Soils Management Plan for Petroleum Hydrocarbon-Affected Soils Yerba Buena/East Baybridge Center Emeryville and Oakland, California

November 30, 1994
1649.00-019

Prepared for
Catellus Development Corporation
201 Mission Street, 30th Floor
San Francisco, California 94105

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

November 30, 1994 LF 1649.00-019

Mr. Sumadhu Arigala
California Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

Subject: Soils Management Plan for Petroleum Hydrocarbon-Affected Soils, Yerba Buena/East Baybridge Center, Emeryville and Oakland, California

Dear Mr. Arigala:

As requested by the Regional Water Quality Control Board (RWQCB) in a letter dated June 24, 1992, Levine•Fricke, on behalf of Catellus Development Corporation, has prepared the enclosed Soils Management Plan (SMP) for the Yerba Buena/East Baybridge Center. The objectives of the SMP are to:

- document on-site containment of petroleum-affected soils
- outline measures to be taken to maintain the pavement cap over the contained soils
- specify protocols for the appropriate management of the contained soils if they are subsequently excavated
- present the ground-water monitoring program implemented at the site following containment of soil to monitor shallow ground-water quality beneath areas where petroleum-affected soil has been contained

If you have any questions, please call either of the undersigned or Ms. Kimberly Brandt at Catellus Development (415) 974-4500.

Sincerely,

Ron Goloubow/jms

Ron Goloubow
Senior Project Geologist

Jenifer Beatty

Jenifer Beatty
Senior Project Hydrogeologist

Enclosure

cc: Ms. Susan Hugo, ACHA
Ms. Kimberly Brandt, Catellus Development Corporation

1900 Powell Street, 12th Floor
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CERTIFICATION

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

Andrew L. Wright
Principal Geologist
California Registered Geologist (4592)

11-30-94
Date

James D. Levine
President
California Professional Engineer (33428)

Nov-30, 1994
Date

November 30, 1994 LF 1649.00-019

**SOILS MANAGEMENT PLAN FOR
PETROLEUM HYDROCARBON-AFFECTED SOILS
YERBA BUENA/EAST BAYBRIDGE CENTER
EMERYVILLE AND OAKLAND, CALIFORNIA**

1.0 INTRODUCTION

Levine·Fricke has prepared this document on behalf of Catellus Development Corporation ("Catellus") to document soil containment activities and provide a plan for monitoring the contained soils at the Yerba Buena/East Baybridge Center in Emeryville and Oakland, California ("the Site"; Figures 1 and 2).

During redevelopment of the Site, localized areas of soil containing concentrations of oil and diesel above site cleanup levels were identified. Those soils were relocated and placed beneath paved areas of the Site in accordance with the March 10, 1992 "Containment Plan for Total Petroleum Hydrocarbon-Affected Soils" (Levine·Fricke 1992a).

According to the Containment Plan, petroleum-affected soils at the Site were to be left in place and capped with a low permeability cover, or placed beneath proposed building pads and/or in areas to be covered with asphalt or concrete (parking lots, walkways). Placement of the affected soils in this manner was proposed to minimize possible exposure to the affected soils and mitigate future effects to shallow ground water by reducing surface infiltration through the soil.

The Containment Plan was approved by the California Regional Water Quality Control Board (RWQCB) in a letter from the RWQCB dated June 24, 1992 (a copy of this letter is contained in Appendix A). In that letter, the RWQCB approved the plan to relocate petroleum-affected soil, but requested that the document be amended to include specific guidance language providing for the maintenance of the proposed encapsulations to protect water quality, and for conducting any future excavation or grading activities at the Site. The RWQCB requested that the document be referred to as the Soils Management Plan. In addition, the RWQCB, and more recently the ACHA in a June 10, 1994 letter, requested that a notice be

placed on the recorded deed(s) whenever soil containing elevated concentrations of pollutants are contained on any parcel. A copy of the recorded deed notice is included in Appendix B.

2.0 OBJECTIVES

The objectives of this Soils Management Plan are to:

- provide a summary of investigation and remediation of petroleum-affected soil at the Site
- document where petroleum hydrocarbon-affected soils have been contained
- present analytical data for soil samples collected from containment areas prior to encapsulating the soil
- provide a monitoring and maintenance plan for the containment area cap (paved areas)
- specify protocols for the appropriate management of contained soils in the event they are subsequently excavated
- present the ground-water monitoring program implemented at the site following containment of soil

3.0 BACKGROUND

Levine·Fricke initiated environmental investigations at the Site on behalf of Catellus in September 1989 (Levine·Fricke 1990, 1991a, and 1991c) by conducting a driveby survey. Soil sampling commenced in January 1990. To aid organization of the sampling and analysis program, the Site was divided into Areas A, B, and C (see Figure 2). Localized areas of petroleum-affected soil were identified during environmental investigations and site grading activities. In cooperation with the ACHA and the RWQCB, cleanup goals for localized areas of petroleum hydrocarbons were established and a program for containing the petroleum-affected soil on site was developed (the Containment Plan; Levine·Fricke 1992a).

The ACHA approved soil cleanup goals for the Site of 10 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg), 100 ppm for TPH as diesel (TPHd), 1.0 ppm total for

benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and 1,000 ppm for total oil and grease (TOG). Cleanup criteria for aerated soil were less than 10 ppm TPHg and less than 1 ppm combined TEX and below detection limits for benzene.

The following section describes areas where affected soil was identified and later subsequently contained in conjunction with site development activities.

3.1 Area A

Results of sampling and analysis conducted in Area A indicated that petroleum hydrocarbons characterized as diesel and oil were widespread in the shallow soil of the western and central portions of Area A. Generally, the affected soil appeared to be contained primarily in a 3- to 5-foot-thick layer of gravel fill, where concentrations of petroleum hydrocarbons ranged from below laboratory detection limits to 6,800 parts per million (ppm). In the central portion of Area A, petroleum hydrocarbons were detected in soil samples collected from depths between approximately 3 and 7 feet bgs at slightly higher concentrations, ranging from below laboratory detection limits to 17,000 ppm. Because petroleum hydrocarbons appeared to be widespread in shallow soil, a remedial option consisting of containment and capping in areas slated for immediate commercial development was selected to minimize the risk of future impact to shallow ground water and limit possible exposure to the affected soil (Levine·Fricke 1991b).

Two fuel underground storage tanks (USTs) encountered during site grading activities were removed from Area A (beneath the Home Depot building pad) in October 1993 (Figure 2). A report summarizing UST removal activities and proposed management of affected soils was submitted to the ACHA on October 29, 1993 (Levine·Fricke 1993d). Approximately 2,500 cubic yards (cy) of diesel- and oil-affected soil was excavated from the vicinity of the USTs to reduce petroleum concentrations to below site cleanup levels. After characterization, these soils were contained in accordance with the Containment Plan.

3.2 Area B

Area B of the Site includes the former Ransome Construction Company ("Ransome") property (Figure 2). Initially, Levine·Fricke investigated this area during the Phase I Investigation of the Site (Levine·Fricke 1990). Further environmental investigations of the property were then conducted by Ransome and its environmental consultant Aqua

Resources, Inc. (ARI) in 1990 (ARI 1991). Those investigations indicated the presence of diesel, oil, and gasoline (and BTEX) in the soil. ARI initiated excavating, stockpiling, and aerating petroleum-affected soil at the property in 1991. Ransome requested that ARI stop work in September 1991, and Levine·Fricke, on behalf of Catellus, continued the excavation, on-site stockpiling and aeration of petroleum-affected soil. Gasoline-affected soils were aerated to below cleanup levels for TPHg and BTEX. Approximately 25,000 cubic yards (cy) of oil- and diesel-affected soil was ultimately stockpiled on site from the Ransome excavation work (Levine·Fricke 1992c).

One fuel UST encountered during site grading activities was removed from an area southeast of the intersection of Hollis Street and the newly constructed 40th Street (Figure 2). A total of approximately 20 cy of petroleum-affected soil was removed from the UST excavation and aerated on site until concentrations of TPHg and BTEX were below aeration criteria for the Site (Levine·Fricke 1994). The aerated soil was then contained on site in accordance with the Containment Plan.

3.3 Area C

Three USTs and associated piping were removed from the former Bashland property, located west of the Ransome property across Hollis Street, on April 7, 1992 (Figure 2). Approximately 2,000 cy of petroleum hydrocarbon-affected soil removed during UST excavation was incorporated into the containment area east of Hollis Street (Levine·Fricke 1992b).

In February and March 1993, 1,200 cy of oil-affected soil was excavated from beneath the former Bashland building to reduce concentrations of oil in soil to below cleanup levels for the Site (Levine·Fricke 1993b). Approximately 500 cy of stockpiled soil was determined to be below backfill criteria for the Site and was used as backfill material in the final excavation. As verbally approved by Ms. Susan Hugo of the ACHA and Mr. Richard Hiett of the RWQCB in a meeting on June 2, 1993, approximately 700 cy of stockpiled oil-affected soil was contained on the Site.

Two 12,000-gallon fuel USTs, formerly located along Beach Street, were encountered during soil investigation and removed on August 31, 1993 (Figure 2; Levine·Fricke 1993c). Approximately 6,000 cy of petroleum-affected soil (primarily oil- and diesel-affected) was removed from the vicinity of the USTs during tank removal activities. Soil containing TPHg and BTEX was aerated on site until concentrations of TPHg and BTEX

were below aeration criteria for the Site. Of those soils, 4,000 cy was incorporated into the containment area of the Site. The remaining 2,000 cy was transported off site for disposal (Levine·Fricke 1993e).

4.0 SITE DEVELOPMENT AND SOIL CONTAINMENT

In accordance with the Containment Plan, petroleum-affected soil was contained at the Site during grading activities which began in August 1993. Figures 2 and 3 illustrate the newly developed East Baybridge Center (formerly Areas A and B of the Yerba Buena Project Site) and indicate where petroleum-affected soil has been contained.

Petroleum-affected soil excavated from the areas discussed in Section 3.0 were contained beneath the building pads of the Home Depot Store and Regional Retail buildings, and beneath adjacent asphalt concrete and concrete paved areas, including asphalt concrete parking lots and walkways. These areas were selected for soil containment to mitigate the potential for petroleum hydrocarbons to migrate from the soil into ground water. In parking areas, low-permeability containment consists of asphalt concrete pavement over either 5 inches of aggregate base rock or 18 inches of petroleum hydrocarbon-affected soil that has been lime-treated. Lime-treating reduces the potential for hydrocarbons to migrate from soil to underlying ground water by reducing soil permeability.

All paved areas were graded to drain water runoff to a storm drainage system. No petroleum hydrocarbon-affected soils were contained in planted areas. Planter areas in the parking lots were constructed with a subdrain system that carries excess irrigation water or rainwater to the storm drain system, rather than allowing it to infiltrate into soils contained beneath the surrounding pavement.

The following sections discuss the containment of affected soil in greater detail.

4.1 Home Depot Building and Adjacent Paved Areas

Gravel fill in the western portion of Area A was excavated and reworked to provide more uniform support for the Home Depot building. Some of the reworked soil was also placed beneath the East Regional Bulding, in accordance with the Containment Plan.

Final grading for the Home Depot building pad and adjacent walkways included the placement of approximately 1.5 to 6.2 feet of petroleum hydrocarbon-affected soil. The thickest layer of affected soil (up to 6.5 feet thick) was contained beneath the western portion of the Home Depot building (Figure 3).

Grading for the Home Depot parking lot included the placement of up to approximately 4 feet of petroleum hydrocarbon-affected soil. In accordance with the Containment Plan, there is a minimum of approximately 8 to 12 feet of native soil between the petroleum hydrocarbon-affected soil and shallow ground water, which is approximately 12 to 20 feet below ground surface (bgs) across the area in which soil is contained (see cross section in Figure 4).

4.2 Regional Retail Building and Adjacent Paved Areas

Grading for the Regional Retail building pad and adjacent walkway areas consisted of the placement of up to 5 feet of petroleum hydrocarbon-affected soil fill in the eastern portion of the building. Grading in the Regional Retail parking lot included the placement of up to approximately 4 feet of petroleum hydrocarbon-affected soil. In accordance with the Containment Plan, there is approximately 12 feet of native soil between the petroleum hydrocarbon-affected soil and the first saturated sediments, which are approximately 17 feet bgs at well MW-6 (see Figure 4).

5.0 CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN SOILS CONTAINED AT THE EAST BAYBRIDGE CENTER

Pursuant to the agreement between the ACHA, the RWQCB, and Catellus, soil samples were collected to document concentrations of the contained petroleum hydrocarbon-affected soils at the Site (Levine•Fricke 1993a). To collect these data, the parking lot area and building pad area were divided into grids consisting of 8 cells and 12 cells, respectively (see Figure 5). Two soil samples were collected from each grid cell from generally 1 and 3 feet bgs, in accordance with soil sampling procedures described in Appendix C.

Soil samples were collected as grading activities were completed on November 10 and 17 and December 28, 1993, and January 5, 1994. Soil samples were analyzed for TPHd and TPH as motor oil (TPHmo) using EPA Method 3550 and TOG using Standard Method 5520EF by Anametrix, Inc., a state-certified analytical laboratory.

Analytical results are presented in Table 1. Results indicated that the TPHd concentrations ranged from non-detectable to 260 mg/kg, TPHmo concentrations ranged from 36 to 4,400 mg/kg, and TOG concentrations ranged from 280 to 18,000 mg/kg. Laboratory certificates are presented in Appendix D.

6.0 MONITORING PROGRAMS

A pavement monitoring plan has been implemented at the Site to identify and fill any cracks that might develop in the cap surface, reducing the potential for human contact with affected soil and the likelihood of rainwater or other surface runoff infiltrating contained soils. Additionally, a ground-water monitoring program has been implemented at the Site to assess if petroleum hydrocarbons in contained soil are migrating to shallow ground water. Ground-water monitoring and reporting for the entire Site, including the contained areas, will be performed in accordance with the regulatory-approved work plan dated April 28, 1993, and the revised quarterly monitoring program. A report summarizing these activities will be presented to the RWQCB and the ACHA at the end of November 1994.

6.1 Pavement Monitoring

Paved areas overlying the petroleum hydrocarbon-affected soil will be inspected for cracking twice a year, during the first two weeks of October and March of every year. The October inspection period was selected so that cracks, if they develop, can be filled before seasonal rains begin. The March inspection period was selected so that any cracks that develop during the course of the rainy season can be filled before spring and summer irrigation begins. Cracks longer than 3 inches and greater than 1/8-inch in width will be sealed with liquid asphalt (or caulking). As noted above, a description of these inspection activities will be incorporated into the quarterly monitoring reports for the second and fourth quarters for submittal to the RWQCB and ACHA.

6.2 Future Soil Excavation and Management

If excavation of contained soil becomes necessary (i.e., for the purpose of pavement or utility repair or construction), special handling of the excavated soil will be required. Petroleum hydrocarbon-affected soil removed from excavations should be stockpiled on and covered with plastic sheeting to reduce the potential for contact with surface water

(e.g., irrigation, rain, or runoff). Where appropriate, petroleum hydrocarbon-affected soil should be replaced and recompacted in the excavation to the fullest extent possible and encapsulated with low permeability asphalt or concrete. However, it should be noted that lime-treated soil will not be reusable as backfill in the design pavement section because after lime-treated soils have been disturbed, they cannot retain the same structural integrity. The location of these soils is indicated on Figure 3. Affected soil that has been excavated and cannot be used as backfill material should be properly disposed of off site in accordance with applicable laws or regulations.

6.3 Ground-Water Monitoring

To assess whether petroleum hydrocarbons in contained soils are migrating to shallow ground water, a ground-water monitoring program has been implemented at the Site.

As discussed in our April 29, 1993 work plan and as presented in our quarterly monitoring report dated October 28, 1994, the monitoring program will include collecting ground-water samples on a semiannual basis (twice a year) from eight monitoring wells located across the Site as described in Appendix E. Figure 6 illustrates the locations of the monitoring wells, which were selected based on their locations. Ground-water samples will be collected using procedures described in Appendix E and submitted for chemical analysis for TPHd and TPHo using EPA Method 3510.

Results from the first year of monitoring will be used to establish background conditions at the Site. Subsequent analytical results will be evaluated relative to these initial results to assess whether shallow ground-water quality is being affected by possible migration of petroleum hydrocarbons from the soil contained at the Site and to establish possible reduced sampling frequencies for later years.

7.0 SUMMARY

Petroleum hydrocarbon-affected soils identified at the Site during environmental investigations and site grading activities have been capped with a low permeability cover, or placed beneath proposed building pads and/or in areas to be covered with asphalt or concrete (parking lots, walkways).

Affected soils were placed in this manner to minimize possible exposure to the affected soils and mitigate future effects to shallow ground water by reducing surface infiltration through the soil.

Figure 2 shows the location and approximate depths of the contained soils. Soil samples collected from the contained soil indicate the presence of TPHd (up to 260 mg/kg), TPHmo (up to 4,400 mg/kg) and TOG (up to 18,000 mg/kg).

A pavement monitoring plan has been implemented at the Site to identify and fill any cracks that might develop in the cap surface, reducing the potential for human contact with affected soil and the likelihood of rainwater or other surface runoff infiltrating contained soils. To assess if petroleum hydrocarbons in contained soil are migrating to shallow ground water, a ground-water monitoring program has been implemented at the Site. Reports presenting results of the ground-water monitoring program will be prepared by Levine·Fricke and submitted to the ACHA and the RWQCB for review.

REFERENCES

Aqua Resources, Inc. 1991. Remedial Investigation and Closure Plan for Former corporation Yard Site, 4030 Hollis Street, Emeryville, California. January 16.

California Regional Water Quality Control Board (RWQCB). 1992. Correspondence to Ms. Amanda Spencer of Levine·Fricke. June 24.

Levine·Fricke Inc. 1990. Phase I and Phase II Environmental investigation, Yerba Buena Project Site, Emeryville and Oakland, California. August 15 (REVISED October 26, 1990).

———. 1991a. Phase III Environmental investigation, Yerba Buena Project Site, Emeryville and Oakland, California. February 6.

———. 1991b. Site Remedial Plan, Yerba Buena Project Site, Emeryville and Oakland, California. February 11.

———. 1991c. Additional Ground-Water Investigation, Yerba Buena Project Site, Emeryville and Oakland, California. September 6.

———. 1991d. Report on Soil Remediation Activities, Yerba Buena Project Site, Emeryville and Oakland, California. November 13.

———. 1992a. Containment plan for petroleum hydrocarbon-affected soils, Yerba Buena Project Site, Emeryville and Oakland, California. March 10.

———. 1992b. Tank Removal Report, Bashland Property, 4015 Hollis Street, Emeryville, California. June 24.

———. 1992c. Soil Remediation Activities Report, Former Ransome Property, Yerba Buena Project Site, Emeryville, California. December 21.

———. 1993a. Work Plan for Site Characterization and Remediation Activities to Be Conducted in Conjunction with Proposed Site Development, Yerba Buena/East Baybridge Project Site, Emeryville and Oakland, California. April 28.

———. 1993b. Soil Investigation and Remediation Activities Report, Former Bashland Property, Yerba Buena/East Baybridge Development Project, Emeryville, California. July 16.

———. 1993c. Report on the Removal of Two Underground Fuel Storage Tanks and Soil Remediation Activities, Beach Street Area, Yerba Buena/East Baybridge Project Site, Oakland, California. October 20.

———. 1993d. Underground Tank Removal and Soil Remediation Activities in Area A, Yerba Buena/East Baybridge Center Project Site, Emeryville and Oakland, California. October 29.

———. 1993e. Remediation and Containment of Soil Excavated During Soil Remediation Activities, Beach Street Area Yerba Buena/East Baybridge Center Project Site, Oakland, California. November 19.

———. 1994. Underground Storage Tank Removal Report, 40th and Hollis Streets, Emeryville, California. January 10.

TABLE 1
ANALYTICAL RESULTS FOR DOCUMENTATION SOIL SAMPLES COLLECTED FROM CONTAINED SOILS
EAST BAYBRIDGE CENTER SITE
EMERYVILLE AND OAKLAND, CALIFORNIA
(concentrations reported in milligrams per kilogram [mg/kg])

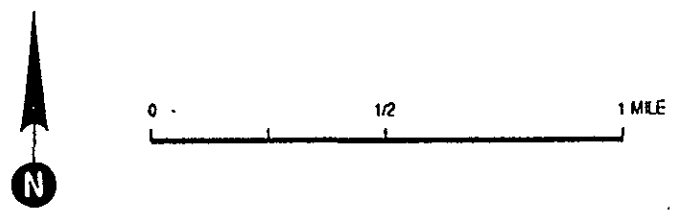
Sample ID	Sample Date	TPHd	TPHmo	TOG
D1-0.5-1	28-Dec-93	<100	1200	2100
D1-1-1.5	28-Dec-93	<10	72	1200
D2-0.5-1	28-Dec-93	<50	690	1200
D2-1-1.5	28-Dec-93	<10	140	1200
D3-0.75	05-Jan-94	15	110	2000
D3-1.5	05-Jan-94	13	150	1000
D4-1.0	05-Jan-94	<100	460	3800
D4-1.75	05-Jan-94	<10	73	890
D5-0.5-1	28-Dec-93	<10	85	340
D5-1-1.5	28-Dec-93	<20	230	1100
D6-0.5-1	28-Dec-93	17	210	850
D6-1-1.5	28-Dec-93	15	240	840
D7-0.75	05-Jan-94	<10	68	2100
D7-1.5	05-Jan-94	48	87	1200
D8-1.5	05-Jan-94	<100	330	3100
D8-2.5	05-Jan-94	<10	96	1300
D9-1.0	10-Nov-93	<500	1400	950
D9-2.0	10-Nov-93	<50	170	830
D10-1.0	10-Nov-93	<500	720	2200
D10-2.0	10-Nov-93	<50	290	1500
D11-1.0	10-Nov-93	<500	2000	8500
D11-1.5	10-Nov-93	<500	1100	1700
D12-1.0	10-Nov-93	<500	580	1500
D12-2.5	10-Nov-93	<500	1400	4300
D13-1.0	10-Nov-93	<500	730	2700
D13-2.0	10-Nov-93	<500	530	1400
D14-1.0	10-Nov-93	<500	900	18000
D14-1.5	10-Nov-93	<500	1300	4000
D15-0.5	17-Nov-93	<100	250	950
D15-1.5	17-Nov-93	<100	330	2000
D16-1.0	17-Nov-93	<500	710	1700
D16-2.0	17-Nov-93	<500	1800	15000
D17-1.0	17-Nov-93	<500	830	1900
D17-2.0	17-Nov-93	<500	650	820
D18-1.0	17-Nov-93	<10	36	280
D18-2.0	17-Nov-93	260	4400	8500
D19-1.0	17-Nov-93	<500	880	2200
D19-2.0	17-Nov-93	<500	660	1500
D20-1.0	17-Nov-93	<100	240	1000
D20-2.0	17-Nov-93	<500	2500	2600

Data entered by MEK/18 Apr 94 Data proofed by MJS QA/QC by MJS/MEK

TPHd - total petroleum hydrocarbons as diesel analyzed by GCFID
TPHmo - total petroleum hydrocarbons as motor oil analyzed by GCFID
TOG - total oil and grease analyzed by EPA Method 5520EF

Samples analyzed by Anametrix, Inc., of San Jose, California.

"D14-1.5" refers to documentation samples series, sample grid location #14, sample depth 1.5 feet below the petroleum-affected soil surface (depth measured to top of sample).



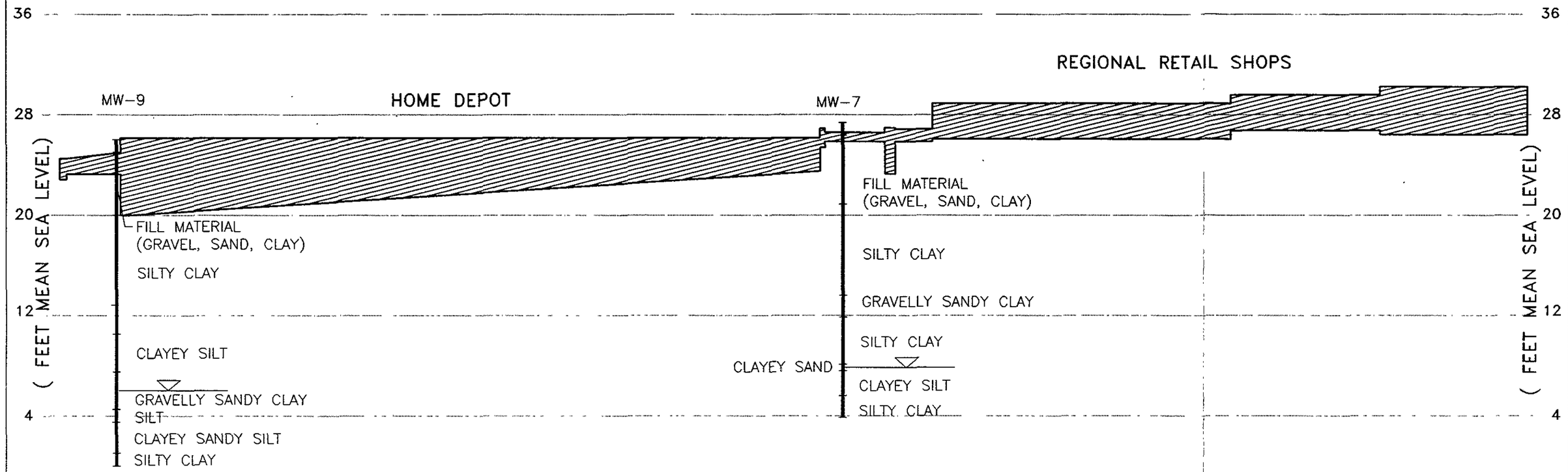
MAP SOURCE:
Alameda & Contra Costa Counties,
Thomas Bros. map, 1990 Edition

Figure 1 : SITE LOCATION MAP
YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE • FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1649ALS+SITE91+rvz



NOTE:
DEPTH OF CONTAINED SOIL VARIED ACROSS THE SITE.
FIGURE REPRESENTS MAXIMUM DEPTH OF CONTAINED SOIL.

DEPTH OF SATURATED SEDIMENTS

TOTAL PETROLEJM HYDROCARBON-AFFECTED SOIL

SECTION A-A'

SCALE 1"=80' HORIZ
1"=8' VERT

Figure 4 :
CROSS SECTION A-A'

Project No 1649

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ENGINEERS HYDROGEOLOGISTS & APPLIED SCIENTISTS

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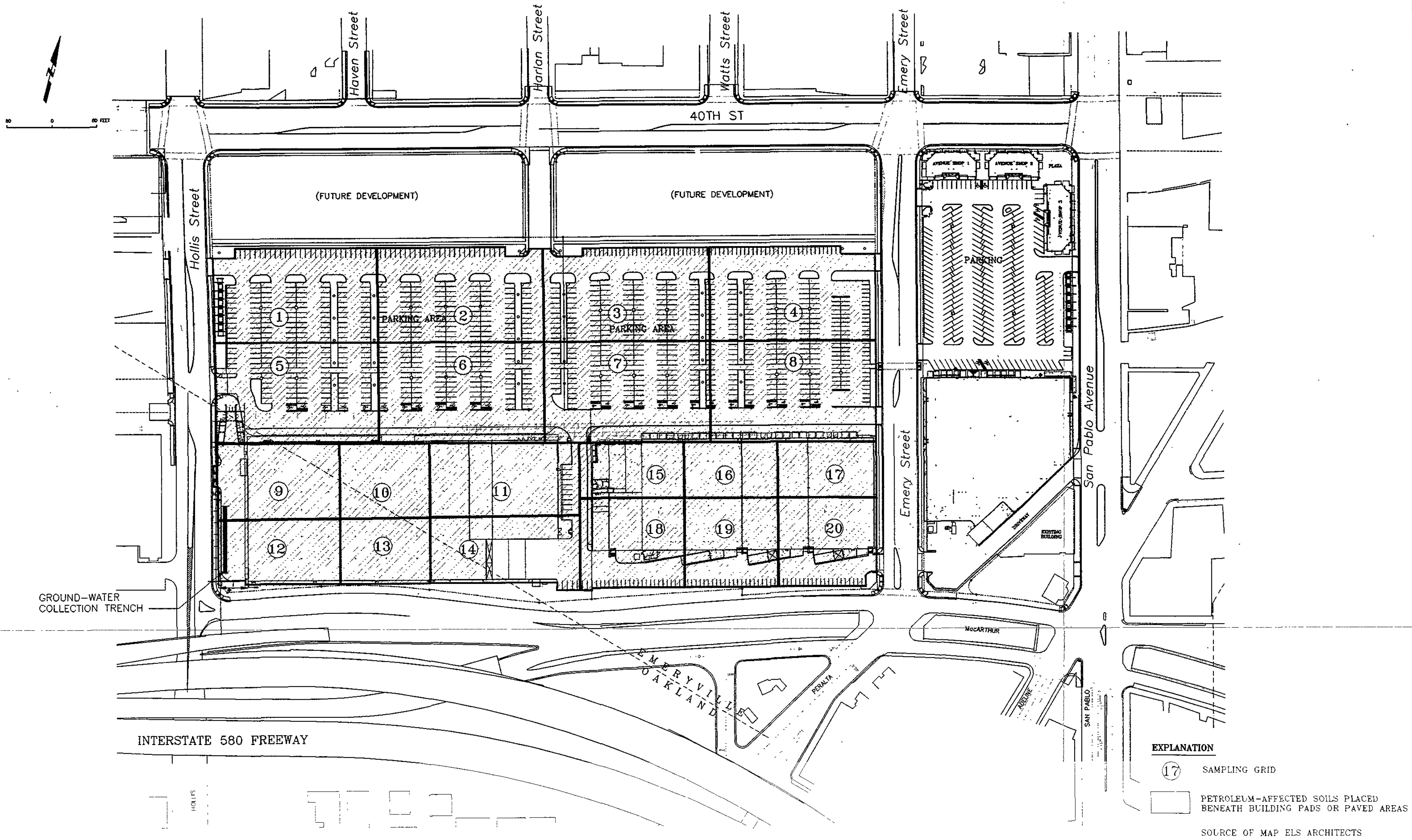

REVISION	DESIGN	DRAWN	CHECKED	DATE

SCALE :
DESIGN
DRAWN
CHECKED

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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS
Emeryville, California

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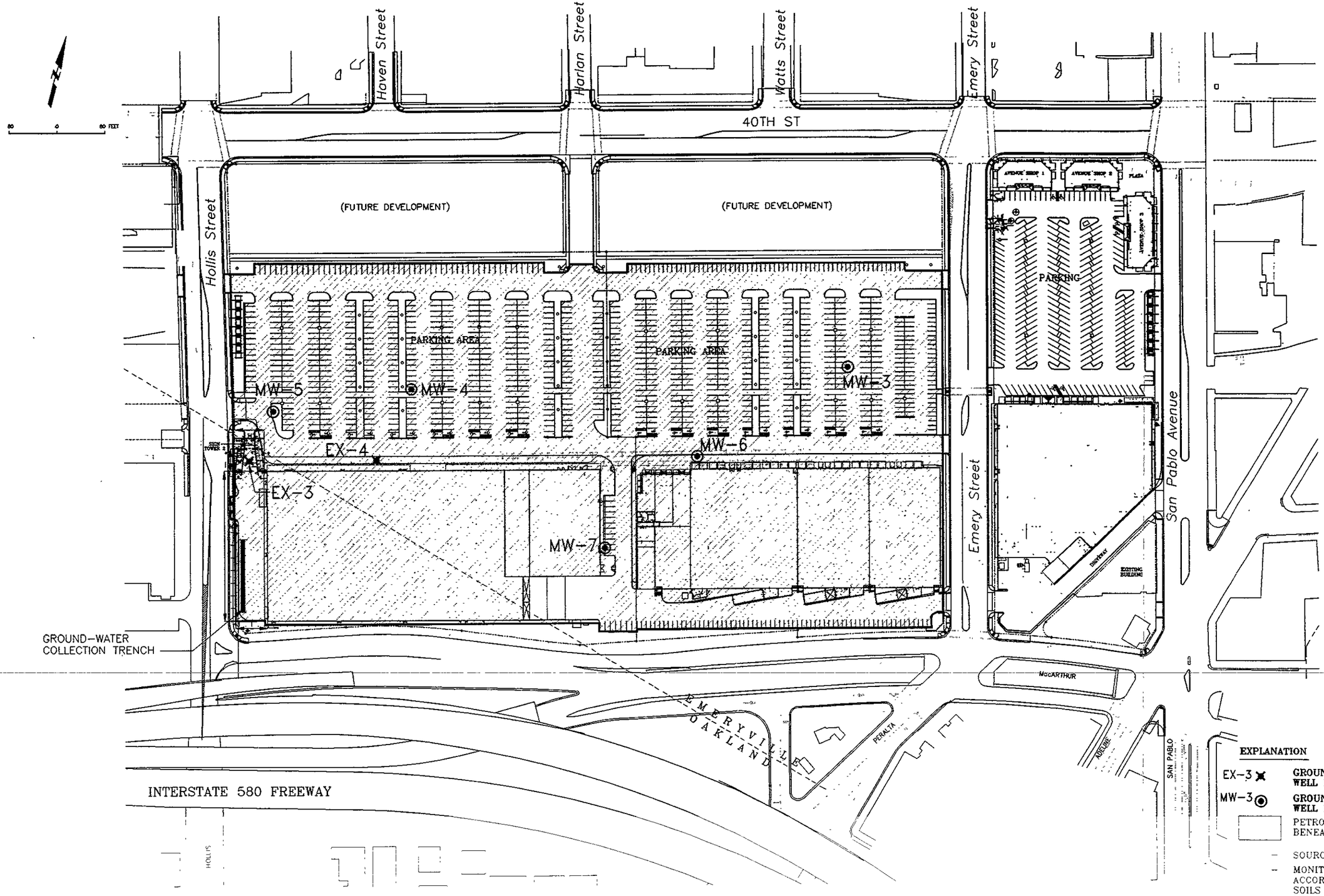
CATELLUS DEVELOPMENT CORPORATION

YERBA BUENA/EAST BAYBRIDGE DEVELOPMENT
EMERYVILLE & OAKLAND, CALIFORNIA

Figure 5

DOCUMENTATION SOIL SAMPLE LOCATIONS
NOVEMBER 1993 THROUGH JANUARY 1994

Project No. 1649
Date JUNE 94



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YERBA BUENA/EAST BAYBRIDGE DEVELOPMENT
EMERYVILLE & OAKLAND, CALIFORNIA

Figure 6
SITE PLAN SHOWING
GROUND-WATER MONITORING WELL LOCATIONS

Project No 1649
Date JUNE 94

DRAWING CODE C ACAD12\1549\SITEPLAN.DWG/GM

APPENDIX A

JUNE 24, 1992 LETTER FROM THE RWQCB

STATE OF CALIFORNIA

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612

Phone: (510) 464-1255
FAX: (510) 464-1380

June 24, 1992
File No. 2223.09(LF)

Amanda Spencer
Senior Hydrogeologist
Levine Fricke
1900 Powell Street, 12th Floor
Emeryville, CA 94608

SUBJECT: Catellus - Yerba Buena Project, Emeryville

Dear Ms. Spencer:

This letter is written in follow-up to your meeting of June 22 with Lester Feldman of my staff concerning the subject proposed development project. I understand that Dennis Byrne of Alameda County Health Care Services Agency has been acting as lead in resolving soil and groundwater pollution issues for the sites involved. I also understand that the overall project involves identification and remediation of volatile organics in the groundwater at one location, verification of hydrocarbon cleanup in the groundwater at several locations, the closure of several underground fuel tanks, remediation of hydrocarbon contaminated soils related to former underground tanks, and the relocation of some hydrocarbon contaminated soils within the project boundaries.

As indicated by Mr. Feldman, this Regional Board staff has no objection to the relocation of hydrocarbon contaminated soils within the project area as proposed in the Draft Plan dated March 10, 1992. This Draft Plan should be re-named the Soils Management Plan and be amended to include specific guidance language providing for the maintenance of the proposed encapsulations to protect water quality. As indicated by Mr. Feldman and Mr. Byrne any future activity on the site which necessitates excavation of the soils of concern should be managed in such a way as to mitigate any water quality problem which could arise (e.g., polluted surface runoff).

Additional concerns which should be addressed for the subject site prior to any leased business occupancy or sale include the following:

1. A Notice is to be placed on the recorded deed(s) whenever soils containing elevated levels of pollutants are contained on any affected parcel.

2. An Self-Monitoring Program shall be in place at all times acceptable to the Alameda County Health Agency or the Regional Board staff. This program shall provide for monitoring of all groundwater under active remediation, and shall provide for verification of all completed cleanups. An Annual Report shall be filed with both agencies.

3. Completion of any groundwater cleanup will be considered by the Board based upon a recommendation for Closure by the Alameda County Health Agency per Board guidelines.

Please direct any questions to Lester Feldman of my staff at (510) 464-1332.

Sincerely,

Steven R. Ritchie,
Executive Officer

cc: Dennis Byrne, Alameda County Health Agency
Don Marini, Catellus
Ric Notini, Catellus
Jim Levine, Levine Fricke

APPENDIX B

RECORDED DEED NOTICE

Recorded in Official Records, Alameda County
Patrick O'Connell, Clerk-Recorder
10.00
94265033 08:30am 07/29/94
005 271688 24 33 000065
A25 2 7.00 3.00 0.00 0.00 0.00 0.00 0.00

Recording Requested By and
When Recorded Return To:

CATELLUS DEVELOPMENT CORPORATION
201 Mission Street, 30th Floor
San Francisco, CA 94105
Telephone: (415) 974-4500
Attn: Law Department

155595

NOTICE

Portions of the soil located beneath the building pad and parking lot of Lots 2 and 4, Tract Map 6368, Official Records of Alameda County, contain oil and diesel at concentrations ranging from less than 50 parts per million (ppm) to 17,000 ppm and less than 10 ppm to 2,600 ppm, respectively. The placement of such soil has been reviewed and approved by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) and the Alameda County Health Agency (ACHA) offices in letters dated June 24, 1992 and March 5, 1991, respectively, to Catellus Development Corporation. Further information is on file at the RWQCB and the ACHA offices. Upon recordation of written confirmation from such agencies or their successors that said oil and diesel-affected soils are in concentrations that no longer require this notice, this notice will be deemed to be removed and of no further force or effect.

Made this 14th day of July, 1994.

CATELLUS DEVELOPMENT CORPORATION
OWNER

By: James J. O'[illegible]

Its: Senior Vice President

"THIS INSTRUMENT FILED FOR RECORD BY FIRST AMERICAN TITLE INSURANCE COMPANY AS AN ACCOMMODATION ONLY. IT HAS NOT BEEN EXAMINED AS TO ITS EXECUTION OR AS TO ITS EFFECT UPON THE TITLE."

h:\legal\acct\irv143

94265033

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN FRANCISCO)

On July 18, 1994, before me, Albert J. Luis, Notary Public, personally appeared James G. O'Gara - Senior Vice President, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature Albert J. Luis

My Commission Expires September 13, 1995

OFFICIAL NOTARY SEAL
ALBERT J. LUIS
Notary Public — California
SAN FRANCISCO COUNTY
My Comm. Expires SEP 13,1995

APPENDIX C

FIELD PROCEDURES FOR SOIL SAMPLE COLLECTION

FIELD PROCEDURES FOR SOIL SAMPLE COLLECTION

Soil samples were collected by driving a brass tube-lined split-spoon sampler into the soil, using hand or truck-mounted equipment. Sample tubes were then sealed with teflon-lined plastic caps or were transferred into laboratory-supplied glass jars and then capped with teflon-lined plastic caps. The samples were individually labeled and placed in a cooler for transportation to the analytical laboratory under standard chain-of-custody protocols. All sampling equipment was washed with a laboratory grade detergent (Alconox) and rinsed with de-ionized water before each use.

APPENDIX D

LABORATORY CERTIFICATES FOR DOCUMENTATION SOIL SAMPLES

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
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 # : 9311165
Date Received : 11/11/93
Project ID : 1649.19
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9311165- 1	D9-1.0
9311165- 2	D9-2.0
9311165- 3	D10-1.0
9311165- 4	D10-2.0
9311165- 5	D11-1.0
9311165- 6	D11-1.5
9311165- 7	D12-1.0
9311165- 8	D12-2.5
9311165- 9	D13-1.0
9311165-10	D13-2.0
9311165-11	D14-1.0
9311165-12	D14-1.5

This report consists of 10 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.

Sarah Schoen, Ph.D.
Laboratory Director

12-6-93
Date

COPY

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

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

Workorder # : 9311165
Date Received : 11/11/93
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9311165- 1	D9-1.0	SOIL	11/10/93	TPHd
9311165- 2	D9-2.0	SOIL	11/10/93	TPHd
9311165- 3	D10-1.0	SOIL	11/10/93	TPHd
9311165- 4	D10-2.0	SOIL	11/10/93	TPHd
9311165- 5	D11-1.0	SOIL	11/10/93	TPHd
9311165- 6	D11-1.5	SOIL	11/10/93	TPHd
9311165- 7	D12-1.0	SOIL	11/10/93	TPHd
9311165- 8	D12-2.5	SOIL	11/10/93	TPHd
9311165- 9	D13-1.0	SOIL	11/10/93	TPHd
9311165-10	D13-2.0	SOIL	11/10/93	TPHd
9311165-11	D14-1.0	SOIL	11/10/93	TPHd
9311165-12	D14-1.5	SOIL	11/10/93	TPHd

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

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

Workorder # : 9311165
Date Received : 11/11/93
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The diesel surrogate recovery for sample D14-1.0 is outside of quality control limits due to a possible matrix effect.

Cheryl Balmer 12/6/93
Department Supervisor Date

Reggie Davison 12/6/93
Chemist Date

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

Anametrix W.O.: 9311165
Matrix : SOIL
Date Sampled : 11/10/93
Date Extracted: 11/12/93

Project Number : 1649.19
Date Released : 12/01/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9311165-01	D9-1.0	11/27/93	500	ND	75%
9311165-02	D9-2.0	12/01/93	50	ND	63%
9311165-03	D10-1.0	11/27/93	500	ND	75%
9311165-04	D10-2.0	12/01/93	50	ND	60%
9311165-05	D11-1.0	11/27/93	500	ND	67%
9311165-06	D11-1.5	11/27/93	500	ND	71%
9311165-07	D12-1.0	11/27/93	500	ND	66%
9311165-08	D12-2.5	11/27/93	500	ND	79%
9311165-09	D13-1.0	11/27/93	500	ND	67%
9311165-10	D13-2.0	11/27/93	500	ND	61%
9311165-11	D14-1.0	11/27/93	500	ND	14%
9311165-12	D14-1.5	11/27/93	500	ND	68%
BN12H1F1	METHOD BLANK	11/21/93	500	ND	68%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C12-C22 is determined by GCFID following sample extraction by EPA Method 3510.

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

Peggie Dawson 12/3/93
Analyst Date

Cheryl Balman 12/3/93
Supervisor Date

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

Anametrix W.O.: 9311165
Matrix : SOIL
Date Sampled : 11/10/93
Date Extracted: 11/12/93

Project Number : 1649.19
Date Released : 12/01/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9311165-01	D9-1.0	11/27/93	500	1400	75%
9311165-02	D9-2.0	12/01/93	50	170	63%
9311165-03	D10-1.0	11/27/93	500	720	75%
9311165-04	D10-2.0	12/01/93	50	290	60%
9311165-05	D11-1.0	11/27/93	500	2000	67%
9311165-06	D11-1.5	11/27/93	500	1100	71%
9311165-07	D12-1.0	11/27/93	500	580	66%
9311165-08	D12-2.5	11/27/93	500	1400	79%
9311165-09	D13-1.0	11/27/93	500	730	67%
9311165-10	D13-2.0	11/27/93	500	530	61%
9311165-11	D14-1.0	11/27/93	500	900	14%
9311165-12	D14-1.5	11/27/93	500	1300	68%
BN12H1F1	METHOD BLANK	11/21/93	500	ND	68%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C22-C36 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 Dawson 12/3/93
Analyst Date

Cheryl Beeman 12/3/93
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MN12H1F1
Matrix	: SOIL	Analyst	: RD
Date Sampled	: N/A	Supervisor	: GB
Date Extracted	: 11/12/93	Date Released	: 12/01/93
Date Analyzed	: 11/21/93	Instrument I.D.	: HP9

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS *
DIESEL	125	107	86%	48-113
SURROGATE			79%	30-130

* Quality control limits established by Anametrix, Inc.

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

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

Workorder # : 9311165
Date Received : 11/11/93
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9311165- 1	D9-1.0	SOIL	11/10/93	5520EF
9311165- 2	D9-2.0	SOIL	11/10/93	5520EF
9311165- 3	D10-1.0	SOIL	11/10/93	5520EF
9311165- 4	D10-2.0	SOIL	11/10/93	5520EF
9311165- 5	D11-1.0	SOIL	11/10/93	5520EF
9311165- 6	D11-1.5	SOIL	11/10/93	5520EF
9311165- 7	D12-1.0	SOIL	11/10/93	5520EF
9311165- 8	D12-2.5	SOIL	11/10/93	5520EF
9311165- 9	D13-1.0	SOIL	11/10/93	5520EF
9311165-10	D13-2.0	SOIL	11/10/93	5520EF
9311165-11	D14-1.0	SOIL	11/10/93	5520EF
9311165-12	D14-1.5	SOIL	11/10/93	5520EF

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

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

Workorder # : 9311165
Date Received : 11/11/93
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cathy Nullenber 11/22/93 [signature] 11/24/93

Department Supervisor Date Chemist Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Project # : 1649.19
Matrix : SOIL
Date sampled : 11/10/93
Date extracted: 11/15/93
Date analyzed : 11/16/93

Anametrix I.D. : 9311165
Analyst : TS
Supervisor : [signature]
Date released : 11/19/93

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9311165-01	D9-1.0	30	950
9311165-02	D9-2.0	30	830
9311165-03	D10-1.0	30	2,200
9311165-04	D10-2.0	30	1,500
9311165-05	D11-1.0	30	8,500
9311165-06	D11-1.5	30	1,700
9311165-07	D12-1.0	30	1,500
9311165-08	D12-2.5	30	4,300
9311165-09	D13-1.0	30	2,700
9311165-10	D13-2.0	30	1,400
9311165-11	D14-1.0	30	18,000
9311165-12	D14-1.5	30	4,000
BN15H1W9	METHOD BLANK	30	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

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

MATRIX SPIKE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: 1649.19, D13-1.0MS, MD	Anametrix I.D.	: 9311165-09
Matrix	: SOIL	Analyst	: 73
Date sampled	: 11/10/93	Supervisor	: CM
Date extracted	: 11/15/93	Date Released	: 11/19/93
Date analyzed	: 11/16/93		

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	MS AMT (mg/Kg)	%REC MS	MD AMT (mg/Kg)	%REC MD	%RPD	% REC LIMITS
Motor Oil	300	2700	3000	100%	3000	100%	0%	48-114%

* Quality control limits established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

ND - Not detectable

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : SOIL
Date sampled : N/A
Date extracted : 11/15/93
Date analyzed : 11/16/93

Anametrix I.D. : MN15H1W9
Analyst : TS
Supervisor : CM
Date Released : 11/19/93

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	320	107%	71-119%

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

#165 CHAIN OF CUSTODY / ANALYSES REQUEST FORM

9311165 (2) (10/12) 17:30

Project No.: 1649.19	Field Logbook No.:	Date: 11-10-93	Serial No.: 11212
Project Name: Yerba Buena	Project Location: Emeryville-Oakland, CA		
Sampler (Signature): Michael Stoll			Samplers: MJS

SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	TPH diesel	TPH motor oil	SM 5520EF Oil/Grease		HOLD	RUSH	REMARKS
(1) D9-1.0	11-10-93			1	SOIL			X	X	X				Regular TAT
(2) D9-2.0				1	SOIL			X	X	X				
(3) D10-1.0				1	SOIL			X	X	X				
(4) D10-2.0				1	SOIL			X	X	X				
(5) D11-1.0				1	SOIL			X	X	X				
(6) D11-1.5				1	SOIL			X	X	X				
(7) D12-1.0				1	SOIL			X	X	X				
(8) D12-2.5				1	SOIL			X	X	X				
(9) D13-1.0				1	SOIL			X	X	X				
(10) D13-2.0				1	SOIL			X	X	X				
(11) D14-1.0				1	SOIL			X	X	X				
(12) D14-1.5				1	SOIL			X	X	X				
														Results to Jenifer Beatty
														Documentation sample locations 9-14

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
Michael Stoll	11-11-93	1510	Benny S. Carrizosa	11/11/93	1510
Benny S. Carrizosa	11/11/93	1630	Brandy C. Falcon	11/11/93	16:30

METHOD OF SHIPMENT:	DATE	TIME	LAB COMMENTS:

Sample Collector: LEVINE-FRICKE
1900 Powell Street, 12th Floor
Emeryville, Ca 94608
510 ~~(415)~~ 652-4500

Analytical Laboratory: ANAMETRIX INC., SAN JOSE, CA

Shipping Copy (White) Lab Copy (Green) File Copy (Yellow) Field Copy (Pink) FORM NO. 86/COC/ARF

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
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 # : 9311259
Date Received : 11/18/93
Project ID : 1649.19
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9311259- 1	D20-1.0
9311259- 2	D20-2.0
9311259- 3	D15-0.5
9311259- 4	D15-1.5
9311259- 5	D17-1.0
9311259- 6	D17-2.0
9311259- 7	D16-1.0
9311259- 8	D16-2.0
9311259- 9	D18-1.0
9311259-10	D18-2.0
9311259-11	D19-1.0
9311259-12	D19-2.0

This report consists of 10 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.

Corinne Shani for
Sarah Schoen, Ph.D.
Laboratory Director

12/09/93
Date

COPY

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

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

Workorder # : 9311259
Date Received : 11/18/93
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9311259- 1	D20-1.0	SOIL	11/17/93	TPHd
9311259- 2	D20-2.0	SOIL	11/17/93	TPHd
9311259- 3	D15-0.5	SOIL	11/17/93	TPHd
9311259- 4	D15-1.5	SOIL	11/17/93	TPHd
9311259- 5	D17-1.0	SOIL	11/17/93	TPHd
9311259- 6	D17-2.0	SOIL	11/17/93	TPHd
9311259- 7	D16-1.0	SOIL	11/17/93	TPHd
9311259- 8	D16-2.0	SOIL	11/17/93	TPHd
9311259- 9	D18-1.0	SOIL	11/17/93	TPHd
9311259-10	D18-2.0	SOIL	11/17/93	TPHd
9311259-11	D19-1.0	SOIL	11/17/93	TPHd
9311259-12	D19-2.0	SOIL	11/17/93	TPHd

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

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

Workorder # : 9311259
Date Received : 11/18/93
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Baeman 12/6/93
Department Supervisor Date

Peggie Davison 12/8/93
Chemist Date

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

Anametrix W.O.: 9311259
Matrix : SOIL
Date Sampled : 11/17/93
Date Extracted: 11/19/93

Project Number : 1649.19
Date Released : 12/08/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9311259-01	D20-1.0	12/07/93	100	ND	72%
9311259-02	D20-2.0	12/05/93	500	ND	79%
9311259-03	D15-0.5	12/05/93	100	ND	71%
9311259-04	D15-1.5	12/07/93	100	ND	75%
9311259-05	D17-1.0	12/05/93	500	ND	75%
9311259-06	D17-2.0	12/05/93	500	ND	72%
9311259-07	D16-1.0	12/05/93	500	ND	77%
9311259-08	D16-2.0	12/05/93	500	ND	41%
9311259-09	D18-1.0	12/04/93	10	ND	64%
9311259-10	D18-2.0	12/05/93	200	260	75%
9311259-11	D19-1.0	12/05/93	500	ND	71%
9311259-12	D19-2.0	12/05/93	500	ND	59%
BN19H1F1	METHOD BLANK	12/04/93	10	ND	67%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C12-C22 is determined by GCFID following sample extraction by EPA Method 3510.

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

Peggie Dawson 12/8/93
Analyst Date

Cheryl Balmer 12/8/93
Supervisor Date

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

Anametrix W.O.: 9311259
Matrix : SOIL
Date Sampled : 11/17/93
Date Extracted: 11/19/93

Project Number : 1649.19
Date Released : 12/08/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9311259-01	D20-1.0	12/07/93	100	240	72%
9311259-02	D20-2.0	12/05/93	500	2500	79%
9311259-03	D15-0.5	12/05/93	100	250	71%
9311259-04	D15-1.5	12/07/93	100	330	75%
9311259-05	D17-1.0	12/05/93	500	830	75%
9311259-06	D17-2.0	12/05/93	500	650	72%
9311259-07	D16-1.0	12/05/93	500	710	77%
9311259-08	D16-2.0	12/05/93	500	1800	41%
9311259-09	D18-1.0	12/04/93	10	36	64%
9311259-10	D18-2.0	12/05/93	200	4400	75%
9311259-11	D19-1.0	12/05/93	500	880	71%
9311259-12	D19-2.0	12/05/93	500	660	59%
BN19H1F1	METHOD BLANK	12/04/93	10	ND	67%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C22-C36 is determined by GCFID following sample extraction by EPA Method 3510.

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

Peggie Davison 12/8/93
Analyst Date

Cheryl Balmer 12/8/93
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MN19H1F1
Matrix	: SOIL	Analyst	: RD
Date Sampled	: N/A	Supervisor	:
Date Extracted	: 11/19/93	Date Released	: 12/08/93
Date Analyzed	: 12/04/93	Instrument I.D.	: HP9

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS *
DIESEL	125	118	94%	48-113
SURROGATE			70%	30-130

* Quality control limits established by Anametrix, Inc.

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

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

Workorder # : 9311259
Date Received : 11/18/93
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9311259- 1	D20-1.0	SOIL	11/17/93	5520EF
9311259- 2	D20-2.0	SOIL	11/17/93	5520EF
9311259- 3	D15-0.5	SOIL	11/17/93	5520EF
9311259- 4	D15-1.5	SOIL	11/17/93	5520EF
9311259- 5	D17-1.0	SOIL	11/17/93	5520EF
9311259- 6	D17-2.0	SOIL	11/17/93	5520EF
9311259- 7	D16-1.0	SOIL	11/17/93	5520EF
9311259- 8	D16-2.0	SOIL	11/17/93	5520EF
9311259- 9	D18-1.0	SOIL	11/17/93	5520EF
9311259-10	D18-2.0	SOIL	11/17/93	5520EF
9311259-11	D19-1.0	SOIL	11/17/93	5520EF
9311259-12	D19-2.0	SOIL	11/17/93	5520EF

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

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

Workorder # : 9311259
Date Received : 11/18/93
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor 11/29/93 Date

Chemist 11.29.93 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Project # : 1649.19
Matrix : SOIL
Date sampled : 11/17/93
Date extracted: 11/19/93
Date analyzed : 11/22/93

Anametrix I.D. : 9311259
Analyst : M.P.
Supervisor :
Date released : 11/29/93

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9311259-01	D20-1.0	30	1,000
9311259-02	D20-2.0	30	2,600
9311259-03	D15-0.5	30	950
9311259-04	D15-1.5	30	2,000
9311259-05	D17-1.0	30	1,900
9311259-06	D17-2.0	30	820
9311259-07	D16-1.0	30	1,700
9311259-08	D16-2.0	30	15,000
9311259-09	D18-1.0	30	280
9311259-10	D18-2.0	30	8,500
9311259-11	D19-1.0	30	2,200
9311259-12	D19-2.0	30	1,500
BN19H1W9	METHOD BLANK	30	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

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

MATRIX SPIKE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: 1649.19, D16-1.0MS, MD	Anametrix I.D.	: 9311259-07
Matrix	: SOIL	Analyst	: M.P.
Date sampled	: 11/17/93	Supervisor	:
Date extracted	: 11/19/93	Date Released	: 11/24/93
Date analyzed	: 11/22/93		

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	MS AMT (mg/Kg)	%REC MS	MD AMT (mg/Kg)	%REC MD	%RPD	% REC LIMITS
Motor Oil	300	1700	1900	67%	2000	100%	5%	48-114%

* Quality control limits established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MN19H1W9
Matrix	: SOIL	Analyst	: M.P.
Date sampled	: N/A	Supervisor	:
Date extracted	: 11/19/93	Date Released	: 11/24/93
Date analyzed	: 11/22/93		

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	290	97%	71-119%

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

#251 9311259 (10/24) 21.45

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 1649.19	Field Logbook No.:	Date: 11/17/93	Serial No.: 8986
Project Name: Yerba Buena	Project Location: Emeryville		
Sampler (Signature): Jennifer Beatty			Samplers:

	SAMPLES					ANALYSES								
	SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	TPH as diesel/MO	5520 E/F			HOLD	RUSH	REMARKS
1	D20-1.0	11/17/93	1120		1	soil			X	X					
2	D20-2.0	11/17/93	1120		↓	↓			X	X					NORMAL T.A.T
3	D15-0.5	↓	930		↓	↓			X	X					
4	D15-1.5	↓	930		↓	↓			X	X					TPH as diesel / Motor oil
5	D17-1.0	↓	1110		↓	↓			X	X					
6	D17-2.0	↓	1110		↓	↓			X	X					O+G by 5520 E/F
7	D16-1.0	↓	955		↓	↓			X	X					
8	D16-2.0	↓	955		↓	↓			X	X					
9	D18-1.0	↓	945		↓	↓			X	X					
10	D18-2.0	↓	950		↓	↓			X	X					
11	D19-1.0	↓	1130		↓	↓			X	X					
12	D19-2.0	↓	1130		↓	↓			X	X					

RELINQUISHED BY: (Signature) Jennifer Beatty	DATE 11/17/93	TIME 2PM	RECEIVED BY: (Signature) Ronny S. Carrizosa	DATE 11/18/93	TIME 1400
RELINQUISHED BY: (Signature) Ronny S. Carrizosa	DATE 11/18/93	TIME 1550	RECEIVED BY: (Signature)	DATE 11/18/93	TIME 15:50
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT: Courier	DATE 11/18/93	TIME 1400	LAB COMMENTS:		

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

Analytical Laboratory:
ANAMETRIX

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Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
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 # : 9312312
Date Received : 12/29/93
Project ID : 1649.19
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9312312- 1	D10.5-1
9312312- 2	D11-1.5
9312312- 3	D50.5-1
9312312- 4	D51-1.5
9312312- 5	D60.5-1
9312312- 6	D61-1.5
9312312- 7	D20.5-1
9312312- 8	D21-1.5

This report consists of 11 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

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

Sarah Schoen, Ph.D.
Laboratory Director

1-19-94
Date

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

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

Workorder # : 9312312
Date Received : 12/29/93
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9312312- 1	D10.5-1	SOIL	12/28/93	TPHd
9312312- 2	D11-1.5	SOIL	12/28/93	TPHd
9312312- 3	D50.5-1	SOIL	12/28/93	TPHd
9312312- 4	D51-1.5	SOIL	12/28/93	TPHd
9312312- 5	D60.5-1	SOIL	12/28/93	TPHd
9312312- 6	D61-1.5	SOIL	12/28/93	TPHd
9312312- 7	D20.5-1	SOIL	12/28/93	TPHd
9312312- 8	D21-1.5	SOIL	12/28/93	TPHd

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

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

Workorder # : 9312312
Date Received : 12/29/93
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 1/13/94
Department Supervisor Date

Lucia Shor 1/13/94
Chemist Date

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

Anametrix W.O.: 9312312
Matrix : SOIL
Date Sampled : 12/28/93
Date Extracted: 01/04/94

Project Number : 1649.19
Date Released : 01/13/94
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9312312-01	D10.5-1	01/12/94	100	ND	102%
9312312-02	D11-1.5	01/08/94	10	ND	90%
9312312-03	D50.5-1	01/08/94	10	ND	96%
9312312-04	D51-1.5	01/12/94	20	ND	92%
9312312-05	D60.5-1	01/08/94	10	17	90%
9312312-06	D61-1.5	01/08/94	10	15	92%
9312312-07	D20.5-1	01/12/94	50	ND	98%
9312312-08	D21-1.5	01/08/94	10	ND	98%
BJ04H1F1	METHOD BLANK	01/08/94	10	ND	86%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C12-C22 is determined by GCFID following sample extraction by EPA Method 3510.

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

Irina Sher 1/13/94
Analyst Date

Cheryl Beelman 1/13/94
Supervisor Date

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

Anametrix W.O.: 9312312
Matrix : SOIL
Date Sampled : 12/28/93
Date Extracted: 01/04/94

Project Number : 1649.19
Date Released : 01/13/94
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9312312-01	D10.5-1	01/12/94	100	1200	102%
9312312-02	D11-1.5	01/08/94	10	72	90%
9312312-03	D50.5-1	01/08/94	10	85	96%
9312312-04	D51-1.5	01/12/94	20	230	92%
9312312-05	D60.5-1	01/08/94	10	210	90%
9312312-06	D61-1.5	01/08/94	10	240	92%
9312312-07	D20.5-1	01/12/94	50	690	98%
9312312-08	D21-1.5	01/08/94	10	140	98%
BJ04H1F1	METHOD BLANK	01/08/94	10	ND	86%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as C22-C36 is determined by GCFID following sample extraction by EPA Method 3510.

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

Analyst 1/13/94 Date

Supervisor 1/13/94 Date

TOTAL EXTRACTABLE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 1649.19 D51-1.5	Anametrix I.D.	: 9312312-04
Matrix	: SOIL	Analyst	: IS
Date Sampled	: 12/28/93	Supervisor	: [illegible]
Date Extracted	: 01/04/94	Date Released	: 01/13/94
Date Analyzed	: 01/12/94	Instrument I.D.	: HP9

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	REC MS (mg/Kg)	% REC MS	REC MD (mg/Kg)	% REC MD	RPD	% REC LIMITS *
DIESEL	125	0	82	66%	86	69%	5%	32-143
SURROGATE				101%		112%		30-130

* Quality control limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MJ04H1F1
Matrix	: SOIL	Analyst	: [illegible]
Date Sampled	: N/A	Supervisor	: [illegible]
Date Extracted	: 01/04/94	Date Released	: 01/13/94
Date Analyzed	: 01/08/94	Instrument I.D.	: HP9

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS *
DIESEL	125	91	73%	48-113
SURROGATE			92%	30-130

* Quality control limits established by Anametrix, Inc.

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

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

Workorder # : 9312312
Date Received : 12/29/93
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9312312- 1	D10.5-1	SOIL	12/28/93	5520EF
9312312- 2	D11-1.5	SOIL	12/28/93	5520EF
9312312- 3	D50.5-1	SOIL	12/28/93	5520EF
9312312- 4	D51-1.5	SOIL	12/28/93	5520EF
9312312- 5	D60.5-1	SOIL	12/28/93	5520EF
9312312- 6	D61-1.5	SOIL	12/28/93	5520EF
9312312- 7	D20.5-1	SOIL	12/28/93	5520EF
9312312- 8	D21-1.5	SOIL	12/28/93	5520EF

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

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

Workorder # : 9312312
Date Received : 12/29/93
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

-Due to the high concentration of Total Recoverable Petroleum Hydrocarbons in sample D21-1.5, the matrix spike and matrix spike duplicate are outside of quality control limits.

Department Supervisor 1/11/94 Date

Chemist 1/11/94 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Project # : 1649.19
Matrix : SOIL
Date sampled : 12/28/93
Date extracted: 01/06/94
Date analyzed : 01/07/94

Anametrix I.D. : 9312312
Analyst : HE
Supervisor : CW
Date released : 01/07/94

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9312312-01	D10.5-1	30	2,100
9312312-02	D11-1.5	30	1,200
9312312-03	D50.5-1	30	340
9312312-04	D51-1.5	30	1,100
9312312-05	D60.5-1	30	850
9312312-06	D61-1.5	30	840
9312312-07	D20.5-1	30	1,200
9312312-08	D21-1.5	30	1,200
BJ06H1W9	METHOD BLANK	30	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

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

MATRIX SPIKE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: 1649.19, D21-1.5MS, MD	Anametrix I.D.	: 9312312-08
Matrix	: SOIL	Analyst	: HE
Date sampled	: 12/28/93	Supervisor	: CW
Date extracted	: 12/06/93	Date Released	: 12/07/93
Date analyzed	: 12/07/93		

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	MS AMT (mg/Kg)	%REC MS	MD AMT (mg/Kg)	%REC MD	%RPD	% REC LIMITS
Motor Oil	300	1220	2100	293	1900	227	7	48-114

* Quality control limits established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MJ06H1W9
Matrix	: SOIL	Analyst	:
Date sampled	: N/A	Supervisor	:
Date extracted	: 01/06/94	Date Released	: 01/07/94
Date analyzed	: 01/07/94		

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	293	97	71-119

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

#607 9312312 (10/5)

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 1649.19	Field Logbook No.:	Date: 12/28/93	Serial No.: Nº 12636
Project Name: YERBA BUENA	Project Location: EMERYVILLE, CA		
Sampler (Signature): J. C. Le			Samplers: JCK

SAMPLES						ANALYSES								
	SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	TPH-D	TPH-G (MODIFIED)	OIL & GREASE		HOLD	RUSH	REMARKS
1	D10.5-1.0	12/28/93	14:40		1	Soil			X	X	X				STANDARD TAT
2	D11.0-1.5	↓	14:40		↓	↓			X	X	X				
3	D50.5-1.0		15:00						X	X	X				
4	D51.0-1.5		15:00						X	X	X				CONTACT JENNIFER BEATTY
5	D60.5-1.0		15:15						X	X	X				
6	D61.0-1.5		15:15						X	X	X				
7	D20.5-1.0		15:30						X	X	X				
8	D21.0-1.5	↓	15:30		↓	↓			X	X	X				

RELINQUISHED BY: (Signature) J. C. Le	DATE 12-29-93	TIME 1005	RECEIVED BY: (Signature) Benny B. Canizares	DATE 12-29-93	TIME 1005
RELINQUISHED BY: (Signature) Benny B. Canizares	DATE 12-29-93	TIME 1210	RECEIVED BY: (Signature) Wendy C. Falcon	DATE 12/29/93	TIME 12:10
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:
ANALETRIX
SAN JOSE, CA.

Shipping Copy (White) Lab Copy (Green) File Copy (Yellow) Field Copy (Pink) FORM NO. 86/COC/ARF

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
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 # : 9401041
Date Received : 01/05/94
Project ID : 1649.19
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9401041- 1	D3-0.75
9401041- 2	D3-1.5
9401041- 3	D4-1.0
9401041- 4	D4-1.75
9401041- 5	D7-0.75
9401041- 6	D7-1.5
9401041- 7	D8-1.5
9401041- 8	D8-2.5

This report consists of 10 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

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

Doug Robbins
Laboratory Director

1-31-94
Date

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

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

Workorder # : 9401041
Date Received : 01/05/94
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9401041- 1	D3-0.75	SOIL	01/05/94	TPHd
9401041- 2	D3-1.5	SOIL	01/05/94	TPHd
9401041- 3	D4-1.0	SOIL	01/05/94	TPHd
9401041- 4	D4-1.75	SOIL	01/05/94	TPHd
9401041- 5	D7-0.75	SOIL	01/05/94	TPHd
9401041- 6	D7-1.5	SOIL	01/05/94	TPHd
9401041- 7	D8-1.5	SOIL	01/05/94	TPHd
9401041- 8	D8-2.5	SOIL	01/05/94	TPHd

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

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

Workorder # : 9401041
Date Received : 01/05/94
Project ID : 1649.19
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- Diesel recovery for the matrix spike duplicate on sample D7-1.5 and the relative percent difference between the matrix spike and matrix spike duplicate are outside of quality control limits due to the relatively high background level of diesel present in the sample.

Department Supervisor 1/31/94 Date

Chemist 1/31/94 Date

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

Anametrix W.O.: 9401041
Matrix : SOIL
Date Sampled : 01/05/94
Date Extracted: 01/10/94

Project Number : 1649.19
Date Released : 01/31/94
Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9401041-01	D3-0.75	01/26/94	10	15	94%
9401041-02	D3-1.5	01/26/94	10	13	103%
9401041-03	D4-1.0	01/26/94	100	ND	99%
9401041-04	D4-1.75	01/26/94	10	ND	92%
9401041-05	D7-0.75	01/26/94	10	ND	88%
9401041-06	D7-1.5	01/26/94	10	48	98%
9401041-07	D8-1.5	01/26/94	100	ND	98%
9401041-08	D8-2.5	01/26/94	10	ND	92%
BJ10H2F1	METHOD BLANK	01/26/94	10	ND	96%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C12-C22 is determined by GCFID following sample extraction by EPA Method 3510.

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

Analyst Date: 1/31/94

Supervisor Date: 1/31/94

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

Anametrix W.O.: 9401041
Matrix : SOIL
Date Sampled : 01/05/94
Date Extracted: 01/10/94

Project Number : 1649.19
Date Released : 01/31/94
Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9401041-01	D3-0.75	01/26/94	10	110	94%
9401041-02	D3-1.5	01/26/94	10	150	103%
9401041-03	D4-1.0	01/26/94	100	460	99%
9401041-04	D4-1.75	01/26/94	10	73	92%
9401041-05	D7-0.75	01/26/94	10	68	88%
9401041-06	D7-1.5	01/26/94	10	87	98%
9401041-07	D8-1.5	01/26/94	100	330	98%
9401041-08	D8-2.5	01/26/94	10	96	92%
BJ10H2F1	METHOD BLANK	01/26/94	10	ND	96%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C22-C36 is determined by GCFID following sample extraction by EPA Method 3510.

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

Doshi 1/31/94.
Analyst Date

Cheryl Balmer 1/31/94
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1649.19 D7-1.5
Matrix : SOIL
Date Sampled : 01/05/94
Date Extracted: 01/10/94
Date Analyzed : 01/26/94

Anametrix I.D. : 9401041-06
Analyst : FD
Supervisor : CB
Date Released : 01/31/94
Instrument I.D.: HP19

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	REC MS (mg/Kg)	% REC MS	REC MD (mg/Kg)	% REC MD	RPD	% REC LIMITS *
DIESEL	125	48	157	87%	247	159%	45%	32-143
SURROGATE				94%		97%		30-130

* Quality control limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MJ10H2F1
Matrix	: SOIL	Analyst	:
Date Sampled	: N/A	Supervisor	:
Date Extracted	: 01/10/94	Date Released	: 01/31/94
Date Analyzed	: 01/26/94	Instrument I.D.	: HP19

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS *
DIESEL	125	102	82%	48-113
SURROGATE			104%	30-130

* Quality control limits established by Anametrix, Inc.

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

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

Workorder # : 9401041
Date Received : 01/05/94
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9401041- 1	D3-0.75	SOIL	01/05/94	5520EF
9401041- 2	D3-1.5	SOIL	01/05/94	5520EF
9401041- 3	D4-1.0	SOIL	01/05/94	5520EF
9401041- 4	D4-1.75	SOIL	01/05/94	5520EF
9401041- 5	D7-0.75	SOIL	01/05/94	5520EF
9401041- 6	D7-1.5	SOIL	01/05/94	5520EF
9401041- 7	D8-1.5	SOIL	01/05/94	5520EF
9401041- 8	D8-2.5	SOIL	01/05/94	5520EF

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

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

Workorder # : 9401041
Date Received : 01/05/94
Project ID : 1649.19
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor 1/17/94 Date

Chemist 1/14/94 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Project # : 1649.19
Matrix : SOIL
Date sampled : 01/05/94
Date extracted: 01/10/94
Date analyzed : 01/11/94

Anametrix I.D. : 9401041
Analyst : HC
Supervisor : CM
Date released : 01/14/94

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9401041-01	D3-0.75	30	2,000
9401041-02	D3-1.5	30	1,000
9401041-03	D4-1.0	30	3,800
9401041-04	D4-1.75	30	890
9401041-05	D7-0.75	30	2,100
9401041-06	D7-1.5	30	1,200
9401041-07	D8-1.5	30	3,100
9401041-08	D8-2.5	30	1,300
BJ10H1W9	METHOD BLANK	30	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

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

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
AS OIL AND GREASE
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : SOIL
Date sampled : N/A
Date extracted : 01/10/94
Date analyzed : 01/11/94

Anametrix I.D. : MJ10H1W9
Analyst :
Supervisor :
Date Released : 01/14/94

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	300	100	71-119

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 1649.19	Field Logbook No.:	Date: 1-5-94	Serial No.: No. 12158
Project Name: Yerba Buena	Project Location: Emeryville, CA		
Sampler (Signature): Michael Stoll			Samplers: MJS

	SAMPLES						ANALYSES								
	SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	TPH diesel	TPH motor oil	Oil & grease SM 552 DEF		HOLD	RUSH	REMARKS
1	D3-0.75	1-5-94			1	SOIL			X	X	X				Regular TAT
2	D3-1.5	"			"	"			"	"	"				
3	D4-1.0	"			"	"			"	"	"				
4	D4-1.75	"			"	"			"	"	"				
5	D7-0.75	"			"	"			"	"	"				
6	D7-1.5	"			"	"			"	"	"				
7	D8-1.5	"			"	"			"	"	"				
8	D8-2.5	X			X	X			X	X	X				
															Results to: Jenifer Beatty

RELINQUISHED BY: (Signature) Michael Stoll	DATE 1-5-94	TIME 1230	RECEIVED BY: (Signature) Bonny L. Carrizosa	DATE 1/5/94	TIME 1230
RELINQUISHED BY: (Signature) Bonny L. Carrizosa	DATE 1-5-94	TIME 1645	RECEIVED BY: (Signature) Josephine DeCarli	DATE 1/5/94	TIME 16:45
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:
Anametrix Inc, San Jose, CA

Shipping Copy (White) Lab Copy (Green) File Copy (Yellow) Field Copy (Pink) FORM 86/COC/ARF

APPENDIX E

SAMPLING PROCEDURES TO BE USED FOR THE GROUND-WATER MONITORING PLAN

SAMPLING PROCEDURES TO BE USED FOR THE GROUND-WATER MONITORING PLAN

A ground-water monitoring program will be implemented to monitor ground-water quality in the vicinity of contained petroleum hydrocarbon-affected soils. The program will include the collection of water samples from eight shallow ground-water monitoring wells (MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, LF-22, and LF-23) on a semiannual basis.

Before sample collection, depth to static water will be measured in each well and three to five well casing volumes of ground water will be purged from each well using a centrifugal pump or a bailer until indicator parameter readings (pH, specific conductance, and temperature) are stable. Indicator parameters will be measured using portable field instruments and recorded on water-quality sampling forms. Purging and sampling equipment will be steam cleaned before use at each well. Purged ground water will be pumped into the on-site treatment system.

After each well has been purged, ground-water samples will be collected using a clean Teflon bailer. Samples are to be collected in containers appropriate for the laboratory analysis to be performed. Samples will be immediately capped and placed in an ice-chilled cooler for transportation to the analytical laboratory.

The samples will be submitted to a state-certified analytical laboratory and analyzed for total petroleum hydrocarbons as diesel and as motor oil. Results of these analyses will be included in quarterly ground-water monitoring reports prepared for the entire East Baybridge Center.