1/92