

20326



April 23, 2002

1649.02-002

Ms. Donna Drogos
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Second Floor
Alameda, California 94502

APR 25 2002

Subject: Request for Case Closure of the Former Bashland Oil Site, East Baybridge Center, Emeryville and Oakland, California

Dear Ms. Drogos:

On behalf of Catellus Development Corporation, Levine · Fricke · Recon Inc. (LFR) has prepared this letter report documenting the analytical results of a groundwater sample taken from well MW-31 located at the former Bashland Oil Site (the "Site") for the analysis of methyl tertiary-butyl ether (MTBE) using EPA test method 8260B. The groundwater sample was collected in response to a telephone conversation between Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHCA) and Mr. Ron Goloubow of LFR on April 8, 2002. Based on the April 8, 2002 conversation, it is our understanding that the analysis of a groundwater sample for MTBE was the final information required by the ACHCA to close this case.

Scope of Work

The scope of work was designed to address issues raised by the ACHCA following their review of a letter requesting case closure (LFR 1997) and included the following tasks:

- collect one groundwater sample from groundwater monitoring well MW-31, located downgradient from the UST formerly located at the Bashland Oil Site ("the Site")
- submit the sample to a state-certified laboratory for MTBE analysis
- prepare this letter report presenting the sample results

As discussed with Ms. Hugo on April 8, 2002, collecting a groundwater sample from monitoring well MW-31 for MTBE analysis will provide the ACHCA with the final data required for case closure.

Groundwater Sample Collection and Laboratory Analyses

To assess the presence of MTBE in shallow groundwater at the Site, one groundwater sample was collected from monitoring well MW-31 on April 9, 2002. Before collecting the sample, three well-casing volumes (a total of approximately 9 gallons) of groundwater were removed from the well. The temperature, specific conductivity, and pH were measured and recorded in a water quality-sampling sheet included as Attachment 1. The purged water was temporarily stored in a 55-gallon drum and was discharged into the East Baybridge groundwater extraction and treatment system on April 9, 2002. The sample was collected by gently pouring the water from a disposable bailer into 40-milliliter, laboratory-supplied volatile organic analysis sample containers. The sample containers were labeled with the well identification number, the time and date of sample collection, the analysis requested, and the initials of the sampler. The sample containers were stored in an ice-chilled cooler and maintained under standard chain-of-custody procedures until they were submitted to Curtis and Tompkins, a state-certified analytical laboratory located in Berkeley, California. The sample was analyzed for MTBE using EPA Method 8260B within a standard turnaround time.

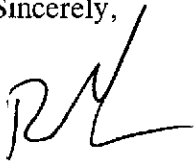
Analytical Results

MTBE was not detected above laboratory reporting limits of 0.5 micrograms per liter ($\mu\text{g/L}$) in the groundwater sample collected from well MW-31. The analytical report for this sample is included as Attachment 2.

Based on MTBE not being present above analytical reporting limits coupled with the information previously provided to the ACHCA requesting case closure (LFR1997; enclosed), LFR recommends that the UST case for this Site be closed and that no further action is warranted.

If you have any questions or need any additional information, please call me at (510) 596-9550.

Sincerely,



Ron Goloubow
Senior Geologist



Donald T. Bradshaw, R.G.,
Principal Hydrogeologist

cc: Ms. Sandra Stevens - Catellus Development

REFERENCES

LFR Levine-Fricke. 1997. Request for Case Closure of the Former Bashland Oil Site, East Baybridge Center, Emeryville and Oakland, California. June 3.

ATTACHMENT 1

WATER-QUALITY SAMPLING FORM



WATER-QUALITY SAMPLING LOG

Project No. 1649.21 Date 4-9-02 Page 1 of 1
 Project Name East Bay Bridge Sampling Location Emeryville
 Sampler's Name MXD Sample No. LF-31 FB
 Sampling Plan By JCK Dated _____ C.O.C. No. _____ DUP
 Purge Method: Centrifugal Pump Disposable Bailer Hand Bail Submersible Pump Teflon Bailer Other _____
 Purge Water Storage Container Type _____ Storage Location _____
 Date Purge Water Disposed _____ Where Disposed on-site treatment

Analyses Requested MTBE - 2260 No. and Type of Bottles Used 3V0A
 Lab Name _____
 Delivery By Courier Hand
 Well No. LF-31 Depth of Water 7.43
 Well Diameter _____ Well Depth 23.10
 2" (0.16 gal/feet) 5" (1.02 gal/feet) Water Column Height 15.77
 4" (0.65 gal/feet) 6" (1.47 gal/feet) Well Volume 2.25

80% DTW

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	Totalizer Reading	Temperature (C°)	pH (SU)	Cond (µmhos)	Turb (NTU)	Remarks
1319		7.43							Start
1323			2.25		16.3	6.59	468		cloudy
1325			4.50		16.3	6.50	457		"
1328			6.75		16.3	6.36	451		"
1331			9.0		16.2	6.34	446		"
1335		8.50							Sample

Continue remarks on reverse, if needed.

ATTACHMENT 2

LABORATORY REPORT



ANALYTICAL REPORT

Prepared for:

LFR Levine Fricke
1900 Powell Street
12th Floor
Emeryville, CA 94608


Date: 19-APR-02
Lab Job Number: 157993
Project ID: 1649.21-002
Location: East Bay Bridge

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:


Project Manager

Reviewed by:


Operations Manager

This package may be reproduced only in its entirety.

Laboratory Numbers: 157993
Client: LFR-Levine Fricke
Location: East Bay Bridge
Project#: 001-1649.21
COC#: 100021

Sampled Date: 04/09/02
Received Date: 04/09/02
Date Issued: 04/19/02

CASE NARRATIVE

This hardcopy data package contains samples and QC results for one water sample, which was received from the site referenced above on April 09, 2002. The sample was received cold and intact. All data were faxed to Ron Goloubow on April 16, 2002.

MTBE by EPA 8260B: No analytical problems were encountered.

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

SAMPLE COLLECTOR DLFR <small>LEVINE-FRICKE</small> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500 Fax: (510) 652-2246	PROJECT NO 001-1649.21	SECTION NO 002	DATE 4/9/02	SAMPLER'S INITIALS [Signature]	SERIAL NO No 100021
	PROJECT NAME East Bay Bridge			SAMPLER (Signature) [Signature]	

SAMPLE			ANALYSES										REMARKS														
Sample ID	Date	Time	Lab Sample No	No. of Containers	TYPE		VOCs					Metals			TAT												
					Solid	Water	TPHid (EPA 8015M)	TPHy (EPA 8015M)	BTEX (EPA 8015M)	VOCs (EPA 821-1002)	Metals (EPA 8210/824)	Standard	RUSH	HOLD		8160 List	8240 List	8010 List	604 List	CAM17	RCRA	LEED					
LF-31	4/9/02	1335	3	X			X																			CLN FOR MTBE ONLY	

Received On Ice
 Cold Ambient Intact

Preservation Correct?
 Yes No N/A

SAMPLE RECEIPT: <input type="checkbox"/> Intact <input type="checkbox"/> Cold <input type="checkbox"/> On Ice <input type="checkbox"/> Ambient Preservative Correct? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Cooler Temp Cooler No:	METHOD OF SHIPMENT LAB REPORT NO	RELINQUISHED BY (SIGNATURE) (DATE)	RELINQUISHED BY: (SIGNATURE) (DATE)	RELINQUISHED BY (SIGNATURE) (DATE)
	FAX COC CONFIRMATION TO	FAX RESULTS TO: SEND HARD COPY TO: SEND EDD TO: EMV.LABEDDS.COM	RECEIVED BY: (SIGNATURE) (DATE)	RECEIVED BY: (SIGNATURE) (DATE)	RECEIVED BY: (SIGNATURE) (DATE)

COOLER RECEIPT CHECKLIST

Login#: 157493 Date Received: 4-9-02 Number of Coolers: 1
Client: LFR Project: 164921-002 (paper work = 001-1649.21)

A. Preliminary Examination Phase

Date Opened: 4-9-02 By (print): Troy Windsor (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc.)?..... YES NO
- If YES, enter carrier name and airbill number: _____
2. Were custody seals on outside of cooler?..... YES NO
- How many and where? _____ Seal date: _____ Seal name: _____
3. Were custody seals unbroken and intact at the date and time of arrival?..... YES NO N/A
4. Were custody papers dry and intact when received?..... YES NO
5. Were custody papers filled out properly (ink, signed, etc.)?..... YES NO
6. Did you sign the custody papers in the appropriate place?..... YES NO *Received on counter*
7. Was project identifiable from custody papers?..... YES NO
- If YES, enter project name at the top of this form.
8. If required, was sufficient ice used? Samples should be 2-6 degrees C. YES NO
- Type of ice: wet Temperature: cold

B. Login Phase

Date Logged In: 4-9-02 By (print): Troy Windsor (sign) [Signature]

1. Describe type of packing in cooler: vials in plastic bag
2. Did all bottles arrive unbroken?..... YES NO
3. Were labels in good condition and complete (ID, date, time, signature, etc.)?..... YES NO
4. Did bottle labels agree with custody papers?..... YES NO
5. Were appropriate containers used for the tests indicated?..... YES NO
6. Were correct preservatives added to samples?..... YES NO
7. Was sufficient amount of sample sent for tests indicated?..... YES NO
8. Were bubbles absent in VOA samples? If NO, list sample Ids below..... YES NO
9. Was the client contacted concerning this sample delivery?..... YES NO
- If YES, give details below.
- Who was called? _____ By whom? _____ Date: _____

Additional Comments:

Purgeable Aromatics by GC/MS

Lab #:	157993	Location:	East Bay Bridge
Client:	DPR Levine Fricke	Prep:	EPA 5030B
Project#:	1649.01-002	Analysis:	EPA 8260B
Field ID:	DP 31	Batch#:	71554
Lab ID:	157993-001	Sampled:	04/09/02
Matrix:	Water	Received:	04/09/02
Units:	ug/l	Analyzed:	04/11/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane d4	111	77-130
Toluene d8	99	80-120
Bromofluorobenzene	98	80-120



Purgeable Aromatics by GC/MS

Lab #:	157893	Location:	East Bay Bridge
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	1649.31 002	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	00176481	Batch#:	71554
Matrix:	Water	Analyzed:	04/11/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	RRC	Limite
1,2-Dichloroethane d4	104	77-130
Toluene d8	101	80-120
Bromofluorobenzene	104	80-120

Purgeable Aromatics by GC/MS

Lab #:	157993	Location:	East Bay Bridge
Client:	LPR Levine Fricke	Prep:	EPA 5030B
Project#:	1049.11-002	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	Q170011	Batch#:	71554
Matrix:	Water	Analyzed:	04/11/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	77-130
Toluene-d8	92	80-120
Bromofluorobenzene	113	80-120

Purgeable Aromatics by GC/MS

Lab #:	157993	Location:	East Bay Bridge
Client:	LFP Levine Fricke	Prep:	EPA 5030B
Project#:	1649.21-002	Analysis:	EPA 8260B
Type:	LC8	Diln Fac:	1.000
Lab ID:	001/5491	Batch#:	71554
Matrix:	Water	Analyzed:	04/11/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	50.84	102	54-131

Surrogate	%REC	Limits
1,2-Dichloroethane d4	115	77-130
Toluene d8	105	80-120
Bromofluorobenzene	112	80-120

Purgeable Aromatics by GC/MS

Lab #:	157993	Location:	East Bay Bridge
Client:	LFP Levine Fricke	Prep:	EPA 5030B
Project#:	15-19-21-002	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
SS Lab ID:	15-8011-005	Batch#:	71554
Matrix:	Water	Sampled:	04/09/02
Units:	ug/L	Received:	04/10/02

Type: MS Analyzed: 04/11/02
 Lab ID: QC 75831

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.1100	50.00	45.01	90	55-132
Surrogate	%REC	Limits			
1,2-Dichloroethane-d4	103	77-130			
Toluene-d8	99	80-120			
Bromofluorobenzene	95	80-120			

Type: MSE Analyzed: 04/12/02
 Lab ID: Q7175683

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	49.76	100	55-132	10	20
Surrogate	%REC	Limits				
1,2-Dichloroethane-d4	101	77-130				
Toluene-d8	94	80-120				
Bromofluorobenzene	98	80-120				

June 3, 1997

1649.97-002

Ms. Susan Hugo
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Second Floor
Alameda, California 94502

Subject: Request for Case Closure of the Former Bashland Oil Site, East Baybridge Center, Emeryville and Oakland, California

Dear Ms. Hugo:

On behalf of Catellus Development Corporation, Levine·Fricke·Recon Inc. (LFR) has prepared this letter requesting case closure of the former Bashland Oil Site, located at East Baybridge Center, Emeryville and Oakland, California ("the Site"; Figure 1). Bashland Oil was formerly located at the southwest corner of the intersection of 40th and Hollis streets in Emeryville, California (Figure 2). Currently, well MW-31 is used to monitor shallow groundwater quality in the vicinity of the Site. The request for case closure is based on the remedial activities conducted at the Site and the analytical results of soil and groundwater samples collected at the Site following source removal activities in 1992. As you are aware, quarterly groundwater monitoring has been conducted at the Site since 1993. Monitoring results have indicated the presence of only relatively low concentrations of total petroleum hydrocarbons as diesel (TPHd). Benzene, toluene, ethylbenzene, and total xylenes (BTEX) compounds are not present above their analytical detection limits.

Source Removal

Three underground storage tanks (USTs) and a fuel dispenser were formerly located at the Site (Figure 2). Between March 23 and May 7, 1992, one 1,200-gallon-capacity oil UST and two 12,000-gallon-capacity fuel USTs were removed from the Site under the supervision of LFR. The tank removal was conducted in accordance with permits obtained from the City of Emeryville Fire Department and Alameda County Health Care Services Agency (ACHCSA). Additionally, approximately 200 cubic yards of petroleum-affected tank backfill soil was excavated and subsequently encapsulated at the East Baybridge Center in accordance with LFR's report entitled "Soils Management Plan for Petroleum Hydrocarbon-Affected Soils, Yerba Buena/East Baybridge Center, Emeryville and Oakland, California," dated November 30, 1994. Details regarding the removal of the tanks were presented in the LFR report entitled "Tank Removal Report, Bashland Property, 4015 Hollis Street, Emeryville, California," dated June 24, 1992.

Soil Sample Analyses

In accordance with the ACHCSA permit for tank removal, soil samples were collected from the excavation sidewalls or floor at locations illustrated on Figure 3. The samples were analyzed for TPH, TPHd, TPH as oil (TPHo), TPH as gasoline (TPHg), and BTEX. Samples collected from beneath the fuel dispenser were analyzed for volatile organic compounds (VOCs) using EPA Method 8010, total oil and grease (TOG) using EPA Method 5520 E and F, semi-volatile organic compounds (SVOCs) using EPA Method 8270, and cadmium, total chromium, zinc and nickel. Analytical results for these samples are summarized on Table 1.

Analytical results of the six soil samples collected from the excavation sidewalls indicated the following:

- TPHg, TPHo, and BTEX were not detected above laboratory detection limits.
- TPHd was not detected above laboratory detection limits in four samples. TPHd was detected at a concentration of 2 milligrams per kilogram (mg/kg) in two samples.
- Total lead concentrations were less than 12 mg/kg, which is below California Environmental Protection Agency's (Cal-EPA's) Total Threshold Limit Concentration (TTLC) of 1,000 mg/kg for hazardous waste.

Analytical results of the two samples collected from the excavation floor (beneath the 1,200-gallon-capacity tank) indicated the following:

- TPHd, TPHg and BTEX were not detected above laboratory detection limits.
- TPHo was not detected above laboratory detection limits in one sample; TPHo was detected at a concentration of 1,500 mg/kg in one sample.
- TOG was detected at concentrations between 20 and 1,300 mg/kg.
- TPH was detected above the laboratory detection limit in one sample, at a concentration of 1,200 mg/kg in one sample.
- Halogenated VOCs were not detected above laboratory detection limits.
- SVOCs were not detected above the laboratory detection limits in the one sample analyzed for these compounds.
- Cadmium, chromium, nickel, lead, and zinc concentrations were within expected background ranges and below Cal-EPA's TTLCs of 100 mg/kg, 2,500 mg/kg, 2,000 mg/kg, 1,000 mg/kg, and 5,000 mg/kg, respectively, for hazardous waste.

One soil sample, P-1-1.5, was collected at a depth of 1.5 feet below ground surface (bgs) directly beneath the former fuel dispenser island. This sample did not contain TPHg, BTEX, VOCs, or SVOCs above analytical detection limits. The soil sample did contain low concentrations of TPHo

(86 mg/kg), TPHd (8 mg/kg), TOG (70 mg/kg), and TPH (50 mg/kg). Concentrations of metals were below TTLC criteria. Chemical analysis results are summarized in Table 1.

Groundwater Sample Analyses

Grab groundwater samples were analyzed for TPHd, TPHo, and TPHg using EPA Method 8015 (modified), for VOCs using EPA Method 8240, for TOG using EPA Method 5520 C, and for TPH using EPA Method 5520 F. Analytical results for these samples are summarized on Table 2.

Analytical results for the two grab groundwater samples indicated the following:

- TPHg, TOG, and TPH were not detected above laboratory detection limits.
- TPHd was detected at low concentrations in both water samples (1.2 and 0.3 milligrams per liter [mg/l]).
- TPHo was not detected above laboratory detection limits in the sample collected from beneath the former location of the westernmost 12,000-gallon-capacity tank. TPHo was detected at a concentration of 0.4 mg/l in the sample collected from beneath the former location of the easternmost 12,000-gallon-capacity tank.
- Low concentrations of cis-1,2-dichloroethene (cis-1,2-DCE; 0.008 mg/l and 0.007 mg/l) and trichloroethene (TCE; 0.022 mg/l and 0.016 mg/l) were detected in both samples.

Groundwater Monitoring

One groundwater monitoring well (LF-31) was installed in February 1993 within 20 feet of the former USTs. The well was abandoned in June 1994 to accommodate site development and was replaced by well MW-31 in November 1995. Well MW-31 is located approximately 25 feet from former well LF-31. Monitoring has been conducted since 1993 in accordance with LFR's report to the ACHCSA entitled "Groundwater Monitoring Plan for the East Baybridge Center, Emeryville and Oakland, California," dated December 19, 1994.

Between February 1993 and February 1997, 15 samples (including 3 duplicates) were collected from this well during quarterly monitoring. The samples were analyzed for TPH (6 samples) TPHd (14 samples), TPHo (9 samples), TPHg and BTEX (4 samples), and VOCs (10 samples). Analytical results for these samples are summarized on Table 3. As shown on Table 3, TPHd and TPHo are the only fuel compounds that have been detected.

TPHd was reported at concentrations ranging from below the analytical detection limit (2 samples) to 0.54 mg/l (in the sample collected in September 1996). As indicated in Table 3 and Figure 4, concentrations for TPHd have remained relatively stable (within the same order of magnitude) over the four years of monitoring. Figure 4 presents groundwater elevation measurements and concentrations of TPHd detected in samples collected from well MW-31. As illustrated on

Figure 4, there does not appear to be a correlation between fluctuations in the groundwater elevation and the concentration of TPHd detected in groundwater samples.

TCE and cis-1,2-DCE have been detected in groundwater samples collected from well MW-31. VOC concentrations of up to 0.02 mg/l (TCE in the primary and duplicate samples collected in May 1993) have been detected in groundwater samples collected from well MW-31. VOC concentrations of up to 7.6 mg/l have been detected in groundwater samples collected from well LF-10, located near the intersection of Horton and 40th streets. The location of this well is presented in Figure 5. It appears that the VOCs have migrated from upgradient, off-site sources, based on the following:

- the presence of VOCs in samples collected from wells located upgradient of the Site at concentrations significantly higher than in wells downgradient of the Site.
- the absence of VOCs in soil samples collected at the Site
- the upgradient location of known off-site sources of VOCs

The Regional Water Quality Control Board (RWQCB) and ACHCSA have reviewed the available data regarding the presence and distribution of VOCs detected in groundwater samples collected in this area of the East Baybridge development. Based on their review, the agencies concur that the VOCs detected in samples collected from groundwater monitoring wells located within this area have migrated from an upgradient, off-site source or sources. (Reference letter from the RWQCB to Catellus dated, May 11, 1994)

Rationale for Case Closure

BTEX and TPHg were not detected above laboratory detection limits in soil samples collected during the removal of the USTs. TPHd was detected at low concentrations in two of six soil samples collected during the removal of the USTs. TPHo (1,500 mg/kg) and TOG (1,200 and 1,300 mg/kg) were detected at in one soil sample collected at a depth of 8 feet bgs (Table 1). Soil in the vicinity of this sample was excavated and confirmation samples collected beneath these areas of additional excavation did not contain any analytes above their analytical detection limits.

Analytical results for groundwater samples collected at the Site indicate that shallow groundwater contains detectable concentrations of TPHd at concentrations consistently below 0.50 mg/l. Because concentrations of TPHd are relatively stable (within the same order of magnitude) in groundwater samples collected from well MW-31, additional groundwater samples collected from well MW-31 will not increase our understanding of the distribution to fuel-related compounds in groundwater at the Site. Therefore, we recommend that the Site be considered for closure status based on the following:

- the source of the TPH (the USTs) has been removed
- TPH-affected soil was excavated at the time of UST removal

- low concentrations of TPHd in groundwater in the vicinity of the former USTs
- TPHg and BTEX have never been detected in groundwater samples collected from well MW-31, or in grab groundwater samples, above analytical detection limits

In addition, site data indicate that low concentrations of TPHd are not likely to pose a significant health risk, and in light of developing policy concerning cleanup of low-risk fuel UST sites, additional monitoring is not recommended for the Site.

Although we are requesting that the Site be officially closed and a closure letter issued, we will retain well MW-31 for groundwater elevation measurement taken as part of the quarterly groundwater monitoring program for East Baybridge Center.

I will call you during the week of June 2, 1997 to obtain any comments you have on this request for case closure. If you have any questions or comments concerning this letter or the project, please call me at (510) 652-4500.

Sincerely,



Ron Goloubow
Senior Project Geologist

Enclosure

cc: James Adams, Catellus Development Corporation
Sumadhu Arigala, Regional Water Quality Control Board

Table 1
Soil Chemical Analysis Results
April 7, 1992
Bashland Property, Emeryville, California
(All results expressed in milligrams per kilogram [mg/kg])

Sample ID	EPA Method 8015			EPA Method 8020				EPA Method 5520E	EPA Method 5520F	EPA Method		Cd	Cr	Ni	Pb	Zn
	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene	Oil and Grease	TPH	8010	8270					
Excavation Samples																
AEW-1-W-9	<5	<1	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	8	NA
AEW-2-S-9	<5	2	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	8	NA
AEW-3-S-9	<5	<1	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	11	NA
B/CEB-4-W-8*	<5	<1	<0.2	<0.005	<0.005	<0.005	<0.005	20	<10	<5	NA	0.4	46	41	10	45
B/CEB-5-E-8*	1,500	<1	<0.2	<0.005	<0.005	<0.005	<0.005	1,300	1,200	<5	ND	<0.2	34	17	9	30
DEW-6-W-9	<5	2	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	11	NA
DEW-7-S-9	<5	<1	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	10	NA
DEW-8-E-9	<5	<1	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	9	NA
P-1-1.5	86	8	<0.2	<0.005	<0.005	<0.005	<0.005	70	50	<5	ND	0.3	47	34	8	30
Stockpile Samples																
SP1	<50	<10	1.0	<0.005	0.009	0.036	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP2	<50	18	2.4	<0.005	0.018	0.107	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP3	<50	<10	1.1	<0.005	0.012	0.092	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP4	<50	<10	<1	<0.005	0.013	0.097	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

NA - Not analyzed

ND - Not detected

TPH - Total Petroleum Hydrocarbons.

* - Soil beneath and adjacent to sampling location excavated and removed on April 27, 1992.

Excavation soil sample locations shown on Figure 3.

Soil samples analyzed by Quanteq Laboratory of Pleasant Hill, California and Precision Analytical Laboratory of Richmond, California, both state-certified laboratories.

See laboratory data sheets for EPA Method 8010 analytes.

See laboratory data sheets for EPA Method 8270 analytes and detection limits

Table 2
 Water Chemical Analysis Results
 April 8, 1992
 Bashland Property, Emeryville, California
 (All results expressed in milligrams per liter [mg/l])

Sample ID	EPA Method 8015			EPA Method 624	EPA Method 5520C	EPA Method 5520F
	TPH as Oil	TPH as Diesel	TPH as Gasoline		Oil and Grease	Total Petroleum Hydrocarbons
AGW(1)	<0.1	1.2	<0.5	cis-1,2-Dichloroethene Trichloroethene	0.007 0.016	<0.5 <0.5
DGW(2)	<0.4	0.3	<0.5	cis-1,2-Dichloroethene Trichloroethene	0.008 0.022	<0.5 <0.5

NOTES:

AGW(1) - Grab groundwater sample collected beneath former location of westernmost 12,000-gallon-capacity tank.

DGW(2) - Grab groundwater sample collected beneath former location of easternmost 12,000-gallon-capacity tank.

Only detectable compounds are listed for EPA Method 624; see laboratory data sheets.

Soil samples analyzed by Quanteq Laboratories (now American Environmental Network) of Pleasant Hill, California, a state-certified laboratory.

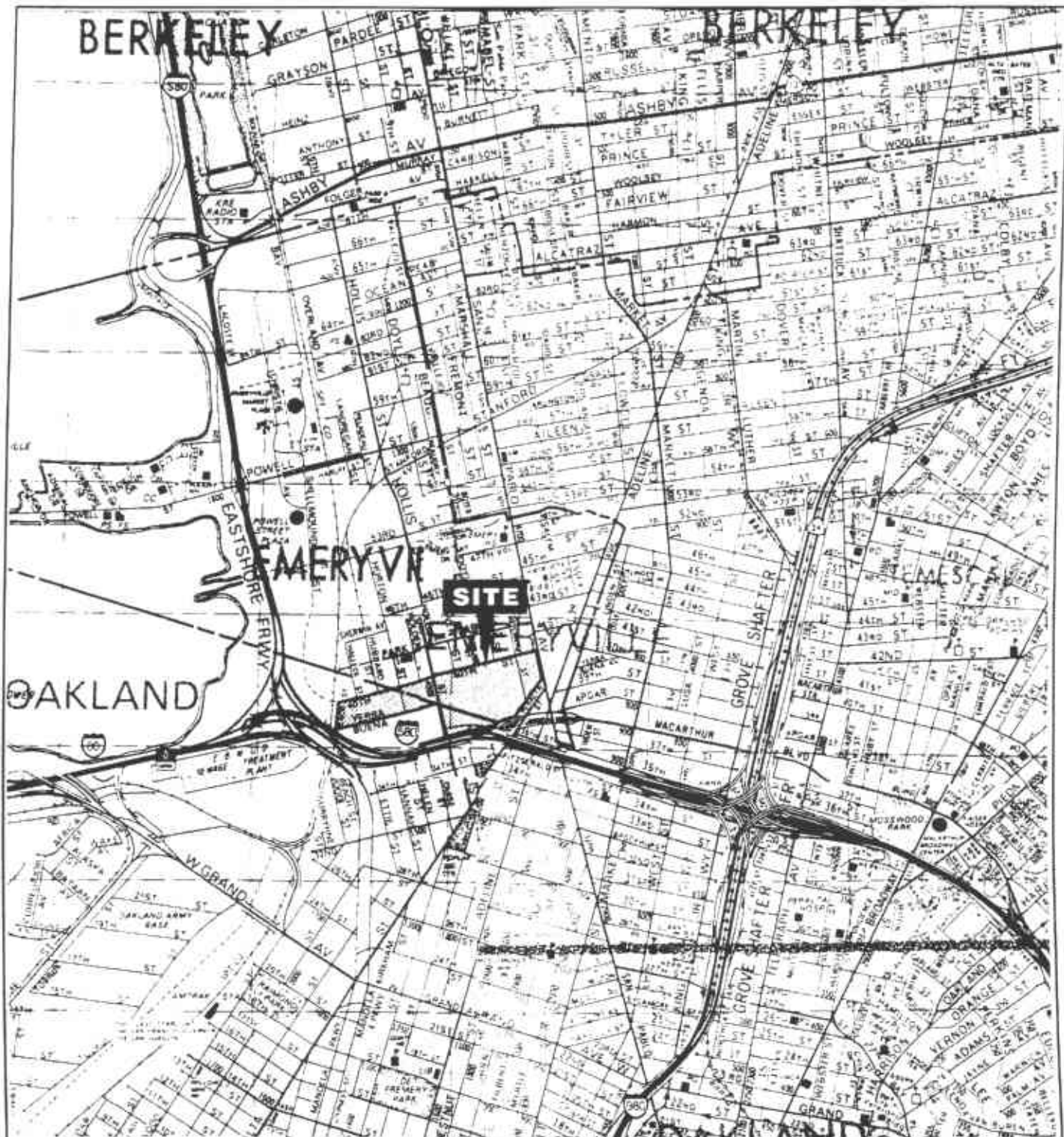
Table 3
Chemical Analysis Results for Monitoring Well MW-31
Former Bashland Company Property
(results in parts per million [ppm])

Date Sampled	Dups	Lab	Notes	TRPH	THPd	TPHo	THPg	Benzene	Toluene	Ethylbenzene	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
26-May-93	dup			<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
14-Jul-93	dup	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
11-Mar-94	dup	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
27-Dec-95		AEN		NA	0.300	<0.200	NA	NA	NA	NA	NA	0.018	0.009
27-Feb-96		AEN		NA	0.370	<0.2	<0.05	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
30-Apr-96		AEN		NA	0.190	<0.2	NA	NA	NA	NA	NA	0.015	0.017
05-Sep-96		AEN		NA	0.540	<0.2	NA	NA	NA	NA	NA	NA	NA
17-Dec-96		A2AC		NA	<0.01	<0.2	NA	NA	NA	NA	NA	0.008	NA
19-Feb-97		AEN		NA	0.490	<0.2	NA	NA	NA	NA	NA	NA	NA

Data entered by _____ Data proofed by E.G.

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

(1) Groundwater 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 detected at a concentration of 0.0063 ppm.
 (3) Chloroform detected at 0.0012 ppm.
 (4) Chloroform detected at 0.0014 ppm.



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Alameda County
1995 Edition



0 1/2 1 MILE

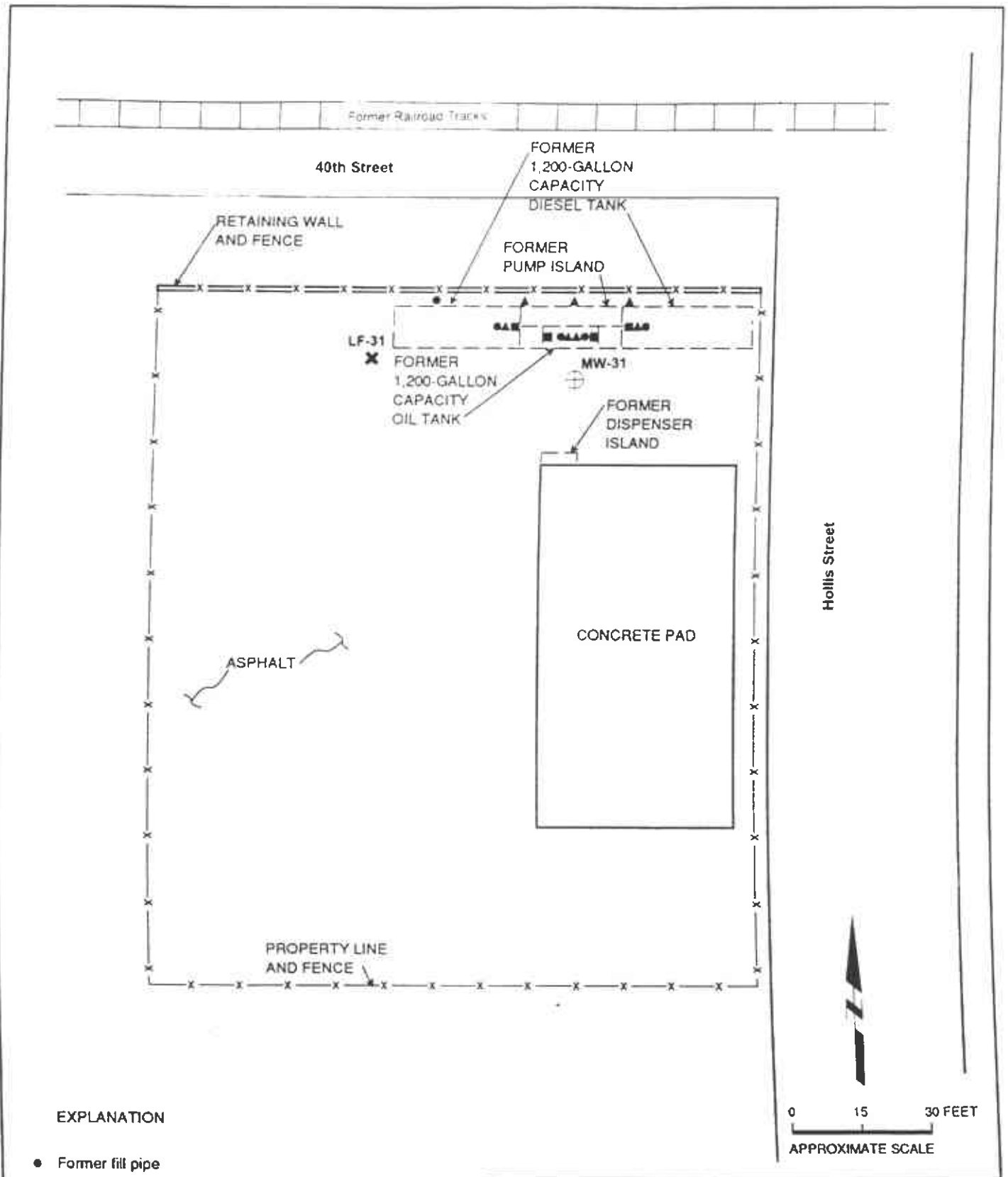
EAST BAYBRIDGE CENTER

Site Location Map

Levine-Fricke-Recon

Figure 1

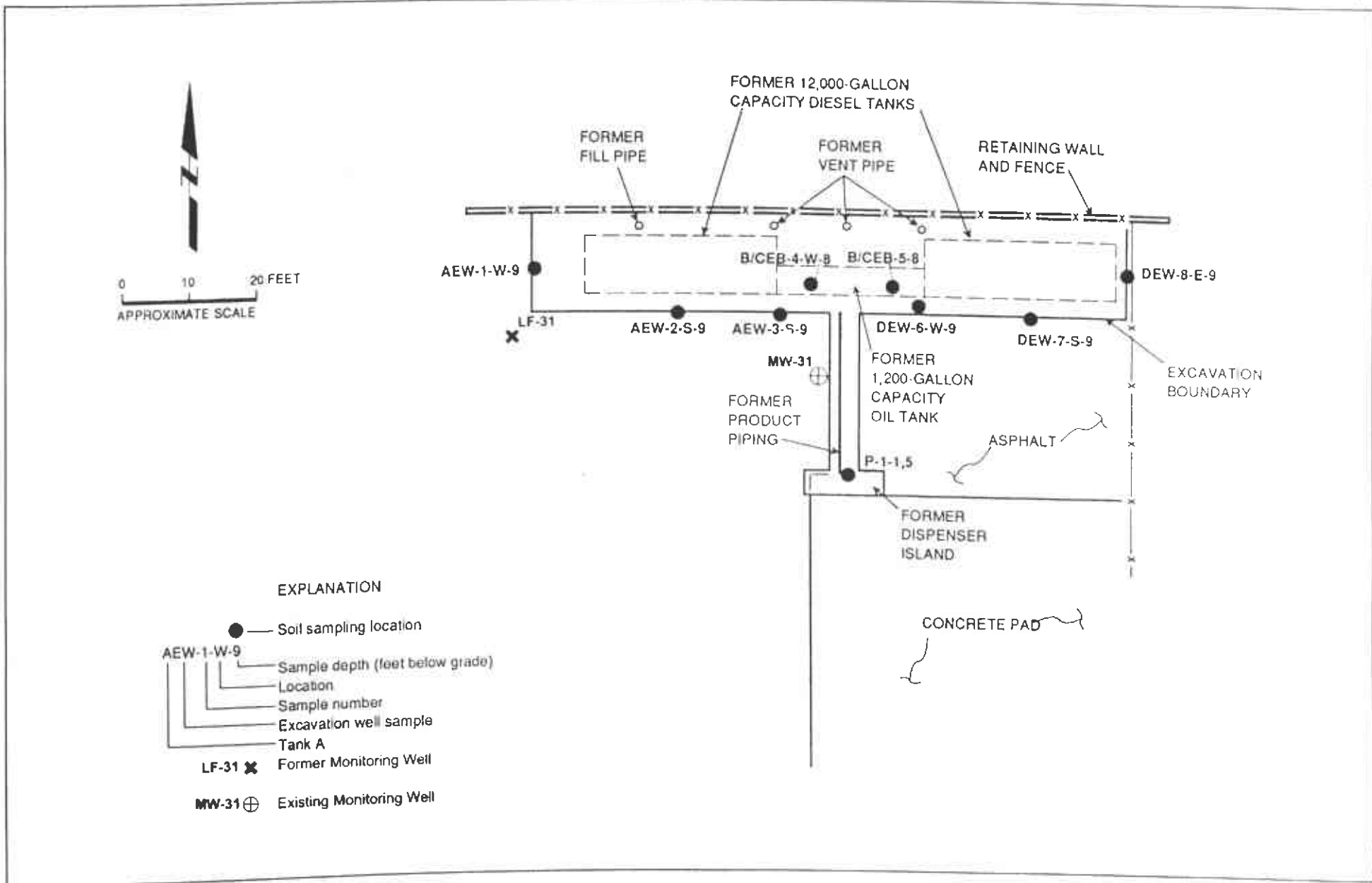
Project No 1649



EXPLANATION

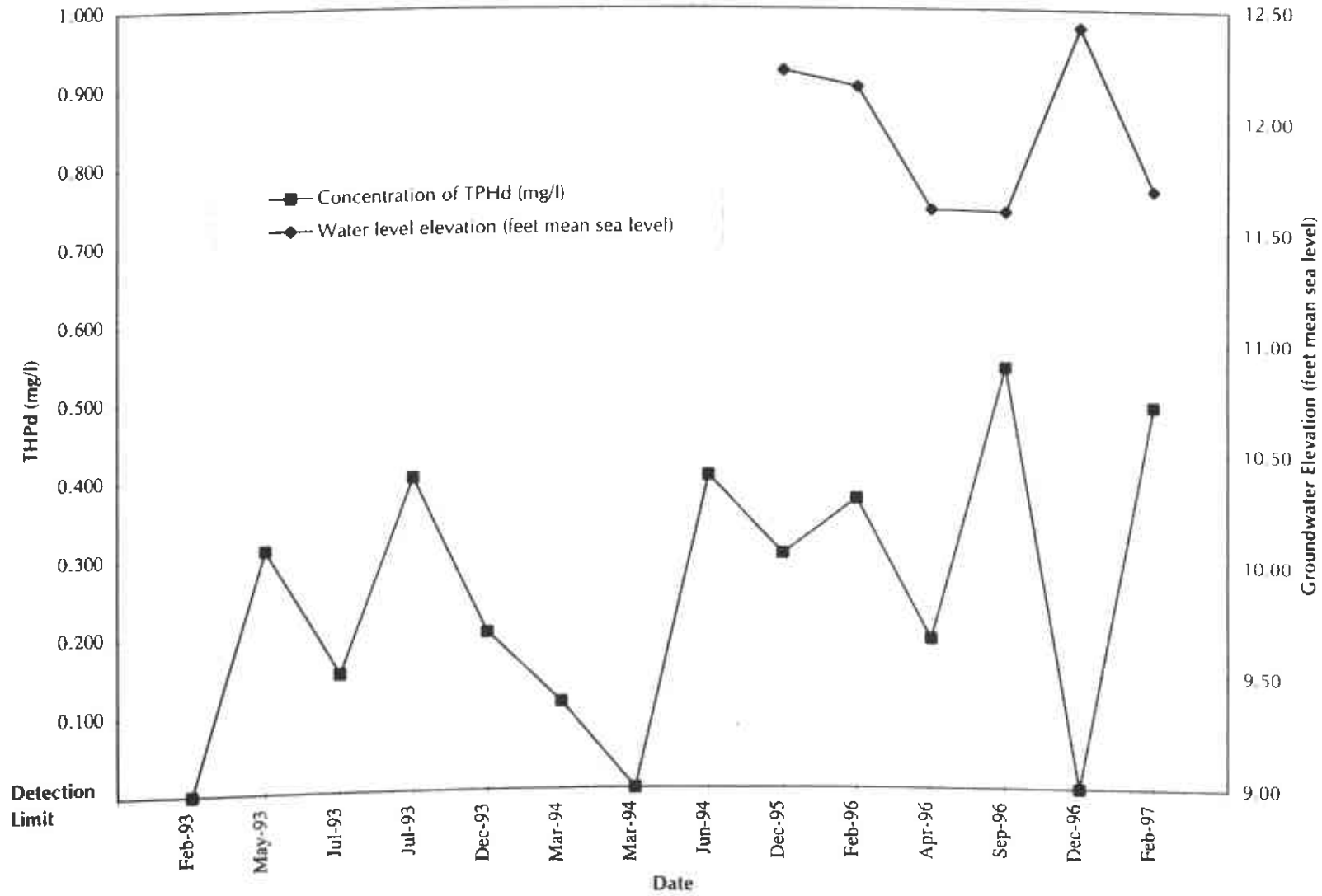
- Former fill pipe
- ▲ Former vent pipe
- Former product pipe
- ✕ Former Monitoring Well
LF-31
- ⊕ Existing Monitoring Well
MW-31

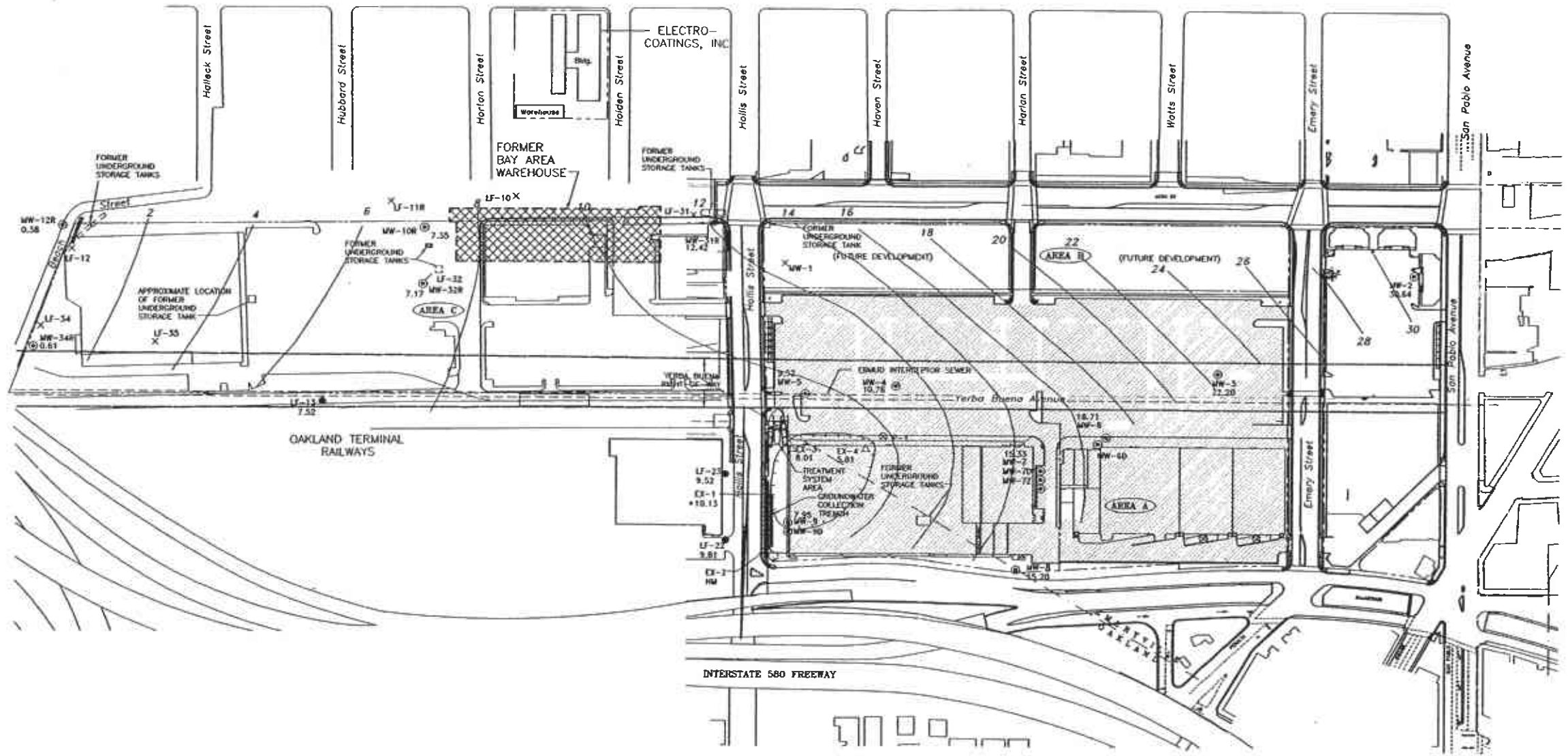
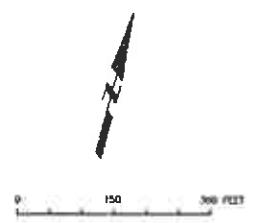
**Former Bashland Oil
Site Plan and Tank Locations**



Site Plan Showing Former Tank and Soil Sampling Locations and Excavation Boundaries at the Former Bashland Oil Site

Figure 4
Total Petroleum Hydrocarbons as Diesel and Groundwater Elevation in Well MW-31
Located On The Former Bashland Company Property





- EXPLANATION**
- ⊙ MONITORING WELL LOCATION
 - △ EXTRACTION WELL
 - ⊗ PROPOSED MONITORING WELL LOCATION
 - × ABANDONED GROUNDWATER MONITORING WELL
 - GROUNDWATER ELEVATION CONTOUR (FEET MSL)
 - APPROXIMATE PROPERTY LINE
 - 29.31 GROUNDWATER ELEVATION
 - APPROXIMATE LOCATION OF PETROLEUM-AFFECTED SOIL CONTAINED ON SITE
 - ELEVATION NOT USED IN CONTOURING
 - DEPRESSION IN GROUNDWATER ELEVATION
 - NM NOT MEASURED

REVISION	DESIGN	DRAWN	CHECKED	DATE

SCALE : _____
 DESIGN : _____
 DRAWN : _____
 CHECKED : _____

Levine-Fricke-Recon
 ENGINEERING, HYDROGEOLOGY & APPLIED SCIENTISTS
 Emeryville, California

CATELLUS DEVELOPMENT CORPORATION

YERBA BUENA/EAST BAYBRIDGE DEVELOPMENT
 Figure 5
 SITE PLAN SHOWING FORMER BAPLAND OIL SITE AND GROUNDWATER ELEVATIONS IN SHALLOW WELLS
 DECEMBER 13, 1996

Project No. 1649
 Date MAY 97
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