

90 DEC -9 PM 3:43

November 24, 1998

UST Local Oversight Program  
Alameda County Health Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, CA 94502-6577

STIP 537

Attention: Ms. Susan Hugo

Subject: Report of Quarterly Ground Water Monitoring  
Liquid Sugars UST Site  
1275 66th Street, Emeryville, California  
GA Project No.: 149-01-02

Ladies and Gentlemen:

Gribi Associates is pleased to submit this groundwater monitoring report on behalf of Liquid Sugars, Inc. for the subject site in Emeryville, California (see Figure 1 and Figure 2). This letter report documents the recent monitoring of two groundwater monitoring wells at the site.

**DESCRIPTION OF SAMPLING ACTIVITIES**

On November 5, 1998, Mr. Jim Gribi conducted groundwater monitoring activities for two site wells (MW-1 and MW-2). Groundwater monitoring was conducted in accordance with California LUFT Field Manual guidelines as follows:

- After unlocking and opening both of the monitoring wells, the water levels were measured to the nearest 0.01 foot with an electronic probe.
- Using a disposable PVC bailer, a single bail of groundwater was taken from each well to check for the presence or absence of floating free product.
- The wells were purged of approximately three well volumes. During purging, temperature, pH, conductivity, and turbidity of the well water were periodically monitored and recorded until they stabilized. All purged water was stored onsite in sealed 55-gallon metal drums. Groundwater sampling data sheets for each well are contained in Appendix A.
- After purging the required volume of water, groundwater was poured directly from the bailer into two half-liter amber jars and four 40-ml VOC vials. Each container was then tightly sealed with teflon-lined septa, making sure that no air bubbles were

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1350 HAYES ST. Suite C-14 Benicia 94510

present in the containers. Each container was then labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody.

## RESULTS OF GROUNDWATER MONITORING

### Hydrologic Conditions

Groundwater was encountered in the two wells at a depth of about nine feet below surface grade. Purged groundwater from MW-1 exhibited slight to moderate hydrocarbon odors, with no hydrocarbon sheens. Purged groundwater from MW-2 exhibited strong hydrocarbon odors. The initial bail of groundwater from MW-2 contained a 3/16-inch product skim; however, after purging, only a slight sheen was noted during bailing.

### Laboratory Analytical Results

Groundwater samples from the two wells were analyzed for the following parameters with standard method turn around time on results.

- USEPA 8015M Total Petroleum Hydrocarbons as Gasoline (TPH-G)
- USEPA 8020/602 Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- USEPA 8020/602 Methyl-t-butyl Ether (MTBE)
- USEPA 8015M Total Petroleum Hydrocarbons as Diesel (TPH-D)

Groundwater analytical results are summarized in Table 1. The laboratory data report, which includes laboratory chromatograms for all analyses, is contained in Appendix B.

Well Number	Sample Date	Water Depth	Constituent (ppm)						
			TPH-G	TPH-D	B	T	E	X	MTBE
MW-1	04/23/93	6.72 ft	0.64	0.99	0.0063	<0.0005	0.0056	0.0025	--
(West)	07/13/93	8.00 ft	0.70	1.50	0.032	0.0012	0.0033	0.0110	--
	11/02/93	8.95 ft	0.87	1.70	0.019	<0.0005	0.0066	0.0044	--
	02/15/94	7.91 ft	1.20	2.00	0.022	0.0018	0.01	0.0064	--
	05/18/94	7.65 ft	1.70	2.60 <sup>1</sup>	0.057	0.021	0.30	0.13	--
	08/17/94	8.51 ft	1.20	2.20 <sup>1</sup>	0.013	0.0019	0.0008	0.0082	--
	12/22/94	6.58 ft	1.10	2.40 <sup>2,3</sup>	0.027	0.0069	0.0014	0.0059	--
	05/09/95	6.73 ft	1.20	2.00 <sup>2,3</sup>	0.014	0.0082	0.0120	0.0062	--
	11/05/98	9.08 ft	0.380	<0.050	0.0040	0.0064	0.0042	0.0019	<0.0050

**Table 1**  
**SUMMARY OF GROUND WATER ANALYTICAL RESULTS**  
 Liquid Sugars, Inc. 66th Street Site

Well Number	Sample Date	Water Depth	Constituent (ppm)						
			TPH-G	TPH-D	B	T	E	X	MTBE
MW-2	04/23/93	6.73 ft	1.10	2.10	0.320	0.0065	0.0082	0.013	--
(East)	07/13/93	8.38 ft	0.48	0.21	0.033	0.0025	0.0052	0.0047	--
	11/02/93	9.05 ft	0.43	1.80	0.016	0.0009	0.0019	0.0021	--
	02/15/94	6.82 ft	1.40	2.80	0.056	0.0029	0.0075	0.0071	--
	05/18/94	7.56 ft	0.54	3.00	0.024	0.0013	0.0026	0.0034	--
	08/17/94	8.50 ft	0.88	2.20 <sup>1</sup>	0.025	0.0030	0.0028	0.0086	--
	12/22/94	6.23 ft	0.61 <sup>4</sup>	3.10 <sup>2-3</sup>	0.0036	0.0033	0.0054	0.0016	--
	05/09/95	6.71 ft	2.30	5.20	0.0150	0.0060	0.0110	0.0130	--
	11/05/98	8.83 ft	1.20 <sup>5</sup>	9.10	0.0065	0.0018	0.0059	0.0014	<0.010

TPH-G = Total Petroleum Hydrocarbons as Gasoline.  
 TPH-D = Total Petroleum Hydrocarbons as Diesel.  
 B = Benzene  
 T = Toluene  
 E = Ethylbenzene  
 X = Xylenes  
 MTBE = Methyl-t-Butyl Ether  
 <1.0 = Not detected above the expressed value.  
 -- = Not analyzed for this analyte.

1 = Lab report states: "The positive result has an atypical pattern for Diesel analysis."  
 2 = Lab report states: "The positive result appears to be a heavier hydrocarbon than Diesel."  
 3 = Lab report states: "The positive result appears to be a lighter hydrocarbon than Diesel."  
 4 = Lab report states: "The positive result appears to be a heavier hydrocarbon than Gasoline."  
 5 = Lab report states: "Product is not typical gasoline"

## CONCLUSIONS

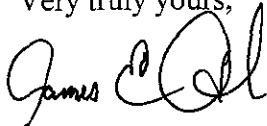
Laboratory analytical results and laboratory chromatograms for the two monitoring well groundwater samples show different fuel hydrocarbon products in each of the wells. The groundwater sample from the west well, MW-1 located about 25 feet southwest from the former underground storage tank (UST) excavation cavity, contained low levels of gasoline-range hydrocarbons, with no diesel-range hydrocarbons detected. The east well, MW-2 located about ten feet southwest from the former UST excavation cavity, contained low to moderate levels of diesel-range hydrocarbons, with no apparent gasoline-range product evident on the laboratory chromatograms for this sample. Further, while levels of TPH-G in MW-1 increased slightly during monitoring of the wells from 1993 to 1995, the TPH-G and Benzene results from this monitoring event are much lower than previous results, suggesting possible natural attenuation of gasoline-range hydrocarbons over time. Although the TPH-D concentration in MW-2 during this monitoring event is higher than previous 1993 to 1995 results, the lack of detectable TPH-D in MW-1, located about 15 feet downgradient from MW-2, clearly indicates only a localized TPH-D groundwater plume downgradient from the former USTs.

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November 24, 1998  
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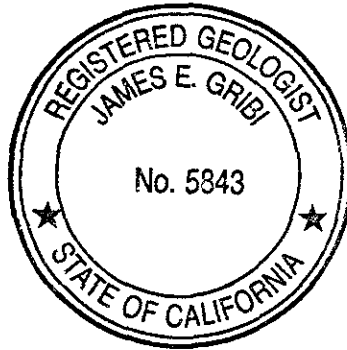
Based on results of this investigation, as summarized above, and upon our knowledge of land use in the site vicinity, we would not expect the low levels of gasoline- and diesel-range hydrocarbons present in groundwater downgradient from the former project site USTs to pose a significant risk to human health or the environment.

We appreciate this opportunity to provide this report for your review. Please contact us if there are questions or if additional information is required.

Very truly yours,



James E. Gribi  
Registered Geologist  
California No. 5843

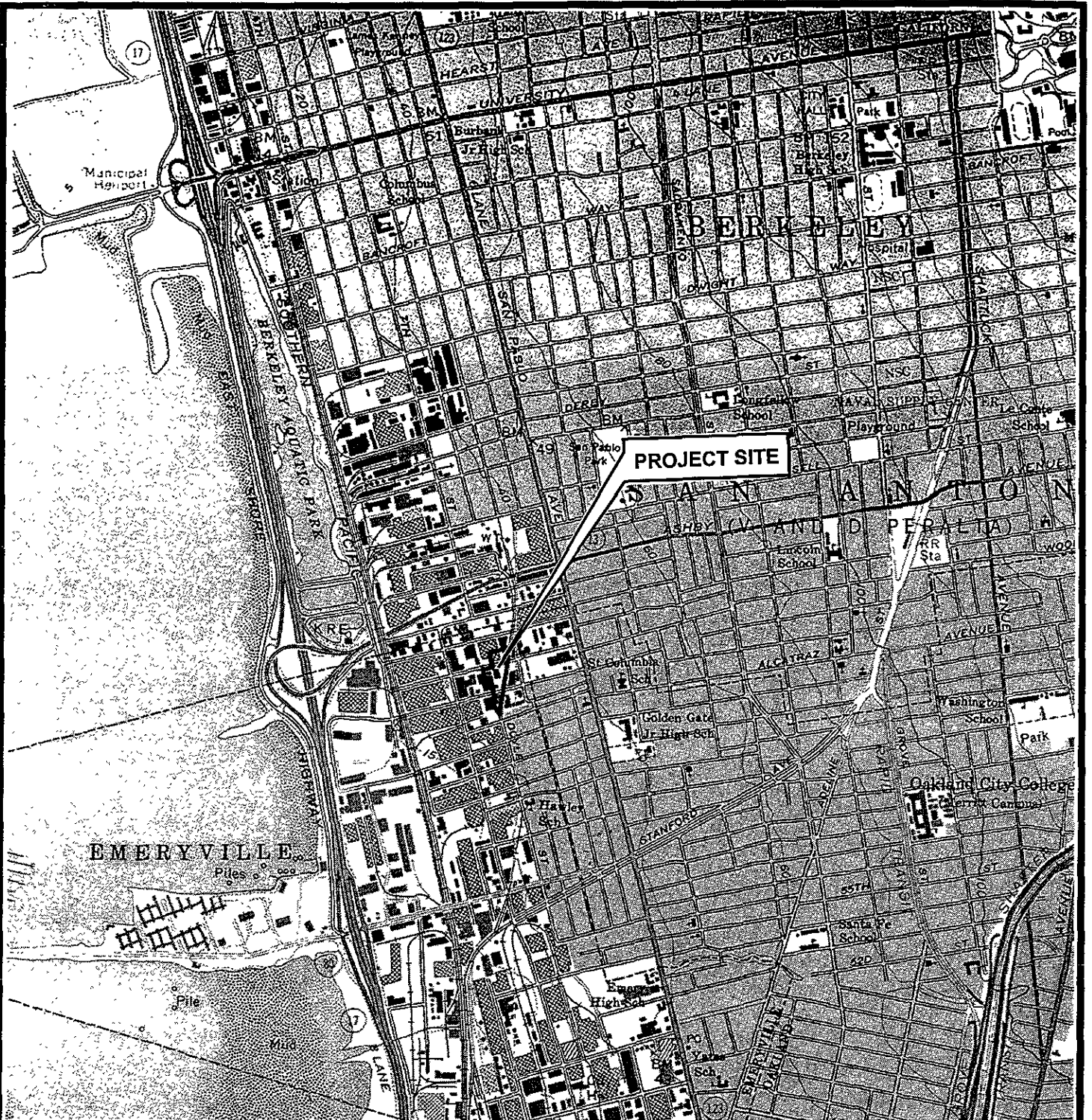


JEG:ct  
Enclosure

c Mr. Mike Alo, Liquid Sugars, Inc.

File GA-24/Isi-gmr qm1

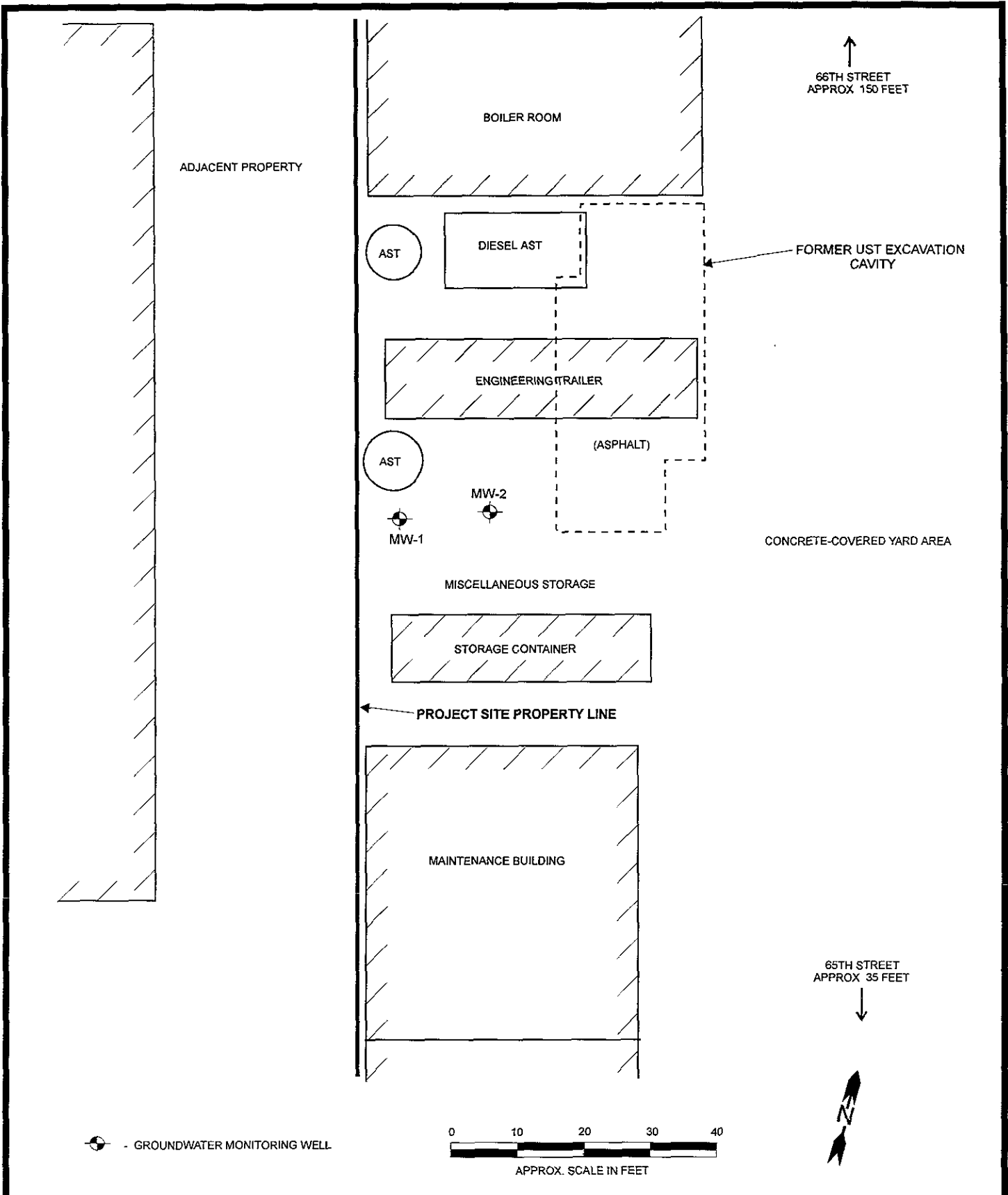
## FIGURES



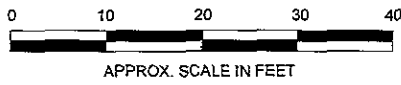
TOPOGRAPHY FROM USGS OAKLAND, WEST, CALIFORNIA  
7.5-MINUTE QUADRANGLE MAPS, (TOPO! 1997).



DESIGNED BY:	CHECKED BY:	<b>SITE VICINITY MAP</b>	DATE: 11/09/98	FIGURE: 1
DRAWN BY: JG	SCALE: 1:24,000		<b>GRIBI Associates</b>	
PROJECT NO. 149-01-01		LIQUID SUGARS, INC. EMERYVILLE, CALIFORNIA		



 - GROUNDWATER MONITORING WELL



DESIGNED BY:	CHECKED BY:
DRAWN BY JG	SCALE:
PROJECT NO 140-01-01	

**SITE PLAN**

LIQUID SUGARS UST SITE  
1275 66TH STREET  
EMERYVILLE, CALIFORNIA

DATE: 11/25/98	FIGURE: 2
<b>GRIBI Associates</b>	

**APPENDIX A**

**GROUNDWATER MONITORING FIELD DATA RECORDS**



GROUNDWATER SAMPLING RECORD		GRIBI Associates	
Well No. MW-1 (West)	Well Loc.		
Project Name LSI/emeryville	Project No.		
Date 11/5/98 Time	TOC Elevation	GW Elevation	
Depth to Water 9.08	Well Depth 25'	Well Diameter	
Purge Water, 2" Wtr Column X 0.163 X 3 = 9.12	Purge Water, 4" Wtr Column X 0.653 X 3 =		
Purge/Sample Method	Lab Analyses		
Weather Conditions	Laboratory		

Time	Volume Purged	Temp.	Cond.	pH	Visual
	0	63.7	1.30	8.4	Clr - (NR) (SR) SL-MD
	1	64.6	1.49	7.5	HC odor
	2	64.4	1.40	7.3	
	3	64.8	1.50	7.2	
	4	64.5	1.00	7.2	
	7	64.4	1.50	7.3	
Remarks					
2 1/2 L					
3 VOAS					

GROUNDWATER SAMPLING RECORD		GRIBI Associates	
Well No. MW-2 (East)	Well Loc.		
Project Name LSI/emeryville	Project No.		
Date 11/5/98 Time	TOC Elevation	GW Elevation	
Depth to Water 8.83	Well Depth 20'	Well Diameter 4"	
Purge Water, 2": Wtr Column X 0.163 X 3 =	Purge Water, 4": Wtr Column X 0.653 X 3 = 20		
Purge/Sample Method	Lab Analyses		
Weather Conditions	Laboratory		

Time	Volume Purged	Temp.	Cond.	pH	Visual
	0		1.30	7.4	clr mky grey
	2		1.90	7.1	str o/sh
	4		1.60	7.1	
	6		1.80	7.1	
	8		1.90	7.1	clr - 5 mky
	10	64H	2.00	7.1	slow recov
	15		2.10	7.1	
	20		1.90	7.1	clr - vsL SAGE N ?
					NO FP

3/16"

Remarks  
3/16" FP

**APPENDIX B**

**LABORATORY DATA REPORTS AND  
CHAIN-OF-CUSTODY RECORDS**



Davis

1046 Olive Drive, Suite 2, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

Sample Log 19263  
November 13, 1998

Jim Gribi  
Gribi Associates  
884 Vintage  
Suisun, CA 94585

Subject : 2 Water samples  
Project Name : LSI/Emeryville  
Project Number : 149-01-01

Location : Emeryville, CA

Dear Mr. Gribi,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Acculabs - Davis is certified by the State of Arizona (AZ0583) and the State of California (# I-2330). If you have any questions regarding procedures or results, please call me at 530-757-0920.

Sincerely,

Tom Kwoka



Davis

1046 Olive Drive, Suite 2, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

November 12, 1998  
Sample Log 19263

MTBE (Methyl-t-butyl ether) By EPA Method 8020/602

From : LSI/Emeryville (Proj. # 149-01-01)  
Sampled : 11/05/98  
Received : 11/06/98  
Matrix : Water

SAMPLE	Date Analyzed	(MRL) ug/L	Measured Value ug/L
MW-1 (WEST)	11/12/98	(5.0)	<5.0
MW-2 (EAST)	11/13/98	(10)	<10

Approved By:

Tom Kwoka  
Lab Director



Sample Log 19263

19263-01

Sample: MW-1 (WEST)

From : LSI/Emeryville (Proj. # 149-01-01)

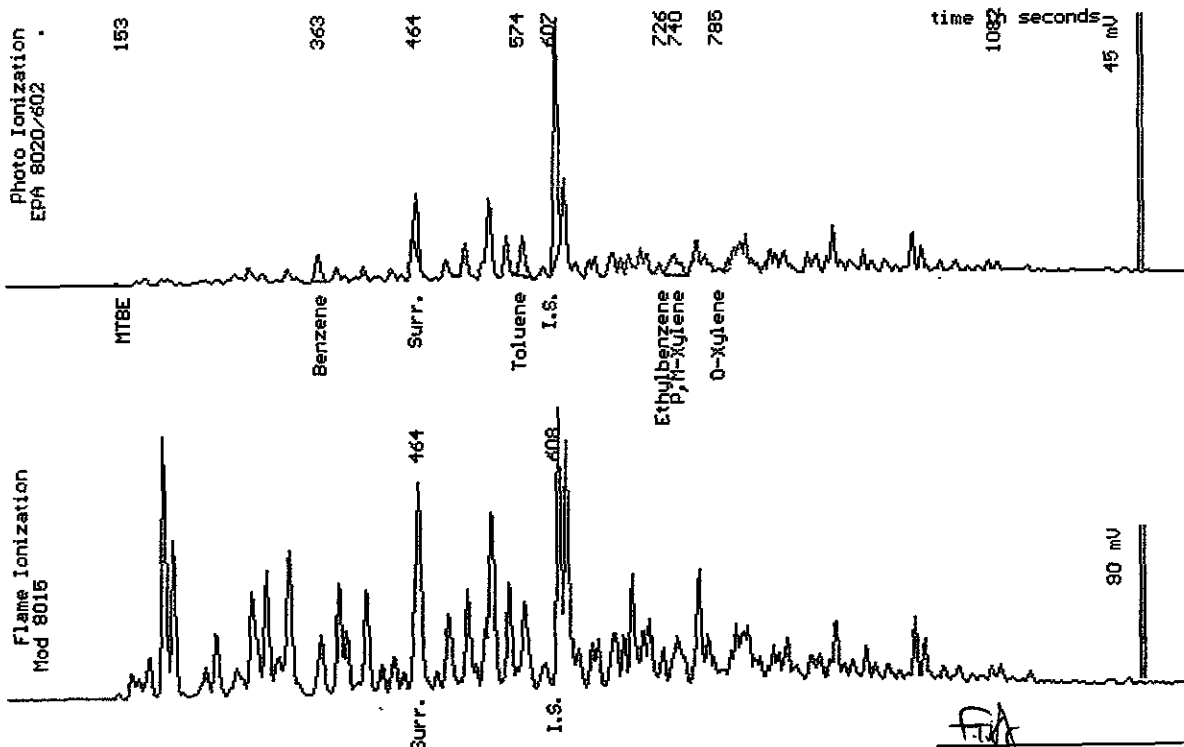
Sampled : 11/05/98

Dilution : 1:1

Run Log : 4178T

Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	4.0
Toluene	(.50)	6.4
Ethylbenzene	(.50)	4.2
Total Xylenes	(.50)	1.9
TPH as Gasoline	(50)	380
Surrogate Recovery		96 %



Date Analyzed: 11-12-98  
Column : 0.53mm ID X 60m Restek Rtx-1701

Stewart Podolsky  
Senior Chemist



### Sample Log 19263

19263-02

Sample: **MW-2 (EAST)**

From : LSI/Emeryville (Proj. # 149-01-01)

Sampled : 11/05/98

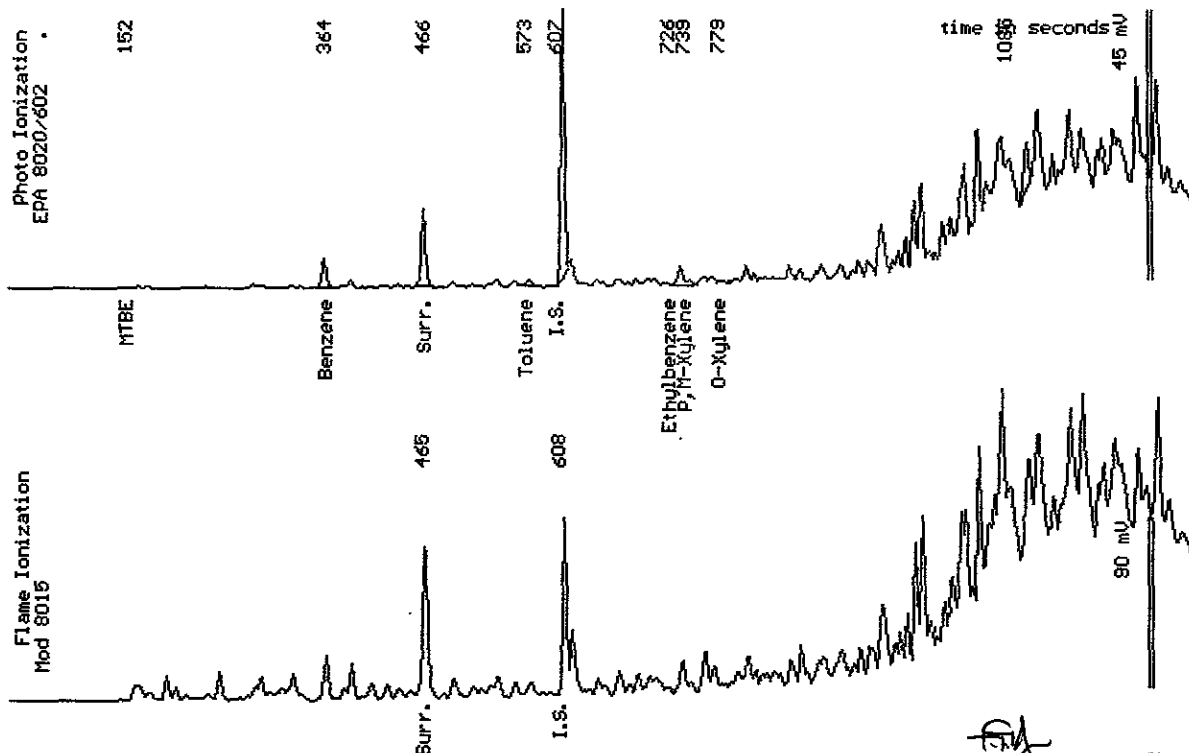
Dilution : 1:2

Run Log : 4178V

Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(1.0)	6.5
Toluene	(1.0)	1.8
Ethylbenzene	(1.0)	5.9
Total Xylenes	(1.0)	1.4
TPH as Gasoline	(100)	1200 *
Surrogate Recovery		136 %

\* Product is not typical gasoline.



Date Analyzed: 11-13-98  
Column : 0.53mm ID X 60m Restek Rtx-1701

Stewart Podolsky  
Senior Chemist

Acculabs Inc.

November 12, 1998  
Sample Log 19263

QC Report for EPA 602 & Modified EPA 8015  
Run Log : 4178R  
From : LSI/Emeryville (Proj. # 149-01-01)  
Sample(s) Received : 11/06/98

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	103	111	7
Ethylbenzene	104	111	7
TPH as Gasoline	112	122	9

\* RPD = Relative Percent Difference

Parameter	Laboratory Control Sample % Recovery
Benzene	102
Ethylbenzene	104
Gasoline	109

Parameter	Method Blank
Benzene	<0.50 ug/L
Toluene	<0.50 ug/L
Ethylbenzene	<0.50 ug/L
Total Xylenes	<0.50 ug/L
TPH as Gasoline	<50 ug/L

  
Tom Kwoka  
Lab Director





Davis

1046 Olive Drive, Suite 2, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

Sample Log 19263

19263-01

Sample: MW-1 (WEST)

From : LSI/Emeryville (Proj. # 149-01-01)

Sampled : 11/05/98

Extracted: 11/10/98

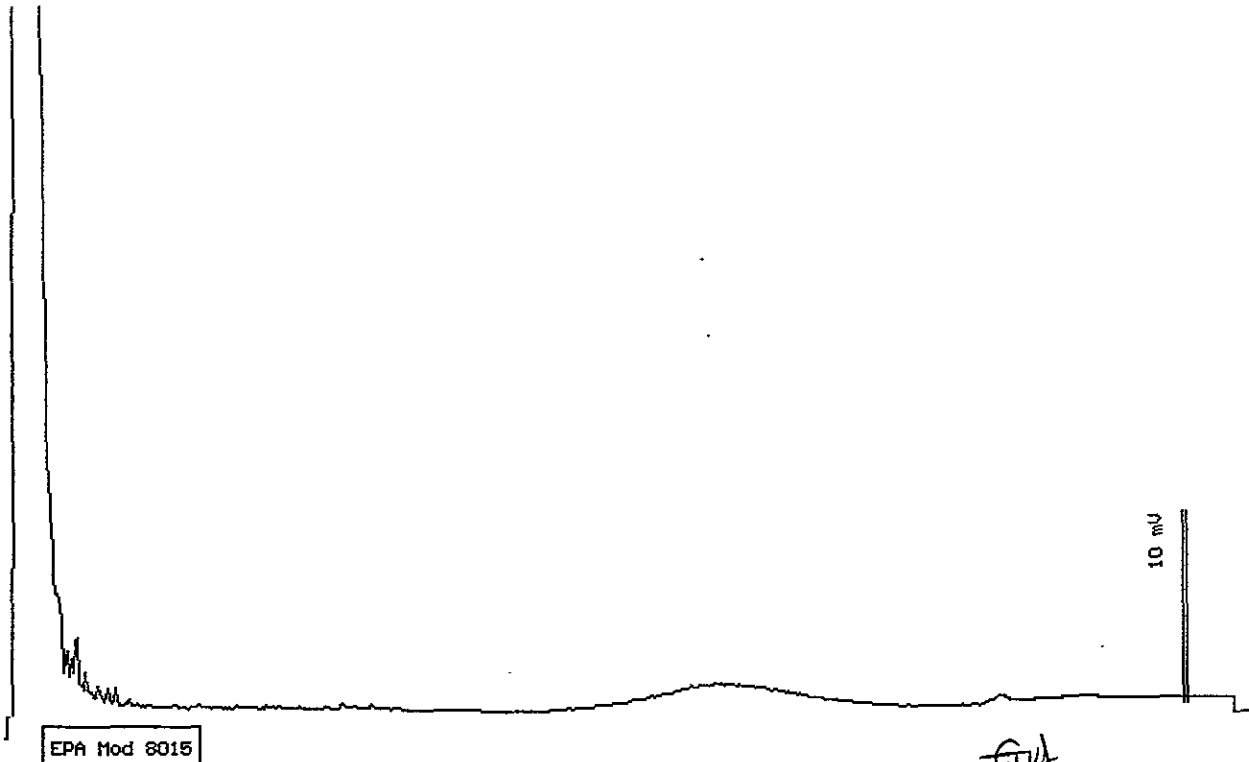
Dilution : 1:1

Matrix : Water

QC Batch : DW981101

Run Log : 7422D

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100



EPA Mod 8015

Date: 11-10-98 Time: 16:28:12  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

  
Stewart Podolsky  
Senior Chemist



Davis

1046 Olive Drive, Suite 2, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

Sample Log 19263  
19263-02

Sample: MW-2 (EAST)

From : LSI/Emeryville (Proj. # 149-01-01)

Sampled : 11/05/98

Extracted: 11/10/98

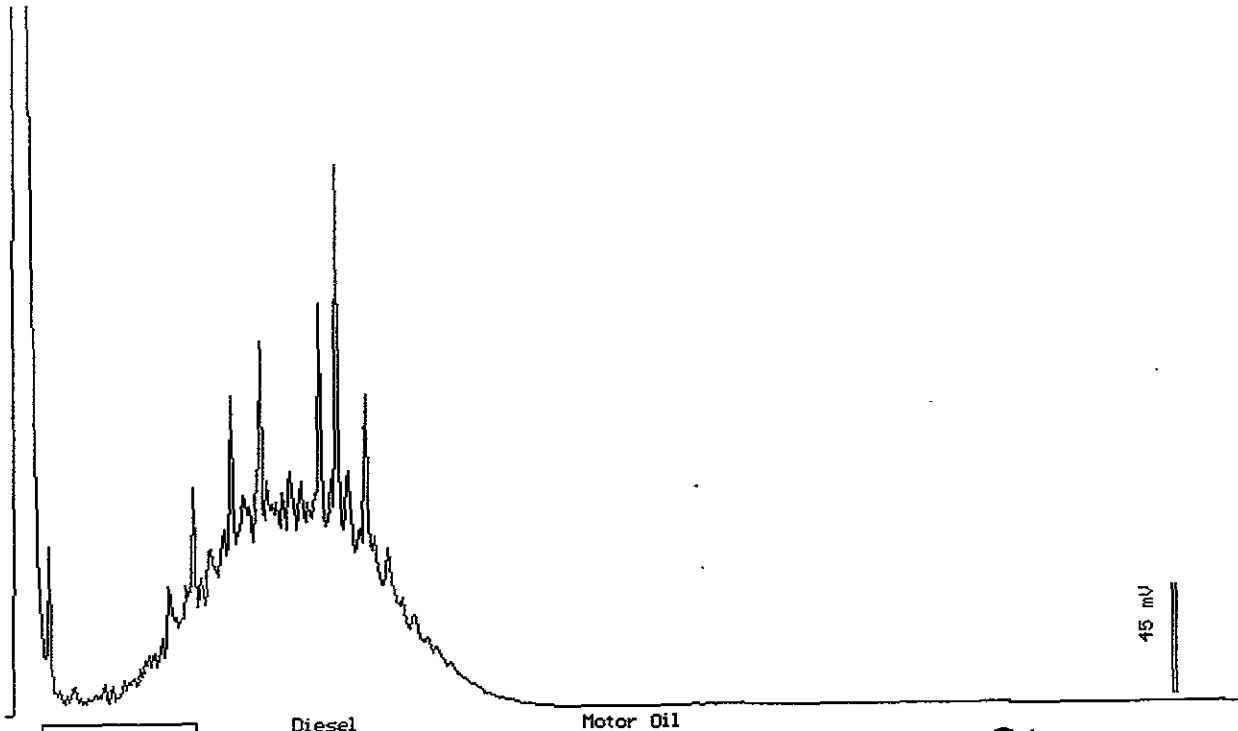
Dilution : 1:2

Matrix : Water

QC Batch : DW981101

Run Log : 7422F

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(100)	9100
TPH as Motor Oil	(200)	200



Date: 11-11-98 Time: 16:19:51  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*[Signature]*  
Stewart Podolsky  
Senior Chemist

Acculabs Inc.

November 12, 1998

QC Report  
TPH Diesel/Motor Oil by 8015 Mod

QC Batch DW981101

Matrix: Water

**Spike and Spike Duplicate Results**


Parameter	Matrix Spike (%Rec)	Matrix Spike Dup. (%Rec)	RPD %
TPH as Diesel	Not enough sample for spiking. See duplicate LCS Data.		

**Laboratory Control Spike**

Parameter	Laboratory Control Spike (%Rec)	Laboratory Control Spike Dup. (%Rec)	RPD %
TPH as Diesel	94	93	1

**Method Blank**

Parameter	MDL(ug/L)	Measured Value(ug/L)
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100

  
\_\_\_\_\_  
Tom Kwoka  
Lab Director

# aqualab inc

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 710 E. Evans Blvd. Tucson AZ 85713  
 2020 W. Lone Cactus Dr. Phoenix AZ 85027  
 1992 Spice Islands Dr. Sparks NV 89431  
 75 Suttle St. Durango CO 81301

602-437-0979 Fax 437-0826  
 520-884-5811 Fax 884-5812  
 602-780-4800 Fax 780-7695  
 702-355-0202 Fax 355-0817  
 970-247-4220 Fax 247-4227

Report  
 Due Date

Client GRIBI ASSOCIATES PUBLIC WATER SUPPLY INFORMATION

Address \_\_\_\_\_ System Name \_\_\_\_\_  
 City, State & Zip SUISUN CA 94585 PWS No. \_\_\_\_\_ Report to State/EPA Y N \_\_\_\_\_  
 Contact JIM GRIBI POE No. \_\_\_\_\_ DWR No. \_\_\_\_\_  
 Phone 707/864-5543 Project Name LSI/EMERYVILLE Collection Point \_\_\_\_\_  
 Fax 11 Project Number 149-01-01 Collector's Name \_\_\_\_\_  
 P.O. Number \_\_\_\_\_ Fax Results  Y  N Page \_\_\_\_\_ of \_\_\_\_\_ Location (City) \_\_\_\_\_

SAMPLE TYPE CODES			Sample Type	Containers	Analyses Requested
DW = drinking water	TB = travel blank	Compliance Monitoring			
WW = waste water	SD = solid	Y N			
MW = monitoring well	SO = soil				
HW = hazardous waste	SL = sludge				
TURNAROUND TIME REQUESTED					
Standard	Lab Director Approval				
RUSH					
Special					

CLIENT'S SAMPLE ID/LOCATION	Date	Time	W	S	X	X
MW-1 (WEST)	11/5		W	S	X	X
MW-2 (EAST)	11		W	S	X	X

TPH-G/BTEX/MTBE  
 TPH-D/MO

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT	Date	Time	Samples Relinquished By	Samples Received By
Received Cold Y N	11-6-98	1940	James [Signature]	Joyce A. [Signature]
Custody Seals Y N				
Seals Intact Y N				
No. of Containers				

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