1330 S. Bascom Ave., Suite F San Jose, CA 95128

Tel. (408) 559-1248 Fax (408) 559-1224

Alameda County Health Care Services Department of Environmental Health 1131 Harbor Bay Parkway, Second Floor Alameda. CA 94502 December 27, 2000

Attn: Mr. Barney Chan; Haz Mat. Specialist for: DiSalvo Trucking

4919 Tidewater Ave., Oakland

Re: Investigative Report

Dear Mr. Chan,

This Report has been prepared by PIERS Environmental Services, (PIERS) to address requirements by the Alameda County Department of Environmental Health (ACDEH) for the performance of a groundwater investigation at a Underground Storage Tank (UST) site, 4919 Tidewater Ave., Oakland, California.

The purpose of this investigation was to further determine the horizontal extent of hydrocarbons in soil and groundwater. This report first reviews the known site history, describes the site vicinity, and presents existing chemical data. Then, the findings of the investigation are given including analytical results of on-site soil and groundwater sampling.

1.2 Site Location

The site is located in a light industrial district of Oakland, California on property at 4919 Tidewater Ave.(Figure 1).

1.3 Previous Subsurface Work at Site

Previous subsurface work at the site includes soil excavation and bio remediation, groundwater disposal, soil borings and sampling, monitor well construction and sampling. Description and chemical results from all work conducted to date are given in reports by Geo Environmental Technology (GTE) of San Jose dated April, 1989, June 1989 and February 1991 and in reports by Gen-Tech Environmental, Inc., (GTE) dated May 1994 and November 1994.

2.0 SITE DESCRIPTION

2.1 Site Description and Hydrogeologic Setting

The site is located on the west side of Tidewater Ave.. A 8000 square foot metal building is located on the northwest portion of the approximate one acre parcel. The majority of the remaining property is paved with asphalt. The site is located at the fringe of the San Francisco Bay on soil that appears to have been imported to fill the location to approximately four feet above the mean high tide elevation. The imported fill caps the entire site and contains sands, gravels, concrete and asphalt. Approximately two to three feet of native silty clay, silt, clayey sand and peat lie between this fill and the bay mud aquatard.

2.2 Vicinity Map

A vicinity map is given in Figure 1 which includes the location of any known hydraulic influences. The San Francisco Bay lies approximately 100 feet southeast of the site. A site map is given in Figure 2 which includes information on adjacent streets, site building locations, locations of existing wells, past soil borings and former tanks.

2.3 Existing Analytical Results

In April of 1994, three monitoring wells were installed at the site by Gen-Tech Environmental (GTE) of San Jose CA.. Eleven soil borings were also advanced at the same time by GTE. Groundwater grab samples were recovered from each boring and tested for TPH/g, TPH/d and BTEX.

In August of 1995, one monitoring well and two soil borings were installed at the site by Environmental restoration Services (ERS) of Menlo Park, CA..

2.3.2 Depth to Groundwater

Depth to groundwater based on the monitor well sampling is approximately two feet below ground surface.

2.3.3 Soil Profile

The boring logs for the monitor wells show predominantly import sands and gravels underlain with peat.

2.4 Waste Removal

Three fuel tanks, one waste oil tank and approximately 40,000 gallons of hydrocarbon impacted groundwater have been removed from the site. Approximately 70 gallons of diesel fuel recovered from an on-site, groundwater recovery sump has been removed from the site.

3.0 INVESTIGATIVE INTRODUCTION

Based on historical analytical data from well samplings, PIERS believes that levels of gasoline and BTEX found in the groundwater at the site do not need to be investigated. PIERS therefore will analyze soil and groundwater samples for TPH/diesel only, with the exception of the groundwater sample recovered from boring SB-4.

Based on the hydrogeology of the site vicinity, PIERS believes that the vertical distribution of groundwater containing hydrocarbons does not require investigation beyond the bay mud aquatard (approximately 6 to 7 feet bgs.).

In addition, PIERS believes that the extent of any soil contamination on the site is due to the migration of the hydrocarbon in the shallow groundwater as it moves through the imported sand and gravel fill material. Since the extent of soil contamination has not been defined below this fill material, the investigative scope of work was comprised of soil sampling, at the bottom of the groundwater aquifer, at on-site locations.

Since the lateral extent of groundwater contamination at the site has not been defined, the investigative scope of work was also comprised of groundwater sampling at on-site locations.

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3.1 Reconnaissance Boring Installation, Soil and Groundwater Sampling

On December 20, 2000, 16 borings were constructed to determine the presence of hydrocarbons in the soil and groundwater around the entire property. The location of borings SB-I through SB-16 are shown in Figure 2.

Prior to mobilization of the drilling equipment on-site, and prior to leaving the site, all associated equipment and well installation equipment were thoroughly cleaned to removed all soil, oil, grease, mud, tar, etc. The cleaning process consisted of TSP cleaning of the drilling equipment and a clean water final rinse. Before drilling each boring, all drill stems, bits, and other down-hole equipment were cleaned.

3.1.1 Soil Boring Procedure

The borings were advanced using a 2" diameter Geo-Probe to a depth of approximately eight feet. All of the soil recovered from the boring was logged under the supervision of a registered civil engineer. Visual and olfactory observations of petroleum hydrocarbons were made and recorded on the boring log. The boring logs are contained in the appendix of this Report.

3.1.2 Soil Sampling Procedures

The soil samples were recovered from each boring at the bottom of the groundwater aquifer. Each sample was cut from the continuous core container at the desired sample depth. The container were then sealed with Teflon sheet and plastic caps. The soil samples were immediately stored on ice. Only those soil samples recovered from borings that contained detectable amounts of diesel in the groundwater were analyzed for TPH/diesel.

3.1.3 Groundwater Grab Sampling Procedures

After completion of drilling, each boring was allowed to recharge with groundwater. Then, a new, disposable bailer was inserted into the boring for recovery of a groundwater grab sample. The groundwater was emptied into sample containers obtained directly from an analytical laboratory. An effort will be made to minimize exposure of the sample to air. The groundwater samples were immediately stored on ice.

Care was taken to collect all excess water resulting from the sampling and cleaning procedures. The excess water was contained in a pre-labeled 55-gallon drum on-site pending receipt of laboratory analyses.

The borings were backfilled immediately after completion of the sampling with a cement grout mixture containing approximately 3% bentonite.

3.1.4 Laboratory Analyses

The following analyses were performed by the on-site lab operated by Mobile Chem Labs (MCL) of Lafayette, CA, on the soil an groundwater samples obtained from the borings:

TPH-diesel (EPA Method 8015M) (Groundwater sample SB4-GW was also analyzed for BTEX, EPA Method 8020)

The analytical results of the groundwater samples were as follows

Results in Parts Per Million (PPM)

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The analytical results of the soil samples were as follows:

Results in Parts Per Million (PPM)

Sample#	TPH/d
SB2@6'	ND
SB5@ 6.5'	ND
SB6@ 7'	ND
SB10@ 6'	ND
SB12@ 6.5'	ND
SB14@ 7'	ND
SB15@ 6'	ND
SB16@ 6.5'	14

4.0 CONCLUSIONS and RECOMMENDATIONS

Sixteen soil borings were advanced at the subject site. Groundwater samples were recovered from all sixteen borings. A groundwater iso-concentration map for diesel is shown in Figure 2. Soil samples were analyzed from all borings that contained detectable levels of diesel in the groundwater. The soil samples were recovered from the bottom of the groundwater aquifer. Analytical results of soil samples indicated low to non-detectable levels of diesel.

It appears that elevated levels of diesel remain in the groundwater to the northeast of the former tank locations and this contaminate plume appears to be migrating to the northwest. Soil within this plume has been impacted with diesel from the top of the aquifer (approximately 2 feet bgs.) to the bottom of the aquifer (approximately 6 feet bgs.).

Concentrations of diesel in the groundwater do not appear to have been reduced from natural attenuation since the last investigation conducted in April of 1994.

PIERS recommends that the client negotiate with East Bay Municipal Utility District (EBMUD) to design a groundwater treatment system to discharge diesel impacted groundwater to the sanitary sewer.

PIERS further recommends that the groundwater extraction system be expanded by installing a recovery trench from the existing recovery sump to the terminal building to the northwest.

Once a groundwater recovery and treatment system has been approved by EBMUD and ACDEH. The cost of a Remedial Action Plan will need to be approved by the State Cleanup Fund before implementation.

5.0 LIMITATIONS

The observations presented in this report are professional opinions based on the scope of work outlined herein. This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. The observations presented apply to site conditions existing at the time of our study and cannot apply to site conditions or changes of which we are not aware or have not had the opportunity to evaluate. This investigation was conducted solely to evaluate environmental conditions of the soil and groundwater with respect to hydrocarbons identified during previous work. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. It must be recognized that any conclusions drawn from these data rely on the integrity of the information available at the time of investigation and that a full and complete determination of environmental contamination and risks cannot be made.

Respectfully submitted this 27th day of December, 2000,

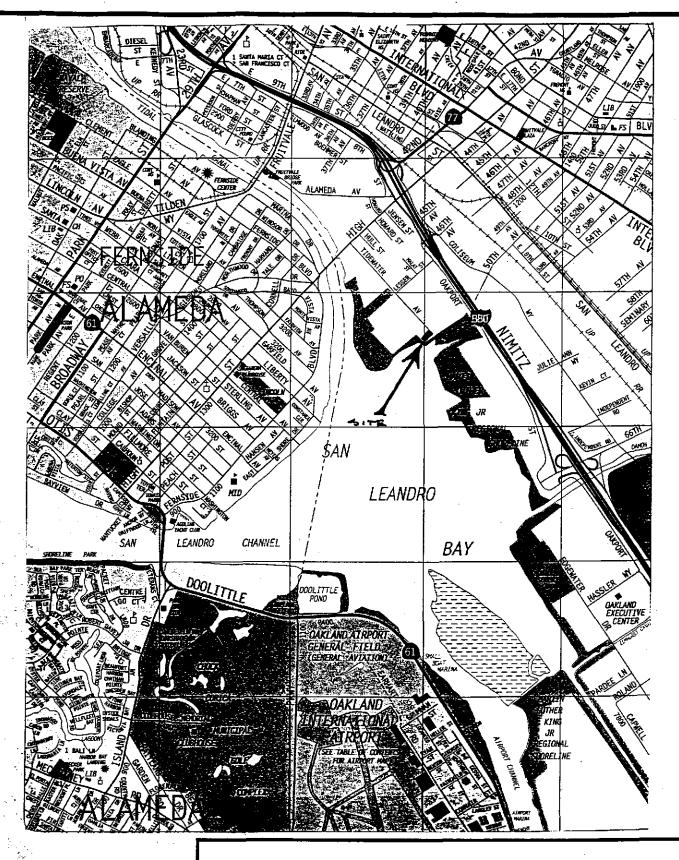
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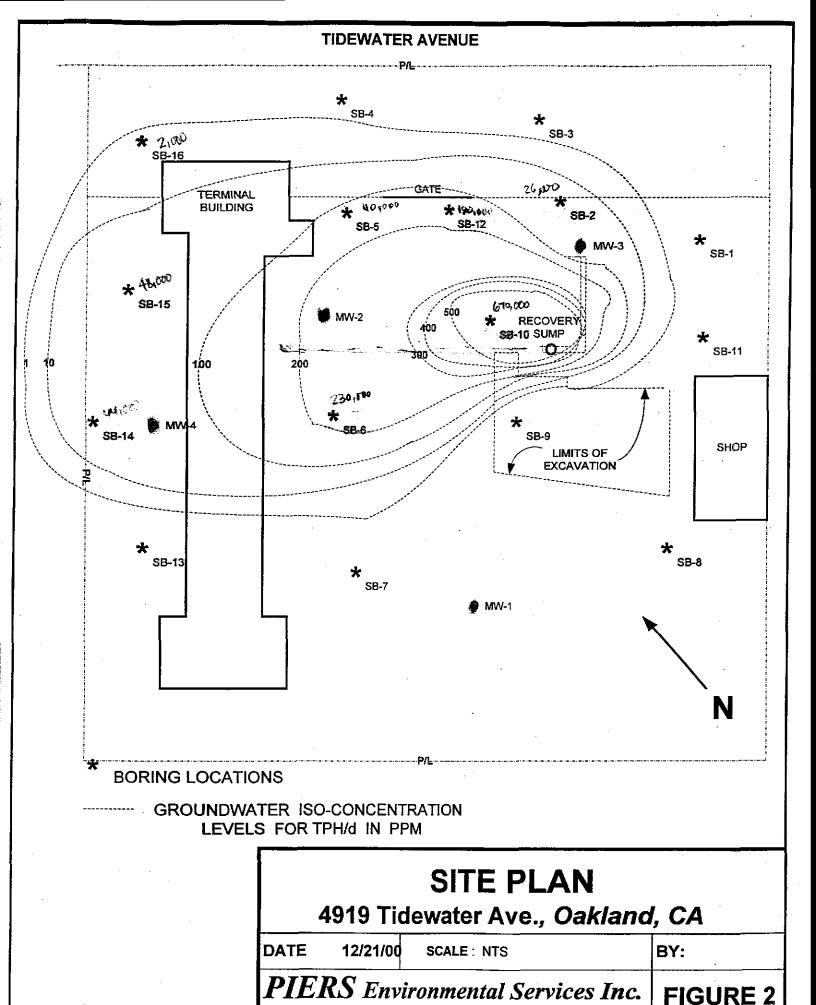


VICINITY MAP 4919 Tidewater Ave., *Oakland, CA*

DATE 12/21/00 SCALE: NTS BY:

PIERS Environmental Services Inc. FIGURE 1

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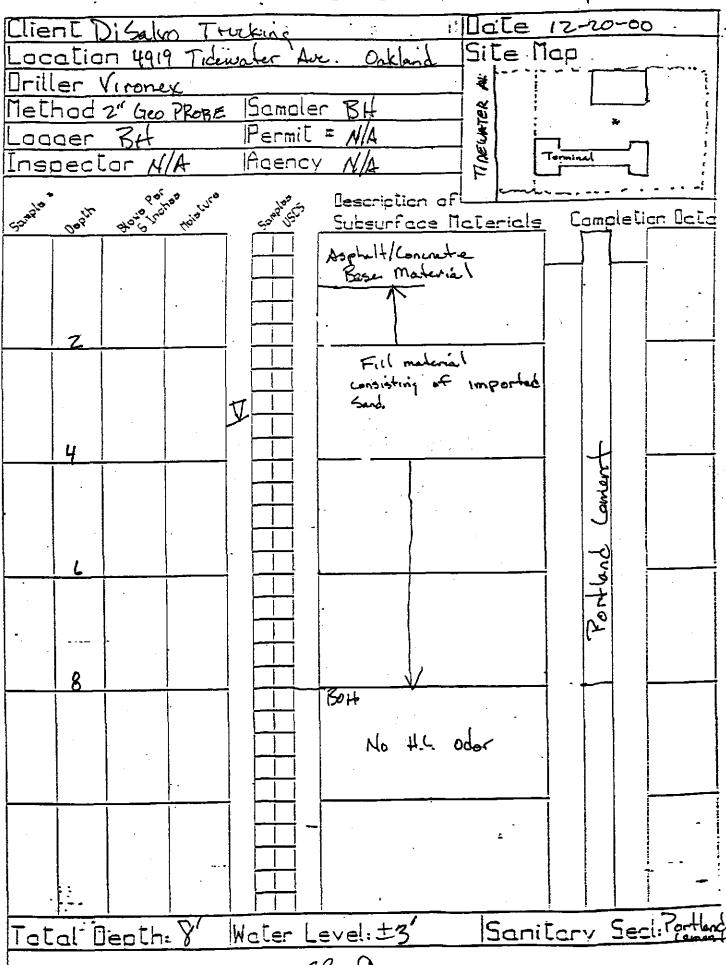
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Logger BH	Permit # N/A	
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Client Disalus J		Site Map
Oriller Vironex	sewarer Acc. Cakland	
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Sanitary Sect. Portland

Total Depth: 8 Water Level: ±3'

	Boring Log	Page of
Client Disalm Tru	rking illo	ile 12-20-00
Location 4919 Tiden	valer Ave. Oakland Sil	Te Map
Oriller Vironex	<u> </u>	
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Looger BH	Sampler BH 3	
Inspector N/A		Terminel
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Tatal Depth: 8' Wa	ater Level:±3' Sc	unitary Sectifortand
Well/Baring Designat	tian: SB-13	

Client Di Salvo	Truking		late	12-20-0	0 .
Location 4919	Tidewater Au	c. Oakland	Site Mo	ap .	
Oriller Vironex			*		
Method 2" Geo P	ROBE Sample	L BH	<u>e</u>	<u>[</u>	ا ا
Looger BH	Permit		TREUNTER	7	, !
Inspector N/A	t lAgency	N/A	7 3	erminal] :
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Client Disalus Trucking Date 12-20-00) ·
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Oriller Vironex	
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Inspector N/A facency N/A	:
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Well/Barina Designation: 5B-16	

CHAIN-OF-CUSTODY ANALYTICAL RESULTS

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Gi de 2018 que sonte forded filtered & passed Hein School sel? cacer: (925) MOBILE CHEM LABS INC. 977 -\$135



1678 Reilez Valley Road • Lafayette, CA 94549 Phone (925) 945-1266 • Fax (925) 943-6884

00368\2131\014129

Piers Envoronmental Services 1330 S. Bascom Avenue, Suita F San Jose, CA 95128 Attn: Ben Halsted

Project Manager

Date Sampled: 12-20-00 Date Received: 12-20-00 Date Analyzed: 12-20-00

WATER Total Petroleum Detection Sample Sample Hydrocarbons as Diesel Limit Description Number dag ppb

> Disalvo Trucking 4919 Tidewater Ave. Cakland, CA Proj #:00368

V120001	SB1-GW	100	<100
V120002	SB2-GW	100	26,000
V120003	SB3-GW	100	<100
V120004	SB4-GW	100	<100
V120005	SB5-GW	100	110,000
V120006	SB6-GW	100	230,000
V120007	SB7-GW	100	<100
V120008	SB8-GW	100	<100

QA/QC: Duplicate Deviation on V120005 is 8.3 % & V120001 is 3.6 % Spike Recovery on V120002 is 101 % & V120001 is 83 %

Analysis was performed using EPA method 3550 modified and Note: TPH LUFT (8015). (ppb) = (ug/1)

MOBILE CHEM LABS

Ronald G. Evans Lab Diractor



MOBILE CHEM LABS INC.

1678 Reliez Valley Road • Lafayette, CA 94549 Phone (925) 945-1266 • Fax (925) 943-6884

00368\2131\014129

Piers Envoronmental Services 1330 S. Bascom Avenue, Suite F

San Jose, CA 95128 Attn: Ben Halsted

Project Manager

Date Sampled: 12-20-00 Date Received: 12-20-00 Date Analyzed: 12-20-00

WATER

Detection Total Petroleum Sample Sample Hydrocarbons as Diesel Description Limit Number dqq dqq

> Disalvo Trucking 4919 Tidewater Ave. Oakland, CA Proj #:00368

<100	100	SB9-GW	V120009
670,000	100	SB10-GW	V120010
<100	100	SB11-GW	V120011
190,000	100	SB12-GW	V120012
<100	100	SB13-GW	V120013
44,000	100	SB14-GW	V120014
48,000	100	SB15-GW	V120015
2,000	100	SB16-GW	V120016

QA/QC: Duplicate Deviation on V120005 is 8.3 % & V120001 is 3.6 % Spike Recovery on V120002 is 101 % & V120001 is 83 %

Analysis was performed using EPA method 3550 modified and Note:

TPH LUFT (8015) (ppb) = (ug/1)

MOBILE CHEM LABS

Ronald G. Evans Lab Director



MOBILE CHEM LABS INC.

1678 Reliez Valley Road • Lafayette, CA 94549 Phone (925) 945-1266 • Fax (925) 943-6884

00368\2131\014129

Piers Environmental Services 1330 S. Bascom Avenue, Suite F

San Jose, CA 95128 Attn: Ben Halsted

Project Manager

Date Sampled: 12-20-00 Date Received: 12-20-00

Date Analyzed: 12-22-00

Sample Number

Sample Description

Disalvo Trucking 4919 Tidewater Ave.

Cakland, CA

V120004

SB4-GW WATER

ANALYSIS

	Detection Limit	Sample Results ppb
	dąą	ppu
		45 E
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes ·	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC:

Duplicate Deviation is 0 %

Spike Recovery is 91 %

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 8020 used for BTEX distinction.

(ppb) = (ug/1)

MOBILE CHEM LABS

Ronald G. Evans Lab Director

Project No. 003 68 Consultant Name PIER Address 1350 5		Site Name/Loc	4919 Oak	Sali Tid	vo en	Tr	- OC ecl	Kir Ju	`(1		1	1	676	R		図	VA		S, 11 Y R	D.
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SAMPLE 1D MUMBER	DATE	TIME	LAB ID#		MAMPLI SERVA			MATRE	x	Cont.	GRAB/COMP	G/BTEX	TPH-D	418.1)		/601	/608	/624	LUFT-5 Met	/625				
				HCL	HINO,	ICE	SOIL	WATER	AIR	# of	GRAB	-HAIL	TPH-	rog(,	TEPH	8010,	8081,	8240,	LUFT	8270/625		. :		
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MOBILE CHEM LABS INC.

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00368\2131\014129

Piers Environmental Services 1330 S. Bascom Avenue, Suite F San Jose, CA 95128

Attn: Ben Haleted

Project Manager

Date Sampled: 12-20-00 Date Received: 12-20-00 Date Analyzed: 12-22-00

Sample Number	Sample Description	Detection Limit ppm	SOIL Total Petroleum Hydrocarbons as Diesel Ppm
·	4919 Oakl	lvo Trucking Tidewater Av and, CA #:00368	78.
V120017	SB2 @ 6'	10.0	<10
V120018	SB5 @ 6.5'	10.0	<10
V120019	SB6 @ 7'	10,0	<10
V120020	SB10 @ 6'	10.0	<10
V120021	SB12 @ 6.5'	10.0	<10
V120022	SB14 @ 7'	10.0	<10
V120023	SB15 @ 6'	10.0	<10
V120024	SB16 @ 6.5'	10.0	14

QA/QC: Duplicate Deviation on V120024 is 17 %

Spike Recovery on V120017 is 96 % LCS Recovery is 73 %

Analysis was performed using EPA method 3550 modified and

TPH LUFT (8015). (ppm) = (mg/kg)

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Ronald G. Evans Lab Director