Quarterly Monitoring Report for July 1 through September 30, 1993 Former Bashland Property Emeryville, California

October 29, 1993
1649.10

Prepared for
Catellus Development Corporation
201 Mission Street
San Francisco, California

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

October 29, 1993 LF 1649.10

Ms. Susan Hugo
Alameda County Health Care Services Agency
80 Swan Way, Suite 200
Oakland, California 94621

Subject: Quarterly Monitoring Report for July 1 through September 30, 1993, Former Bashland Property, Yerba Buena Project Site, Emeryville, California

Dear Ms. Hugo:

Enclosed is the quarterly monitoring report for July 1 through September 30, 1993, for the former Bashland property, located in Emeryville, California.

This report has been prepared on behalf of Catellus Development Corporation for the redevelopment project at the Yerba Buena/East Baybridge Project Site, in accordance with Levine•Fricke's work plan dated December 15, 1992. The enclosed report presents the results for ground-water monitoring activities conducted in July 1993.

Please call me if you have any questions or comments regarding this report.

Sincerely,

Jenifer Beatty

Jenifer Beatty
Project Hydrogeologist

cc: Richard Hiett, RWQCB
Kimberly Brandt, Catellus
Pat Cashman, Catellus

1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500
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Other offices in Irvine, CA; Sacramento/Roseville, CA; Tallahassee, FL; Honolulu, HI

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CERTIFICATION

All hydrogeologic and geologic information, conclusions, and recommendations presented in this report have been prepared under the supervision of and reviewed by a Levine·Fricke California Registered Geologist.

Andrew L. Wright
Senior Associate Geologist
California Registered Geologist (4592)

10/29/93
Date

October 29, 1993 LF 1649.10

QUARTERLY MONITORING REPORT FOR JULY 1 THROUGH SEPTEMBER 30, 1993 FORMER BASHLAND PROPERTY, EMERYVILLE, CALIFORNIA

1.0 INTRODUCTION

This report presents results of quarterly ground-water monitoring activities conducted during the period July 1 to September 30, 1993, for the former Bashland property ("Bashland") located at 4015 Hollis Street in Emeryville, California (Figure 1). Levine·Fricke, Inc. ("Levine·Fricke") conducted this work on behalf of Catellus Development Corporation ("Catellus") in accordance with the work plan dated December 15, 1992 (Levine·Fricke 1992), and verbally approved by Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHA) in January 1993.

2.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

Between March 23 and May 7, 1992, Levine·Fricke supervised the removal of one 1,200-gallon oil and two 12,000-gallon fuel underground storage tanks (USTs) from Bashland by Trumpp Brothers, Inc., of San Jose, California, under permits from the City of Emeryville (permit number B-4278-492), the Emeryville Fire Department (EFD), and the ACHA. Ms. Susan Hugo, Senior Hazardous Materials Specialist of the ACHA, Mr. Ron Owcarz, Hazardous Specialist of the ACHA, and a representative of the EFD were on site to observe tank removal and soil sampling activities. Holes were observed in two of the three USTs removed.

Chemical analysis results for soil samples collected from the excavation sidewalls indicated low concentrations (below detection limits to 2 parts per million [ppm]) of petroleum product or associated constituents. Total petroleum hydrocarbons (TPH) as oil (TPHo) were detected in one of the floor samples at a concentration of 1,500 ppm; however, TPHo concentrations were below laboratory detection limits in the other samples. On the basis of these results, the excavation was backfilled using 3/4-inch drain rock and clean imported fill material on May 6 and 7, 1992, upon approval of the ACHA.

Following installation of monitoring well LF-31 downgradient from and within 10 feet of the former USTs (Figure 2) in February 1993 (Levine•Fricke 1992 and 1993), a quarterly ground-water monitoring program was implemented at Bashland to assess whether a possible release of petroleum hydrocarbons has affected shallow ground water in the vicinity of the former UST locations. As part of this analysis program, samples collected from wel[redacted] also will be analyzed periodically for volatile organic compounds [redacted] possible concentrations of [redacted] shall[redacted] have migrated on site from known [redacted] Electro-Coatings, Inc., and/or Del Monte sites; Figure 1).

3.0 QUARTERLY MONITORING ACTIVITIES CONDUCTED DURING THE PERIOD FROM JULY 1 THROUGH SEPTEMBER 30, 1993

The activities conducted and the results obtained for July 1 through September 30, 1993, are presented below.

3.1 Water-Level Measurement

Depth to water was measured in well LF-31 on July 9, 1993, in conjunction with water-level measurements for all existing wells at the Yerba Buena Project Site. Depth to water was measured using an electric water-level sounding probe to the nearest 0.01 foot, relative to the top of the PVC well casing. The depth to water measured in well LF-31 on July 9, 1993, was 6.58 feet below ground surface. This represents a decrease in ground-water elevations of 0.25 foot relative to May 1993 data.

3.2 Sampling

Ground-water samples were collected for chemical analyses from well LF-31 on July 14, 1993. Before ground-water samples were collected from this well, approximately four casing volumes of water were purged from the well using a centrifugal pump. Parameters such as pH, temperature, specific conductance, quantity, and clarity of water withdrawn were measured and recorded on a water-quality sampling sheet. A copy of this sheet is included in Appendix A.

Ground-water samples were collected immediately following purging of the well using a clean Teflon bailer. Samples collected for analysis of VOCs were placed into laboratory-supplied, 40-milliliter glass vials preserved with hydrochloric acid. The glass vials were filled to capacity,

capped, and checked for trapped air bubbles. Samples collected for TPH as diesel (TPHd) and total recoverable petroleum hydrocarbon (TRPH) analyses were poured into laboratory-supplied 1-liter amber bottles. Samples were placed in an ice-chilled cooler immediately after collection for transportation under chain-of-custody protocols to a state-certified laboratory for chemical analysis.

3.3 Laboratory Analysis

Ground-water samples were submitted to Anametrix, Inc., of San Jose, California, a state-certified laboratory, and analyzed using EPA Method 3510 GCFID for TPHd, Standard Method 5520BF for TRPH, and EPA Method 8010 for VOCs. Duplicate samples were submitted to American Environmental Network of Pleasant Hill, California, a state-certified laboratory, for the analysis discussed above.

4.0 GROUND-WATER ELEVATIONS

Ground-water elevation measurements for Bashland and vicinity are included on Figure 3, which presents ground-water elevation data and ground-water elevation contours for the entire Yerba Buena Project Site. Depth-to-water measurements collected on July 9, 1993, indicate ~~that~~ shallow ground-water flow beneath Bashland is to the southwest, with an average hydraulic gradient of approximately ~~0.01~~ ft/ft. These results are consistent with ground-water flow directions previously reported for this area.

5.0 ANALYTICAL RESULTS

A summary of analytical results is presented in Table 1. Results from the ground-water sample collected from well LF-31 indicated that TPHd was detected at concentrations of 0.15 ppm and 0.40 ppm (duplicate). TRPH was not detected above the laboratory detection limit of 5 ppm (1 ppm for the duplicate).

Cis-1,2-dichloroethene (1,2-DCE) and trichloroethene (TCE) were detected at concentrations of 0.0024 ppm and 0.010 ppm (duplicate), respectively.

A low concentration (0.006 ppm) of tetrachloroethene (PCE) was detected in the sample submitted to Anametrix, Inc. This compound previously has not been detected in samples collected

from this well and was not detected in the sample submitted to American Environmental Network. Concentrations of PCE will be monitored during future sampling events.

Laboratory certificates for ground-water samples are presented in Appendix B.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Ground-water samples were collected in July 1993 from monitoring well LF-31 to monitor concentrations of TPH and VOCs in shallow ground water. Well LF-31 is located within 10 feet downgradient from the former UST locations at Bashland.

6.1 TPH

Analytical results for ground-water samples collected from well LF-31 indicate that shallow ground water has not been affected by a possible release of petroleum hydrocarbons, with the exception of TPHd, which has been detected at low concentrations of 0.40 ppm or less. Well LF-31 will continue to be monitored on a quarterly basis through December 1993. This will have completed one year of quarterly monitoring. Following completion of one year of monitoring, ground-water quality data will be evaluated and discussed with the ACHA to assess whether continued ground-water monitoring is necessary.

6.2 VOCs

Analytical results indicate low concentrations of VOCs in shallow ground water (0.010 ppm TCE and 0.0024 1,2-DCE) that likely have migrated on site from an off-site VOC source located north of the Bashland property boundary. It should be noted that 0.034 ppm of TCE was detected in ground-water samples collected from monitoring well LF-9, formerly located approximately 40 feet northeast (upgradient) of well LF-31, during the Phase I Investigation in February 1990. No on-site source for VOCs was identified during the background and regulatory literature review conducted at the initiation of the Phase I investigation in 1989 or during removal of the USTs, oil/water separator, or hydraulic lifts formerly located at Bashland.

Possible off-site sources for VOCs detected in shallow ground water in the vicinity of well LF-31 and other Area C wells (LF-10 and LF-11; Figure 3) include the Electro-Coatings, Inc. (ECI), site, located at 1201 Park Avenue, and the Del Monte Plant Number 35 West Parcel site, located at 4202 Hollis Street in Emeryville, California. TCE has been detected in

ground water at the ECI site since 1985. In November 1991, consultants working on behalf of ECI reported concentrations of TCE up to 19 ppm (American Environmental Management Corporation 1992). TCE was detected in monitoring wells located at the Del Monte site at concentrations up to 1.4 ppm in 1989 (CH2M Hill 1990). It is our understanding that a ground-water extraction system was installed at the Del Monte site in late 1992 or early 1993. Levine·Fricke will continue to monitor the progress of investigations conducted at these sites.

REFERENCES

American Environmental Management Corporation. 1992. Ground Water Monitoring Report for Electro-Coatings, Inc., Emeryville, California. January 27.

CH2M Hill. 1990. Quarterly Monitoring Data for Del Monte's Plant 35 West Parcel, Removed Fuel Tanks Area at 4202 Hollis Street, Emeryville, California.

Levine·Fricke, Inc. 1992. Work Plan to Install One Ground-Water Monitoring Well and Conduct Quarterly Monitoring, Bashland Property, Emeryville, California. December 15.

Levine·Fricke, Inc. 1993. Combined Soil and Ground-Water Investigation Report and Quarterly Monitoring Report for the Period from January 1 through March 31, 1993, Former Bashland Property, Emeryville, California. April 5.

TABLE 1

CHEMICAL ANALYSES RESULTS FOR MONITORING WELL LF-31
FORMER BASHLAND COMPANY PROPERTY
(results in parts per million [ppm])

Date Sampled		TRPH	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenze	Total Xylenes	TCE	1,2-DCE
2/12/93	(1)	<5	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
5/26/93		<5	0.200	NA	NA	NA	NA	NA	0.020	0.0039
duplicate		<5	0.310	NA	NA	NA	NA	NA	0.020	0.0034
7/14/93	(2)	<5	0.150	NA	NA	NA	NA	NA	0.0073	0.0024
duplicate		<1	0.400	NA	NA	NA	NA	NA	0.010	0.002

Data entered by SCH/28-Sep-93. Proofed by JJB.

Notes:

(1) Ground-water samples also analyzed for cadmium, chromium, nickel, lead, and zinc, and semivolatile organic compounds using EPA Method 8270. None of these compounds were detected above laboratory detection limits.

(2) [redacted]

TRPH - Total recoverable petroleum hydrocarbons as oil and grease (Standard Methods 5520BF)
TCE - Trichloroethene (EPA Method 8010)
1,2-DCE - 1,2-dichloroethene (EPA Method 8010)
NA - Not analyzed

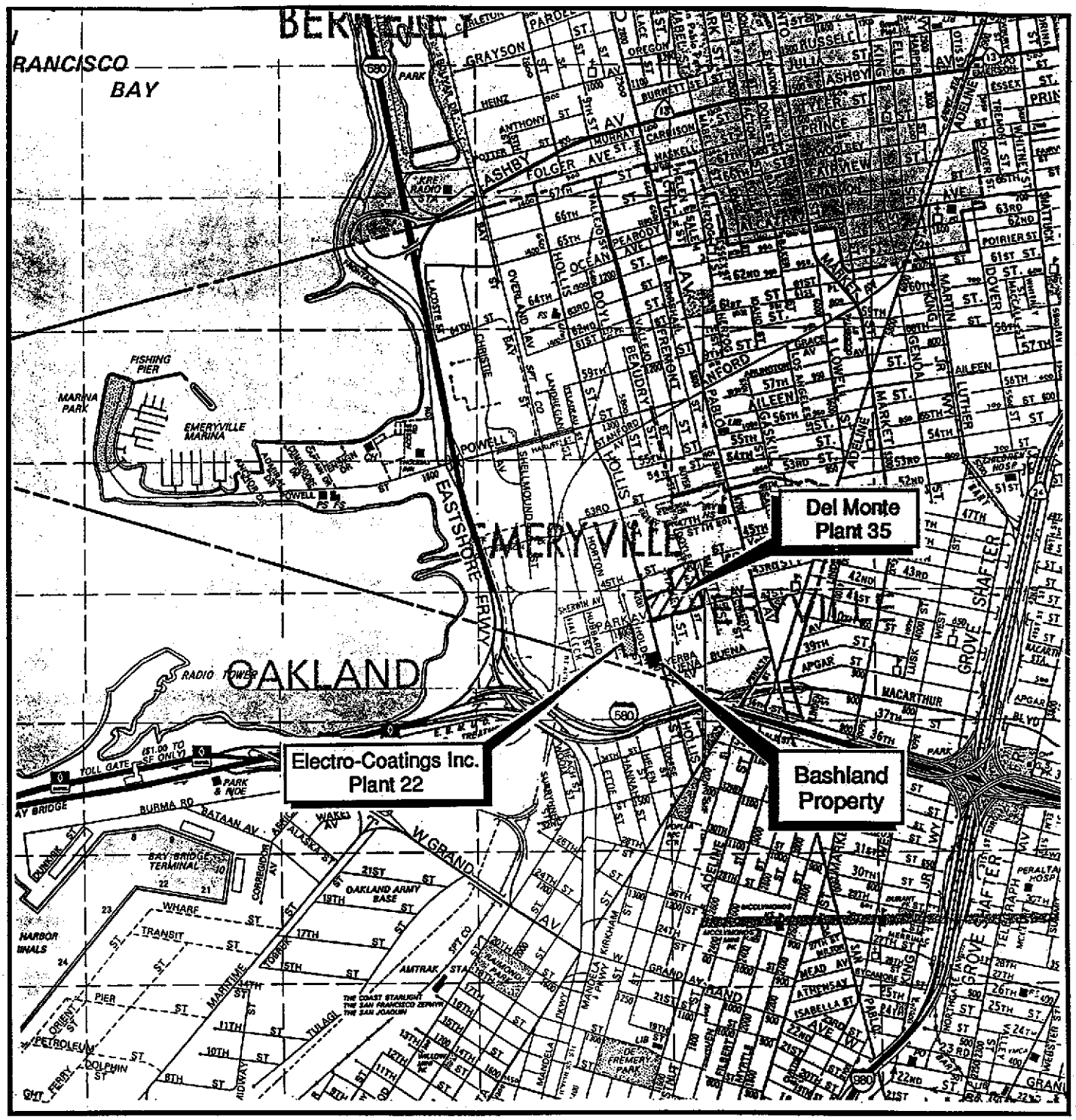

Figure 1: SITE LOCATION MAP
BASHLAND PROPERTY SITE

Project No. 1649.10

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JJB28JUL93#RYL

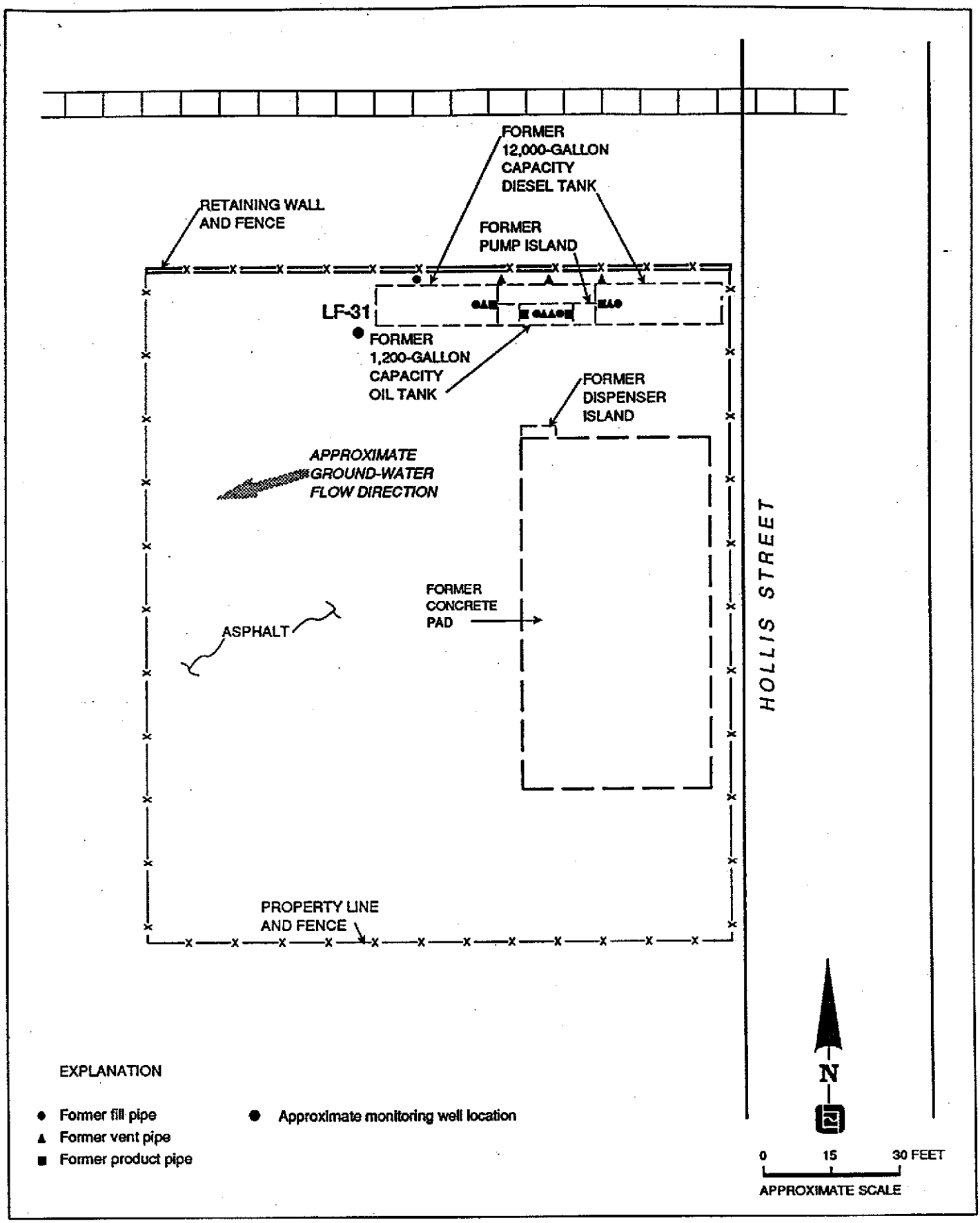

Figure 2: SITE PLAN SHOWING MONITORING WELL LF-31

Project No. 1649.10
Bashland Property, Emeryville, California

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1649.10JJB19JUL93MPM◀F2

9999-00

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WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena
Date 7.14.93
Samplers Name SCH JCK
Sampling Location Emeryville / Former Bashland
Sampling Method Cent. pump / Teflon bailer
Analyses Requested 8010, TPHd, 5520 BF
Number and Types of Sample Bottles used 3 VOA, 2 amber L
Method of Shipment Courier | 2 amber L / H_2SO_4

Project No. 1649.10
Sample No. LF-31
LF-131

20.00
6.53
1347
65
6735
8020
876

LOCATION MAP

GROUND WATER

Well No. _____
Well Diameter (in.) _____
Depth to Water, Static (ft) 6.53
Water in Well Box _____
Well Depth (ft) 20.0
Height of Water Column in Well 13.47
Water Volume in Well 8.76 ≈ 9

SURFACE WATER

Stream Width _____
Stream Depth _____
Stream Velocity _____
Rained recently? NO
Other _____

2-inch casing = 0.16 gal/ft
(4)-inch casing = 0.65 gal/ft
5-inch casing = 1.02 gal/ft
6-inch casing = 1.47 gal/ft

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
0850								pH, Cond. Calibrated
0859								Start pump
0901		9	20.0	6.97	1208			V. SL. TWbid
0902		18	19.5	6.96	1201			"
0903	Inlet	24						
0906		27	21.3	7.22	1220			SL. TWbid/off/DWTRD
0910								Start
0911		35						Stop/DWTRD
0915								Start
0917		39	20.0	7.10	1173			V. SL. TWbid/DWTRD
0925								Sample LF-31
1025								Dup LF-131

284

Suggested Method for Purging Well _____

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 94523-001

LEVINE-FRICKE
1900 POWELL STREET
12TH FLOOR
EMERYVILLE, CA 94608
ATTN: JENIFER BEATTY

CLIENT PROJECT ID: 1649.10
C.O.C. SERIAL NO: 11701
PROJ. NAME: YERBA BUENA

REPORT DATE: 07/28/93

DATE SAMPLED: 07/14/93

DATE RECEIVED: 07/15/93

AEN JOB NO: 9307134

PROJECT SUMMARY:

On July 15, 1993, this laboratory received one (1) water sample.

Client requested the sample be analyzed for organic parameters. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

Results FAXed 07/26/93

LEVINE-FRICKE

DATE SAMPLED: 07/14/93
DATE RECEIVED: 07/15/93
CLIENT PROJECT ID: 1649.10

REPORT DATE: 07/28/93

AEN JOB NO: 9307134

Client Sample Id.	AEN Lab Id.	Oil & Grease (mg/L)	Hydrocarbons (mg/L)	Extractable Hydrocarbons as Diesel (mg/L)
LF-131	01D	---	---	0.4
LF-131	01F	ND	ND	---
Reporting Limit		1	1	0.05
Method:		SM5520B	SM5520F	EPA 3510 GCFID
Instrument:		ME1	ME1	C
Date Extracted:		07/19/93	07/19/93	07/16/93
Date Analyzed:		07/19/93	07/19/93	07/20/93

ND = Not Detected

LEVINE-FRICKE

SAMPLE ID: LF-131
CLIENT PROJ. ID: 1649.10
DATE SAMPLED: 07/14/93
DATE RECEIVED: 07/15/93
REPORT DATE: 07/28/93

AEN LAB NO: 9307134-01A
AEN JOB NO: 9307134
DATE ANALYZED: 07/19/93
INSTRUMENT: G

EPA METHOD 8010 (WATER MATRIX)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	75-34-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.5
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	**156-59-2**	**2**	**0.5**
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	75-09-2	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	**79-01-6**	**10**	**0.5**
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

QUALITY CONTROL DATA

DATE EXTRACTED: 07/19/93
DATE ANALYZED: 07/19/93
CLIENT PROJ. ID: 1649.10

AEN JOB NO: 9307134
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: ME1

GRAVIMETRIC DETERMINATION/OIL AND GREASE
MATRIX SPIKE RECOVERY SUMMARY
METHOD 5520B (WATER MATRIX)

ANALYTE	MS Conc. (mg/L)	MSD Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Oil	78.5	84.4	ND	76.4	81.7	97.1	0.5

CURRENT QC LIMITS (Revised 06/22/92)

Analyte	Percent Recovery	RPD
Oil	(92-100)	5.0

METHOD BLANK RESULT

Lab Id.	Oil & Grease (mg/L)	Hydrocarbons (mg/L)
071993-METHOD BLANK	ND	ND
Reporting Limit:	1	1
Method:	SM5520B	SM5520F

Instrument: ME1
Date Extracted: 07/19/93
Date Analyzed: 07/19/93

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

DATE EXTRACTED: 07/14/93
DATE ANALYZED: 07/15/93
CLIENT PROJ. ID: 1649.10

AEN JOB NO: 9307134
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: C

MATRIX SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE WATER
METHOD: EPA 3510 GCFID

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	2.02	ND	1.66	1.61	80.9	3.1

CURRENT QC LIMITS (Revised 06/22/92)

Analyte	Percent Recovery	RPD
Diesel	(45.0-103.3)	25.0

METHOD BLANK RESULT

Lab Id.	Extractable Hydrocarbons as Diesel (mg/L)
071693 METHOD BLANK	ND

Reporting Limit: 0.3
Method: 3510 GCFID
Instrument: C
Date Extracted: 07/16/93
Date Analyzed: 07/20/93

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

INSTRUMENT: G

CLIENT PROJ. ID: 1649.10

AEN JOB NO: 9307134
AEN LAB NO: DAILY BLANK
DATE ANALYZED: 07/19/93

EPA METHOD 8010 (METHOD BLANK)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	75-34-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.5
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	156-69-9	ND	0.5
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	75-09-2	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	79-01-6	ND	0.5
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

QUALITY CONTROL DATA

INSTRUMENT: G

AEN JOB NO: 9307134

CLIENT PROJ. ID: 1649.10

SURROGATE STANDARD RECOVERY SUMMARY

METHOD: EPA 8010
(WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION Client Id.	Lab Id.	SURROGATE RECOVERY (PERCENT) Bromochloro-methane	1-Bromo-2-chloro-propane
07/19/93	LF-131	01A	85.3	83.8
07/19/93		0719-BLANK	71.9	74.3

CURRENT QC LIMITS (Revised 06/22/92)

ANALYTE	PERCENT RECOVERY
Bromochloromethane	(65-138)
1-Bromo-2-chloropropane	(61-141)

QUALITY CONTROL DATA

DATE ANALYZED: 07/19/93

CLIENT PROJ. ID: 1649.10

AEN JOB NO: 9307134
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: G

METHOD SPIKE RECOVERY SUMMARY

METHOD: EPA 8010
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	ND	35.6	36.0	71.6	1.1
Trichloroethene	50.0	ND	49.8	47.4	97.2	4.9
Chlorobenzene	50.0	ND	37.9	38.6	76.5	1.8

CURRENT QC LIMITS (06/22/92)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(52-116)	5.6
Trichloroethene	(68-123)	5.8
Chlorobenzene	(62-104)	5.5

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

9307134

Project No.: 1649.10	Field Logbook No.:	Date: 7/14/93	Serial No.: 11701
Project Name: YERBA BUENA	Project Location: EMERYVILLE, CA.		
Sampler (Signature): [signature]			Samplers: JCK SCH

SAMPLES						ANALYSES								
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	EPA 8010	TPH-D	O+G #1		HOLD	RUSH	REMARKS
LF-131 SCH	7/14/93	~~9:25~~ 1025	01A-G	7	H2O			X	X	X				NORMAL TAT
														#1 5520 BF
														RESULTS TO JENNIFER BEATY

RELINQUISHED BY: (Signature) Matthew Cloud	DATE 7/15/93	TIME 10:45	RECEIVED BY: (Signature) [signature]	DATE 7/15/93	TIME 10:45
RELINQUISHED BY: (Signature) [signature]	DATE 7/15/93	TIME 11:45	RECEIVED BY: (Signature) Gina Gillespie	DATE 7-15-93	TIME 1140
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT:	DATE	TIME	LAB COMMENTS:		

Sample Collector:
LEVINE-FRICKE
1900 Powell Street, 12th Floor
Emeryville, Ca 94608
(415) 652-4500

Analytical Laboratory:
AEN
PLEASANT HILL, CA.

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Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
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San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MS. JENIFER BEATTY
LEVINE-FRICKE
1900 POWELL STREET 12TH FLOOR
EMERYVILLE, CA 94608

Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9307144- 1	LF-31

This report consists of 15 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Larry Kent for
Sarah Schoen, Ph.D.
Laboratory Director

7-29-93
Date

COPY

ANAMETRIX REPORT DESCRIPTION

GC

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in its report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.

B - Indicates that the compound was detected in the associated method blank.

J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.

E - Indicates that the reported amount exceeded the linear range of the instrument calibration.

D - Indicates that the compound was detected in an analysis performed at a secondary dilution.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY
LEVINE-FRICKE
1900 POWELL STREET 12TH FLOOR
EMERYVILLE, CA 94608

Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307144- 1	LF-31	WATER	07/14/93	8010

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY
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EMERYVILLE, CA 94608

Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Corinne Bram 7/28/93
Department Supervisor Date

Michelle Young 7/28/93
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10
Sample ID : LF-31
Matrix : WATER
Date Sampled : 7/14/93
Date Analyzed : 7/27/93
Instrument ID : HP14

Anametrix ID : 9307144-01
Analyst : mf
Supervisor : cp

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
76-13-1	Trichlorotrifluoroethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
156-59-2	cis-1,2-Dichloroethene	.50	2.4	
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	7.3	
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	6.3	
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	1.0	ND	U
106-46-7	1,4-Dichlorobenzene	1.0	ND	U
95-50-1	1,2-Dichlorobenzene	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.1
Sample ID : BLK726
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 7/27/93
Instrument ID : HP14

Anametrix ID : 14B0726H03
Analyst : MP
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
76-13-1	Trichlorotrifluoroethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
156-59-2	cis-1,2-Dichloroethene	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	1.0	ND	U
106-46-7	1,4-Dichlorobenzene	1.0	ND	U
95-50-1	1,2-Dichlorobenzene	1.0	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10
Matrix : LIQUID

Anametrix ID : 9307144
Analyst : [illegible]
Supervisor : [illegible]

	SAMPLE ID	SU1	SU2	SU3
1	BLK726	112		
2	LF-31	99		
3				
4				
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12				
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	QC LIMITS
SU1 = Chlorofluorobenzene	(51-136)

* Values outside of Anametrix QC limits

LABORATORY CONTROL SAMPLE
EPA METHOD 601/8010
ANAMETRIX, INC. (408)432-8192

Project/Case	: LABORATORY CONTROL SAMPLE	Anametrix I.D.	: WO072693
Matrix	: WATER	Analyst	:
SDG/Batch	: N/A	Supervisor	:
Date analyzed	: 07/26/93	Instrument I.D.	: HP14

COMPOUND	SPIKE AMOUNT (ug/L)	AMOUNT RECOVERED (ug/L)	PERCENT RECOVERY	%RECOVERY LIMITS
FREON 113	10	9.6	96%	34 - 128
1,1-DICHLOROETHENE	10	9.1	91%	63 - 133
trans-1,2-DICHLOROETHENE	10	10.2	102%	55 - 145
1,1-DICHLOROETHANE	10	11.4	114%	49 - 121
cis-1,2-DICHLOROETHENE	10	10.3	102%	66 - 168
1,1,1-TRICHLOROETHANE	10	10.7	107%	72 - 143
TRICHLOROETHENE	10	10.6	106%	63 - 147
TETRACHLOROETHENE	10	11.7	117%	60 - 133
CHLOROBENZENE	10	11.2	112%	70 - 148
1,3-DICHLOROBENZENE	10	11.1	111%	49 - 139
1,4-DICHLOROBENZENE	10	11.5	115%	70 - 133
1,2-DICHLOROBENZENE	10	11.0	110%	69 - 140

* Limits based on data generated by Anametrix, Inc., August, 1992.

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Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307144- 1	LF-31	WATER	07/14/93	TPHd

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

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Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as [redacted] due to the presence of a heavier petroleum product of hydrocarbon range [redacted]

Cheryl Bedner 7/24/93
Department Supervisor Date

Peggie Dawson 7/29/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9307144
Matrix : WATER
Date Sampled : 07/14/93
Date Extracted: 07/20/93

Project Number : 1649.10
Date Released : 07/29/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9307144-01	LF-31	07/28/93	51	150
BL2011F1	METHOD BLANK	07/28/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 7/29/93
Analyst Date

Cheryl Balmer 7/29/93
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 07/16/93
Date Analyzed : 07/22/93

Anametrix I.D. : ML1611F1
Analyst : RD
Supervisor : [illegible]
Date Released : 07/27/93
Instrument I.D.: HP9

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	880	70%	910	73%	3%	47-130

*Quality control established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

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LEVINE-FRICKE
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EMERYVILLE, CA 94608

Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307144- 1	LF-31	WATER	07/14/93	5520BF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY
LEVINE-FRICKE
1900 POWELL STREET 12TH FLOOR
EMERYVILLE, CA 94608

Workorder # : 9307144
Date Received : 07/15/93
Project ID : 1649.10
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Cathy Mcletchy 7/22/93
Department Supervisor Date

Chemist 07.22.93
Chemist Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORY (408) 432-8192

roject I.D.	: 1649.10	Anametrix I.D.	: 9307144
atrix	: WATER	Analyst	:
Date sampled	: 07/14/93	Supervisor	:
ate extracted	: 07/19/93	Date released	: 07/22/93
ate analyzed	: 07/20/93		

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9307144-01	LF-31	5	ND
BL1911W4	METHOD BLANK	5	ND

D - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
STANDARD METHOD 5520BF
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML1911W4
Matrix	: WATER	Analyst	:
Date sampled	: N/A	Supervisor	:
Date extracted	: 07/19/93	Date Released	: 07/22/93
Date analyzed	: 07/20/93		

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	53	106%	48	96%	10%	47-99%

Quality control limits established by Anametrix Laboratories.