centurywest
ENGINEERING CORPORATION

STID 539

December 8, 1993

UST Local Oversight Program
Alameda County Health Agency
Department of Environmental Health
80 Swan Way, Suite 200
Oakland, CA 94621

Attention: Ms. Susan Hugo

Subject: Report of Third Quarterly Ground Water Monitoring
Liquid Sugars UST Site
1275 66th Street
Emeryville, California
CWEC: 20516-001-07

Ladies and Gentlemen:

This letter report documents recent quarterly monitoring of two ground water monitoring wells at the subject site in Emeryville, California (see Figures 1 and 2). This letter report summarizes the work performed and the results of this monitoring event.

DESCRIPTION OF SAMPLING ACTIVITIES

On November 2, 1993, Century West Engineering Corporation purged and sampled monitoring wells MW-1 and MW-2. Purging and sampling of each of the wells was conducted in accordance with California LUFT Field Manual guidelines as follows:

- After unlocking and opening both of the monitoring wells on site, the water level was measured to the nearest 0.01 foot with an electronic probe.
- Using a disposable PVC bailer, a single bail of ground water was taken from wells MW-2 and MW-3 to check for the presence or absence of floating free product.
- While purging the wells, temperature, pH, conductivity, and turbidity of the well water were periodically monitored and recorded. Although these parameters have stabilized rapidly during previous sampling activities, a defective Hydac® pH/conductivity meter did not reflect this. The meter has subsequently been sent to the manufacturer and repaired. Copies of sampling data sheets for each well are contained in Appendix A.

- After purging the required volume, ground water was poured directly from the bailer into two one-liter amber jars and three 40-ml VOC vials. Each container was then tightly sealed with teflon lined septums, making sure that no air bubbles were 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 QUARTERLY MONITORING

Hydrologic Conditions

Ground water depth in both wells was approximately nine feet below grade. No hydrocarbon sheen was noted, however, hydrocarbon odors were noted in both monitoring wells during purging.

Analytical Results

Ground water samples from the two wells were analyzed for total petroleum hydrocarbons as gasoline (TPH-gas by EPA Method 5030/M8020); total petroleum hydrocarbons as diesel (TPH-diesel by EPA Method 3510 Modified); and benzene, toluene, xylenes, and ethylbenzene (BTXE by EPA Method 602/8020). Table 1 summarizes these analytical results. Laboratory data reports and chain-of-custody records are contained in Appendix B.

Table 1
SUMMARY OF GROUND WATER ANALYTICAL RESULTS

Well Number	Sample Date	Water Depth	Constituent (ppm)					
			TPH-gas	TPH-diesel	B	T	X	E
MW-1	04/23/93	6.72 ft	0.64	0.99	0.0063	ND(.0005)[1]	0.0025	0.0056
(West)	07/13/93	8.00 ft	0.70	1.5	0.032	0.0012	0.0110	0.0033
	11/02/93	8.95 ft	0.87	1.7	0.019	ND(.0005)	0.0044	0.0066
MW-2	04/23/93	6.73 ft	1.1	2.1	0.32	0.0065	0.013	0.0082
(East)	07/13/93	8.38 ft	0.48	0.21	0.033	0.0025	0.0047	0.0052
	11/02/93	9.05 ft	0.43	1.8	0.016	0.0009	0.0021	0.0019

1 - Not detected above the concentration expressed in the parentheses.

CONCLUSIONS

Lab analysis of ground water samples from both monitoring wells revealed low levels of gasoline and diesel constituents. Therefore, we propose a fourth quarterly ground water sampling of monitoring wells MW-1 and MW-2 at the subject site.

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,

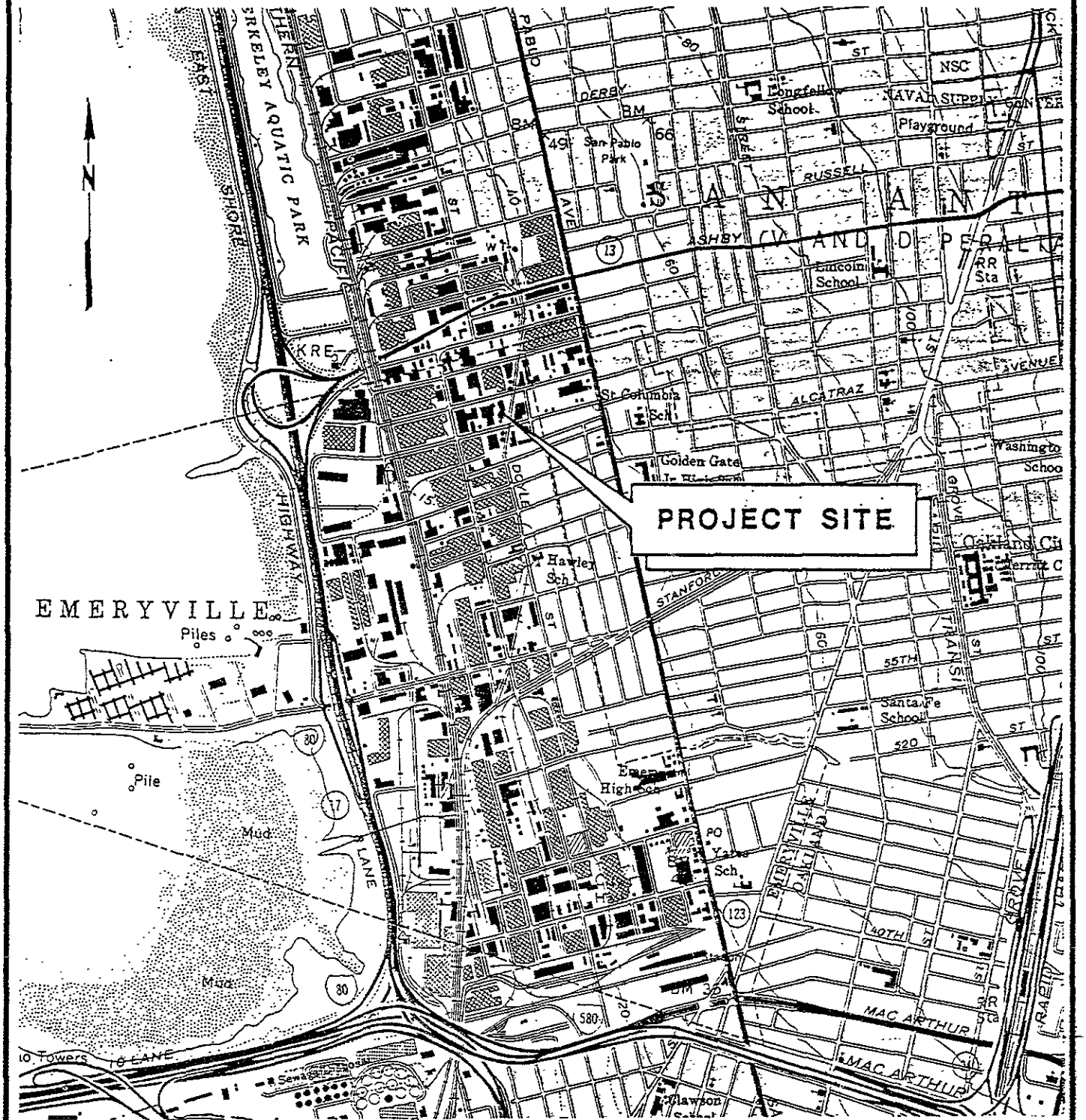
Robert Bogar
Geologist

James E. Gribi
Project Manager

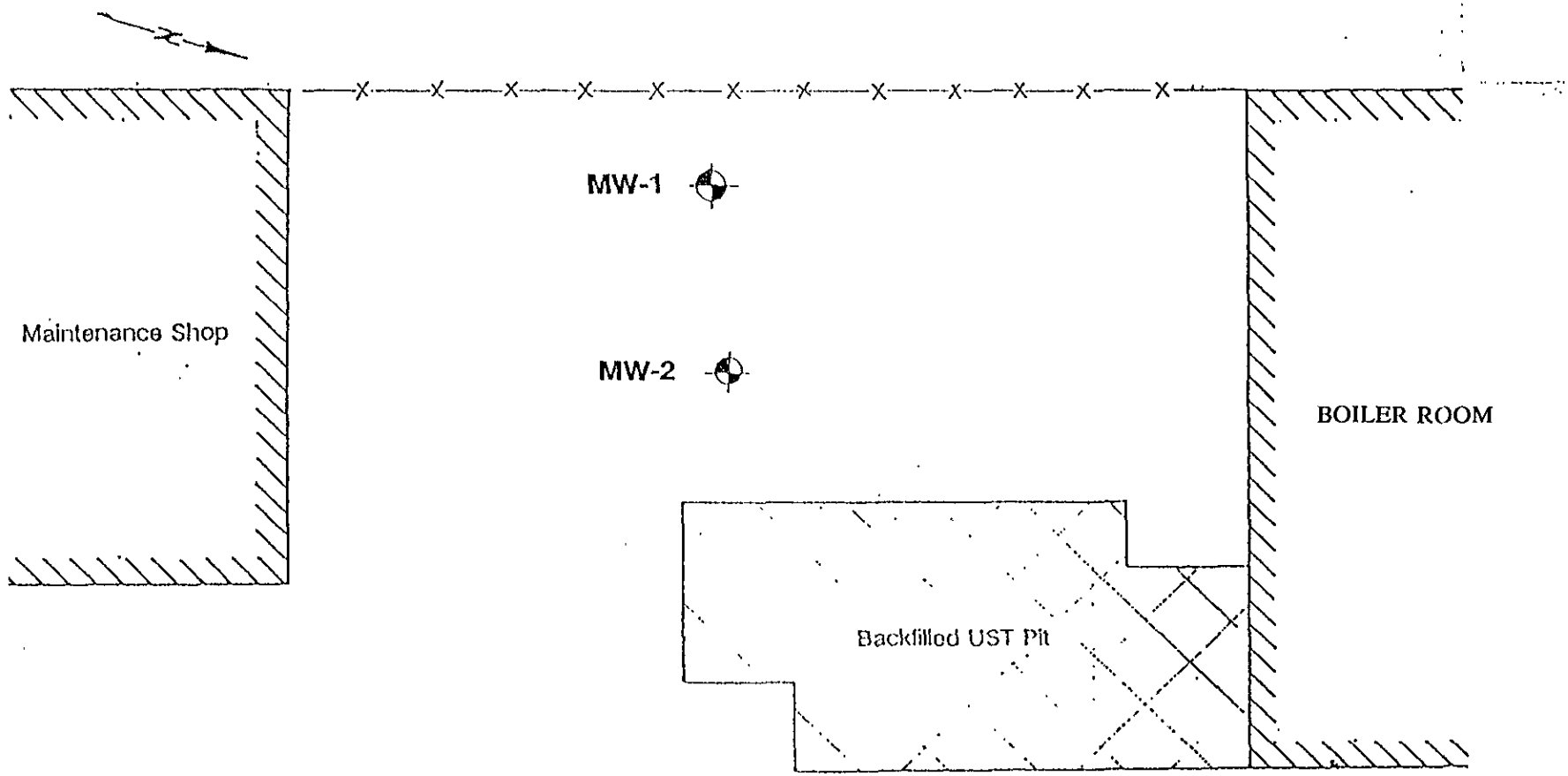
Helen Ling
Registered Civil Engineer
California No. 35014

RB/JEG:cc
Enclosure

cc: Mr. Alan Mooney, Liquid Sugars, Inc.



DESIGNED BY:	CHECKED BY:	Figure 1 SITE VICINITY MAP CWEC: 20516-001-07	DATE:	FIGURE:
DRAWN BY:	SCALE:		CENTURY WEST ENGINEERING	
DWG. NO.:				



0 5 10 15 20

APPROX. SCALE (FT.)

DESIGNED BY :	DATE :	CENTURY WEST ENGINEERING	**FIGURE 2** **SITE PLAN**	DRAWING NO.
DRAWN BY :	SCALE :			SHEET NO.
CHECKED BY :	SEC. :		**CWEC: 20516-001-07**	
DRAWING NO. :				

APPENDIX A

GROUND WATER SAMPLING DATA SHEETS

G.01

CENTURY WEST ENGINEERING

GROUNDWATER SAMPLING RECORD

****

SAMPLE NO. MW-1 WELL NO. MW-1

PROJECT NAME LSI / ~~66th~~ 54 PROJECT NO. 20576-001-07

DATE _____ TIME _____ ELEV. TOP OF CASING _____

WELL DIAMETER 2" WELL DEPTH _____ SCREEN INTERVAL _____

H2O LEVEL INIT. 7.05' FIN. _____

CALC. PURGE H2O COL. _____ FT. (X) ** = .643 (X) 3 ≅ 5 GALS.

LAB ANALYSIS _____

LABORATORY _____ PURGE/SAMPLE METHOD _____

WEATHER CONDITIONS Good

****

TIME	VOLUME PUMPED (GALS.)	PUMP RATE (GPM)	TEMP. (C)	COND.	pH	REMARKS (TURBIDITY)
12:49	0		.46	4.6	.82	sl murky (no sheen) odor
	1		9.0	.89	159	murky "
	2		23.6	2.10	1.94	" "
1:07	3		28.3	3.40	4.98	" "
1:20	4		D.N.S	5.46	4.60	" "
	5		41.2	D.N.S	4.50	V. murky (for)

D.N.S = Did not stabilize

SAMPLE CREW _____

REMARKS (New battery in Ph meter)

** (2" = 0.163 GAL/FT) (4" = 0.653 GAL/FT)

Century West Engineering Corporation / Engineers and Scientists
East 429 Third Avenue / Spokane, Washington 99202 / (509) 838-3810 / Fax: (509) 624-0355

CENTURY WEST ENGINEERING

GROUNDWATER SAMPLING RECORD

****

SAMPLE NO. MW-2 WELL NO. MW-2

PROJECT NAME LSI / 66th PROJECT NO. 20516-001-07

DATE _____ TIME _____ ELEV. TOP OF CASING _____

WELL DIAMETER 4" WELL DEPTH _____ SCREEN INTERVAL _____

H2O LEVEL INIT. 8.945 FIN. _____

CALC. PURGE H2O COL. .653 FT. (X) ** = 6.53 (X) 3 ≅ 20 GALS.

LAB ANALYSIS _____

LABORATORY _____ PURGE/SAMPLE METHOD _____

WEATHER CONDITIONS Good

****

TIME	VOLUME PUMPED (GALS.)	PUMP RATE (GPM)	TEMP. (C)	COND.	pH	REMARKS (TURBIDITY)
	0		22.0	1.55	2.51	clear strong odor (no sheen)
10:55	4		25.0	2.60	2.80	sl. murky !! (no sheen) odor
11:10	8		23.8	2.47	2.55	" murky - odor no sh. greenish
11:21	12		22.0	2.32	1.95	" murky - odor no sh.
11:32	16		18.2	1.95	3.10	" "
11:44	20		20.2	2.05	2.48	sl. murky - odor

checked Ph at 0 volume after bailing ~4 gals - still ≈ 2.50

SAMPLE CREW Bob Ryan

REMARKS PH needs calibrated - AFTER 1 min using distilled H2O Ph reads 6.38, relative only!

** (2" = 0.163 GAL/FT) (4" = 0.653 GAL/FT)

Century West Engineering Corporation / Engineers and Scientists
East 429 Third Avenue / Spokane, Washington 99202 / (509) 838-3810 / Fax: (509) 624-0355

APPENDIX B

LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY RECORDS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Gribi
Century West Engineering
7950 Dublin Blvd., Ste 210
Dublin, CA 94568

Date: 11/12/1993
NET Client Acct. No: 75300
NET Pacific Job No: 93.04838
Received: 11/03/1993

Client Reference Information

LS1/66H
~~CSB/Emeryville,~~ Project No. 20516-001-07

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: CSE/Emeryville, Project No. 20516-001-07

SAMPLE DESCRIPTION: MW-1
Date Taken: 11/02/1993
Time Taken:
NET Sample No: 177624

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	0.87		0.05	mg/L	5030		11/09/1993
METHOD 8020 (GC,Liquid)	--						11/09/1993
Benzene	19		0.5	ug/L	8020		11/09/1993
Toluene	ND		0.5	ug/L	8020		11/09/1993
Ethylbenzene	6.6		0.5	ug/L	8020		11/09/1993
Xylenes (Total)	4.4		0.5	ug/L	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	178	MI		% Rec.	5030		11/09/1993
METHOD 3510/M8015						11/05/1993	
DILUTION FACTOR*	1						11/10/1993
as Diesel	1.7		0.05	mg/L	3510		11/10/1993
as Motor Oil	ND		0.5	mg/L	3510		11/10/1993

MI : Matrix Interference

Ref: CSE/Emeryville, Project No. 20516-001-07

SAMPLE DESCRIPTION: MW-2
Date Taken: 11/02/1993
Time Taken:
NET Sample No: 177625

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	0.43		0.05	mg/L	5030		11/09/1993
METHOD 8020 (GC,Liquid)	--						11/09/1993
Benzene	16		0.5	ug/L	8020		11/09/1993
Toluene	0.9		0.5	ug/L	8020		11/09/1993
Ethylbenzene	1.9		0.5	ug/L	8020		11/09/1993
Xylenes (Total)	2.1		0.5	ug/L	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	116			% Rec.	5030		11/09/1993
METHOD 3510/M8015						11/05/1993	
DILUTION FACTOR*	1						11/10/1993
as Diesel	1.8		0.05	mg/L	3510		11/10/1993
as Motor Oil	ND		0.5	mg/L	3510		11/10/1993

Ref: CSE/Emeryville, Project No. 20516-001-07

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)						
as Gasoline	99.0	0.99	1.00	mg/L	11/09/1993	dkb
Benzene	96.0	4.80	5.00	ug/L	11/09/1993	dkb
Toluene	98.2	4.91	5.00	ug/L	11/09/1993	dkb
Ethylbenzene	97.4	4.87	5.00	ug/L	11/09/1993	dkb
Xylenes (Total)	99.3	14.89	15.0	ug/L	11/09/1993	dkb
Bromofluorobenzene (SURR)	94.0	94	100	% Rec.	11/09/1993	dkb
METHOD 3510/M8015						
as Diesel	115.	1154.	1000.	mg/L	11/10/1993	
as Motor Oil	100.	1000.	1000.	mg/L	11/10/1993	

Ref: CSE/Emeryville, Project No. 20516-001-07

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/09/1993	dkb
Benzene	ND	0.5	ug/L	11/09/1993	dkb
Toluene	ND	0.5	ug/L	11/09/1993	dkb
Ethylbenzene	ND	0.5	ug/L	11/09/1993	dkb
Xylenes (Total)	ND	0.5	ug/L	11/09/1993	dkb
Bromofluorobenzene (SURR)	98		% Rec.	11/09/1993	dkb
METHOD 3510/M8015					
as Diesel	ND	0.05	mg/L	11/10/1993	tts
as Motor Oil	ND	0.5	mg/L	11/10/1993	tts

Ref: CSE/Emeryville, Project No. 20516-001-07

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)										
as Gasoline	95.0	98.0	3.1	1.00	ND	0.95	0.98	mg/L	11/09/1993	dkb
Benzene	95.8	98.8	3.1	40.1	ND	38.4	39.6	ug/L	11/09/1993	dkb
Toluene	96.5	99.2	2.8	98.3	ND	94.9	97.5	ug/L	11/09/1993	dkb
Bromofluorobenzene (SURR)				100	102			% Rec.	11/09/1993	dkb
METHOD 3510/M8015										
as Diesel	67.3	66.5	1.2	1.00	ND	0.673	0.665	mg/L	11/10/1993	tts

Ref: CSE/Emeryville, Project No. 20516-001-07

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	RPD	LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials
METHOD 3510/M8015 as Diesel	63.9		0.639	1.00	mg/L	11/10/1993	tts

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

NET NATIONAL ENVIRONMENTAL TESTING, INC.

MOBILE LAB DIVISION, 1072 SERPENTINE LANE, SUITE D, PLEASANTON, CA 94566
(510) 462-4004 PHONE (510) 462-4357 FAX

CHAIN OF CUSTODY RECORD

COMPANY Century West Engineering
ADDRESS 7955 Dublin Blvd, Dublin
PHONE (510) 551-7724 FAX
PROJECT NAME/LOCATION CSE / Emeryville
PROJECT NUMBER 20576-001-07
PROJECT MANAGER Jim Gribi

SAMPLED BY (PRINT NAME) Bob Bogar
SIGNATURE
(PRINT NAME)
SIGNATURE

TURNAROUND TIME 10 DAY (S)

DATE	TIME	SAMPLE ID/DESCRIPTION	GRAB	COMP	# OF CONTAINERS	MATRIX	PRESERVED Y/N	ANALYSES: TPH-G/BTEX	ANALYSES: DIESEL/TPH	COMMENTS
11/2		MW-1 (1 LITER)			1	WATER	Y		X	
11/2		MW-1 (VOAs)			4		Y	X		
11/2		MW-2 (1 LITER)			1		Y		X	
11/2		MW-2 (VOAs)			4		Y	X		

CUSTODY SEALED 11-2-93 @ 1750 BA Seal intact

RESULTS TO:

INVOICE TO:

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RECEIVED BY:
Bob Bog	11/2/93 1555	Betty Harvey	11/2/93 1750	
RELINQUISHED BY:	DATE/TIME	RELINQUISHED BY: Betty Harvey	DATE/TIME 11/3/93 0800	RECEIVED FOR LABORATORY BY:

METHOD OF SHIPMENT NCS

REMARKS:

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK