Quarterly Monitoring Report for April 1 through June 30, 1994 Former Bashland Property Emeryville, California

July 25, 1994
1649.10

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

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

July 25, 1994 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 April 1 through June 30, 1994, Former Bashland Property, Emeryville, California

Dear Ms. Hugo:

Enclosed is the quarterly monitoring report for April 1 through June 30, 1994, for the former Bashland property, located in Emeryville, California. This report has been prepared on behalf of Catellus Development Corporation ("Catellus") for the redevelopment project at the Yerba Buena/East Baybridge Center Project Site ("the Site"), in accordance with your February 22, 1994 letter to Kimberly Brandt of Catellus. That letter requested continued quarterly monitoring of well LF-31 and analysis of total petroleum hydrocarbons (TPH) as diesel (TPHd), TPH as motor oil (TPHo), and volatile organic compounds (VOCs). The enclosed report presents the results for ground-water monitoring activities conducted in July 1994.

As discussed in the meeting on June 21, 1994, among representatives of the Alameda County Health Care Services Agency (ACHA), the Regional Water Quality Control Board (RWQCB), Catellus, and Levine•Fricke, the ground-water monitoring program for the Site will consider the entire development as a "nonattainment area." The former Bashland Property, located in the eastern portion of the Site, is located within the nonattainment area.

Additionally, monitoring well LF-31, which was used to monitor ground-water quality beneath the former Bashland Property, was abandoned to accommodate grading that took place in this area on June 30, 1994. Consequently, the next ground-water monitoring event for the Site, including the former Bashland Property, will be conducted after site development has been completed.

1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500
Fax (510) 652-2246

If you have any questions or comments regarding this report, please call me or Andrew L. Wright, R.G.

Sincerely,

Ron Goloubow
Senior Project Geologist

Enclosure

cc: Mr. Sumadhu Arigala, RWQCB
Ms. Kimberly Brandt, Catellus Development
Mr. Pat Cashman, Catellus Development

1649/BashL94.QMR/NAS

CONTENTS

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
Principal Geologist
California Registered Geologist (4592)

7/25/94
Date

July 25, 1994 LF 1649.10

**QUARTERLY MONITORING REPORT FOR
APRIL 1 THROUGH JUNE 30, 1994
FORMER BASHLAND PROPERTY, EMERYVILLE, CALIFORNIA**

1.0 INTRODUCTION

This report presents results of quarterly ground-water monitoring activities conducted during the period April 1 to June 30, 1994, for the former Bashland Property located at 4015 Hollis Street in Emeryville, California (Figure 1). Levine•Fricke conducted this work on behalf of Catellus Development Corporation ("Catellus") in accordance with a February 22, 1994 letter from Ms. Hugo of the Alameda County Health Care Services Agency (ACHA). That letter requested continued quarterly monitoring of well LF-31 and analysis of total petroleum hydrocarbons (TPH) as diesel (TPHd), TPH as motor oil (TPHo), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and volatile organic compounds (VOCs).

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 the former Bashland property 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 with the ACHA, Mr. Ron Owcarz, Hazardous Materials Specialist with the ACHA, and a representative of the EFD were on site to observe tank removal and soil sampling activities. Several small 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. TPHo was 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. Soil beneath and adjacent to the sampling location reporting the 1,500 ppm detection was excavated and removed. 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 the former Bashland property 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 monitoring program, samples collected from well LF-31 also were analyzed periodically for VOCs using EPA Method 8010 to monitor possible concentrations of VOCs in shallow ground water that may have migrated on site from known off-site VOC sources located north of the former Bashland property (i.e., the Electro-Coatings, Inc. [ECI] and/or Del Monte sites; Figure 1).

3.0 QUARTERLY MONITORING ACTIVITIES CONDUCTED DURING THE PERIOD FROM APRIL 1 THROUGH JUNE 30, 1994

The activities conducted and the results obtained for April 1 through June 30, 1994, are presented below.

3.1 Water-Level Measurement

Water-level measurements for well LF-31 are typically taken in conjunction with measurements in nearby wells. Depth to water was measured on June 6, 1994, in wells LF-10, LF-11R, LF-13, LF-32, LF-34, and LF-35, which are located in the general vicinity of well LF-31 within Area C of the Yerba Buena/East Baybridge Center Project site ("the Site"). However, depth to water was not measured in well LF-31 on June 6 because lumber was being stored on top of the well, making the well inaccessible. The depth to water in well LF-31 was measured on June 21, 1994 before ground-water samples were collected.

Measurments were made using an electric water-level sounding probe to the nearest 0.01 foot, relative to the top of the PVC well casing.

3.2 Sampling

Ground-water samples were collected for chemical analyses from well LF-31 on June 21, 1994. Before ground-water samples were collected from this well, approximately four well 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 (HCl). The glass vials were filled to capacity, capped, and checked for trapped air bubbles. Samples collected for TPHd analysis were poured into laboratory-supplied 1-liter amber bottles preserved with HCl. Samples were placed into an ice-chilled cooler immediately after collection for transportation under chain-of-custody protocols to a state-certified laboratory for chemical analysis. Copies of the laboratory certificates and chain-of-custody form are included in Appendix B.

3.3 Laboratory Analysis

Ground-water samples were submitted to American Environmental Network Inc., of Pleasant Hill, California, a state-certified laboratory, and analyzed using EPA Method 3510 GCFID for TPHd and TPHo, and for VOCs using EPA Method 8010.

4.0 GROUND-WATER ELEVATIONS AND FLOW DIRECTION

The depth to water measured in well LF-31 on June 21, 1994, was 5.91 feet below ground surface, which corresponds to a ground-water elevation of 11.12 feet above mean sea level. This represents a decrease in ground-water elevation of 0.22 foot relative to March 1994 data (Levine·Fricke 1994).

Depth to water measured in Area C on June 6, 1994, ranged from 5.88 feet below ground surface (bgs) in wells LF-10 to 9.01 feet bgs in well LF-34. Ground-water elevation data for Area C of the Site is provided in Figure 2. As indicated in Figure 2, ground-water elevation data collected on June 6 indicate the ground-water flow direction beneath Area C is generally toward the southwest under an average hydraulic gradient of 0.0067 foot per foot. The ground-water flow direction beneath the former Bashland Property and Area C has historically been toward the west-southwest.

5.0 ANALYTICAL RESULTS

A historical summary of analytical results for well LF-31 is presented in Table 1. Analytical results for this quarter are generally consistent with previous results reported for well

LF-31. TPHd and TPHo were detected at concentrations of 0.400 ppm and 0.200 ppm, respectively. Trichloroethene (0.005 ppm) and 1,2-dichloroethene (0.002 ppm) also were detected.

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

6.0 CONCLUSIONS AND RECOMMENDATIONS

Ground-water samples have been collected from well LF-31 during the past six quarters. Analytical results of these samples indicate shallow ground water has not been affected by a possible release of petroleum hydrocarbons, with the exception of TPHd and TPHo. These compounds have been detected at low concentrations of 0.400 ppm (TPHd) and 0.200 ppm (TPHo) or less.

While VOCs have been detected in ground-water samples collected from well LF-31, 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. In addition, no VOC source was identified during removal of the USTs, oil/water separator, or hydraulic lifts formerly located at the former Bashland property.

TCE and 1,2-DCE were detected at concentrations of 0.005 ppm and 0.002 ppm, respectively. However, as indicated in a letter dated May 11, 1994, from the Regional Water Quality Control Board (RWQCB) to Ms. Kimberly Brandt of Catellus, the RWQCB recognizes that VOCs detected in ground water in Area C appear to be from an off-site source. 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 of Levine·Fricke 1993) include the 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.

As discussed in the meeting on June 21, 1994, among representatives of the ACHA, the RWQCB, Catellus, and Levine·Fricke, the ground-water monitoring program for Site will consider the entire development as a "nonattainment area." The former Bashland site, located in the eastern portion of the Site, is located within the nonattainment area.

Additionally, monitoring well LF-31, which is used to monitor ground-water quality beneath the former Bashland site, was abandoned to accommodate grading that took place in this area on June 30, 1994. This well will be reinstalled and the next ground-water monitoring event in this portion of the Site will be conducted after site development has been completed.

REFERENCES

Alameda County Health Care Services Agency (ACHA). 1994. Correspondence to Ms. Kimberly Brandt of Catellus Development Corporation. Subject: Status of Soil and Groundwater Investigation. February 22.

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 April 1 through June 30, 1993, Former Bashland Property, Emeryville, California. April 5.

Levine•Fricke, Inc. 1994. Quarterly Monitoring Report for January 1 through March 31, 1994, Former Bashland Property, Emeryville, California. April 29.

TABLE 1

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

Date Sampled	Lab		TRPH	THPd	TPHo	THPg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TCE	1,2-DCE
12-Feb-93	ANA	(1)	<5	<0.05	NA	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
26-May-93	ANA		<5	0.200	NA	NA	NA	NA	NA	NA	0.020	0.0039
duplicate			<5	0.310	NA	NA	NA	NA	NA	NA	0.020	0.0034
14-Jul-93	ANA	(2)	<5	0.150	NA	NA	NA	NA	NA	NA	0.0073	0.0024
duplicate	AEN		<1	0.400	NA	NA	NA	NA	NA	NA	0.010	0.002
09-Dec-93	ANA		<5	0.200	0.100	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
11-Mar-94	ANA	(3)	NA	0.110	0.210	NA	NA	NA	NA	NA	0.0054	0.003
duplicate	ANA	(4)	NA	NA	NA	NA	NA	NA	NA	NA	0.006	0.0034
21-Jun-94	AEN		NA	0.400	0.200	<0.05	<0.0005	<0.0005	<0.0005	<0.002	0.005	0.002

Data entered by REG/12-Jul-94. Data proofed by REG

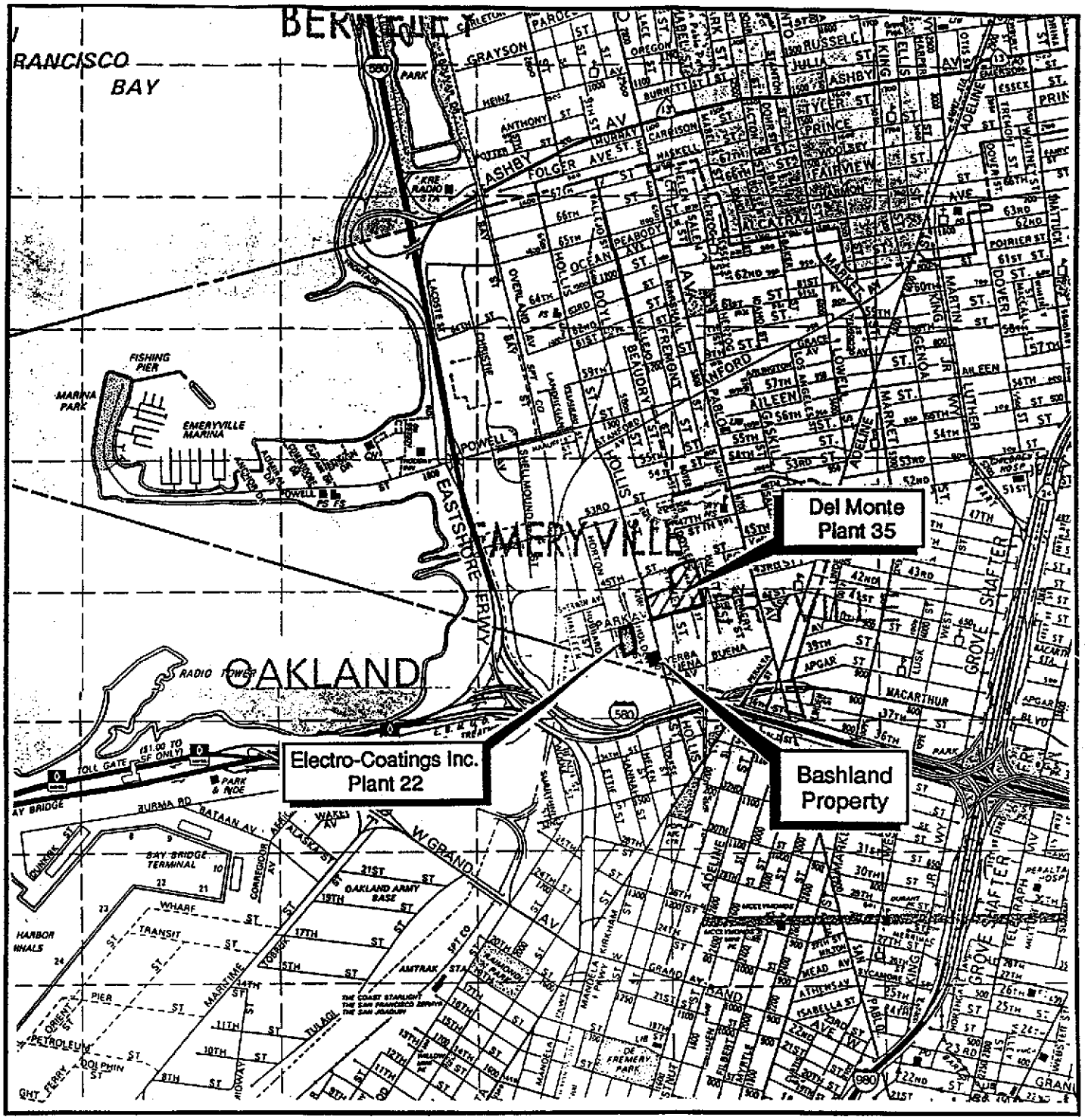
ANA - Anametrix, Inc., of San Jose, California
AEN - American Environmental Network of Pleasant Hill, California
TRPH - Total recoverable petroleum hydrocarbons as oil and grease, analyzed using Standard Methods 5520BF.
TPHd - Total petroleum hydrocarbons as diesel, analyzed using EPA Method 3510.
THPo - Total petroleum hydrocarbons as oil, analyzed using EPA Method 3510.
TPHg - Total petroleum hydrocarbons as gasoline, analyzed using EPA Method 3550.
Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
TCE - Trichloroethene, analyzed using EPA Method 8010.
1,2-DCE - 1,2-dichloroethene, analyzed using EPA Method 8010.
NA - Not analyzed

(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) Tetrachloroethene (PCE) detected at a concentration of 0.0063 ppm.

(3) Chloroform detected at 0.0012 ppm.

(4) Chloroform detected at 0.0014 ppm.



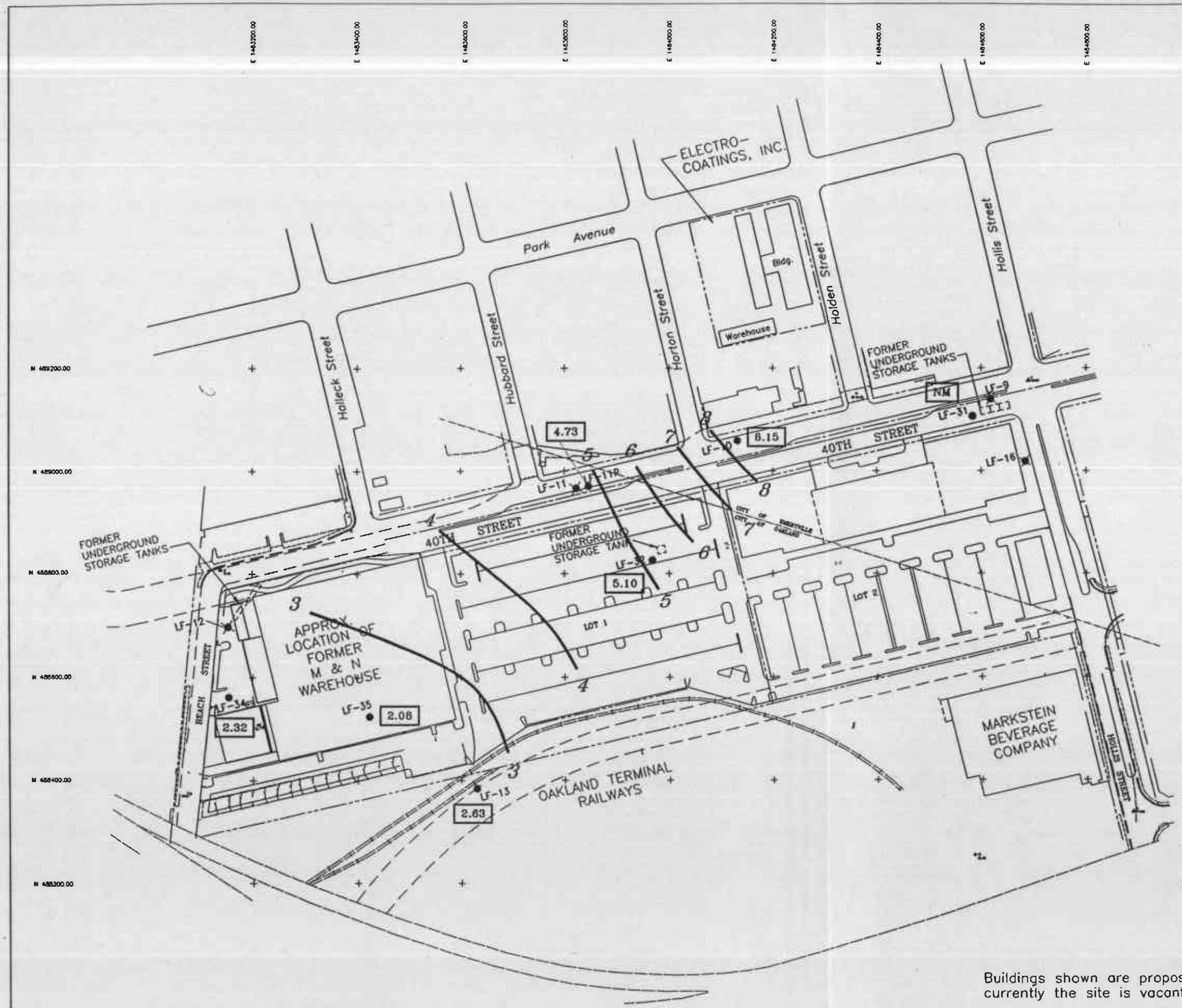
MAP SOURCE:
Thomas Bros. Map
Alameda and Contra Costa Counties
EDITION 1992

Figure 1: SITE LOCATION MAP
BASHLAND PROPERTY SITE

Project No. 1649.10

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

JJB28JUL93◀RYL



EXPLANATION

- ● Monitoring well location
- ✱ Abandoned well
- 5.10 Ground-water elevation (feet mean sea level)
- 5 ~ Ground-water elevation contour (feet mean sea level)
- NM Well not measured

N

200 0 200 FEET

SCALE: 1"=200'

Buildings shown are proposed; currently the site is vacant.

Figure 2 :
GROUND-WATER ELEVATION CONTOURS
IN AREA C WELLS
JUNE 6, 1994

Project No. 1649

LEVINE·FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1649B050.REG:EM 061694 1649G012.REG:EM 061494

10-30-89
LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name E. BAYBRIDGE Project No. 1649.35

Date 6/21/94 Sample No. LF-31

Samplers Name JCK

Sampling Location LF-31

Sampling Method CENT PUMP / TEFLON BAILER

Analyses Requested TPH-g, o, d + BTEX EPA 8010

Number and Types of Sample Bottles used 4 VOA 2 L GL

Method of Shipment COURIER

GROUND WATER

Well No. LF-31

Well Diameter (in.) 4

Depth to Water, Static (ft) 5.91

Water in Well Box NO

Well Depth (ft) 20.00

Height of Water Column in Well 14.09

Water Volume in Well ~~15.66~~ 9.16

SURFACE WATER

Stream Width

Stream Depth

Stream Velocity

Rained recently ?

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

20.00
5.91
14.09
.65
~~[illegible]~~
7045
8454
91585
14.09 20.00
.8 11.27
11272 8.73

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
15:40								START
15:42		10	19.2	7.30	910			CLEAR
15:45		20	19.0	7.22	901			CLEAR
15:47		30	18.4	7.08	1017			CLEAR
15:50	DEWATER	40	19.2	7.05	1069			SL. TURBID
16:15	8.61							SAMPLE

Suggested Method for Purging Well

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

LEVINE-FRICKE
1900 POWELL ST. 12TH FL.
EMERYVILLE, CA 94608

ATTN: RON GOLOUBOW
CLIENT PROJ. ID: 1649.35
CLIENT PROJ. NAME: E. BAYBRIDGE
C.O.C. NUMBER: 12074

REPORT DATE: 07/12/94
DATE(S) SAMPLED: 06/21/94
DATE RECEIVED: 06/22/94
AEN WORK ORDER: 9406277

PROJECT SUMMARY:

On June 22, 1994, this laboratory received 7 water sample(s).

Client requested samples be analyzed for organic parameters. On July 6, 1994, client requested additional organic analysis on one (1) sample. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

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

Larry Klein
Laboratory Director

LEVINE-FRICKE

SAMPLE ID: LF-31
AEN LAB NO: 9406277-06
AEN WORK ORDER: 9406277
CLIENT PROJ. ID: 1649.35

DATE SAMPLED: 06/21/94
DATE RECEIVED: 06/22/94
REPORT DATE: 07/12/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	06/29/94
Toluene	108-88-3	ND	0.5	ug/L	06/29/94
Ethylbenzene	100-41-4	ND	0.5	ug/L	06/29/94
Xylenes, Total	1330-20-7	ND	2	ug/L	06/29/94
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	06/29/94
#Extraction for Diesel/Oil	EPA 3510	-		Extrn Date	06/24/94
TPH as Diesel	GC-FID	0.4 *	0.05	mg/L	06/28/94
TPH as Oil	GC-FID	0.2 *	0.2	mg/L	06/28/94
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	07/06/94
Bromoform	75-25-2	ND	0.5	ug/L	07/06/94
Bromomethane	74-83-9	ND	0.5	ug/L	07/06/94
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	07/06/94
Chlorobenzene	108-90-7	ND	0.5	ug/L	07/06/94
Chloroethane	75-00-3	ND	0.5	ug/L	07/06/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5	ug/L	07/06/94
Chloroform	67-66-3	ND	0.5	ug/L	07/06/94
Chloromethane	74-87-3	ND	0.5	ug/L	07/06/94
Dibromochloromethane	124-48-1	ND	0.5	ug/L	07/06/94
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	07/06/94
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	07/06/94
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	07/06/94
Dichlorodifluoromethane	75-71-8	ND	0.5	ug/L	07/06/94
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	07/06/94
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	07/06/94
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	07/06/94
cis-1,2-Dichloroethene	156-59-2	2 *	0.5	ug/L	07/06/94
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	07/06/94
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	07/06/94
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	07/06/94
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	07/06/94
Methylene Chloride	75-09-2	ND	0.5	ug/L	07/06/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	07/06/94
Tetrachloroethene	127-18-4	ND	0.5	ug/L	07/06/94
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	07/06/94
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	07/06/94
Trichloroethene	79-01-6	5 *	0.5	ug/L	07/06/94

LEVINE-FRICKE

SAMPLE ID: LF-31
AEN LAB NO: 9406277-06
AEN WORK ORDER: 9406277
CLIENT PROJ. ID: 1649.35

DATE SAMPLED: 06/21/94
DATE RECEIVED: 06/22/94
REPORT DATE: 07/12/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Trichlorofluoromethane	75-69-4	ND	0.5	ug/L	07/06/94
1,1,2Trichlorotrifluoroethane	76-13-1	ND	0.5	ug/L	07/06/94
Vinyl Chloride	75-01-4	ND	0.5	ug/L	07/06/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

LEVINE-FRICKE

SAMPLE ID: TRIP62194
AEN LAB NO: 9406277-07
AEN WORK ORDER: 9406277
CLIENT PROJ. ID: 1649.35

DATE SAMPLED: 06/21/94
DATE RECEIVED: 06/22/94
REPORT DATE: 07/12/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	06/30/94
Toluene	108-88-3	ND	0.5	ug/L	06/30/94
Ethylbenzene	100-41-4	ND	0.5	ug/L	06/30/94
Xylenes, Total	1330-20-7	ND	2	ug/L	06/30/94
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	06/30/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9406277

CLIENT PROJECT ID: 1649.35

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

The following abbreviations are found throughout the QC report:

ND = Not Detected at or above the reporting limit
RPD = Relative Percent Difference
< = Less Than

QUALITY CONTROL DATA

DATE EXTRACTED: 06/24/94

AEN JOB NO: 9406277

CLIENT PROJ. ID: 1649.35

INSTRUMENT: C

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 3510 GCFID
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)
Date Analyzed	Sample Id.	Lab Id.	n-Pentacosane
06/28/94	LF-34	01	44
06/28/94	LF-35	02	39
06/28/94	LF-32	03	42
06/28/94	LF-31	06	64

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
n-Pentacosane	(30-100)

QUALITY CONTROL DATA

DATE EXTRACTED: 06/24/94
DATE ANALYZED: 06/27/94
CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
SAMPLE SPIKED: DI WATER
INSTRUMENT: C

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

ANALYTE	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Diesel	2.09	65	3	65-103	12

METHOD BLANK RESULT

Lab Id.	Extractable Hydrocarbons as Diesel (mg/L)	Extractable Hydrocarbons as Oil (mg/L)
062494-METHOD BLANK	ND	ND
Reporting Limit	0.05	0.2

QUALITY CONTROL DATA

INSTRUMENT: G

CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
AEN LAB NO: 0629-BLANK
DATE ANALYZED: 06/29/94

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	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

QUALITY CONTROL DATA

INSTRUMENT: G

CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
AEN LAB NO: 0630-BLANK
DATE ANALYZED: 06/30/94

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	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

QUALITY CONTROL DATA

INSTRUMENT: G

CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
AEN LAB NO: 0706-BLANK
DATE ANALYZED: 07/06/94

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	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

QUALITY CONTROL DATA

INSTRUMENT: G

AEN JOB NO: 9406277

CLIENT PROJ. ID: 1649.35

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8010
(WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION Sample Id.	Lab Id.	SURROGATE RECOVERY (PERCENT) Bromochloro-methane	1-Bromo-3-chloro-propane
06/30/94	LF-34	01	108	105
06/29/94	LF-35	02	150	129
06/29/94	LF-11R	04	143	122
06/30/94	LF-10	05	121	115
07/06/94	LF-31	06	123	111

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Bromochloromethane	(78-153)
1-Bromo-3-chloropropane	(74-143)

QUALITY CONTROL DATA

DATE ANALYZED: 06/29/94
SAMPLE SPIKED: LCS
CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
INSTRUMENT: G

LABORATORY CONTROL SAMPLE
METHOD: EPA 8010
(WATER MATRIX)

ANALYTE	Spike Added (ug/L)	Percent Recovery
1,1-Dichloroethene	50.0	65
Trichloroethene	50.0	88
Chlorobenzene	50.0	70

CURRENT QC LIMITS

Analyte	Percent Recovery
1,1-Dichloroethene	(37-156)
Trichloroethene	(54-122)
Chlorobenzene	(54-141)

QUALITY CONTROL DATA

DATE ANALYZED: 07/05/94
SAMPLE SPIKED: 9406373-01
CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
INSTRUMENT: G

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8010
(WATER MATRIX)

ANALYTE	Spike Added (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	79	8
Trichloroethene	50.0	90	13
Chlorobenzene	50.0	79	2

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(40-130)	18
Trichloroethene	(67-136)	17
Chlorobenzene	(59-123)	15

QUALITY CONTROL DATA

INSTRUMENT: F

CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
AEN LAB NO: 0629-BLANK
DATE ANALYZED: 06/29/94

BTEX AND HYDROCARBONS
METHOD: EPA 8020, 5030 GCFID
(WATER MATRIX)

	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-3	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2
PURGEABLE HYDROCARBONS AS:			
Gasoline		ND mg/L	0.05 mg/L

QUALITY CONTROL DATA

INSTRUMENT: F

CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
AEN LAB NO: 0630-BLANK
DATE ANALYZED: 06/30/94

BTEX AND HYDROCARBONS
METHOD: EPA 8020, 5030 GCFID
(WATER MATRIX)

	CAS #	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-3	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2
PURGEABLE HYDROCARBONS AS:			
Gasoline		ND mg/L	0.05 mg/L

QUALITY CONTROL DATA

CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277

INSTRUMENT: F

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8020, 5030 GCFID
(WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION Sample Id.	Lab Id.	SURROGATE RECOVERY (PERCENT) Fluorobenzene
06/29/94	LF-34	01	102
06/29/94	LF-35	02	100
06/29/94	LF-32	03	101
06/29/94	LF-31	06	102
06/30/94	TRIP62194	07	112

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Fluorobenzene	(70-115)

QUALITY CONTROL DATA

DATE ANALYZED: 06/28/94
SAMPLE SPIKED: LCS
CLIENT PROJ. ID: 1649.35

AEN JOB NO: 9406277
INSTRUMENT: F

LABORATORY CONTROL SAMPLE
METHOD: EPA 8020, 5030 GCFID
(WATER MATRIX)

ANALYTE	Spike Added (ug/L)	Percent Recovery
Benzene	10.6	104
Toluene	40.2	96
Hydrocarbons as Gasoline	500	103

CURRENT QC LIMITS

Analyte	Percent Recovery
Benzene	(65-122)
Toluene	(67-124)
Gasoline	(60-125)

*** END OF REPORT ***

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

9406277

Project No.: 1649.35	Field Logbook No.:	Date: 6/21/94	Serial No.: Nº 12074
Project Name: E. BAYBRIDGE	Project Location: EMERYVILLE, CA.		
Sampler (Signature): J.C. Ke			

SAMPLES						ANALYSES							
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601 BTEX	TPH-G	TPH-D	TPH-D	EPA 8010	8010 HOLD RB	RUSH	REMARKS
LF-34	6/21/94	11:20	01A-F	6		X	X	X	X	X			STANDARD TAT
LF-35		12:15	02A-F	6		X	X	X	X	X			
LF-32		13:55	03A-D	4		X	X	X	X	[illegible]			RESULTS TO RON GOLOUBOW
LF-11R		14:05	04AB	2						X			
LF-10		15:15	05AB	2						X			
LF-31		16:15	06A-F	6		X	X	X	X	[illegible]	RB ✓		TPH-d 3510 3550 GC FID
TRIP62194		09:00	07AB	2		X	X						" O 3510 3550 GC FID
													9 3550 5030 GC FID
													BTEX 8020
													NOTE: BILLING DIRECT TO CATELLUS ATT: KIM BRANDT
													7-6-94 Run LF-31 for 8010 per Ron Goloubow 48 hr TAT

RELINQUISHED BY: (Signature) J.C. Ke	DATE 6/22/94	TIME 9:15	RECEIVED BY: (Signature) Michael E McMullen	DATE 6/22/94	TIME 9:15
RELINQUISHED BY: (Signature) Michael E McMullen	DATE 6/22/94	TIME 9:50	RECEIVED BY: (Signature) Gina Gillespie	DATE 6-22-94	TIME 0950
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, California 94608
(510) 652-4500

Analytical Laboratory:
AEN
PLEASANT HILL, CA.

Shipping Copy (White) Lab Copy (Green) File Copy (Yellow) Field Copy (Pink)

FORM NO. 86/COC/ARF