ST10 4251

RO# 326

Levine·Fricke·Recon
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

June 3, 1997

1649.97-002

MAR 25 2002

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])***

| | EPA Method 8015 | | | EPA Method 8020 | | | | EPA Method 5520E | EPA Method 5520F | EPA Method | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TPH as Oil | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Xylenes | Ethyl-benzene | Oil and Grease | TPH | 8010 | 8270 | Cd | Cr | Ni | Pb | Zn |
| **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 | 0.007 | <0.5 | <0.5 |
| | | | | Trichloroethene | 0.016 | | |
| DGW(2) | <0.4 | 0.3 | <0.5 | cis-1,2-Dichloroethene | 0.008 | <0.5 | <0.5 |
| | | | | Trichloroethene | 0.022 | | |

**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 | 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 |
| 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.

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.

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.

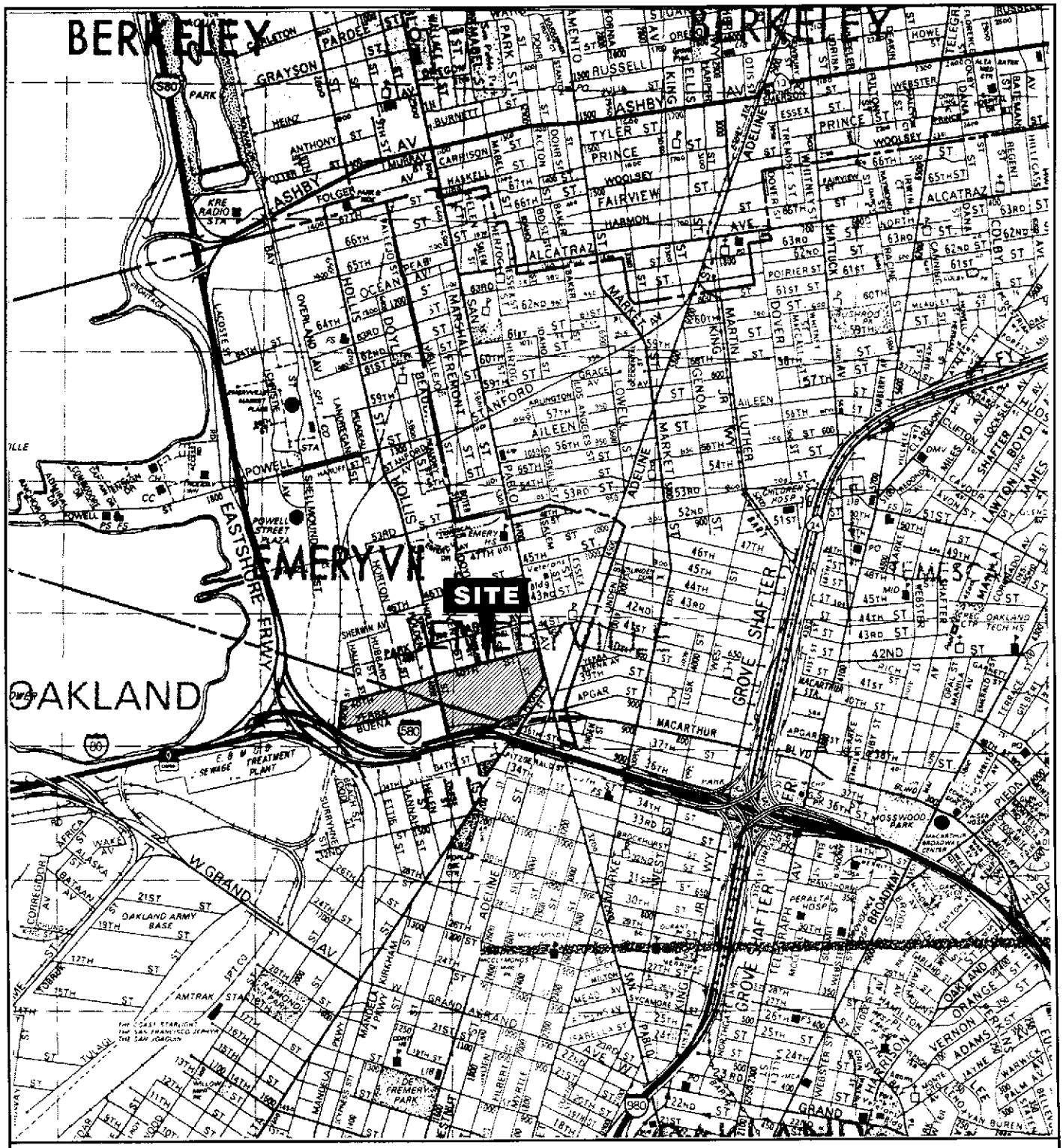
NA - Not analyzed.

(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.






EAST BAYBRIDGE CENTER

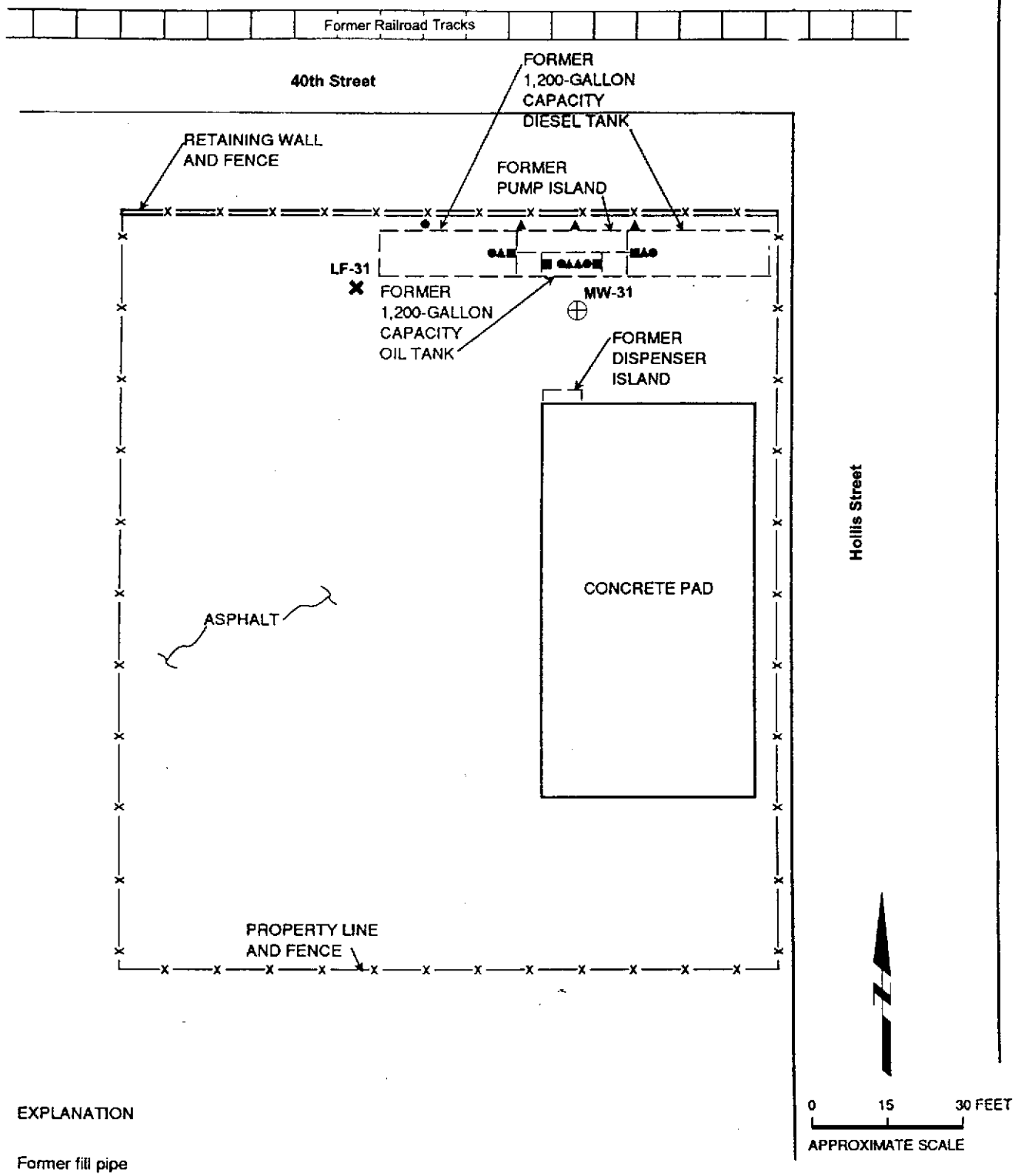
## Site Location Map

**Levine-Fricke-Recon**

Figure 1

Project No. 1649

1649SV01.CDR 102296RYL.JCK

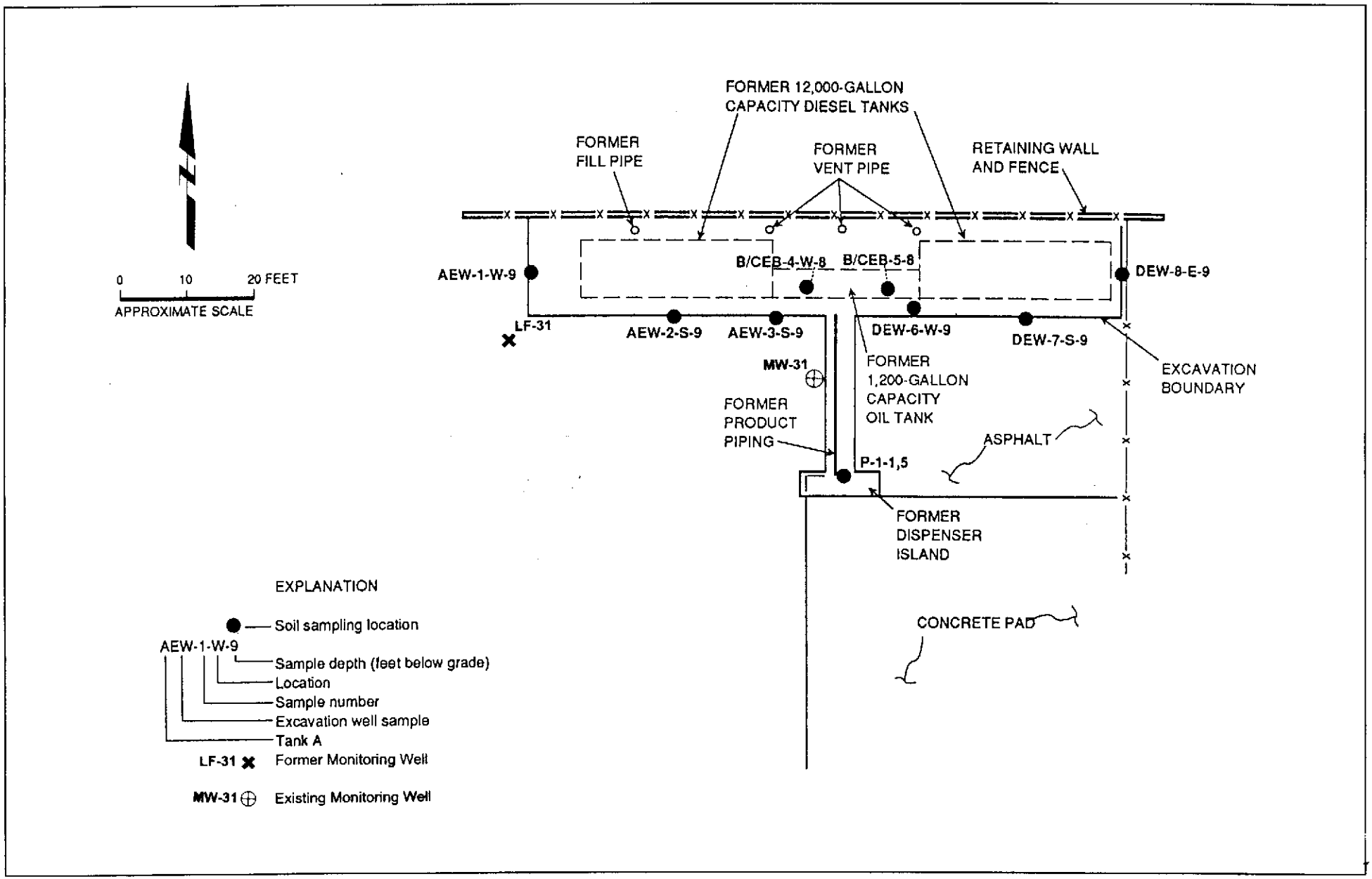



## Former Bashland Oil
## Site Plan and Tank Locations

**Levine-Fricke-Recon**

Figure 2

Project No. 1649



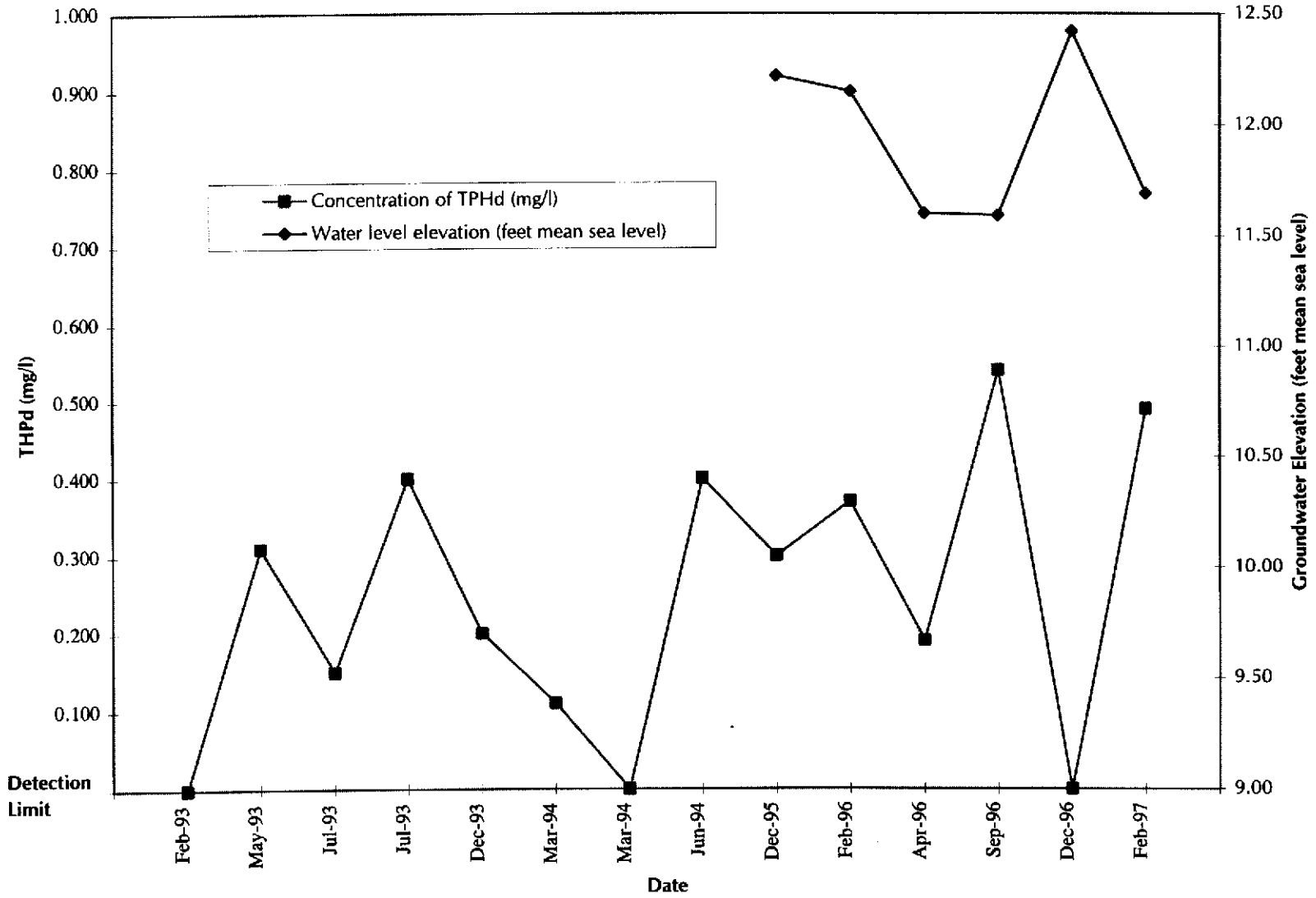

**Site Plan Showing Former Tank and Soil Sampling Locations and Excavation Boundaries at the Former Bashland Oil Site**

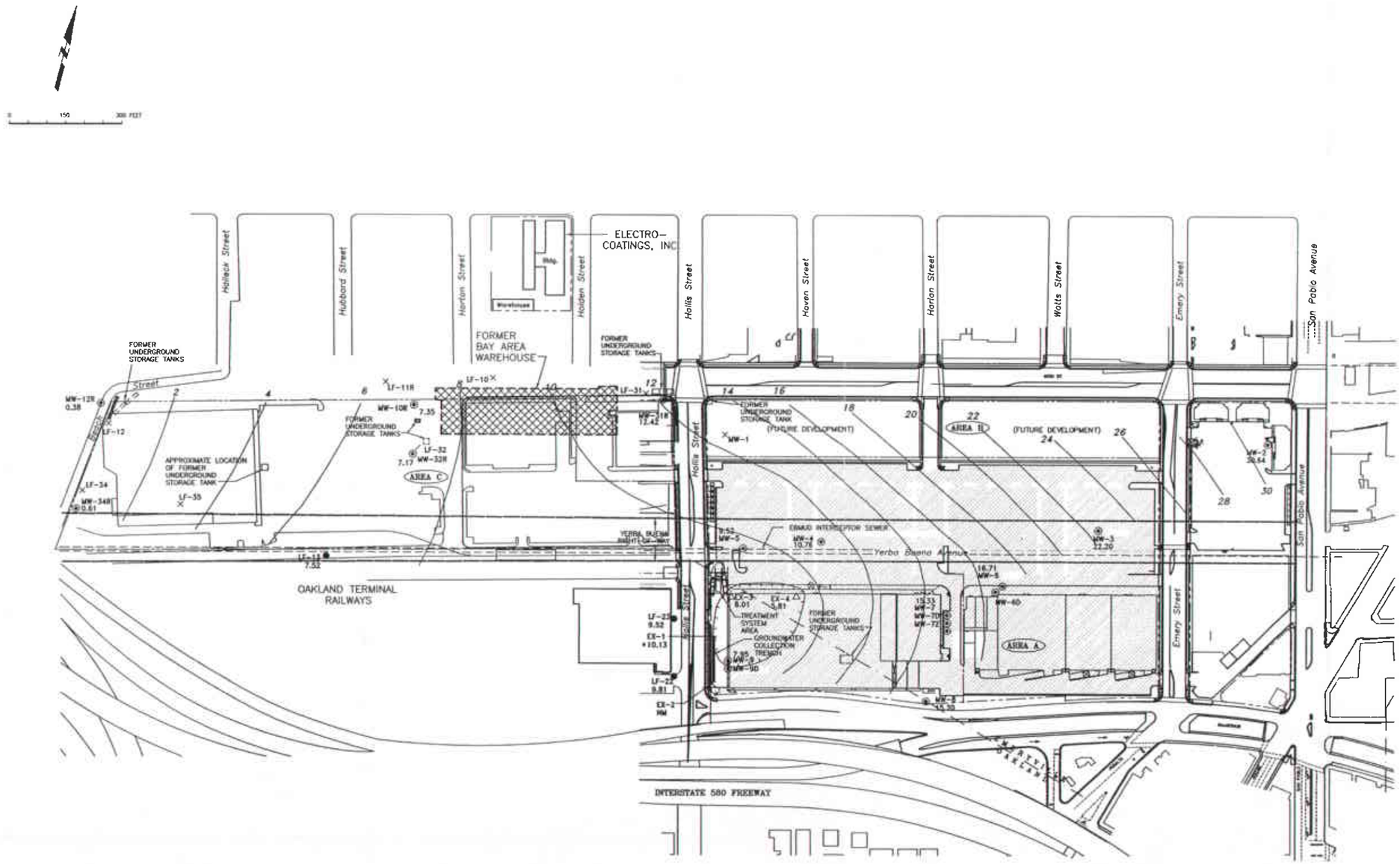
**Levine-Fricke-Recon**

**Figure 3**

Project No. 1649

**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
Emeryville, California

CATELLUS DEVELOPMENT CORPORATION

YERBA BUENA/EAST BAYBRIDGE DEVELOPMENT

Figure 5
SITE PLAN SHOWING FORMER BASHLAND OIL SITE AND GROUNDWATER ELEVATIONS IN SHALLOW WELLS
DECEMBER 13, 1996

Project No. 1649
Date MAY 97
Sheet of