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PORT OF OAKLAND

June 11, 2013

Mr. Keith Nowell, P.G.
Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **Fuel Leak Case RO0000470 (STID 2485),**
1395 Middle Harbor Road,
Oakland, California

Dear Mr. Nowell:

Enclosed please find a Request for Closure for nine former underground storage tanks ("USTs") at 1395 Middle Harbor Road, Berths 60 to 63 at the Port of Oakland ("Site"); the Port-assigned identification numbers for the USTs were UST EF-6 through EF-14. The Request for Closure for USTs EF-6 through EF-14 has been prepared on behalf of the Port by BASELINE Environmental Consulting.

The nine USTs were removed from Berths 60 to 63 from 1990 to 1995. The USTs were under case management by the Alameda County Environmental Health Department ("County"), which assigns a Site Identification Number ("STID") for the location of USTs. USTs EF-6 through EF-9 and USTs EF-11 through EF-14 were managed by the County under STID 3777 with an address of 1579 Middle Harbor Road and UST EF-10 was under STID 2485 with an address of 1395 Middle Harbor Road. On 4 February 1997, the County consolidated all nine USTs under case file STID 2485 - 1395 Middle Harbor Road, as documented in a letter to the Port. One of the nine USTs (EF-10) had already received closure from the County in 1995, but since the County in 1997 consolidated all nine USTs into one STID, the case closure for UST EF-10 was theoretically reopened and is therefore part of this closure request.

This closure is requested pursuant to the State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy ("Policy"). The attached report by BASELINE provides an evaluation of the applicability of the Policy to the nine USTs and concludes that the USTs meet the requirements of the Policy.

As discussed in the attached report, Berths 60 to 63 is currently the American President Lines ("APL") Terminal. In 2005, the County agreed to assume oversight for redevelopment activities

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at the APL Terminal, which occurred from 2006 to 2008. Portions of the redevelopment area for the APL Terminal included specific release sites that were under oversight from the San Francisco Bay Regional Water Quality Control Board ("Regional Water Board"). To avoid overlapping jurisdictions, the County also assumed temporary oversight of the Regional Water Board sites during redevelopment of APL Terminal. The County imposed certain requirements on the Port for management of hazardous substances that were potentially encountered during redevelopment activities as well as requirements for subsequent investigations of identified subsurface contamination. A report is currently being prepared by BASELINE on behalf of the Port identifying contamination encountered during redevelopment activities and providing recommendations for further actions. That report is expected to be submitted to the County in July of 2013.

If the County were to concur that the site qualifies for closure under the Policy, the Port could assist the County in completing the closure summary documentation, if desired.

I declare under penalty of perjury, that the information contained in the attached document is true and correct to the best of my knowledge.

Sincerely,

John Prall, P.G.
Port Associate Environmental Scientist
Environmental Programs & Planning

Enclosure
cc: Michele Heffes, Port of Oakland
John Prall, Port of Oakland
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UNDERGROUND STORAGE TANK CLOSURE REQUEST

AMERICAN PRESIDENT LINES TERMINAL
BERTHS 60-63

JUNE 2013

UNDERGROUND STORAGE TANKS
EF-6 THROUGH EF-14
1395 Middle Harbor Road
Port of Oakland
Oakland, California

For:
Port of Oakland

Environmental Programs and Planning Division
Oakland, California

12315-09.02032

BASELINE ENVIRONMENTAL CONSULTING

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13 June 2013
12315-09.02032

John Prall, P.G.
Port of Oakland, EPP
530 Water Street, 2nd Floor
Oakland, CA 94607

Subject: **Underground Storage Tank Closure Request – STID 2485 and Case No. RO0000470, American President Lines Terminal, Berths 60-63, Port of Oakland**

Dear John:

This letter transmits a Request for Closure for submittal to Alameda County Department of Environmental Health. Should you have any questions regarding this report, we will look forward to discussing it with you.

Sincerely,

Yane Nordhav, P.G.
Professional Geologist

YN:km

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UNDERGROUND STORAGE TANK CLOSURE REQUEST

AMERICAN PRESIDENT LINES TERMINAL BERTHS 60-63

JUNE 2013

UNDERGROUND STORAGE TANKS
EF-6 THROUGH EF-14
1395 Middle Harbor Road
Port of Oakland
Oakland, California

FOR:
Port of Oakland

Environmental Programs and Planning Division
Oakland, California

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PROFESSIONAL CERTIFICATION

This report was prepared by me or by other professionals directly under my supervision.

_____

Yane Nordhav
P. G. No. 4009

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Case No. RO0000470, STID 2485
1395 Middle Harbor Road, Oakland, CA

1. INTRODUCTION

This Request for Site Closure of Nine Underground Storage Tanks Report ("Report") has been prepared by BASELINE Environmental Consulting ("BASELINE") of behalf of the Port of Oakland ("Port"). The purpose of this Report is to provide data to the Alameda County Department of Environmental Health ("County") to support closure of nine underground storage tanks ("USTs") formerly located at the Port's American President Lines ("APL") Terminal ("Terminal" or "site") in accordance with the State Water Resources Control Board ("SWRCB") Low-Threat Underground Storage Tank Case Closure Policy ("Policy"). The APL Terminal is located at Berths 60-63 along the Oakland Inner Harbor (Figure 1).

2. BACKGROUND

Prior to 1990, there were nine USTs located at the APL Terminal. Figure 2 shows the location of the nine USTs, identified as EF-6 through EF-14. USTs EF-6 through EF-9 were located in a cluster on the eastern portion of the APL Terminal; UST EF-10 was located in the southeastern portion of the APL Terminal; USTs EF-11 through EF-13 were located in a cluster in the central portion of the APL Terminal; and UST EF-14 was located in the south-central portion of APL Terminal. From 1990 through 1995, under oversight from the County, the Port removed the nine USTs.

The former USTs were under case management by the County, which assigned a Site Identification Number ("STID") for the location of the USTs. USTs EF-6 through EF-9 and USTs EF-11 through EF-14 were managed under STID 3777 with an address of 1579 Middle Harbor Road and UST EF-10 under STID 2485 with an address of 1395 Middle Harbor Road. On 4 February 1997, the County consolidated all nine USTs under case file STID 2485 - 1395 Middle Harbor Road, as documented in a letter to the Port.[1]

In 2005, the County agreed to assume oversight for redevelopment activities at the APL Terminal, which occurred from 2006 to 2008. Portions of the redevelopment area for the APL Terminal included specific release sites[2] that were under oversight from the San Francisco Bay Regional Water Quality Control Board ("Regional Water Board"). To avoid overlapping

[1] Alameda County Health Care Services Agency, 1997, *American President Lines, 1395 Middle Harbor Road, Oakland CA 94607 (USTs No. EF-06, EF-07, EF-08, EF-09, EF-11, EF-12, EF-13, EF-14)*, 4 February.

[2] These sites included a portion of the former Union Pacific Roundhouse and the Union Pacific Motor Freight.

jurisdictions, the County also assumed temporary oversight of the Regional Water Board sites during redevelopment of APL Terminal. This Report pertains only to closure of the UST sites.

In May 2005, Treadwell and Rollo,[3] on behalf of the Port, prepared a UST Assessment report to evaluate the need for any further actions for eight of the USTs.[4] The recommendation of the UST Assessment was closure of the UST cluster EF-11 through EF-13 and UST EF-14 and further investigation of the subsurface conditions near the UST cluster EF-6 though EF-9.

In a letter dated 14 November 2005, the County concurred that additional investigation was needed at the UST cluster EF-6 through EF-9. Regarding USTs EF-11 through EF-13, the County requested that an investigation of observed increases with depth in total petroleum hydrocarbon ("TPH") should be performed. The County agreed that it did not appear that additional work would be necessary for UST EF-14.

In a 2 March 2006 letter, the County provided further requests regarding the UST EF-6 through EF-9 cluster; the County opined that the petroleum and halogenated volatile organic compound ("VOC") plumes had not been properly defined (especially below Building E-221, which was to be removed during subsequent redevelopment) and absent any additional soil excavation during APL redevelopment, replacement of the three wells installed around the former USTs should occur. In the 2 March 2006 letter, the County also reiterated that additional explanation/investigation appeared necessary to assess increases in TPH concentrations with depth at the location of the EF-11 through EF-13 UST cluster. These County recommendations were provided prior to the development and adoption of the Policy.

3. SITE CONDITIONS

The APL Terminal is a marine terminal where shipping containers are loaded and unloaded onto ships and stored on the Terminal. The Terminal is completely paved and contains no vegetation. Commercial buildings, supporting terminal operations, are located near the Terminal gate and along Middle Harbor Road.

The area encompassed by the APL Terminal has had more than 100 years of industrial activity, including ship building and repair, railroads, and lumber yards. These uses involved the use and storage of hazardous materials. Previous investigations at the Terminal have identified soil and/or groundwater impacts due to releases of various hazardous materials[5] unrelated to the USTs throughout the Terminal redevelopment area; however, historic contamination may be co-mingled with releases from the USTs.

[3] Treadwell and Rollo, 2005 Underground Storage Tank Assessment, Berths 60-63, 1395 Middle Harbor Road, Oakland, California, 2 May.

[4] On 7 May 1996, the County issued a Remedial Action Completion Certificate for UST EF-10. Therefore, UST EF-10 was not part of the Treadwell and Rollo May 2005 UST assessment.

[5] GAIA Consulting, Inc., 2002, Subsurface Site Investigation Report, American President Lines Terminal, April; and Treadwell and Rollo, 2004, Redevelopment Planning Report, Environmental Site Assessment, Berths 60-63 Yard and Gate Redevelopment Project, September.

The Terminal is underlain by artificial fill identified by Treadwell and Rollo[6] as consisting of terrestrial and marine fill ranging in thickness from 10 to 15 feet. The fill is underlain by Young Bay Mud which overlies Merritt Sands of the San Antonio Formation. Groundwater occurs in the fill under unconfined to semi-confined conditions and occurs at depths ranging from about 4 to 13 feet below ground surface ("bgs"). The groundwater flow is generally to the south toward the Inner Harbor although there may be local variations. The total dissolved solids ("TDS") of the groundwater ranged from 800 to 5,580 milligrams per liter ("mg/L") in 2004.[7]

4. UST REMOVALS AND INVESTIGATIONS

The nine former USTS were owned by the Port and operated by Port tenants. Specific details on the sizes, contents, installation dates, and removal dates are provided in Table 1 and the UST removals are described in further detail, below. Copies of the reports detailing UST removal activities are included in Appendix D on a CD ROM.

4.1 UST Cluster EF-6 through EF-9

This cluster of four USTs (containing diesel, gasoline and waste oil) was removed by the Port in 1992. The USTs were removed from one large excavation and the removal activities are documented by Geomatrix Consultants ("Geomatrix") in a report from 1992.[8] During UST removals, groundwater accumulated in the open excavation and about one half inch of product was observed on the water surface. Sorbent pads were used to capture product floating on the water within the excavation and about 2,600 gallons of a mixture of product and water was pumped out of the excavation and transported off-site for recycling.

Following removal of the USTs, additional soil excavation occurred to remove contaminated soil to the extent practicable.[9] Selected areas around the original UST excavation were over-excavated; a total of about 300 cubic yards of soils were removed during UST removal activities. Confirmation soil samples were collected at depths generally near the groundwater interface or 4 to 6 feet bgs to document any residual contamination remaining in the subsurface. During over-excavation activities, an additional 40,000 gallons of groundwater (mixed with rainwater) were pumped out of the excavation.

Contaminants of potential concern ("COPCs") associated with this UST cluster are related to former UST contents which include TPH as gasoline ("TPHg") TPH as diesel ("TPHd"), TPH as motor oil ("TPHmo"), and associated VOCs. Semi-volatile organic compounds ("SVOCs") and metals could also have been associated with the USTs, but discerning the contribution from possible UST releases to possible contamination from past industrial terminal activities and fill

[6] Treadwell and Rollo, 2005, op.cit.

[7] Ibid.

[8] Geomatrix, 1992, Underground Storage Tank Removal Report, American President Lines Terminal, 1395 Middle Harbor Road, Oakland, California 94607, June. This report is attached in Appendix D.

[9] A building (identified as E-221 by the Port) was present at the western end of the over-excavation, resulting in limited access; that building was subsequently removed as part of the APL redevelopment.

quality would be questionable; therefore, the COPCs from the USTs are considered only TPH species and VOCs.

4.1.1 Subsurface investigations in 2002, 2004, and 2005

Following removal of USTs EF-6 through EF-9 and removal of secondary source material by over-excavation to the extent practicable, three groundwater monitoring wells were installed around the UST cluster by Geomatrix[10] (Figure 2). From 1993 through 2005, the wells were sampled during 14 monitoring events.[11] The analytical results for TPH species and VOCs are presented in Table 2.[12] The most recent groundwater analytical results (from 2005) indicate that the most recent groundwater samples collected from monitoring well MW-1, which is located upgradient of the UST cluster, did not contain any COPCs above laboratory reporting limits; between 1993 and 2005, the concentration of COPCs had steadily declined. With two exceptions, groundwater samples collected from monitoring well MW-2, located downgradient from the UST EF-6 through EF-9 cluster, did not contain any COPCs above the laboratory reporting limits. The groundwater samples collected from MW-2 in 2005 were reported to contain TPHd at a concentration of 100 micrograms per liter ("µg/L") and 1,4-dichlorobenzene at a concentration of 0.64 µg/L. The groundwater sample collected in 2005 from MW-3 contained TPHd at 99 µg/L and vinyl chloride at 0.98 µg/L; other analytes were below laboratory reporting limits. These concentrations are below the Environmental Screening Levels ("ESLs") for groundwater that is not considered a potential drinking water source.[13]

Since 2002, a considerable amount of soil sampling has also occurred around UST EF-6 through EF-9 cluster[14] (Appendix A includes a map [Figure 2, Site Plan], showing all boring and monitoring well locations in the APL Terminal redevelopment area, including around the UST locations). The soil data collected during these investigations were compiled by ETIC Engineering[15] and summarized in tables included in Appendix B. The maximum concentrations of TPH species (with silica gel cleanup, as appropriate) and VOCs from soil samples collected in the UST EF-6 through EF-9 cluster-area are summarized below. The summary also includes the 2013 ESLs for commercial land uses where groundwater is not a potential source of drinking water. For those analytes that exceed the ESL, the 95 percent upper confidence level of the mean ("95% UCL"), as computed by ETIC,[16] is included.

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[10] Geomatrix, 1993, Soil and Groundwater Investigation, American President Lines Terminal, 1395 Middle Harbor Road, Port of Oakland, Oakland, California, April. This report is included in electronic format in Appendix D.

[11] URS, 2005, Draft Groundwater Monitoring Report, APL Terminal, 25 July.

[12] Table 2 does not present data on analyses on MTBE since the groundwater samples were not analyzed for this analyte. MTBE analyses were performed on grab groundwater samples collected by Treadwell and Rollo (2004, op.cit.) Thirteen grab groundwater samples were analyzed for MTBE and, except at one location where the concentration was reported as 8.1 µg/L, none of the samples contained MTBE above the laboratory reporting limit

[13] Regional Water Board, 2013 Environmental Screening Levels, Table B.

[14] GAIA, 2002, op.cit. and Treadwell and Rollo, 2004, op.cit.

[15] ETIC Engineering, 2005, Construction Worker Risk Assessment, Berths 60-63 Terminal Yard and Gate Redevelopment Project Area, Port of Oakland, 21 March.

[16] Ibid.

Analyte	Concentration (mg/kg)	2013 ESL, Table B (mg/kg)	Calculated 95% UCL (mg/kg)
TPHg	910	420	196
TPHd	530	500	172
TPHmo	3,300	2,500	1,469
1,1,1-trichloroethane	0.009	7.8	
1,2,4-trimethylbenzene	44	-	
1,3,5-trimethylbenzene	13	-	
Benzene	0.005	1.2	
Chlorobenzene	0.044	1.5	
Ethylbenzene	10	4.7	1.79
Isopropylbenzene	1.8	-	
Methylene chloride	0.067	34	
Naphthalene	8.9	4.8	1.67
n-butylbenzene	4.9	-	
Tetrachloroethylene	0.11	3.4	
Propylbenzene	6.7	-	
Tert-butyl benzene	0.24	-	
Toluene	0.032	9.3	
Trichloroethylene	0.013	5.9	
Xylenes (total)	27.8	11	4.97

mg/kg = milligram per kilogram

The data summarized above show that the maximum concentration of contaminants in the soil collected in 2002 and 2004 from the UST EF-6 through EF-9 cluster-area is below the ESLs or where the maximum concentration exceeds the ESL, the 95% UCLs are below the respective ESLs.[17]

4.1.2 Observations during APL Terminal Redevelopment

An environmental monitor was present during redevelopment of the Terminal to ensure compliance with a soil management and contingency Plan.[18] In November 2006, building E-221, located adjacent to UST EF-6 through EF-9 cluster, was being demolished. When the concrete pad associated with the building was broken up and pilings supporting the concrete pad were being readied for removal, oily water flowed into the excavation. A vacuum truck was brought onto the Terminal and oily water from the excavation was pumped out and into two Baker tanks for storage prior to off-site disposal/recycling.

[17] ETIC, 2005, op.cit.

[18] ETIC Engineering, Inc., 2006, Soil Management and Contingency Plan, APL Redevelopment Project, Port of Oakland, Oakland, California, May 17.

4.2 UST EF-10

UST EF-10 was located in the southeastern area of the APL Terminal (Figure 2) and used to contain diesel fuel. It was removed in 1995 and Alisto Engineering Group prepared a UST removal report[19] on behalf of the Port. After UST EF-10 had been removed, over-excavation occurred to remove secondary source materials. The County issued a Remedial Action Completion Certification ("RACC") on 7 May 1995 to the Port. On 4 February 1997, the County consolidated the other eight USTs under the common case file STID 2485; therefore, theoretically reopening the case for EF-10. However, this Report assumes that no further evaluation of the former EF-10 UST is warranted to request closure for case file STID 2485.

4.3 UST Cluster EF-11 through EF-13

USTs EF-11, EF-12, and EF-13 were removed in 1990 by the Port as documented in a report by BASELINE.[20] The USTs were removed and over 330 cubic yards of petroleum-impacted soil was removed from two excavations. The removed soil was transported to a temporary treatment site in the Oakland Airport North Field prior to reuse on Port property. The COPCs for this UST cluster are TPHg, TPHd, and VOCs. SVOCs and metals could also have been associated with the USTs, but discerning the contribution from possible UST releases to past industrial terminal activities and fill quality would be questionable; therefore, the COPCs from the USTs are considered only TPH species and VOCs. Following UST removals and soil overexcavation, soil samples were collected from native materials below the UST inverts, at depths ranging from 7 to 10 feet bgs. The analytical results indicated that only very low concentrations of TPHg (8.3 mg/kg), TPHd (5.8 mg/kg), and benzene, toluene, ethylbenzene, and xylenes ("BTEX") (total of up to 0.250 mg/kg) remained in the soil.

One grab groundwater sample was collected from the excavation formerly occupied by USTs EF-11 and EF-12 (UST EF-13 excavation did not contain groundwater), which had been used to store gasoline and diesel; that sample contained 5,800 µg/L of TPHg, and minor concentrations of toluene (9.0 µg/L) and xylenes (8.0 µg/L); benzene and ethylbenzene were not detected above the laboratory reporting limit.

4.3.1 Subsurface Investigations in 2004

In 2004, Treadwell and Rollo collected additional soil and grab groundwater samples downgradient from the former UST EF-11 through EF-13 cluster.[21] Soil samples were collected from 4 to 6 feet bgs from five locations. The depth to groundwater was observed to be about 8.0 to 8.5 feet bgs (in May 2004); the boring logs from the investigation identify the area near the UST cluster to be underlain by unconsolidated lenses of sands and clays underlain by Young Bay Mud at about 15 to 16 feet bgs. In one of the borings (B45, for boring location refer to

[19] Alisto Engineering Group, 1995, Tank Closure Report, Port of Oakland Tank EF-10-, Berth 63 –American President Line Terminal, 1395 Middle Harbor Road, Oakland, California, 31 October. This report is included in electronic format in Appendix D.

[20] BASELINE, 1990, Underground Tanks Removal Activities, APL Container Yard Earthquake Repair, 1395 Middle Harbor Road, Oakland California, 20 November. This report is included in electronic format in Appendix D.

[21] Treadwell and Rollo, 2005, op.cit.

Appendix B), a weak hydrocarbon odor was identified from 7.0 to 7.5 feet bgs and a moderate odor at 11 to 12 feet bgs. In a second boring (B49), a moderate odor was identified between 8.0 and 9.0 feet bgs and weak hydrocarbon odor at about 9.0 feet bgs. The depths at which odors were identified were within the groundwater vadose zone.

The analytical data from the soil samples are summarized in Tables 3 and 4. The data indicate that at a depth of 4 feet bgs, the soil did not contain TPHg at a concentration above the laboratory reporting limits. The maximum TPHd concentration reported in soil samples from 4 feet bgs was 110 mg/kg and for TPHmo, 360 mg/kg; these concentrations are below commercial ESLs.

The maximum reported TPHg concentrations in soil samples collected from 6 feet bgs was 2.2 mg/kg, which is below the commercial ESL. The reported concentration of TPHd in the soil samples collected from 6 feet bgs is below commercial ESLs in all but one location. The maximum reported TPHmo concentration in the soil samples collected from 6 feet bgs was 1,200 mg/kg; this is below commercial the ESL.

Except for methylene chloride, a suspected laboratory contaminant, soil samples did not contain VOCs above laboratory reporting limits.

The 2 March 2006 letter from the County to the Port requested that the Port provide an explanation of the increases in concentration of TPH with depth observed during the 2004 investigation by Treadwell and Rollo. Based on the data collected, it appears that if the 2004 soil quality data are representative of releases from USTs EF-11 through EF-13 and not from some other historical source, then the increases in TPH concentrations from 4 feet to 6 feet bgs is reflective of the lateral migration of TPH within the capillary fringe. The grab groundwater samples did not contain any TPH species or VOCs except for MTBE (reported below the ESL at a concentration of 5.2 µg/L). Thus, any residual contaminants in the soil do not appear to be affecting groundwater quality.

4.3.2 Observations during Terminal Redevelopment

An environmental monitor present during redevelopment activities to ensure compliance with the Soil Management and Contingency Plan for the terminal redevelopment[22] did not identify any unusual conditions during earthwork in the UST EF-11 through EF-13 cluster area.

4.4 UST EF-14

UST EF-14 was removed in 1990 in conjunction with USTs EF-11 through EF-13, as documented by BASELINE.[23] The contents and construction of the USTs are summarized in Table 1. About 67 feet from the UST was a dispenser consisting of a hose and reel pit within a concrete vault that housed pumping and fuel dispensing equipment. The dispenser was connected to the UST by a subsurface pipeline.

[22] ETIC Engineering, Inc., 2006, op. cit.
[23] BASELINE, 1990, op.cit.

After the over-excavation of petroleum impacted soil, four soil samples were collected from the UST excavation at about 10 feet bgs. These soil samples did not contain any TPHd or BTEX at levels above laboratory reporting limits. A grab groundwater sample collected from the excavation also did not contain BTEX above the laboratory reporting limit (no TPHd analysis was performed due to insufficient groundwater accumulation in the excavation).

After removal of the hose and reel pit vault and associated piping, soil confirmation samples were collected. Three soil samples were collected from the bottom and sidewalls of the vault excavation; TPHd concentrations ranged from 2.1 to 200 mg/kg, below the commercial ESL. Except for low levels of xylenes (0.0073 to 0.01 mg/kg), no BTEX constituents were detected above the laboratory reporting limits. Four soil samples were collected from the bottom of the pipeline trench; TPHd concentrations ranged from 1.8 to 9.7 mg/kg, also below the commercial ESL. Similar to the dispenser vault soil sample, except for low levels of xylenes, no BTEX constituents were detected above the laboratory reporting limits.

In accordance with the County 14 November 2005 letter to the Port, the County concurred that no further work appeared necessary for the former UST EF-14.

4.4.1 2004 Subsurface Investigation

In 2004, Treadwell and Rollo collected soil and grab groundwater samples from five locations around the former UST location (for boring locations refer to Appendix B). The soil and grab groundwater samples were analyzed for TPHg and TPHd. Soil samples were collected at depths of 4 and 6 feet bgs (one soil sample at 2 feet bgs was also analyzed for TPHmo) (Tables 3 and 5). None of the soil samples was reported to contain TPH over 3.1 mg/kg. The grab groundwater samples did not contain any TPH species above 3.1 µg/L. These concentrations are significantly below ESLs.

4.4.2 Observations during Terminal Redevelopment

The environmental monitor present during excavations while redevelopment activities occurred at the Terminal, did not document unusual soil conditions (e.g., odor or soil discoloration) in the UST EF-14 area.

5. CONCEPTUAL SITE MODEL

The APL Terminal is located along the Oakland Inner Harbor. It is underlain by fill, terrestrial as well as dredged material, with thicknesses ranging from about 10 to 15 feet. The fill is underlain by Young Bay Mud, acting as an aquitard over the Merritt Sand of the San Antonio Formation. Groundwater has been recorded as being present from about 4 to 13 feet bgs[24] under unconfined or semi-confined conditions. Groundwater appears to flow toward the Inner Harbor, but the direction may vary locally. The shallow groundwater is brackish with TDS levels up to 5,580 mg/L and is assumed not to constitute a potential drinking water source due to its brackish nature.

[24] Treadwell and Rollo, 2005, op.cit.

The terminal is an active marine terminal and is completely paved. Buildings are located near Middle Harbor Road and the entrance to the Terminal; one of these buildings, a maintenance shop with roll-up doors, remains near the former UST cluster EF-11 through EF-13. No buildings are near the other former UST locations. Human contact with the underlying soil and groundwater would occur only during utility maintenance or construction projects.

The Terminal has a history of more than 100 years of industrial activity (including ship building and repair and lumber storage). These historic industrial activities have resulted in contamination to the subsurface as documented by Treadwell and Rollo.[25] Because of the historical industrial activities and filling, contaminants not associated with releases from the USTs may be present in the subsurface around the former USTs and may be indistinguishable from the UST COPCs. For that reason, the COPCs for all the USTs have been assumed to consist of TPHg, TPHd, TPHmo, and VOCs.

At USTs EF-10 and EF-14 there are no expected groundwater impacts based on data collected during UST removal. At UST cluster EF-11 through EF-13, grab groundwater sampling around the UST cluster in 2004 did not identify any TPH species or VOCs above laboratory reporting limits except one sample with a low concentration of MTBE. Thus, there does not appear to be a groundwater plume at this cluster.

Groundwater sampling from three groundwater monitoring wells at the EF-6 through EF-9 UST cluster was performed intermittently between 1993 and 2005 (Table 2). No TPH species or VOCs above the laboratory reporting limits were reported in groundwater samples collected during the most recent sampling event in 2005, except as follows:

Analyte	2005 Sampling Event (µg/L)	ESL (Table B) (µg/L)	Sampling Location
cis-1,2-dichloroethene	3.6	590	MW-2
1,4-dichlorobenzene	0.64	15	MW-2
TPHd	100	640	MW-2
TPHd	99	640	MW-3
Vinyl Chloride	0.98	1.8	MW-3

These analytes are all below the ESLs. The concentrations in these three monitoring wells have declined from 1993 to 2005 (Table 2) indicating a decreasing plume, possibly due to natural attenuation. Thus, there does not appear to be a groundwater plume at this location.

Receptors to the COPCs would consist of construction and utility workers as well as aquatic organisms in the Inner Harbor where the shallow groundwater discharges below the wharf. In 2005, Treadwell and Rollo[26] evaluated the potential migration of contaminants along preferential pathways. They concluded that only the area of the EF-6 through EF-9 UST cluster contained utilities that could act as preferential pathways. The nearby utilities consisted of a

[25] Treadwell and Rollo, 2005a, Redevelopment Planning Report, Environmental Subsurface Assessment, Berths 60-63 Yard and Gate Redevelopment Project, Oakland California, 30 March.

[26] Treadwell and Rollo, 2005, op.cit.

storm drain and telephone and electrical lines south of the former UST locations. Typically, electrical and telephones lines are not installed at depths below groundwater and therefore, would not be expected to act as conduits for groundwater contamination. The storm drain invert was determined to be about 3.6 to 4.5 feet bgs and may be slightly below the groundwater table. Water quality data from monitoring wells MW-2 and MW-3, immediately upgradient from the utility lines had relatively low concentrations of COPCs; therefore, it was concluded that while the storm drain could intercept and collect groundwater, it was unlikely to act as a significant preferential pathway for COPC migration.

6. COMPLIANCE WITH POLICY REQUIREMENTS

To evaluate compliance with the Policy, the SWRCB has developed a checklist for use by regulators and responsible parties; the completed checklist is included in Appendix C. Below is a discussion of each of the criteria for low-threat closure in accordance with the Policy.

6.1 General Criteria

There are nine General Criteria that all UST sites must satisfy to be considered for low-threat closure. Each of these criteria is addressed, below.

6.1.1 Is the Unauthorized Release located within the Service Area of a Public Water System?

Yes.

The APL Terminal receives water from the East Bay Municipal Utilities District. Water supply wells are not present on the Terminal or in the vicinity of the former USTs.

6.1.2 Does the Unauthorized Release Consist only of Petroleum?

Yes.

The nine USTs contained gasoline, diesel, or waste oil, as summarized in Table 1. The COPCs, as defined above, consist of TPH species and BTEX. Some chlorinated hydrocarbons were identified in groundwater samples from monitoring wells around the EF-6 through EF-9 UST cluster in the past; however, the most recent (2005) indicated that only 1,4-dichlorobenzene, (0.64 µg/L) and vinyl chloride (0.98 µg/L) were present above laboratory reporting limits; these concentrations are below the ESLs for groundwater that is not considered a potential drinking water source.

6.1.3 Has the Unauthorized ("Primary") Release from the UST System been stopped?

Yes.

All nine USTs and associated dispensing equipment have been removed between 1990 and 1995, as summarized in Table 1.

6.1.4 Has Free Product been removed to the extent Practicable?

Yes.

During removal of the **EF-6 through EF-9 UST cluster**, free product (about one half inch in thickness) was observed in the excavation.[27] The groundwater and free product accumulating in the excavation were subsequently removed by a vacuum truck and sorbent pads; a total of about 42,600 gallons of liquids (which also included rainwater) were removed. During redevelopment activities in 2006, Building E-221, adjacent to the EF-6 through EF-9 UST cluster, was demolished. When the concrete pad and the pilings supporting the concrete pad were excavated and removed, the excavation contained groundwater with visible sheens of petroleum. The liquid was pumped out of the excavation until the excavation was dry. The oily water was transferred to two Baker tanks with a total capacity of 40,000 gallons and subsequently transported off-site for recycling. Three groundwater monitoring wells (Figure 2) installed around the former UST cluster were not reported to contain free product during the fourteen groundwater monitoring events conducted between 1993 and 2005. Therefore, free product is considered to have been removed from this UST cluster to the extent practicable.[28]

At **UST EF-10**, free-phase product was not observed within the excavation cavity. The groundwater that accumulated within the excavation following UST removal was pumped out and transported off-site for recycling. A grab groundwater sample collected from the groundwater recharge was reported to contain a dissolved concentration of TPHd at 5,800 µg/L and no BTEX above laboratory reporting limits.[29] This UST has already received an RACC from the County.

At the **UST EF-11 through EF-13 cluster**, groundwater was observed entering only one of the two excavations. Free-phase product was not observed in that excavation and a grab groundwater sample collected contained dissolved concentrations of TPHg at 5,800 µg/L, toluene at 9.0 µg/L, and xylenes at 8.0 µg/L during UST removal activities.[30] Benzene and ethylbenzene were not reported in the grab groundwater sample above the laboratory reporting limit.

At the **UST EF-14**, groundwater that had accumulated in the excavation following UST removal was removed by a vacuum truck. UST removal documentation does not reveal any observations of free-phase product in the groundwater. One grab groundwater sample collected from the UST EF-14 excavation did not contain any BTEX above laboratory reporting limits (insufficient groundwater had accumulated to perform TPHd analyses).[31]

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[27] Geomatrix, 1992, op.cit.

[28] The Port is preparing documentation of compliance with the Soil Management and Contingency Plan for the APL redevelopment project for submittal to the County. That documentation will include recommendations for additional investigations, as applicable, for subsurface investigations in areas where contamination was discovered during redevelopment construction; the former Building E-221 area is one of those areas.

[29] Alisto Engineering Group, 1995, op.cit.

[30] BASELINE, 1990, op.cit.

[31] BASELINE, 1990, op.cit.

6.1.5 Has a Conceptual Site Model that Assesses the Nature, Extent, and Mobility of the Release been developed?

Yes.

Please refer to Section 5, above.

6.1.6 Has Secondary Source been removed to the Extent Practicable?

Yes.

Secondary source removal was performed at each of the UST sites to the extent practicable by over-excavation of petroleum impacted soil, as summarized below.

UST Area	Volume of Secondary Source Soils Removal (cubic yards)	Volume of Groundwater Removal (gallons)	Time of Secondary Source Removals
EF-6 through EF-9	300	42,600	1992 UST removal
		Up to or in excess of 40,000	Redevelopment in 2006
EF-10	144	2,500	1995 UST removal
EF-11 through EF-13	145	None	1990 UST removal
EF-14	189	5,000	1990 UST removal

In addition, product and groundwater were removed from excavations of the nine USTs during removals and during redevelopment of the APL Terminal near UST clusters EF-6 through EF-9, as described above.

6.1.7 Has Soil and Groundwater been tested for MTBE and Results Reported in Accordance with Health and Safety Code Section 25296.15?

The USTs applicable to this requirement are those that contained gasoline and waste oil. Those former USTs are EF-8, EF-9, EF-11, and EF-13; these four USTS are located with the two UST clusters EF-6 through EF-9 and EF-11 through EF-13. The following summarizes the MTBE analyses performed on soil and groundwater samples from these two UST clusters.

UST Cluster	MTBE Soil Analysis	MTBE Groundwater Analysis	Reference
EF-6 through EF-9	24 samples around the former excavation area. None of the results reported MTBE above the laboratory reporting limit.	13 grab groundwater samples around former excavation area. One sample contained 8.1 µg/L of MTBE; the remaining samples were not reported to contain MTBE above laboratory reporting limit.	Treadwell and Rollo, 2005 (see also Table 6)
EF-11 through EF-13	Nine soil samples around former excavation area. None of the samples was reported to contain MTBE above laboratory reporting limit.	Three grab groundwater samples. One sample contained 5.2 µg/L of MTBE; the remaining samples were not reported to contain MTBE above laboratory reporting limit.	Treadwell and Rollo, 2005 (see also Table 4)

6.1.8 Does a Nuisance, as defined by Water Code Section 13050 exist at the Site?

Any residual contamination from the former USTs at the Terminal is located below an asphalt concrete cap and several feet, if not more, of soil. The APL Terminal is a marine terminal that functions as needed and the operations are not affected by the existence of residual contamination from the former UST locations. Any residual contamination below the asphalt concrete cap does not represent a health threat to current workers at the Terminal or present a source of offensive odors that would interfere with the current or future use of the Terminal.

6.1.9 Are there Unique Site Attributes or Site-Specific Conditions that demonstrably increases the Risk Associated with Residual Petroleum Constituents?

There are no known unique site attributes that increases risks. The APL Terminal is a marine terminal where containers are stored, loaded, and unloaded onto an asphalt concrete surface and transported by trucks to and from the Terminal.

6.2 Media- Specific Criteria

The Policy contains three media-specific criteria that must be met for a site to be considered for low-threat closure. The three criteria pertain to: 1) Groundwater; 2) Vapor Intrusion to Indoor Air; and 3) Direct Contact and Outdoor Air Exposure. Below is a discussion on how this site meets these three criteria.

6.2.1 Groundwater Criterion

To satisfy the groundwater criterion, the contaminant plume that exceeds water quality objectives must be stable or decreasing in aerial extent or meet the criterion of one of five different classes of sites.

Is the Contaminant Plume that Exceeds Water Quality Objectives Stable or Decreasing in Areal Extent?

The investigations conducted to date have not discerned a groundwater plume around or near any of the four UST areas in the Terminal.

At the **UST EF-6 through EF-9 cluster**, groundwater monitoring, conducted intermittently between 1993 and 2005 at three monitoring wells, has shown a significant decrease in concentration of COPCs, possibly due to natural attenuation (Table 2). When groundwater monitoring was initiated, in 1993, significant concentrations of TPH species and BTEX were present in at least one of the wells. During the last monitoring event in 2005, all analytes were below laboratory reporting limits, with the exceptions identified, above, in Section 5; none of the analytes exceeded the ESLs.

At UST **EF-10**, an RACC has already been issued by the County and no groundwater contaminant plume is known to be present.

At UST **EF-11 through EF-13 cluster**, grab groundwater sampling around the former USTs did not identify TPH species or VOCs above laboratory reporting limits (except for one sample containing low concentrations of MTBE) (Tables 5 and 6). No apparent contaminant plume is present at this cluster.

At **UST EF-14**, data collected during UST removal in 1990 did not indicate there was reportable BTEX concentrations in a grab groundwater sample collected from the UST excavation. No contaminant plume appears present at this location. The County also concurred in a 14 November 2006 letter to the Port, that no additional work was necessary for this UST location.

Does the Contaminant Plume that Exceeds Water Quality Objectives meet all of the Additional Characteristics of One of the Five Classes of Site?

The criterion is not applicable to the Terminal USTs since the most recent 2005 quality data indicate that all COPCs are below applicable ESLs.

For Sites with Releases that have not affected Groundwater, do Mobile Constituents (Leachate, Vapors, or Light Non-Aqueous Phase Liquids) contain Sufficient Mobile Constituents to Cause Groundwater to exceed the Groundwater Criterion?

Based on data collected during UST removals from soil and groundwater, grab groundwater samples in 2004,[32] and groundwater samples from groundwater monitoring wells in 2005,[33] any

[32] Treadwell and Rollo, 2005, op.cit.
[33] URS, 2005, op.cit.

releases from UST operations do not appear to have resulted in groundwater plumes of COPCs at UST EF-10, UST EF-11 through EF-13, and UST EF-14 locations. At the UST EF-6 through EF-9 cluster, the concentrations of COPCs since 1993 through 2005 have shown significant decreases presumably through natural attenuation; such processes are expected to continue.

6.2.2 Petroleum Vapor Intrusion to Indoor Air

The Policy states that the vapor-intrusion criterion applies to "sites where the release originated and impacted or potentially impacted adjacent parcels when: 1) existing buildings are occupied or may be reasonably occupied in the future, or 2) buildings for human occupancy are reasonably expected to be constructed in the future."

The areas of the former USTs are paved and are part of a marine terminal that is used for the storage of containers. One building is located adjacent to the former USTs EF-11 through EF-13 cluster. That building is a maintenance shop containing about nine bays with roll-up doors for equipment repair and maintenance. According to Port staff, there are no current or foreseeable plans for construction of buildings on the Terminal. It is possible that trailers (with no direct foundation on the surface) may be placed in the Terminal in the future, depending on existing or future tenant needs.

The scenarios of the Policy for potential effects to indoor air quality pertain to un-weathered free product near the groundwater or dissolved benzene in the groundwater at a concentration in excess of 1,000 µg/L. The former USTs were installed between 1969 and 1979 and removed between 1990 and 1995; therefore, any releases from the UST sites would be expected to be weathered TPH. No plumes of dissolved product or free product have been identified to be present at the current time (as discussed, above). Dissolved benzene has not been identified in groundwater above 1,000 µg/L (Tables 2 and 6). Therefore, this criterion is not applicable to the UST sites.

6.2.3 Direct Contact and Outdoor Air Exposure

The Policy considers direct exposure to residual soil contaminants or inhalation of COPCs in outdoor air to be a low-threat if residual contaminant concentrations are below specific numerical thresholds for either residential, commercial/industrial, or utility workers; these thresholds are specified in the Policy. Alternatively, the Policy considers residual contamination to be low-threat if: 1) a site-specific health risk assessment has been conducted and the results indicate acceptable excess risks; or 2) exposures are controlled by engineering or institutional controls.

The Terminal is an active marine terminal and the Port is not planning any changes in land use in the foreseeable future. The Port will request that the County approves a Risk Management Plan that will govern any excavations or construction of buildings to ensure that construction workers are protected from residual contamination, that the cap across the Terminal is maintained, and that any new buildings for occupancy by commercial workers be evaluated for potential vapor intrusion impacts.

These measures, institutional and engineering controls, will be proposed as part of the report the Port is preparing to document environmental observations during redevelopment activities as well as removal of contaminated soil and groundwater during redevelopment. The report will be prepared to comply with the County requirements contained in the County letter to the Port dated 2 March 2006, as applicable.

7. CONCLUSIONS

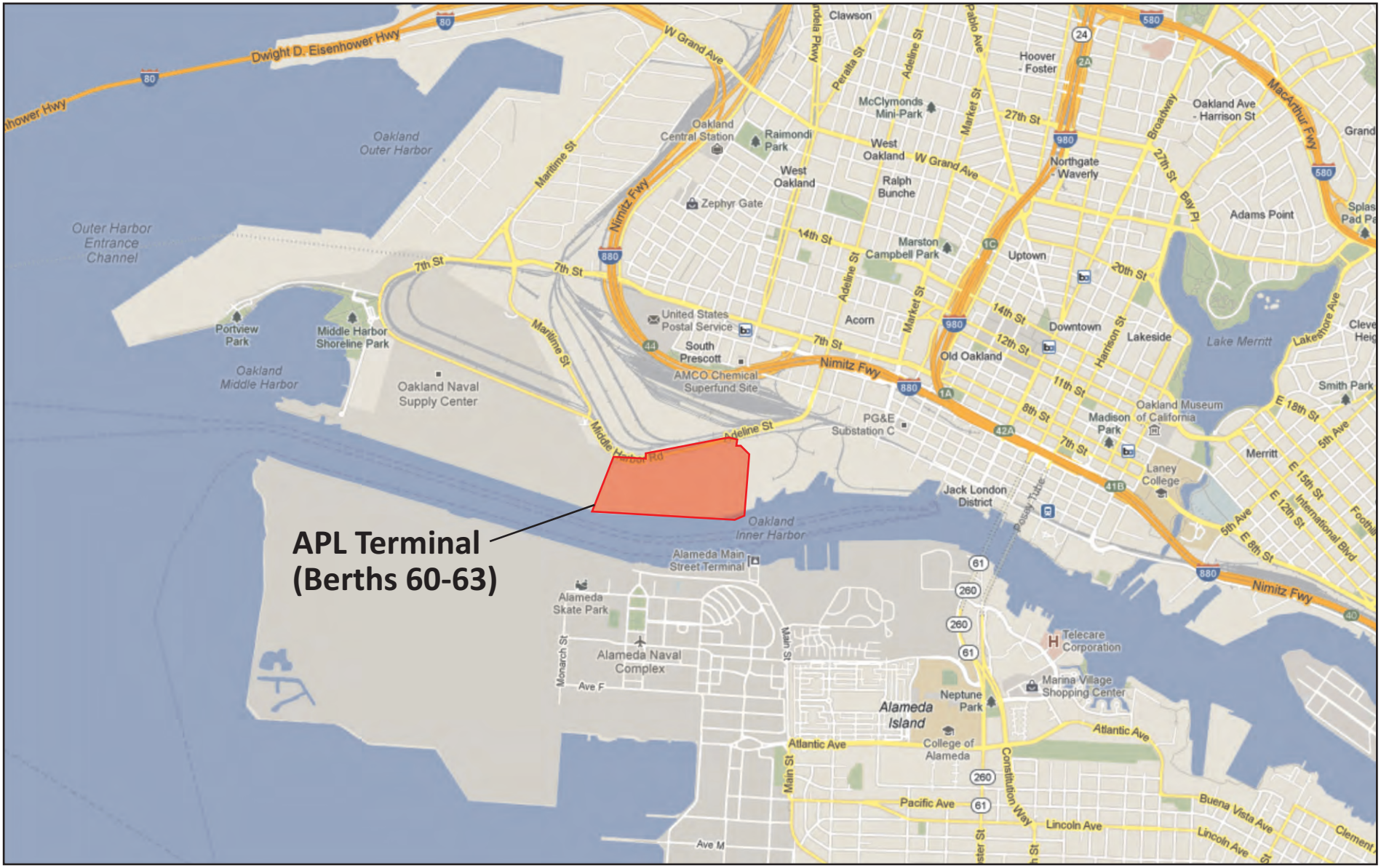
Nine USTs were removed from the APL Terminal between 1990 and 1995. Following removal of the primary sources of contamination, secondary sources (affected soil, free-phase product, and groundwater containing dissolved concentrations of petroleum products) were removed. The shallow groundwater that has high TDS concentrations rendering it a non-drinking water supply and soil, groundwater, and grab groundwater analytical data indicate that any residual petroleum contamination does not represent a significant impact to current or future groundwater uses in the area.

With engineering and institutional controls, to be proposed by the Port for the entire APL Terminal redevelopment area, in conjunction with the subsurface data collected to date from the UST locations, we conclude that the USTs appear to qualify for closure under the Policy.

FIGURES

REGIONAL LOCATION

Figure 1



0 3000 Feet

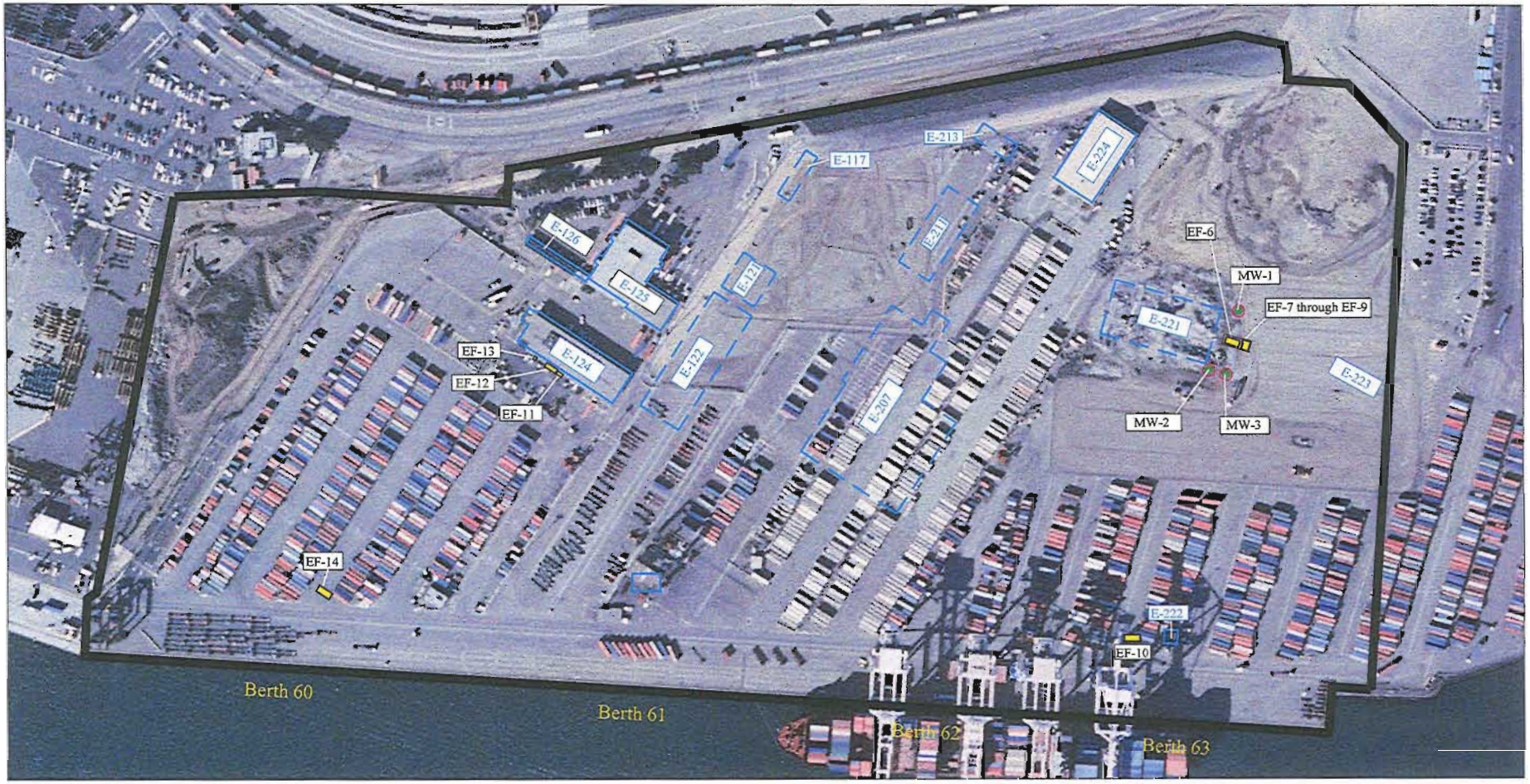
APL Terminal
Oakland, California

12315-09.02032.Fig1.cdr 4/15/13

BASELINE ENVIRONMENTAL CONSULTING

UST AND MONITORING WELL LOCATIONS

Figure 2



Legend

Redevelopment Area Boundary

E-121 — Building Outline and Number (building outline is dashed if it has been removed)

Approximate Underground Storage Tank Location

EF-06 — Underground Storage Tank Identification Number(s)

MW-1 — Former Monitoring Well Location

Basemap: Port of Oakland, 2003
Aerial: Port of Oakland, 2006

Note:

Locations and dimensions of former buildings and former USTs are approximate.

0 350 Feet

APL Terminal
Oakland, California

BASELINE ENVIRONMENTAL CONSULTING

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TABLES

Table 1: Underground Storage Tank Summary, APL Terminal, Port of Oakland

Port Tank Number	Tank Size (Gallons)	Tank Contents	Construction Material	Date Installed	Date Removed
EF-06	10,000	Diesel	Single-Wall(?) Fiberglass	1969 Replaced in 1979	1992
EF-07	5,000	Diesel	Single-Wall(?) Steel	1969	1992
EF-08	1,000	Gasoline	Single-Wall(?) Fiberglass	1969	1992
EF-09	550	Waste Oil	Single-Wall(?) Steel	1969	1992
EF-10	4,000	Diesel	Single-Wall Steel	1969	1995
EF-11	2,000	Gasoline	Single-Wall Steel	1973	1990
EF-12	10,000	Diesel	Single-Wall Steel	1975	1990
EF-13	550	Waste Oil	Single-Wall Steel	1975	1990
EF-14	10,000	Diesel	Single-Wall Fiberglass	1975	1990

Table 2: Historical Analytical Results, Groundwater Monitoring Wells, APL Terminal, Port of Oakland

Monitoring Well	Date	TDS	Gasoline	Diesel	Motor Oil	Benzene	Toluene	Ethyl benzene	Xylene(s)	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Dibromochloromethane	Dichlorodifluoromethane	Methylene chloride	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane	Trichlorotrifluoroethane	Vinyl chloride
		mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-1	2/5/93	3,000	1,800	4,700	-	9.2	1.6	8.9	2.7	-	-	-	0.8	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	5/11/93	-	260	4,800	-	3.2	2.3	0.7	0.5	-	-	-	0.6	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	8/19/93	-	60	2,300	-	9	ND	ND	ND	-	-	-	2.0	2.0	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	11/24/93	-	50	280	-	8.8	1.5	ND	3.0	-	-	-	0.7	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	2/24/94	-	360	2,000	-	12	ND	2	ND	-	-	-	2.0	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/14/94	-	ND	ND	-	9.4	ND	ND	0.7	-	-	-	1.0	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	8/23/94	-	80	3,000	-	13	2.4	ND	9.0	-	-	-	2.3	ND	ND	0.3	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	1.1
	11/4/94	-	ND	1,600	-	15	2.4	ND	11.2	-	-	-	2.2	ND	ND	0.8	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	0.7
	3/7/95	9,000	<50	420	7,200	1.3	0.4	<0.3	<0.4	-	-	-	1.5	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	9/25/95	2,200	310	<500	1,300	12	8.0	<0.3	22.5	-	-	-	1.2	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	0.6	-	-	-	-	-	-	-	-	-	-	1.8
	3/28/96	453	430	710	820	6.6	2.4	12	8.5	-	-	-	1.2	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	4
	6/18/96	953	68	350	750	5.8	1.3	<0.5	<1	-	-	-	1.2	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	2.6
	6/17/05	2,200	<50	<50	<500	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<1.0	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50
MW-2	2/5/93	23,000	ND	840	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	5/11/93	-	ND	3,700	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	8/19/93	-	ND	620	-	ND	ND	ND	ND	-	-	-	ND	ND	1.0	2.0	-	-	3.0	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	11/24/93	-	ND	80	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	2/24/94	-	ND	ND	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	1.0	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/14/94	-	-	ND	-	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	0.8	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	8/23/94	-	-	620	-	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	1.3	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	11/4/94	-	-	1,400	-	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	0.9	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	3/7/95	20,000	<50	310	7,100	<0.4	<0.3	<0.3	<0.4	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	9/25/95	11,000	-	<300	880	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	0.4	-	-	-	-	-	-	-	-	-	-	ND
	3/28/96	1,190	-	280	380	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/18/96	18,800	-	110	330	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/17/05	4,200	<50	100	<500	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<2.0	<1.0	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50
MW-3	2/5/93	1,600	ND	3,400	-	2.1	0.9	1.7	3.1	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	0.4	-	-	-	-	-	-	-	-	-	-	ND
	5/11/93	-	ND	3,300	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	8/19/93	-	ND	840	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	1.0	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	11/24/93	-	ND	100	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	2/24/94	-	ND	890	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/14/94	-	-	440	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	0.6	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	8/23/94	-	-	ND	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	11/4/94	-	-	630	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	3/7/95	12,000	<50	330	3,200	1.4	<0.3	<0.3	<0.4	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	9/25/95	19,000	-	200	1,300	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	3/28/96	7,600	-	200	300	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	1.6	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/18/96	20,600	-	340	560	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	ND	-	ND	-	-	-	-	-	-	-	-	-	-	ND
	6/17/05	16,000	<50	99	<500	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<1.0	<0.50	<0.50	<1.0	<0.50	<1.0	3.6	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	0.98

Notes:
ND = not detected
- = data not available
TDS = total dissolved solids
Historical data prior to 6/17/05 extracted from Tables 2 and 3 from Groundwater Monitoring and Sampling Report, ITSI (1996); 2005 data from URS (2005)

Table 3: 2004 TPH Results in Soil near USTs, APL Terminal, Port of Oakland

Sample ID	Depth (ft bgs)	Sample Date	Gasoline (mg/kg)	Diesel* (mg/kg)	Motor Oil* (mg/kg)
ESL Criteria (Table B)			**420**	**500**	**2,500**
EF6-9					
B31-4.0'	4	5/11/2004	< 0.92	20	63
B31-6.0'	6	5/11/2004	< 0.91	**530**	**2,800**
B32-2.0'	2	5/11/2004	--	1.1	< 5
B32-4.0'	4	5/11/2004	**910**	3.1	< 5
B32-6.0'	6	5/11/2004	5.0	200	1,800
B33-4.0'	4	5/11/2004	< 1.1	64	160
B33-6.0'	6	5/11/2004	< 1.1	17	51
B34-4.0'	4	5/11/2004	< 1.1	< 0.99	< 5.0
B34-6.0'	6	5/11/2004	< 0.95	23	95
B35-4.0'	4	5/12/2004	< 1.0	1.9	--
B35-6.0'	6	5/12/2004	< 0.99	68	--
B36-4.0'	4	5/12/2004	< 1.0	< 0.99	--
B36-6.0'	6	5/12/2004	< 1.1	6.4	--
B37-4.0'	4	5/12/2004	< 0.92	22	--
B37-6.0'	6	5/12/2004	< 0.99	6.3	--
B38-4.0'	4	5/12/2004	**500**	2.9	--
B38-6.0'	6	5/12/2004	< 0.98	15	--
B39-4.0'	4	5/13/2004	< 1.0	22	64
B39-6.0'	6	5/13/2004	< 1.1	180	330
B50-4.0'	4	5/17/2004	< 0.91	4.6	--
B50-6.0'	6	5/17/2004	< 1.1	4.7	--
B51-4.0'	4	5/17/2004	< 0.99	< 1.0	--
B51-6.0'	6	5/17/2004	< 1.0	< 1.0	--
B52-4.0'	4	5/17/2004	< 1.0	5.6	--
B52-7.0'	7	5/17/2004	< 0.98	43	--
EF11-13					
B45-4.0'	4	5/14/2004	< 1.0	3.1	14
B45-6.0'	6	5/14/2004	2.2	**1,200**	320
B46-4.0'	4	5/14/2004	< 0.97	110	360
B46-6.0'	6	5/14/2004	< 1.1	50	46
B47-2.0'	2	5/14/2004	--	8.0	28
B47-4.0'	4	5/14/2004	< 0.95	41	160
B47-6.0'	6	5/14/2004	< 1.1	< 1.0	< 5.0
B48-4.0'	4	5/14/2004	< 1.1	< 1.0	< 5.0
B49-4.0'	4	5/14/2004	< 1.1	2.9	12
B49-6.0'	6	5/14/2004	< 1.0	150	1,200
EF14					
B62-4.0'	4	5/19/2004	< 1.1	3.1	--
B62-6.0'	6	5/19/2004	< 0.94	2.2	--
B63-4.0'	4	5/19/2004	< 1.0	1.3	--
B63-6.0'	6	5/19/2004	< 0.98	< 1.0	--

Table 3: 2004 TPH Results in Soil near USTs, APL Terminal, Port of Oakland

Sample ID	Depth (ft bgs)	Sample Date	Gasoline	Diesel*	Motor Oil*
			(mg/kg)	(mg/kg)	(mg/kg)
ESL Criteria (Table B)			**420**	**500**	**2,500**
B64-2.0'	2	5/19/2004	< 1.1	1.0	< 5.0
B64-4.0'	4	5/19/2004	< 1.0	2.4	--
B64-6.0'	6	5/19/2004	< 1.0	1.2	--
B65-4.0'	4	5/19/2004	< 1.1	< 0.99	--
B65-6.0'	6	5/19/2004	< 1.1	< 1.0	--
B66-4.0'	4	5/19/2004	< 1.1	< 1.0	--
B66-6.0'	6	5/19/2004	< 1.0	< 1.0	--

Source: Treadwell and Rollo, 2005, modified by BASELINE. Modification consists of updating ESLs to 2013 ESLs (Regional Water Board, 2013) for commercial/industrial land uses where groundwater is not a potential drinking water source (Table B).

Notes
mg/kg = milligrams per kilogram
TPH = total petroleum hydrocarbons
"--" = not analyzed
USTs = underground storage tanks
ft bgs = feet below ground surface

Although soil data associated with samples collected from depths of 2 feet bgs are presented, only data from depths of greater than 2 feet bgs were evaluated to assess potential releases from USTs.

< 1 Analyte not detected; reporting limit below the ESL Criteria.
6.9 Analyte detected; result below the ESL Criteria.
1,900 Analyte detected; result above the ESL Criteria.

*TPH-diesel and TPH-motor oil results with silica gel cleanup.

Table 4: 2004 VOC Results in Soil near USTs, APL Terminal, Port of Oakland

Sample ID	Depth (ft bgs)	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethylene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Chlorotoluene	2-Phenylbutane
			(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
ESL Criteria (Table B)			**14,000**	**7,800**	**1,900**	**3,400**	**1,900**	**4,300**	--	--	--	**7,600**	--	**4.5**	**510**	**1,600**	**910**	**2,500**	--	**7,400**	--	**1,800**	--	--	--
EF6-9																									
B31-4.0'	4	5/11/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B31-6.0'	6	5/11/2004	< 5.0	8.7	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
B32-4.0'	4	5/11/2004	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	44,000	**< 500**	< 500	< 500	< 500	< 500	13,000	< 500	< 500	< 500	< 500	< 500	1,200
B32-6.0'	6	5/11/2004	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	610	**< 25**	< 25	< 25	< 25	< 25	150	< 25	< 25	< 25	< 25	< 25	< 25
B33-4.0'	4	5/11/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B33-6.0'	6	5/11/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B34-4.0'	4	5/11/2004	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**< 4.9**	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B34-6.0'	6	5/11/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B35-4.0'	4	5/12/2004	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**< 4.9**	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B35-6.0'	6	5/12/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B36-4.0'	4	5/12/2004	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	**< 4.6**	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B36-6.0'	6	5/12/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B37-4.0'	4	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
B37-6.0'	6	5/12/2004	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**< 4.9**	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B38-4.0'	4	5/12/2004	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	**< 23**	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	< 23	550
B38-6.0'	6	5/12/2004	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	**< 4.6**	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B39-4.0'	4	5/13/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B39-6.0'	6	5/13/2004	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**< 4.9**	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B50-4.0'	4	5/17/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B50-6.0'	6	5/17/2004	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	**< 4.5**	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5
B51-4.0'	4	5/17/2004	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	**< 4.6**	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B51-6.0'	6	5/17/2004	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	**< 4.6**	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B52-4.0'	4	5/17/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B52-7.0'	7	5/17/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
EF11-13																									
B45-4.0'	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B45-6.0'	6	5/14/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B46-4.0'	4	5/14/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B46-6.0'	6	5/14/2004	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**< 4.9**	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B47-4.0'	4	5/14/2004	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	**< 4.7**	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B47-6.0'	6	5/14/2004	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**< 4.9**	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B48-4.0'	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B49-4.0'	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	**< 4.8**	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B49-6.0'	6	5/14/2004	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	**< 4.6**	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
EF14*																									

Table 4: 2004 VOC Results in Soil near USTs, APL Terminal, Port of Oakland

Sample ID	Depth (ft bgs)	Sample Date	4-Chlorotoluene	Acetone	Benzene	Bromobenzene	Bromo-dichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	CFC-11	CFC-12	Chlorobenzene	Chlorobromo methane	Chlorodibromo methane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene	Dibromo-methane	Diisopropyl Ether	ETBE	Ethylbenzene
			(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
ESL Criteria (Table B)			--	**500**	**1,200**	--	**1,800**	**24,000**	**6,400**	--	**410**	--	--	**1,500**	--	--	**1,100**	**4,500**	**130,000**	**18,000**	**93**	--	--	--	--	**4,700**
EF6-9																										
B31-4.0'	4	5/11/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B31-6.0'	6	5/11/2004	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
B32-4.0'	4	5/11/2004	< 500	**< 2,000**	< 500	< 500	< 500	< 500	< 1,000	< 500	**< 500**	< 500	< 1,000	< 500	< 500	< 500	< 1,000	< 500	< 1,000	< 500	< 500	980	< 500	< 500	< 500	**10,000**
B32-6.0'	6	5/11/2004	< 25	< 100	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25	< 50	< 25	< 25	< 25	< 50	< 25	< 50	< 25	< 25	< 25	< 25	< 25	< 25	70
B33-4.0'	4	5/11/2004	< 4.7	39	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B33-6.0'	6	5/11/2004	< 4.8	44	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B34-4.0'	4	5/11/2004	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B34-6.0'	6	5/11/2004	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B35-4.0'	4	5/12/2004	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B35-6.0'	6	5/12/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B36-4.0'	4	5/12/2004	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B36-6.0'	6	5/12/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B37-4.0'	4	5/12/2004	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
B37-6.0'	6	5/12/2004	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B38-4.0'	4	5/12/2004	< 23	< 91	< 23	< 23	< 23	< 23	< 45	< 23	< 23	< 23	< 45	44	< 23	< 23	< 45	< 23	< 45	< 23	< 23	38	< 23	< 23	< 23	< 23
B38-6.0'	6	5/12/2004	< 4.6	21	5.2	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	11
B39-4.0'	4	5/13/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B39-6.0'	6	5/13/2004	< 4.9	23	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B50-4.0'	4	5/17/2004	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B50-6.0'	6	5/17/2004	< 4.5	< 18	< 4.5	< 4.5	< 4.5	< 4.5	< 9.1	< 4.5	< 4.5	< 4.5	< 9.1	< 4.5	< 4.5	< 4.5	< 9.1	< 4.5	< 9.1	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5
B51-4.0'	4	5/17/2004	< 4.6	21	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B51-6.0'	6	5/17/2004	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B52-4.0'	4	5/17/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B52-7.0'	7	5/17/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
EF11-13																										
B45-4.0'	4	5/14/2004	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B45-6.0'	6	5/14/2004	< 4.8	28	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B46-4.0'	4	5/14/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B46-6.0'	6	5/14/2004	< 4.9	25	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B47-4.0'	4	5/14/2004	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 9.4	< 4.7	< 9.4	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B47-6.0'	6	5/14/2004	< 4.9	22	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 9.8	< 4.9	< 9.8	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B48-4.0'	4	5/14/2004	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B49-4.0'	4	5/14/2004	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 9.6	< 4.8	< 9.6	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B49-6.0'	6	5/14/2004	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 9.3	< 4.6	< 9.3	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
EF14*																										

Table 4: 2004 VOC Results in Soil near USTs, APL Terminal, Port of Oakland

Sample ID	Depth (ft bgs)	Sample Date	Freon 113	Hexachloro-butadiene	Isopropyl-benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methyl n-Butyl Ketone	Methyl Tert-Amyl Ether (TAME)	Methylene Chloride	MTBE	Naphthalene	n-Butylbenzene	PCE	Propylbenzene	Styrene	Tert-Butyl Alcohol	Tert-Butyl-benzene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	TCE	Vinyl Acetate	Vinyl Chloride	Xylenes (total)
			(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
ESL Criteria (Table B)			--	**4,600**	--	**13,000**	**3,900**	--	--	**34,000**	**8,400**	**4,800**	--	**3,400**	--	**15,000**	**110,000**	--	**9,300**	**39,000**	--	**5,900**	--	**150**	**11,000**
EF6-9																									
B31-4.0'	4	5/11/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B31-6.0'	6	5/11/2004	< 5.0	< 5.0	< 5.0	< 10	< 10	< 10	< 5.0	67	< 5.0	< 5.0	< 5.0	110	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 5.0	< 5.0	13	< 50	< 10	< 5.0
B32-4.0'	4	5/11/2004	< 500	< 500	1,800	< 1,000	< 1,000	< 1,000	< 500	< 2,000	< 500	**8,900**	4,900	< 500	6,700	< 500	< 10,000	< 500	< 500	< 500	< 500	< 500	< 5,000	**< 1,000**	**27,800**
B32-6.0'	6	5/11/2004	< 25	< 25	< 25	< 50	< 50	< 50	< 25	< 100	< 25	260	79	< 25	63	< 25	< 500	< 25	< 25	< 25	< 25	< 25	< 250	< 50	186
B33-4.0'	4	5/11/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	35	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B33-6.0'	6	5/11/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	34	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B34-4.0'	4	5/11/2004	< 4.9	< 4.9	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	59	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 98	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 49	< 9.8	< 4.9
B34-6.0'	6	5/11/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	20	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B35-4.0'	4	5/12/2004	< 4.9	< 4.9	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 98	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 49	< 9.8	< 4.9
B35-6.0'	6	5/12/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B36-4.0'	4	5/12/2004	< 4.6	< 4.6	< 4.6	< 9.3	< 9.3	< 9.3	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 93	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 46	< 9.3	< 4.6
B36-6.0'	6	5/12/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B37-4.0'	4	5/12/2004	< 5.0	< 5.0	< 5.0	< 10	< 10	< 10	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	< 10	< 5.0
B37-6.0'	6	5/12/2004	< 4.9	< 4.9	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 98	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 49	< 9.8	< 4.9
B38-4.0'	4	5/12/2004	< 23	< 23	350	< 45	< 45	< 45	< 23	< 91	< 23	< 23	1,300	< 23	930	< 23	< 450	240	< 23	< 23	< 23	< 23	< 230	< 45	< 23
B38-6.0'	6	5/12/2004	< 4.6	< 4.6	< 4.6	< 9.3	< 9.3	< 9.3	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	13	< 4.6	< 93	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 46	< 9.3	< 4.6
B39-4.0'	4	5/13/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B39-6.0'	6	5/13/2004	< 4.9	< 4.9	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 98	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 49	< 9.8	< 4.9
B50-4.0'	4	5/17/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B50-6.0'	6	5/17/2004	< 4.5	< 4.5	< 4.5	< 9.1	< 9.1	< 9.1	< 4.5	< 18	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 91	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 45	< 9.1	< 4.5
B51-4.0'	4	5/17/2004	< 4.6	< 4.6	< 4.6	< 9.3	< 9.3	< 9.3	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 93	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 46	< 9.3	< 4.6
B51-6.0'	6	5/17/2004	< 4.6	< 4.6	< 4.6	< 9.3	< 9.3	< 9.3	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 93	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 46	< 9.3	< 4.6
B52-4.0'	4	5/17/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B52-7.0'	7	5/17/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
EF11-13																									
B45-4.0'	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B45-6.0'	6	5/14/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	53	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B46-4.0'	4	5/14/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	36	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B46-6.0'	6	5/14/2004	< 4.9	< 4.9	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	33	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 98	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 49	< 9.8	< 4.9
B47-4.0'	4	5/14/2004	< 4.7	< 4.7	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 94	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 47	< 9.4	< 4.7
B47-6.0'	6	5/14/2004	< 4.9	< 4.9	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 98	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 49	< 9.8	< 4.9
B48-4.0'	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B49-4.0'	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 96	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 48	< 9.6	< 4.8
B49-6.0'	6	5/14/2004	< 4.6	< 4.6	< 4.6	< 9.3	< 9.3	< 9.3	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 93	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 46	< 9.3	< 4.6
EF14*																									

Source: Treadwell and Rollo, 2005, modified by BASELINE. Modification consists of updating ESLs to 2013 ESLs (Regional Water Board, 2013) for commercial/industrial land uses where groundwater is not a potential drinking water source (Table B).

Notes

µg/kg - micrograms per kilogram

ft bgs = feet below ground surface

"--" = no value

* = no analyses

USTs = underground storage tanks

VOC = volatile organic compound

< 4.6 Analyte not detected; reporting limit below the ESL.

< 4.5 Analyte not detected; reporting limit above the ESL.

20 Analyte detected; result below the ESL.

8,900 Analyte detected; result above the ESL.

Table 5: 2004 TPH Results in Grab Groundwater Samples near USTs, APL Terminal, Port of Oakland

Sample ID	Sample Date	Gasoline (µg/L)	Diesel* (µg/L)	Motor Oil* (µg/L)	Hydraulic Oil* (µg/L)
ESL Criteria (Table B)		**500**	**640**	**640**	-
EF6-9					
B31(GW)	5/11/2004	230	**9,200**	**8,700**	17,000
B32(GW)	5/11/2004	**12,000**	**66,000**	**95,000**	140,000
B33(GW)	5/11/2004	< 50	< 50	< 300	< 300
B34(GW)	5/11/2004	< 50	< 50	< 300	< 300
B35(GW)	5/12/2004	**570**	130	--	--
B36(GW)	5/12/2004	51	< 50	--	--
B37(GW)	5/12/2004	< 50	< 50	--	--
B38(GW)	5/12/2004	**1,900**	260	--	--
B39(GW)	5/13/2004	< 50	< 50	< 300	< 300
B50(GW)	5/17/2004	72	< 50	--	--
B51(GW)	5/17/2004	< 50	< 50	--	--
B52(GW)	5/17/2004	< 50	< 50	--	--
MW2(GW)	6/8/2004	<50	<50	<300	--
EF11-13					
B45(GW)	5/14/2004	< 50	< 50	< 300	< 300
B46(GW)	5/14/2004	< 50	< 50	< 300	< 300
B47(GW)	5/14/2004	< 50	< 50	< 300	< 300
B49(GW)	5/14/2004	< 50	< 50	< 300	< 300
EF14					
B62(GW)	5/19/2004	< 50	< 50	--	--
B63(GW)	5/19/2004	< 50	< 50	--	--
B64(GW)	5/19/2004	< 50	54	--	--
B65(GW)	5/19/2004	< 50	< 50	--	--
B66(GW)	5/19/2004	< 50	< 50	--	--

Source: Treadwell and Rollo, 2005, modified by BASELINE. Modification consists of updating ESLs to 2013 ESLs (Regional Water Board, 2013) for commercial/industrial land uses where groundwater is not a potential drinking water source (Table B).

Notes

µg/L = micrograms per liter

TPH = total petroleum hydrocarbons

USTs = underground storage tanks

- = no value

"--" = not analyzed

< 300	Analyte not detected; reporting limit below the ESL.
6,500	Analyte detected; result below the ESL.
9,200	Analyte detected; value above the ESL.

*TPH-diesel, TPH-motor oil, and TPH-hydraulic oil results with silica gel cleanup.

Table 6: 2004 VOC Results in Grab Groundwater Samples near USTs, APL Terminal, Port of Oakland, California

Sample ID	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethylene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ESL Criteria (Table B)		**930**	**62**	**240**	**940**	**47**	**25**	-	-	-	**25**	-	**0.2**	**77**	**14**
EF6-9															
B31(GW)	5/11/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	9.9	**< 5.0**	< 0.50	< 5.0
B32(GW)	5/11/2004	< 63	**< 63**	< 63	< 63	**< 63**	**< 63**	< 63	< 63	< 63	**< 63**	1,100	**< 63**	< 6.3	**< 63**
B33(GW)	5/11/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B34(GW)	5/11/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B35(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B36(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B37(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B38(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	6.6	**< 5.0**	< 0.50	< 5.0
B39(GW)	5/13/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B50(GW)	5/17/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B51(GW)	5/17/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B52(GW)	5/17/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
MW2(GW)	6/8/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
EF11-13															
B46(GW)	5/14/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B47(GW)	5/14/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
B49(GW)	5/14/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 0.50	< 5.0
EF14*															

Table 6: 2004 VOC Results in Grab Groundwater Samples near USTs, APL Terminal, Port of Oakland, California

Sample ID	Sample Date	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Chlorotoluene	2-Phenylbutane	4-Chlorotoluene	Acetone	Benzene	Bromobenzene	Bromo-dichloro-methane
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ESL Criteria (Table B)		**100**	**100**	-	**65**	-	**15**	-	-	-	-	**1,500**	**27**	-	**1,100**
EF6-9															
B31(GW)	5/11/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	15	< 5.0	< 5.0
B32(GW)	5/11/2004	< 6.3	< 63	290	< 63	< 63	**< 63**	< 63	< 63	< 63	< 63	< 250	**73**	< 63	< 63
B33(GW)	5/11/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B34(GW)	5/11/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B35(GW)	5/12/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B36(GW)	5/12/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B37(GW)	5/12/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B38(GW)	5/12/2004	1.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.9	< 5.0	< 20	**65**	< 5.0	< 5.0
B39(GW)	5/13/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B50(GW)	5/17/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B51(GW)	5/17/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B52(GW)	5/17/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
MW2(GW)	6/8/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<20	< 5.0	< 5.0	< 5.0
EF11-13															
B46(GW)	5/14/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B47(GW)	5/14/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
B49(GW)	5/14/2004	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0
EF14*															

Table 6: 2004 VOC Results in Grab Groundwater Samples near USTs, APL Terminal, Port of Oakland, California

Sample ID	Sample Date	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	CFC-11	CFC-12	Chlorobenzene	Chloro-bromomethane	Chloro-dibromo-methane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ESL Criteria (Table B)		**1,100**	**160**	-	**4.8**	-	-	**25**	-	-	**16**	**170**	**1,100**	**590**	**24**
EF6-9															
B31(GW)	5/11/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B32(GW)	5/11/2004	< 63	< 130	< 63	**< 63**	< 63	< 130	**< 63**	< 130	< 63	**< 130**	< 63	< 130	< 63	**< 63**
B33(GW)	5/11/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B34(GW)	5/11/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B35(GW)	5/12/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B36(GW)	5/12/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B37(GW)	5/12/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B38(GW)	5/12/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B39(GW)	5/13/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B50(GW)	5/17/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B51(GW)	5/17/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B52(GW)	5/17/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
MW2(GW)	6/8/2004	< 5.0	<10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	<10	< 5.0	< 10	< 5.0	< 5.0
EF11-13															
B46(GW)	5/14/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B47(GW)	5/14/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
B49(GW)	5/14/2004	< 5.0	< 10	< 5.0	**< 5.0**	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 10	< 5.0	< 5.0
EF14*															

Table 6: 2004 VOC Results in Grab Groundwater Samples near USTs, APL Terminal, Port of Oakland, California

Sample ID	Sample Date	Cymene	Dibromomethane	Diisopropyl Ether	ETBE	Ethylbenzene	Freon 113	Hexachloro-butadiene	Isopropyl-benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methyl n-Butyl Ketone	Methyl Tert-Amyl Ether	Methylene Chloride	Methyl-tert-butyl-ether
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ESL Criteria (Table B)		-	-	-	-	**43**	-	**0.93**	-	**14,000**	**170**	-	-	**2,200**	**1,800**
EF6-9															
B31(GW)	5/11/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B32(GW)	5/11/2004	< 63	< 63	< 6.3	< 6.3	**140**	< 63	**< 63**	< 63	< 130	< 130	< 130	< 6.3	< 250	< 6.3
B33(GW)	5/11/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B34(GW)	5/11/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B35(GW)	5/12/2004	< 5.0	< 5.0	< 0.50	< 0.50	14	< 5.0	**< 5.0**	17	< 10	< 10	< 10	< 0.50	< 20	8.1
B36(GW)	5/12/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B37(GW)	5/12/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B38(GW)	5/12/2004	< 5.0	< 5.0	< 0.50	< 0.50	13	< 5.0	**< 5.0**	40	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B39(GW)	5/13/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B50(GW)	5/17/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B51(GW)	5/17/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B52(GW)	5/17/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
MW2(GW)	6/8/2004	< 5.0	< 5.0	--	--	< 5.0	< 5.0	**< 5.0**	< 5.0	--	--	< 10	--	< 20	< 5.0
EF11-13															
B46(GW)	5/14/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	5.2
B47(GW)	5/14/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
B49(GW)	5/14/2004	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	**< 5.0**	< 5.0	< 10	< 10	< 10	< 0.50	< 20	< 0.50
EF14*															

Table 6: 2004 VOC Results in Grab Groundwater Samples near USTs, APL Terminal, Port of Oakland, California

Sample ID	Sample Date	Naphthalene	n-Butylbenzene	Tetrachloroethene	Propylbenzene	Styrene	Tert-Butyl Alcohol	Tert-Butyl-benzene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ESL Criteria (Table B)		**24**	-	**63**	-	**100**	**18,000**	-	**130**	**590**	-	**130**	-	**1.8**	**100**
EF6-9															
B31(GW)	5/11/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	9.7
B32(GW)	5/11/2004	**210**	< 63	< 63	140	< 63	< 130	< 63	< 63	< 63	< 63	< 63	< 630	**< 130**	**1,690**
B33(GW)	5/11/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B34(GW)	5/11/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B35(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	15	< 5.0	< 10	6.8	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B36(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B37(GW)	5/12/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B38(GW)	5/12/2004	6.9	7.0	< 5.0	91	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	6.1
B39(GW)	5/13/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B50(GW)	5/17/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B51(GW)	5/17/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B52(GW)	5/17/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
MW2(GW)	6/8/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
EF11-13															
B46(GW)	5/14/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B47(GW)	5/14/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
B49(GW)	5/14/2004	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50	**< 10**	< 5.0
EF14*															

Source: Treadwell and Rollo, 2005, modified by BASELINE. Modification consists of updating ESLs to 2013 ESLs (Regional Water Board, 2013) for commercial/industrial land uses where groundwater is not a potential drinking water source (Table B).

Notes
µg/L = micrograms per liter
USTs = underground storage tanks
VOC = volatile organic compound
"--" = not analyzed
* = no snalyses
- = no value
< 5 Analyte not detected; reporting limit below the ESL Criteria.
< 130 Analyte not detected; reporting limit above the ESL Criteria.
1.5 Analyte detected; result value below the ESL Criteria.
280 Analyte detected; result value above the ESL Criteria.

APPENDICES

APPENDIX A

MAP SHOWING BORING LOCATIONS AT THE APL REDEVELOPMENT AREA

Municipal Debris Fill Area

Diesel Spill / Railyard Area

Tanks EF11-13 Area

General Area

Tanks EF6-9 Area

Tank EF14 Area

Boring B20 Area

Wharf

Oakland Inner Harbor

"SPILL AREA" WELL/ DSMW-1*

MW-2*

APL/UP-W1**

APL/UP-W2**

E-124 E-125 E-126 E-127 E-123 E-240 E-224 E-221 E-222

LEGEND

Sampling locations and data references included in T&R's Environmental Subsurface Assessment:

● B31	T&R
▣ MW-6	ITSI, 2004
■ B1	GAIA, 2003
⊙ B-1	Blymer, 1999
▲ OKUS-B2	USPCI, 1993; CDM, 1999
◬ IB-49	CDM, 1998

Preliminary Areas of Concern

Current Property Boundary

Redevelopment Site Outline

EF14 Former Underground Storage Tanks (UST)

E-124 Existing Building (only building E-125 will remain after redevelopment)

Proposed Building

Notes:

* MW-2 & "Spill Area" Well : Monitoring wells installed by others but data assessed was generated by T&R. assigned to ITSI

** APL/UP-W1 & W2: Soil sampling data from CDM, 1999 and groundwater data from ETIC, 2004.

N

200 0 200 Feet

32 16 8 4 2 1 0.5 0.25 1/64

Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SITE PLAN WITH SAMPLING LOCATIONS

Date 3/30/05 | Project No. 4000.04 | Figure 5

Treadwell&Rollo

Treadwell & Rollo C:\GIS\4000_04\REPORT_FIGURES.APR 03/2005

APPENDIX B

SOIL QUALITY DATA FROM 2002-2005 FROM APL TERMINAL REDEVELOPMENT AREA

CONSTRUCTION WORKER RISK ASSESSMENT

BERTHS 60-63 TERMINAL YARD AND GATE REDEVELOPMENT PROJECT AREA PORT OF OAKLAND

Prepared For:

Port of Oakland
530 Water Street
Oakland, California 94607

Prepared By:

ETIC Engineering, Inc.
1330 Broadway, Suite 1015
Oakland, California 94612

SAIC
1404 Franklin Street, 6th Floor
Oakland, California 94612

March 21, 2005

IB-44
IB-45
IB-46
IB-47
IB-48
IB-49
B72
B71
B74
B75
B73
B19
B14
B88
B13
B92
B91
B22
B90
B76
B9
B68
B70
B67
B69
B8
DIESEL SPILL / RAILYARD AREA
MUNICIPAL DEBRIS FILL AREA
B28
B93
OKUS-W6
B55
B2
B53
OKUS-B13
B54
B1
B3
TANKS EF11-13 AREA
B-1
B-2
B7
B96
B46
B47
B48
B45
B49
B15
B87
B84
B12
TANKS EF6-9 AREA
B21
B89
B51
B35
B36
B52
B50
B37
B38
B39
B77
B31
B32
B33
B34
MW-2
B24
B78
OKUS-B5
B29
OKUS-B4
OKUS-B2
OKUS-W4
MW7
MW6
B56
OKUS-W5
B94
B57
B80
B4
GENERAL AREA
B81
B85
B18
OKUS-W3
OKUS-B3
OKUS-B1
B58
EW5
OKUS-W2
B59
APLUP-W1
B6
B83
B16
B82
B23
BORING B20 AREA
OKUS-W1
OKUS-B7
B30
B79
B10
TANK EF14 AREA
APLUP-W2
B66
B63
B41
B43
B26
IB-43
MW8
B60
B61
B5
B62
B64
B86
B42
B65
B95
B11
B17
B20
B40
B44
B25
WHARF

LEGEND:

- Monitoring well
- Extraction well
- Soil boring

N

0 100 200

Scale (feet)

SITE PLAN

PORT OF OAKLAND - BERTH 60-63
OAKLAND, CALIFORNIA

Date: 12/7/2004 | File:SITEPLAN1004.DWG | Figure: 2

ETIC ENGINEERING

SAIC An Employee-Owned Company

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
DIESEL SPILL / RAILYARD AREA										
B8	4	12/14/2002	< 1	--	25 G	--	120	--	--	--
B8	8	12/14/2002	< 1	--	2.7 G	--	10	--	--	--
B9	4	12/21/2002	1.4 A	--	370 G	--	3,100	--	--	--
B9	8	12/21/2002	< 1	--	10 G	--	26	--	--	--
B13	4	12/21/2002	< 1	--	15 G	--	43	--	--	--
B13	8	12/21/2002	< 1	--	1.7 G	--	< 5	--	--	--
B14	4	12/15/2002	< 1	--	1.4 BG	--	< 5	--	--	--
B14	8	12/15/2002	< 1	--	2.4 BG	--	5.1	--	--	--
B19	4	12/21/2002	< 1	--	16 GB	--	100	--	--	--
B19	8	12/21/2002	< 1	--	2.2 G	--	9.9	--	--	--
B22	4	12/21/2002	< 1	--	10 G	--	71	--	--	--
B22	8	12/21/2002	< 1	--	1 G	--	6.4	--	--	--
B67	2	5/19/2004	--	15 HY	--	160	--	--	--	--
B67	4	5/19/2004	--	< 1	--	6.9	--	--	--	--
B67	6	5/19/2004	--	< 1	--	< 5	--	--	--	--
B68	2	5/20/2004	--	34 HY	--	100	--	--	--	--
B68	4	5/20/2004	--	100 HY	--	660	--	--	--	--
B69	2	5/20/2004	--	20 HY	--	130	--	--	--	--
B69	4	5/20/2004	--	61 HY	--	370	--	--	--	--
B70	2	5/20/2004	--	79 HY	--	260	--	--	--	--
B70	4	5/20/2004	--	340 HY	--	1,900	--	--	--	--
B71	2	5/20/2004	--	54 HY	--	380	--	--	--	--
B71	4	5/20/2004	--	< 1	--	< 5	--	--	--	--
B72	2	5/20/2004	--	37 HY	--	150	--	--	--	--
B73	2	5/21/2004	--	1.7 HY	--	8	--	--	--	--
B74	2	5/21/2004	--	23 HY	--	140	--	--	--	--
B75	2	5/21/2004	--	57 HY	--	360	--	--	--	--
B88	2	5/25/2004	--	< 1	--	5.2	--	--	--	--
IB-46	2	4/1/1998	< 1	3 YH	--	25 YH	--	--	--	20 YH
IB-46	3.5	4/1/1998	< 1	< 1	--	< 5.1	--	--	--	< 5.1
IB-46	4.5	4/1/1998	< 1	5 YH	--	32 YH	--	--	--	26 YH
IB-46	6	4/1/1998	< 1	14 YH	--	165 YH	--	--	--	130 H
IB-47	2.5	4/1/1998	--	43 YH	--	373 YHL	--	--	--	306 HL
IB-47	5	4/1/1998	--	6 H	--	8 YH	--	--	--	7 YHL
IB-48	3.25	4/1/1998	--	8 YH	--	29 YHL	--	--	--	24 YHL
IB-48	5	4/1/1998	--	4 YH	--	33 YHL	--	--	--	27 YHL
IB-49	1	4/1/1998	--	5 YH	--	89 YHL	--	--	--	76 HL
IB-49	5	4/1/1998	--	1 YH	--	8 YHL	--	--	--	67 YHL
Maximum Detected Concentration			1.4	370		3,100		--		306

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
Mean			0.56	36.07		234.11				68.56
Standard Deviation			0.23	79.94		577.89				92.04
Number of Samples			16	38		38				10
95% UCL			0.80	92.59		642.74				195.42
MUNICIPAL DEBRIS FILL AREA										
B1	4	12/14/2002	< 1	--	1.8 G	--	820	--	--	--
B1	8	12/14/2002	< 1	--	3.3 G	--	13	--	--	--
B2	4	12/14/2002	2.3 b	--	800 G	--	1,900	--	--	--
B2	8	12/14/2002	< 1	--	16 G	--	38	--	--	--
B28	4	12/21/2002	1.8 A	--	320 G	--	1,300	--	--	--
B28	8	12/21/2002	< 1	--	35 BG	--	47	--	--	--
B29	4	12/21/2002	13 gA	--	35 BG	--	24	--	--	--
B29	6	12/21/2002	19 gA	--	120 BG	--	160	--	--	--
B29	8	12/21/2002	69 gA	--	7,000 BG	--	8,300	--	--	--
B30	4	12/21/2002	2.3 A	--	140 BG	--	270	--	--	--
B30	12	12/21/2002	< 1	--	5.3 G	--	12	--	--	--
B53	2	5/17/2004	< 0.98	11 H	--	36	--	82 Y	--	--
B53	4	5/17/2004	< 1.1	560 H	--	740	--	2,300 Y	--	--
B54	2	5/17/2004	1.3 YZ	750 H	730 H	830 L	860 L	2,900 Y	2,900 Y	--
B54	4	5/17/2004	5.7 YZ	2.4 HY	3.2 HY	6.1	7.3	15 Y	19 Y	--
B55	2	5/18/2004	--	33 HY	--	80	--	--	--	--
B55	4	5/18/2004	--	79 HY	--	--	--	--	--	--
B55	6	5/18/2004	--	65 HY	--	--	--	--	--	--
B56	2	5/18/2004	< 1	170 HY	--	430	--	1,100 Y	--	--
B56	4	5/18/2004	1.6 HY	24 HY	--	48	--	130 Y	--	--
B57	2	5/18/2004	< 1.1	310 HY	--	1,500	--	3,200 Y	--	--
B57	4	5/18/2004	< 1	3.2 HY	--	17	--	41 Y	--	--
B58	2	5/18/2004	< 1.1	130 HY	--	3,100	--	8,200 HY	--	--
B58	4	5/18/2004	< 1.1	260 HY	--	980	--	2,200 Y	--	--
B59	2	5/18/2004	< 0.94	15 HY	--	58	--	130 Y	--	--
B59	4	5/18/2004	< 1	17 HY	--	51	--	130 Y	--	--
OKUS-B1	8	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B2	4	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B2	7	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B3	8	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B4	8	1/15/1993	154	47,000	--	--	--	--	--	--
OKUS-B7	6	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B7	8	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B13	3	7/13/1993	2.49	< 0.5	--	--	--	--	--	--
OKUS-B13	10	7/13/1993	1.03	< 0.5	--	--	--	--	--	--
OKUS-W1	6	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W2	2	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
OKUS-W2	10	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W2	14	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W3	6	1/14/1993	< 0.05	0.1	--	--	--	--	--	--
OKUS-W3	10	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W3	18	1/14/1993	2.1	< 0.5	--	--	--	--	--	--
OKUS-W5	7	1/15/1993	8.6	1,400	--	--	--	--	--	--
OKUS-W5	8	1/15/1993	194	15,000	--	--	--	--	--	--
OKUS-W6	10	7/12/1993	0.28	< 0.5	--	--	--	--	--	--
IB-43	1.25	4/1/1998	< 1	4 YH	--	16 YHL	--	--	--	13 YHL
IB-43	2.5	4/1/1998	< 1	717 YH	--	3,314 YH	--	--	--	2,598 YH
IB-45	1.5	4/1/1998	< 1	13 YH	--	54 YHL	--	--	--	45 YL
IB-45	5	4/1/1998	< 1	12 YH	--	405 YH	--	--	--	336 YH
Maximum Detected Concentration			194	47,000		8,300		8,200		2,598
Mean			10.38	1,501.14		877.87		1,702.67		
Standard Deviation			36.63	6,961.53		1,708.86		2,383.67		
Number of Samples			47	50		28		12		
95% UCL			33.67	5,792.51		2,285.55		4,702.05		
BORING B20 AREA										
B20	4	12/15/2002	2.3 Fb	--	82 G	--	160	--	--	--
B20	8	12/15/2002	< 1	--	5.1 G	--	13	--	--	--
B23	4	12/15/2002	< 1	--	83 GB	--	780	--	--	--
B23	8	12/15/2002	< 1	--	< 1	--	< 5	--	--	--
B25	4	12/15/2002	< 1	--	160 G	--	650	--	--	--
B25	8	12/15/2002	< 1	--	5.1 G	--	21	--	--	--
B26	4	12/14/2002	< 1	--	32 G	--	160	--	--	--
B26	7	12/14/2002	< 1	--	8.4 GB	--	31	--	--	--
B27	2	12/14/2002	1.5 b	--	240 G	--	1,400	--	--	--
B27	4	12/14/2002	1.3 b	--	450 GB	--	610	--	--	--
B27	8	12/14/2002	< 1	--	7.1 B	--	< 25	--	--	--
B40	2	5/13/2004	--	6.4 HY	--	44 Y	--	--	--	47
B40	4	5/13/2004	--	150 HY	--	400 Y	--	--	--	490
B40	6	5/13/2004	--	40 HY	--	87 Y	--	--	--	120
B41	2	5/13/2004	--	6 HY	--	30 Y	--	--	--	33
B41	6	5/13/2004	--	36 HY	--	92 H	--	--	--	110 L
B42	2	5/13/2004	--	140 HY	--	730 Y	--	--	--	730
B42	5	5/13/2004	--	160 HY	--	760 Y	--	--	--	830
B42	6	5/13/2004	--	< 1	--	< 5	--	--	--	< 5
B43	2	5/13/2004	--	7.3 HY	--	27 Y	--	--	--	33
B43	3.5	5/13/2004	--	< 1	--	< 5	--	--	--	< 5

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
DIESEL SPILL / RAILYARD AREA										
B8	4	12/14/2002	< 1	--	25 G	--	120	--	--	--
B8	8	12/14/2002	< 1	--	2.7 G	--	10	--	--	--
B9	4	12/21/2002	1.4 A	--	370 G	--	3,100	--	--	--
B9	8	12/21/2002	< 1	--	10 G	--	26	--	--	--
B13	4	12/21/2002	< 1	--	15 G	--	43	--	--	--
B13	8	12/21/2002	< 1	--	1.7 G	--	< 5	--	--	--
B14	4	12/15/2002	< 1	--	1.4 BG	--	< 5	--	--	--
B14	8	12/15/2002	< 1	--	2.4 BG	--	5.1	--	--	--
B19	4	12/21/2002	< 1	--	16 GB	--	100	--	--	--
B19	8	12/21/2002	< 1	--	2.2 G	--	9.9	--	--	--
B22	4	12/21/2002	< 1	--	10 G	--	71	--	--	--
B22	8	12/21/2002	< 1	--	1 G	--	6.4	--	--	--
B67	2	5/19/2004	--	15 HY	--	160	--	--	--	--
B67	4	5/19/2004	--	< 1	--	6.9	--	--	--	--
B67	6	5/19/2004	--	< 1	--	< 5	--	--	--	--
B68	2	5/20/2004	--	34 HY	--	100	--	--	--	--
B68	4	5/20/2004	--	100 HY	--	660	--	--	--	--
B69	2	5/20/2004	--	20 HY	--	130	--	--	--	--
B69	4	5/20/2004	--	61 HY	--	370	--	--	--	--
B70	2	5/20/2004	--	79 HY	--	260	--	--	--	--
B70	4	5/20/2004	--	340 HY	--	1,900	--	--	--	--
B71	2	5/20/2004	--	54 HY	--	380	--	--	--	--
B71	4	5/20/2004	--	< 1	--	< 5	--	--	--	--
B72	2	5/20/2004	--	37 HY	--	150	--	--	--	--
B73	2	5/21/2004	--	1.7 HY	--	8	--	--	--	--
B74	2	5/21/2004	--	23 HY	--	140	--	--	--	--
B75	2	5/21/2004	--	57 HY	--	360	--	--	--	--
B88	2	5/25/2004	--	< 1	--	5.2	--	--	--	--
IB-46	2	4/1/1998	< 1	3 YH	--	25 YH	--	--	--	20 YH
IB-46	3.5	4/1/1998	< 1	< 1	--	< 5.1	--	--	--	< 5.1
IB-46	4.5	4/1/1998	< 1	5 YH	--	32 YH	--	--	--	26 YH
IB-46	6	4/1/1998	< 1	14 YH	--	165 YH	--	--	--	130 H
IB-47	2.5	4/1/1998	--	43 YH	--	373 YHL	--	--	--	306 HL
IB-47	5	4/1/1998	--	6 H	--	8 YH	--	--	--	7 YHL
IB-48	3.25	4/1/1998	--	8 YH	--	29 YHL	--	--	--	24 YHL
IB-48	5	4/1/1998	--	4 YH	--	33 YHL	--	--	--	27 YHL
IB-49	1	4/1/1998	--	5 YH	--	89 YHL	--	--	--	76 HL
IB-49	5	4/1/1998	--	1 YH	--	8 YHL	--	--	--	67 YHL
Maximum Detected Concentration			1.4	370		3,100		--		306

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
Mean			0.56	36.07		234.11				68.56
Standard Deviation			0.23	79.94		577.89				92.04
Number of Samples			16	38		38				10
95% UCL			0.80	92.59		642.74				195.42
MUNICIPAL DEBRIS FILL AREA										
B1	4	12/14/2002	< 1	--	1.8 G	--	820	--	--	--
B1	8	12/14/2002	< 1	--	3.3 G	--	13	--	--	--
B2	4	12/14/2002	2.3 b	--	800 G	--	1,900	--	--	--
B2	8	12/14/2002	< 1	--	16 G	--	38	--	--	--
B28	4	12/21/2002	1.8 A	--	320 G	--	1,300	--	--	--
B28	8	12/21/2002	< 1	--	35 BG	--	47	--	--	--
B29	4	12/21/2002	13 gA	--	35 BG	--	24	--	--	--
B29	6	12/21/2002	19 gA	--	120 BG	--	160	--	--	--
B29	8	12/21/2002	69 gA	--	7,000 BG	--	8,300	--	--	--
B30	4	12/21/2002	2.3 A	--	140 BG	--	270	--	--	--
B30	12	12/21/2002	< 1	--	5.3 G	--	12	--	--	--
B53	2	5/17/2004	< 0.98	11 H	--	36	--	82 Y	--	--
B53	4	5/17/2004	< 1.1	560 H	--	740	--	2,300 Y	--	--
B54	2	5/17/2004	1.3 YZ	750 H	730 H	830 L	860 L	2,900 Y	2,900 Y	--
B54	4	5/17/2004	5.7 YZ	2.4 HY	3.2 HY	6.1	7.3	15 Y	19 Y	--
B55	2	5/18/2004	--	33 HY	--	80	--	--	--	--
B55	4	5/18/2004	--	79 HY	--	--	--	--	--	--
B55	6	5/18/2004	--	65 HY	--	--	--	--	--	--
B56	2	5/18/2004	< 1	170 HY	--	430	--	1,100 Y	--	--
B56	4	5/18/2004	1.6 HY	24 HY	--	48	--	130 Y	--	--
B57	2	5/18/2004	< 1.1	310 HY	--	1,500	--	3,200 Y	--	--
B57	4	5/18/2004	< 1	3.2 HY	--	17	--	41 Y	--	--
B58	2	5/18/2004	< 1.1	130 HY	--	3,100	--	8,200 HY	--	--
B58	4	5/18/2004	< 1.1	260 HY	--	980	--	2,200 Y	--	--
B59	2	5/18/2004	< 0.94	15 HY	--	58	--	130 Y	--	--
B59	4	5/18/2004	< 1	17 HY	--	51	--	130 Y	--	--
OKUS-B1	8	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B2	4	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B2	7	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B3	8	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B4	8	1/15/1993	154	47,000	--	--	--	--	--	--
OKUS-B7	6	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B7	8	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B13	3	7/13/1993	2.49	< 0.5	--	--	--	--	--	--
OKUS-B13	10	7/13/1993	1.03	< 0.5	--	--	--	--	--	--
OKUS-W1	6	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W2	2	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
OKUS-W2	10	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W2	14	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W3	6	1/14/1993	< 0.05	0.1	--	--	--	--	--	--
OKUS-W3	10	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-W3	18	1/14/1993	2.1	< 0.5	--	--	--	--	--	--
OKUS-W5	7	1/15/1993	8.6	1,400	--	--	--	--	--	--
OKUS-W5	8	1/15/1993	194	15,000	--	--	--	--	--	--
OKUS-W6	10	7/12/1993	0.28	< 0.5	--	--	--	--	--	--
IB-43	1.25	4/1/1998	< 1	4 YH	--	16 YHL	--	--	--	13 YHL
IB-43	2.5	4/1/1998	< 1	717 YH	--	3,314 YH	--	--	--	2,598 YH
IB-45	1.5	4/1/1998	< 1	13 YH	--	54 YHL	--	--	--	45 YL
IB-45	5	4/1/1998	< 1	12 YH	--	405 YH	--	--	--	336 YH
Maximum Detected Concentration			194	47,000		8,300		8,200		2,598
Mean			10.38	1,501.14		877.87		1,702.67		
Standard Deviation			36.63	6,961.53		1,708.86		2,383.67		
Number of Samples			47	50		28		12		
95% UCL			33.67	5,792.51		2,285.55		4,702.05		
BORING B20 AREA										
B20	4	12/15/2002	2.3 Fb	--	82 G	--	160	--	--	--
B20	8	12/15/2002	< 1	--	5.1 G	--	13	--	--	--
B23	4	12/15/2002	< 1	--	83 GB	--	780	--	--	--
B23	8	12/15/2002	< 1	--	< 1	--	< 5	--	--	--
B25	4	12/15/2002	< 1	--	160 G	--	650	--	--	--
B25	8	12/15/2002	< 1	--	5.1 G	--	21	--	--	--
B26	4	12/14/2002	< 1	--	32 G	--	160	--	--	--
B26	7	12/14/2002	< 1	--	8.4 GB	--	31	--	--	--
B27	2	12/14/2002	1.5 b	--	240 G	--	1,400	--	--	--
B27	4	12/14/2002	1.3 b	--	450 GB	--	610	--	--	--
B27	8	12/14/2002	< 1	--	7.1 B	--	< 25	--	--	--
B40	2	5/13/2004	--	6.4 HY	--	44 Y	--	--	--	47
B40	4	5/13/2004	--	150 HY	--	400 Y	--	--	--	490
B40	6	5/13/2004	--	40 HY	--	87 Y	--	--	--	120
B41	2	5/13/2004	--	6 HY	--	30 Y	--	--	--	33
B41	6	5/13/2004	--	36 HY	--	92 H	--	--	--	110 L
B42	2	5/13/2004	--	140 HY	--	730 Y	--	--	--	730
B42	5	5/13/2004	--	160 HY	--	760 Y	--	--	--	830
B42	6	5/13/2004	--	< 1	--	< 5	--	--	--	< 5
B43	2	5/13/2004	--	7.3 HY	--	27 Y	--	--	--	33
B43	3.5	5/13/2004	--	< 1	--	< 5	--	--	--	< 5

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
B43	6	5/13/2004	--	< 1	--	< 5	--	--	--	< 5
B44	2	5/13/2004	--	810 HY	--	1,700 H	--	--	--	2,300 L
B44	4	5/13/2004	--	430 HY	--	3,000 Y	--	--	--	3,100
B44	6	5/13/2004	--	2 HY	--	11 Y	--	--	--	13
Maximum Detected Concentration			2.3	810		3,000		--		3,100
Mean			0.83	114.5		429.14				558.11
Standard Deviation			0.61	191.98		706.88				962.06
Number of Samples			11	25		25				14
95% UCL			1.63	281.86		1,045.38				1,678.87
TANKS EF6-9 AREA										
B21	4	12/21/2002	< 1	--	250 G	--	1,200	--	--	--
B21	8	12/21/2002	< 1	--	17 G	--	220	--	--	--
B24	2	12/15/2002	< 1	--	140 G	--	1,200	--	--	--
B24	4	12/15/2002	< 1	--	79 BG	--	1,100	--	--	--
B24	6	12/15/2002	< 1	--	4.6 G	--	8.9	--	--	--
B24	8	12/15/2002	< 1	--	6.2 G	--	8.6	--	--	--
B31	4	5/11/2004	< 0.92	20 HY	--	63 Y	--	--	--	65
B31	6	5/11/2004	< 0.91	530 HY	--	2,800 Y	--	--	--	3,000
B32	2	5/11/2004	--	1.1 HY	--	< 5	--	--	--	< 5
B32	4	5/11/2004	910 H	3.1 Y	--	< 5	--	--	--	5.4 Y
B32	6	5/11/2004	5	200 HY	--	1,800 Y	--	--	--	1,700
B33	4	5/11/2004	< 1.1	64 HY	--	160 Y	--	--	--	180
B33	6	5/11/2004	< 1.1	17 HY	--	51 Y	--	--	--	54
B34	4	5/11/2004	< 1.1	< 0.99	--	< 5	--	--	--	< 5
B34	6	5/11/2004	< 0.95	23 HY	--	95 Y	--	--	--	94
B35	4	5/12/2004	< 1	1.9 HY	--	--	--	--	--	--
B35	6	5/12/2004	< 0.99	68 HY	--	--	--	--	--	--
B36	4	5/12/2004	< 1	< 0.99	--	--	--	--	--	--
B36	6	5/12/2004	< 1.1	6.4 HY	--	--	--	--	--	--
B37	4	5/12/2004	< 0.92	22 HY	--	--	--	--	--	--
B37	6	5/12/2004	< 0.99	6.3 HY	--	--	--	--	--	--
B38	4	5/12/2004	500 Y	2.9 HY	--	--	--	--	--	--
B38	6	5/12/2004	< 0.98	15 HLY	--	--	--	--	--	--
B39	4	5/13/2004	< 1	22 HY	--	64 Y	--	--	--	83
B39	6	5/13/2004	< 1.1	180 HY	--	330 Y	--	--	--	470
B50	4	5/17/2004	< 0.91	4.6 HY	--	--	--	--	--	--
B50	6	5/17/2004	< 1.1	4.7 HY	--	--	--	--	--	--
B51	4	5/17/2004	< 0.99	< 1	--	--	--	--	--	--
B51	6	5/17/2004	< 1	< 1	--	--	--	--	--	--
B52	4	5/17/2004	< 1	5.6 HY	--	--	--	--	--	--
B52	7	5/17/2004	< 0.98	43 HY	--	--	--	--	--	--
B76	2	5/24/2004	--	390 HY	--	290 L	--	--	--	--

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
B77	2	5/24/2004	--	66 HY	--	290	--	--	--	--
B78	2	5/24/2004	--	2 HY	--	14	--	--	--	--
B78	4.5	5/24/2004	--	480 HY	--	3,300	--	--	--	--
B78	6	5/24/2004	--	< 1	--	< 5	--	--	--	--
Maximum Detected Concentration			910	530		3,300		--		3,000
Mean			47.62	74.39		591.11				514.22
Standard Deviation			186.63	135.52		944.76				962.16
Number of Samples			30	36		22				11
95% UCL			196.14	172.84		1,469.10				1,778.75
TANKS EF11-13 AREA										
B1	3.5	3/12/1999	< 1	49 g	--	--	--	--	--	--
B2	3.5	3/12/1999	< 1	9.2 g	--	--	--	--	--	--
B2	7	3/12/1999	< 1	1.4 g	--	--	--	--	--	--
B7	4	12/14/2002	< 1	--	1.5 G	--	8.6	--	--	--
B7	8	12/14/2002	< 1	--	1.3 G	--	< 5	--	--	--
B45	4	5/14/2004	< 1	3.1 HY	--	14 Y	--	--	--	15
B45	6	5/14/2004	2.2	1,200 HY	--	320 LY	--	--	--	1,400 L
B46	4	5/14/2004	< 0.97	110 HY	--	360 Y	--	--	--	430
B46	6	5/14/2004	< 1.1	50 HY	--	46 Y	--	--	--	85 Y
B47	2	5/14/2004	--	8 HY	--	28 Y	--	--	--	31
B47	4	5/14/2004	< 0.95	41 HY	--	160 Y	--	--	--	180
B47	6	5/14/2004	< 1.1	< 1	--	< 5	--	--	--	< 5
B48	4	5/14/2004	< 1.1	< 1	--	< 5	--	--	--	< 5
B49	4	5/14/2004	< 1.1	2.9 HY	--	12 Y	--	--	--	13
B49	6	5/14/2004	< 1	150 HY	--	1,200 Y	--	--	--	1,200
Maximum Detected Concentration			2.2	1,200		1,200		--		1,400
Mean			0.63	108.56		179.68				335.9
Standard Deviation			0.45	305.26		345.56				526.79
Number of Samples			14	15		12				10
95% UCL			1.16	452.12		614.50				1,062.04
TANK EF14 AREA										
B5	4	12/15/2002	< 1	--	< 1	--	< 5	--	--	--
B5	8	12/15/2002	< 1	--	2.7 B	--	< 5	--	--	--
B62	4	5/19/2004	< 1.1	3.1 HY	--	--	--	--	--	--
B62	6	5/19/2004	< 0.94	2.2 Y	--	--	--	--	--	--
B63	4	5/19/2004	< 1	1.3 HY	--	--	--	--	--	--
B63	6	5/19/2004	< 0.98	< 1	--	--	--	--	--	--
B64	2	5/19/2004	< 1.1	1 Y	--	< 5	--	--	--	--
B64	4	5/19/2004	< 1	2.4 HY	--	--	--	--	--	--
B64	6	5/19/2004	< 1	1.2 Y	--	--	--	--	--	--

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
B65	4	5/19/2004	< 1.1	< 0.99	--	--	--	--	--	--
B65	6	5/19/2004	< 1.1	< 1	--	--	--	--	--	--
B66	4	5/19/2004	< 1.1	< 1	--	--	--	--	--	--
B66	6	5/19/2004	< 1	< 1	--	--	--	--	--	--
Maximum Detected Concentration			ND		3.1		ND		--	--
Mean					1.3					
Standard Deviation					0.96					
Number of Samples					13					
95% UCL					2.47					
GENERAL AREA										
B3	4	12/14/2002	2.5 b	--	340 G	--	3,100	--	--	--
B3	8	12/14/2002	< 1	--	4 G	--	9.9	--	--	--
B4	4	12/14/2002	< 1	--	< 1	--	< 5	--	--	--
B4	8	12/14/2002	< 1	--	< 1	--	< 5	--	--	--
B6	4	12/14/2002	< 1	--	21	--	14	--	--	--
B6	8	12/14/2002	< 1	--	< 1	--	< 5	--	--	--
B11	4	12/15/2002	< 1	--	83 G	--	390	--	--	--
B11	8	12/15/2002	< 1	--	2 BG	--	< 5	--	--	--
B12	4	12/21/2002	< 1	--	3.6 G	--	28	--	--	--
B15	4	12/21/2002	< 1	--	1.6 G	--	8.2	--	--	--
B15	8	12/21/2002	< 1	--	< 1	--	< 5	--	--	--
B16	4	12/15/2002	2.8 g	--	72 BG	--	150	--	--	--
B16	6	12/15/2002	3.6 b	--	47 G	--	310	--	--	--
B16	8	12/15/2002	< 1	--	19 BG	--	73	--	--	--
B17	4	12/21/2002	< 1	--	3.4 G	--	54	--	--	--
B17	8	12/21/2002	< 1	--	2.2 B	--	< 5	--	--	--
B18	4	12/15/2002	< 1	--	6.2 GB	--	20	--	--	--
B18	8	12/15/2002	< 1	--	21 G	--	71	--	--	--
B60	2	5/18/2004	< 0.97	3 HY	--	8.9	--	21 Y	--	--
B60	4	5/18/2004	< 1	14 HY	--	20	--	62 Y	--	--
B61	2	5/18/2004	< 1	3.1 HY	--	12	--	28 Y	--	--
B61	4	5/18/2004	< 1	4.1 HY	--	18	--	40 Y	--	--
B79	2	5/24/2004	< 1	5.3 HY	--	19	--	49 Y	--	--
B79	4	5/24/2004	< 1	1.7 HY	--	9.3	--	29 Y	--	--
B80	2	5/24/2004	< 1.1	1.1 HY	--	< 5	--	7.7 Y	--	--
B80	4	5/24/2004	< 0.99	3.7 HY	--	13	--	39 Y	--	--
B81	2	5/24/2004	--	79 HY	--	320	--	--	--	--
B82	2	5/24/2004	--	410 HY	--	1,700	--	--	--	--
B83	2	5/25/2004	--	6 HY	--	17 L	--	--	--	--
B84	2	5/25/2004	--	410 H	--	960 H	--	--	--	--
B85	4	5/25/2004	< 1	120 HY	--	--	--	--	--	--
B85	6	5/25/2004	< 1	28 H	--	--	--	--	--	--

TABLE A-1a HISTORICAL SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (mg/kg) TPH-Gasoline (No Silica Gel Cleanup)	TPH- Diesel (Silica Gel Cleanup)	TPH- Diesel (No Silica Gel Cleanup)	TPH-Motor Oil (Silica Gel Cleanup)	TPH-Motor Oil (No Silica Gel Cleanup)	TPH-Bunker C (Silica Gel Cleanup)	TPH-Bunker C (No Silica Gel Cleanup)	TPH-Hydraulic Oil (Silica Gel Cleanup)
B86	2	5/25/2004	--	48 HY	--	210 H	--	--	--	--
B87	2	5/25/2004	--	7.2 HY	--	80	--	--	--	--
APL/UP-W1	6	7/16/1993	0.11	< 100	--	--	--	--	--	--
APL/UP-W1	12	7/16/1993	0.1	< 100	--	--	--	--	--	--
APL/UP-W1	12	7/16/1993	< 100	< 100	--	--	--	--	--	--
APL/UP-W2	3	7/16/1993	0.11	86.5	--	--	--	--	--	--
APL/UP-W2	11	7/16/1993	0.1	76.4	--	--	--	--	--	--
APL/UP-W2	11	7/16/1993	0.13	< 100	--	--	--	--	--	--
Maximum Detected Concentration			3.6	410		3,100		62		--
Mean				53.38		238.53		34.46		
Standard Deviation				101.38		623.24		16.86		
Number of Samples				40		32		8		
95% UCL				123.25		718.77		60.45		

Notes
mg/kg - miligrams per kilogram
"--" - Not Analyzed
ND - Not Detected at or above laboratory reporting limits
A - Unmodified or weakly modified gasoline or diesel is significant
B - Diesel range compounds are significant
b - Heavier gasoline range compounds are significant (aged gasoline?)
G - Oil range compounds are significant
g - Strongly aged gasoline or diesel range compounds are significant
H - Heavier hydrocarbons contributed to the quantitation
L - Lighter hydrocarbons contributed to the quantitation
Y - Sample exhibits chromatographic pattern which does not resemble standard
TPH - total petroleum hydrocarbons
95% UCL - 95 percent upper confidence level of mean concentration

[1]Sampling dates and related data references:
1/1993 - USPCI, 1993
7/1993 - CDM, 1999
4/1998 - CDM, 1998
3/1999 - Blymer, 1999
12/2002 - GAIA, 2003
5/2004 - T&R, 2004

Note - analyses are listed as "no silica cleanup unless silica gel cleanup is specified in the laboratory analytical report, table, and/or report. The laboratory analytical report, if available, was taken as the authoritative reference.

TABLE A-1e HISTORICAL SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Concentrations (µg/kg)

Location ID	Depth (feet)	Sample Date [1]	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Benzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Ethylbenzene	Isopropylbenzene	Methyl Ethyl Ketone	Methylene Chloride	Naphthalene	n-Butylbenzene	PCE	Propylbenzene	Tert-Butylbenzene	Toluene	TCE	Xylenes (total)
DIESEL SPILL / RAILYARD AREA																							
B8	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B8	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B9	4	12/21/2002	< 5	–	–	–	5.7	< 5	< 5	< 5	–	20	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B9	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	120	< 5	130
B13	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B13	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B14	4	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B14	8	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B19	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B19	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B22	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B22	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
IB-46	2	4/1/1998	–	< 5	–	< 5	< 5	–	< 5	–	–	< 5	–	< 5	–	–	< 5	–	< 5	< 5	< 5	–	< 5
IB-46	3.5	4/1/1998	–	< 5	–	< 5	< 5	–	< 5	–	–	< 5	–	< 5	–	–	< 5	–	< 5	< 5	< 5	–	< 5
IB-46	4.5	4/1/1998	–	< 5	–	< 5	< 5	–	< 5	–	–	< 5	–	< 5	–	–	< 5	–	< 5	< 5	< 5	–	< 5
IB-46	6	4/1/1998	–	< 5	–	< 5	< 5	–	< 5	–	–	< 5	–	< 5	–	–	< 5	–	< 5	< 5	< 5	–	< 5
Maximum Detected Concentration			ND	ND	–	ND	5.7	ND	ND	ND	–	20	–	ND	ND	54***	ND	ND	ND	ND	120	ND	130
Mean							2.7					3.59									9.84		10.47
Standard Deviation							0.8					4.34									29.38		31.88
Number of Samples							16					16									16		16
95% UCL							3.57					8.36									41.85		45.20
MUNICIPAL DEBRIS FILL AREA																							
B1	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	18	< 5	6.3
B1	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B2	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	9.6	–	–	< 5	–	–	< 5	–	–	550	< 5	50
B2	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B28	4	12/21/2002	< 5	–	–	–	11	< 5	< 5	< 5	–	6.5	–	–	< 5	–	–	< 5	–	–	22	< 5	42
B28	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B29	4	12/21/2002	< 5	–	–	–	28	< 5	< 5	< 5	–	13	–	–	< 5	–	–	< 5	–	–	46	< 5	59
B29	6	12/21/2002	< 5	–	–	–	88	< 5	< 5	10	–	47	–	–	< 5	–	–	< 5	–	–	76	< 5	120
B29	8	12/21/2002	< 20	–	–	–	130	< 20	< 20	< 20	–	70	–	–	< 20	–	–	< 20	–	–	120	< 20	700
B30	4	12/21/2002	< 5	–	–	–	120	< 5	< 5	< 5	–	47	–	–	< 5	–	–	< 5	–	–	76	< 5	88
B30	12	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B53	2	5/17/2004	< 4.6	< 4.6	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B53	4	5/17/2004	< 5	< 5	< 5	39	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B54	4	5/17/2004	< 5	8.8	< 5	44	21	< 5	< 5	< 5	< 5	64	< 5	11	< 20	< 5	< 5	< 5	< 5	< 5	37	< 5	142
B56	2	5/18/2004	< 4.8	< 4.8	< 4.8	28	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	140	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B56	4	5/18/2004	< 5	< 5	< 5	28	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	120	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B57	2	5/18/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	310	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B57	4	5/18/2004	< 4.9	< 4.9	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B58	2	5/18/2004	< 4.5	< 4.5	< 4.5	< 18	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 9.1	220	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5
B58	4	5/18/2004	< 4.8	< 4.8	< 4.8	60	5	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	14	520	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B59	2	5/18/2004	< 4.9	< 4.9	< 4.9	29	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	180	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B59	4	5/18/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	25	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7

TABLE A-1e HISTORICAL SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Concentrations (µg/kg)

Location ID	Depth (feet)	Sample Date [1]	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Benzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Ethylbenzene	Isopropylbenzene	Methyl Ethyl Ketone	Methylene Chloride	Naphthalene	n-Butylbenzene	PCE	Propylbenzene	Tert-Butylbenzene	Toluene	TCE	Xylenes (total)
OKUS-B1	8	1/15/1993	--	--	--	--	6	--	--	--	--	32	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-B2	4	1/15/1993	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-B2	7	1/15/1993	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	16
OKUS-B3	8	1/15/1993	--	--	--	--	< 0.5	--	--	--	--	28	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-B7	6	1/15/1993	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-B13	3	7/13/1993	--	--	--	--	27	--	--	--	--	81	--	--	--	--	--	--	--	--	84	--	257
OKUS-B13	10	7/13/1993	--	--	--	--	1	--	--	--	--	50	--	--	--	--	--	--	--	--	13	--	127
OKUS-W1	6	1/14/1993	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-W1	8	1/14/1993	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5	--	--	--	--	--	< 0.5	--	--	< 0.5	--	< 0.5
OKUS-W2	2	1/14/1993	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-W2	10	1/14/1993	--	--	--	--	< 0.5	110	410	--	28	100	--	--	--	--	--	28	--	--	< 0.5	--	< 0.5
OKUS-W2	14	1/14/1993	--	--	--	--	< 0.5	--	--	--	--	10	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-W3	6	1/14/1993	--	--	--	--	11	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	< 0.5
OKUS-W3	10	1/14/1993	--	--	--	--	7	< 0.5	< 0.5	--	< 0.5	22	--	--	--	--	--	< 0.5	--	--	< 0.5	--	< 0.5
OKUS-W3	18	1/14/1993	--	--	--	--	59	--	--	--	--	670	--	--	--	--	--	--	--	--	16	--	< 0.5
OKUS-W5	7	1/15/1993	--	--	--	--	14	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	9	--	36
OKUS-W6	10	7/12/1993	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	2	--	< 0.5
IB-43	1.25	4/1/1998	--	< 5	--	< 5	< 5	--	< 5	--	--	< 5	--	< 5	--	--	< 5	--	< 5	< 5	< 5	--	< 5
IB-43	2.5	4/1/1998	--	< 5	--	< 5	< 5	--	23	--	--	< 5	--	< 5	--	--	< 5	--	< 5	< 5	< 5	--	< 5
IB-45	1.5	4/1/1998	--	< 5	--	< 5	< 5	--	< 5	--	--	< 5	--	< 5	--	--	< 5	--	< 5	< 5	< 5	--	8
IB-45	5	4/1/1998	--	< 5	--	< 5	< 5	--	< 5	--	--	< 5	--	< 5	--	--	< 5	--	< 5	< 5	< 5	--	< 5
Maximum Detected Concentration			ND	8.8	ND	60	130	110	410	10	28	670	ND	14	520	1,800	ND	28	ND	ND	550	ND	700
Mean				2.85		19.03	13.42	6.88	17.33	3.14	3.93	30.21		5.22	72.25	437.29		3.6			25.95		39.44
Standard Deviation				1.65		17.95	29.84	21.55	75.63	2.22	6.97	102.93		3.18	132.31	980.28		5.35			86.11		115.17
Number of Samples				15		15	43	25	29	22	14	43		15	22	30		25			43		43
95% UCL				4.71		39.23	33.26	25.66	78.55	5.20	12.05	98.62		8.80	195.21	1,217.42**		8.26			83.20		115.99
BORING B20 AREA																							
B20	4	12/15/2002	< 5	--	--	--	180	< 5	< 5	< 5	--	53	--	--	< 5	--	--	< 5	--	--	55	< 5	77
B20	8	12/15/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	< 5	< 5	< 5
B23	4	12/15/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	< 5	< 5	< 5
B23	8	12/15/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	< 5	< 5	< 5
B25	4	12/15/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	19	< 5	< 5
B25	8	12/15/2002	< 5	--	--	--	10	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	13	< 5	6.4
B26	4	12/14/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	< 5	< 5	5.3
B26	7	12/14/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	< 5	< 5	< 5
B27	2	12/14/2002	< 5	--	--	--	8.3	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	16	< 5	18
B27	4	12/14/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	11	< 5	8.5
B27	8	12/14/2002	< 5	--	--	--	< 5	< 5	< 5	< 5	--	< 5	--	--	< 5	--	--	< 5	--	--	< 5	< 5	< 5
Maximum Detected Concentration			ND	--	--	--	180	ND	ND	ND	--	53	--	--	ND	ND**	--	ND	--	--	55	ND	77
Mean							19.85					7.09									11.73		11.84
Standard Deviation							53.19					15.23									15.67		22.11
Number of Samples							11					11									11		11
95% UCL							89.74					27.10									32.33		40.90

TABLE A-1e HISTORICAL SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Concentrations (µg/kg)

Location ID	Depth (feet)	Sample Date [1]	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Benzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Ethylbenzene	Isopropylbenzene	Methyl Ethyl Ketone	Methylene Chloride	Naphthalene	n-Butylbenzene	PCE	Propylbenzene	Tert-Butylbenzene	Toluene	TCE	Xylenes (total)
TANKS EF6-9 AREA																							
B21	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	32	< 5	12
B21	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B24	2	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B24	4	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B24	6	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B24	8	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B31	4	5/11/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B31	6	5/11/2004	8.7	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	67	< 5	< 5	110	< 5	< 5	< 5	13	< 5
B32	4	5/11/2004	< 500	44,000	13,000	< 2,000	< 500	< 500	< 500	< 500	< 500	10,000	1,800	< 1,000	< 2,000	8,900	4,900	< 500	6,700	< 500	< 500	< 500	27,800
B32	6	5/11/2004	< 25	610	150	< 100	< 25	< 25	< 25	< 25	< 25	70	< 25	< 50	< 100	260	79	< 25	63	< 25	< 25	< 25	186
B33	4	5/11/2004	< 4.7	< 4.7	< 4.7	39	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	35	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B33	6	5/11/2004	< 4.8	< 4.8	< 4.8	44	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	34	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B34	4	5/11/2004	< 4.9	< 4.9	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	59	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B34	6	5/11/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	20	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B35	4	5/12/2004	< 4.9	< 4.9	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B35	6	5/12/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B36	4	5/12/2004	< 4.6	< 4.6	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B36	6	5/12/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B37	4	5/12/2004	< 5	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B37	6	5/12/2004	< 4.9	< 4.9	< 4.9	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B38	4	5/12/2004	< 23	< 23	< 23	< 91	< 23	44	< 23	< 23	< 23	< 23	350	< 45	< 91	< 23	1,300	< 23	930	240	< 23	< 23	< 23
B38	6	5/12/2004	< 4.6	< 4.6	< 4.6	21	5.2	< 4.6	< 4.6	< 4.6	< 4.6	11	< 4.6	< 9.3	< 19	< 4.6	< 4.6	< 4.6	13	< 4.6	< 4.6	< 4.6	< 4.6
B39	4	5/13/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B39	6	5/13/2004	< 4.9	< 4.9	< 4.9	23	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B50	4	5/17/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B50	6	5/17/2004	< 4.5	< 4.5	< 4.5	< 18	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 9.1	< 18	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5	< 4.5
B51	4	5/17/2004	< 4.6	< 4.6	< 4.6	21	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B51	6	5/17/2004	< 4.6	< 4.6	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
B52	4	5/17/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B52	7	5/17/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
Maximum Detected Concentration			9*	44,000	13,000	44*	5*	44*	ND	ND	ND	10,000	1,800	ND	67*	8,900	4,900	110	6,700	240	32*	13*	27,800
Mean				1,861.31	550.48							338.50	92.18			478.24	263.70	14.88	323.07	23.02			935.73
Standard Deviation				8,973.36	2,651.91							1,824.81	370.59			1,571.92	1,022.30	48.56	######	68.42			5,073.96
Number of Samples				24	24							30	24			33	24	30	24	24			30
95% UCL				9,848.09	2,910.03							1,790.73	421.92			1,670.99*'	1,173.31	53.53	######	83.89			4,973.70
TANKS EF11-13 AREA																							
B-1	7	3/12/1999	< 5	–	–	–	< 5	< 5	< 5	< 5	< 6	< 5	–	–	< 5	–	–	< 5	–	–	20	< 5	< 5
B-1	3.5	3/12/1999	< 5	–	–	–	< 5	< 5	< 5	< 5	< 5	< 5	–	–	< 5	–	–	< 5	–	–	14	< 5	15
B-2	3.5	3/12/1999	< 5	–	–	–	< 5	< 5	< 5	< 5	< 5	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B-2	7	3/12/1999	< 5	–	–	–	< 5	< 5	< 5	< 5	< 5	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B7	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B7	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	11	< 5	5.1

TABLE A-1e HISTORICAL SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (µg/kg)																				
			1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Benzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Ethylbenzene	Isopropyl-benzene	Methyl Ethyl Ketone	Methylene Chloride	Naphthalene	n-Butylbenzene	PCE	Propylbenzene	Tert-Butyl-benzene	Toluene	TCE	Xylenes (total)
B45	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B45	6	5/14/2004	< 4.8	< 4.8	< 4.8	28	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	53	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B46	4	5/14/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	36	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B46	6	5/14/2004	< 4.9	< 4.9	< 4.9	25	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	33	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B47	4	5/14/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B47	6	5/14/2004	< 4.9	< 4.9	< 4.9	22	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 9.8	< 20	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
B48	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B49	4	5/14/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B49	6	5/14/2004	< 4.6	< 4.6	< 4.6	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 9.3	< 19	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
Maximum Detected Concentration			ND	ND	ND	28	ND	ND	ND	ND	ND	ND	ND	ND	53	ND	ND	ND	ND	ND	20	ND	15
Mean						14.67									12.97						4.93		3.44
Standard Deviation						7.89									15.26						5.49		3.27
Number of Samples						9									15						15		15
95% UCL						26.14									30.14						11.11		7.12
TANK EF14 AREA																							
B5	4	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	14	< 5	< 5
B5	8	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
Maximum Detected Concentration			ND	–	–	–	ND	ND	ND	ND	–	ND	–	–	ND	–	–	ND	–	–	14	ND	ND
GENERAL AREA																							
B3	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	17	< 5	5.3
B3	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B4	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B4	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B6	4	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B6	8	12/14/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B11	4	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	17	< 5	6.6
B11	7.1	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	23	< 5	< 5
B11	7.3	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B11	8	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B12	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B12	7	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B15	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B15	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B16	4	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	17	< 5	< 5
B16	6	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	34	< 5	6.1
B16	8	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B17	4	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B17	8	12/21/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B18	4	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B18	8	12/15/2002	< 5	–	–	–	< 5	< 5	< 5	< 5	–	< 5	–	–	< 5	–	–	< 5	–	–	< 5	< 5	< 5
B60	2	5/18/2004	< 5	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	91	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B60	4	5/18/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	21	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B61	2	5/18/2004	< 5	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	110	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

TABLE A-1e HISTORICAL SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS AT BERTHS 60 - 63 TERMINAL, PORT OF OAKLAND, CALIFORNIA

Location ID	Depth (feet)	Sample Date [1]	Concentrations (µg/kg)																			
			1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Benzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Ethylbenzene	Isopropyl-benzene	Methyl Ethyl Ketone	Methylene Chloride	Naphthalene	n-Butylbenzene	PCE	Propylbenzene	Tert-Butyl-benzene	Toluene	TCE	Xylenes (total)
B61	4	5/18/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	25	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B79	2	5/24/2004	< 5	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	35	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B79	4	5/24/2004	< 5	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B80	2	5/24/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B80	4	5/24/2004	< 4.8	< 4.8	< 4.8	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 9.6	< 19	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
B85	4	5/25/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	76	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
B85	6	5/25/2004	< 4.7	< 4.7	< 4.7	< 19	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 9.4	57	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
Maximum Detected Concentration			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	810	ND	ND	ND	ND	34	ND	6.6
Mean															16.01	135.75					5.56		2.81
Standard Deviation															28.38	319.79					7.65		1.07
Number of Samples															31	36					31		31
95% UCL															38.23	368.07**					11.54		3.66

Notes

µg/kg - micrograms per kilogram
"–" - Not Analyzed
95% UCL - 95 percent upper confidence level of mean concentration

[1]Sampling dates and related data references:
1/1993 - USPCI, 1993
7/1993 - CDM, 1999
4/1998 - CDM, 1998
3/1999 - Blymer, 1999
12/2002 - GAIA, 2003
5/2004 - T&R, 2004

* 95% UCL concentration exceeds the maximum detected concentration.
** Analyte is also listed on SVOC and/or PAH table(s) due to overlapping suite of chemicals; maximum detection, standard deviation, number of samples, and 95% UCL calculation determined from all samples analyzed for chemical, including those not listed on this table. For samples analyzed more than once for a given chemical, the maximum concentration was used.
*** 95% UCL concentration exceeds maximum detected concentration. Analyte is also listed on SVOC and/or PAH table(s) due to overlapping suite of chemicals; maximum detection determined from all samples analyzed for chemical, including those not listed on this table. For samples analyzed more than once for any given chemical, the maximum concentration was used.

APPENDIX C

LOW-THREAT UNDERGROUND STORAGE TANK CASE CLOSURE POLICY CHECK LIST

Site Name: APL TERMINAL
Site Address: 1395 Middle Harbor Road, Oakland, CA

Site meets the criteria of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.[1]

General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☒ Yes ☐ No ☐ NA
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No
Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Does nuisance as defined by Water Code section 13050 exist at the site?	☒ Yes ☐ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
Media-Specific Criteria Candidate sites must satisfy all three of these media-specific criteria: **1. Groundwater:** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☐ Yes ☐ No ☒ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5**	☐ Yes ☐ No ☒ NA

[1] Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

Site Name:
Site Address:

For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?	☐ Yes ☐ No ☒ NA
2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies. **Is the site an active commercial petroleum fueling facility?** Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk. **a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4?** If YES, check applicable scenarios: ☐ **1** ☐ **2** ☐ **3** ☐ **4** **b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?** **c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?**	☐ Yes ☒ No ☐Yes ☐ No ☒ NA ☐ Yes ☐ No ☒ NA ☐ Yes ☐ No ☒ NA
3. Direct Contact and Outdoor Air Exposure: The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c). **a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?** **b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?** **c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?**	☐ Yes ☐ No ☒ NA ☐ Yes ☐ No ☒ NA ☒ Yes ☐ No ☐ NA

APPENDIX D

TANK CLOSURE DOCUMENTATION

BASELINE, 1990, Underground Tank Removal Activities, APL Container Yard Earthquake Repair, 1395 Middle Harbor Road, Oakland, California, 20 November

Geomatrix, 1992, Underground Storage Tank Removal Report, American President Line Terminal, 1395 Middle Harbor Road, Oakland, California, June

Geomatrix, 1993, Soil and Groundwater Investigation, American President Lines Terminal, 1395 Middle Harbor Road, Port of Oakland, Oakland, California, April

Alisto Engineering Group, 1995, Tank Closure Report, Port of Oakland Tank EF-10-, Berth 63 –American President Line Terminal, 1395 Middle Harbor Road, Oakland, California, 31 October

COPY

Report on

UNDERGROUND TANK REMOVAL ACTIVITIES
APL CONTAINER YARD EARTHQUAKE REPAIR
1395 Middle Harbor Road
Oakland, California

Prepared for:

Port of Oakland
Oakland, California

November 1990

Prepared by:

BASELINE ENVIRONMENTAL CONSULTING
5900 Hollis Street, Suite D
Emeryville, California 94608
(415) 420-8686

S9-134.40

BASELINE

ENVIRONMENTAL CONSULTING

20 November 1990
S9-134.40

Mr. Andrew Clark-Clough
Environmental Department
Port of Oakland
530 Water Street
Oakland, CA 94607-2064

Subject: Underground Tank Removals at APL Container Yard Earthquake Repair, 1395 Middle Harbor Road, Oakland, California

Dear Mr. Clark-Clough:

Enclosed please find seven copies of our report on underground tank removal activities at 1395 Middle Harbor Road in Oakland, California. Copies of the report should be sent to Alameda County Department of Environmental Health and to the Regional Water Quality Control Board, San Francisco Bay Region.

If you have any questions or require additional information, please do not hesitate to contact us at your convenience.

Sincerely,

Yane Nordhav
Principal
Reg. Geologist No. 4009

Irene Kan, M.P.H
Vice President

YN:IK:cr/S9-134
Enclosure

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (415) 420-8686 • FAX (415) 420-1707

Report on

UNDERGROUND TANK REMOVAL ACTIVITIES
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S9-134.40

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UNDERGROUND TANK REMOVAL ACTIVITIES
APL CONTAINER YARD EARTHQUAKE REPAIR

INTRODUCTION

The Port of Oakland (PORT) has removed four underground storage tanks from its property in the Middle Harbor Terminal, Oakland (see Figure 1). The tanks were removed from 1395 Middle Harbor Road, a site currently occupied by American President Companies (also referred to as American President Line, or APL), a container shipping firm.[1] The four underground tanks were removed as part of the PORT's APL Container Yard Earthquake Repair, Middle Harbor Terminal Project, a four-month project to repair pavement, storm drains, and subsurface utility structures that were damaged during the October 1989 earthquake.

The purpose of this report is to provide documentation that tank removal activities were performed in accordance with the requirements of the Alameda County Department of Environmental Health (County) and with the guidelines established by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) for removal of underground tanks.

SCOPE OF WORK

The PORT retained BASELINE to obtain underground tank closure permits from the County and from the City of Oakland Fire Department, collect soil and groundwater samples, coordinate with regulatory agencies, supervise excavation and disposal/treatment of soils containing petroleum hydrocarbons, and document tank removal and sampling activities. The PORT retained O. C. Jones and Sons, general contractors, of Berkeley, California to perform the earthquake repair work, including the removal of the four underground tanks. IT Corporation of Martinez, California, a subcontractor to O. C. Jones and Sons, was responsible for tank removals, associated soil excavation, and site restoration.

BACKGROUND

The site is located in the northwestern portion of the City of Oakland, adjoining Oakland Middle Harbor. Railway shipping terminals are located along the adjacent waterfront areas north and west of the APL facility; Schnitzer Steel, a scrap metal yard, is located to the east.

Tank locations in the APL facility are depicted in Figure 1. Three of the removed tanks were located at the "M & R Building" and a fourth tank, at the wharf area.[2] Tanks EF11, EF12, and EF13 (M & R Building location) were single-wall steel tanks installed in 1975 and inactivated before 1987. Tank EF11 was a ~~2,000~~ 10,000-gallon tank used for storage of gasoline; tank EF12 was a ~~10,000~~ 2,000-gallon tank used for storage of diesel; and tank EF13 was a ~~550~~ 350-gallon tank used for storage of waste oil.

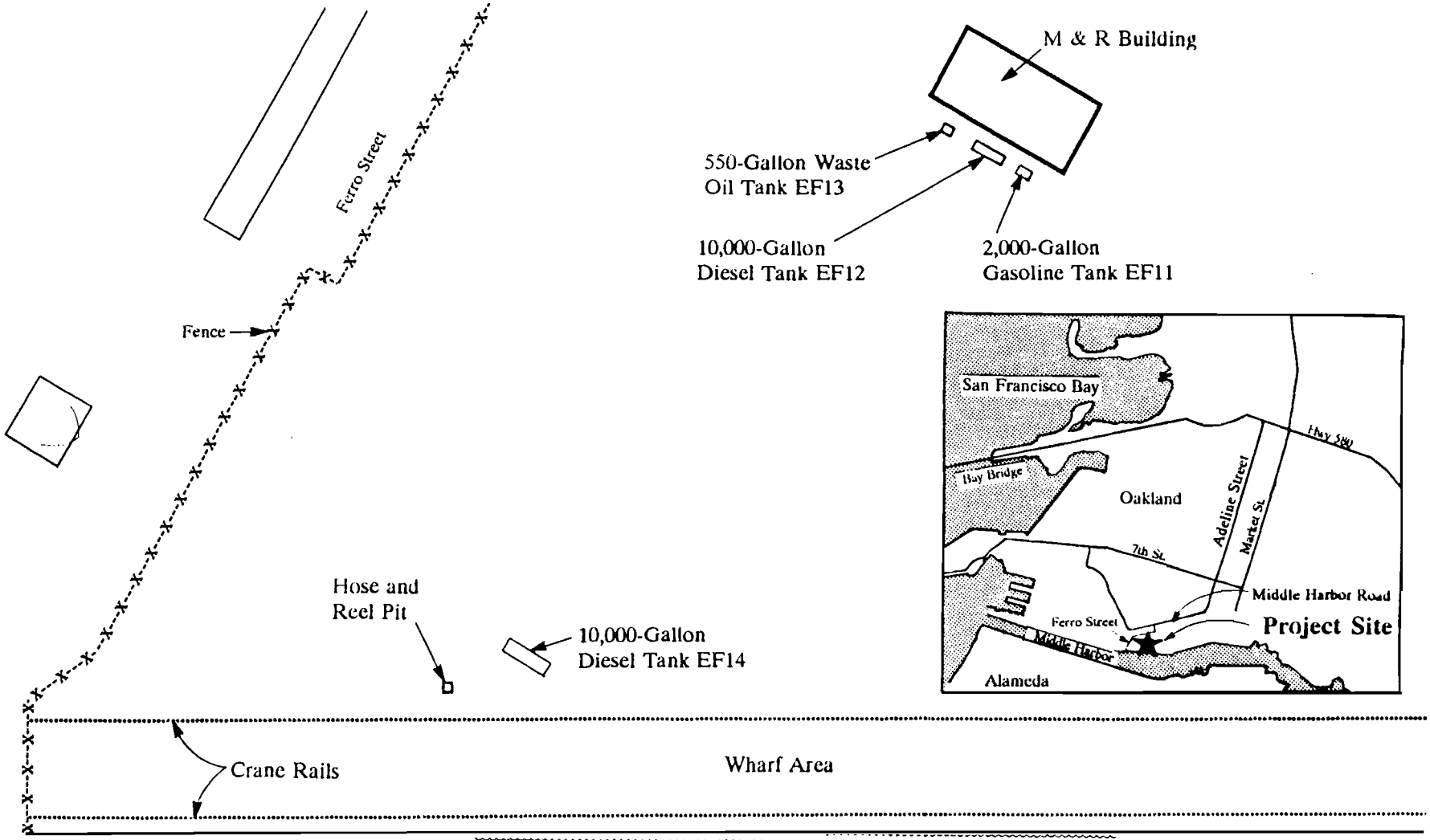
[1]The tanks were located at the 1579 Middle Harbor Road address when the site was occupied by the former U.S. Lines. The tanks became part of 1395 Middle Harbor Road when American President Companies assumed operational responsibility for the facilities at 1579 Harbor Road.

[2]"M & R Building" is PORT nomenclature; the building is referred to by APL as the "Rigging Loft Building."

REGIONAL LOCATION AND SITE MAP

Figure 1

Underground Tank Removal
American President Companies ("APL")
Container Yard Earthquake Repair



1395 Middle Harbor Road
Oakland, California

Source: Jordan Woodman Dobson Architecture Engineering, May 1990.

BASELINE

S9-134.40

11/5/90

Tank EF14 (wharf location) was a 10,000-gallon, single-wall fiberglass tank installed in 1975 for storage of diesel and inactivated before 1987. Fuel was dispensed from a hose and reel pit located approximately 67 feet west of the tank.

Prior to site activities, BASELINE obtained permits from the County and the City of Oakland Fire Department to remove the underground tanks. BASELINE also notified the Bay Area Air Quality Management District (BAAQMD) of the tank removals. Copies of the tank closure permits and BAAQMD notification are included as Appendix A.

FIELD ACTIVITIES

Field activities for removal of the underground tanks consisted of: 1) observation and documentation of tank removal activities, including verification sampling of the tank excavation areas, and 2) soil sampling for management of excavated soils.

Tank Removal

In preparation for removal of the tanks, Refinery Services of Patterson, California, disposed of residual liquid from all of the tanks using a vacuum truck, and IT Corporation displaced residual combustible vapors using carbon dioxide. A copy of the hazardous waste manifest for the residual tank liquid is included as Appendix B.

The tanks were removed after inspections by representatives of the County and the Oakland Fire Department verified that the lower explosive limit (LEL) readings within the tanks were within the acceptable range. All tanks were transported by Erickson, Inc. to their facility in Richmond, California, for cleaning and dismantling; the tanks were disposed of as scrap metal at LMC Corporation in Richmond (except for the fiberglass tank EF14). Copies of the hazardous waste manifests and certificates of disposal for the tanks are included as Appendix B. Fiberglass tank EF14 was disposed of at a Class III landfill, BFI Waste System in Livermore, California.

After removal of tanks, associated pipelines, and dispensing equipment, and after excavation of apparent contaminated soils, soil samples from the side walls and/or bottom of the excavations were collected by a backhoe at depths and locations identified by the BASELINE field person in the presence of a representative of the Alameda County Department of Environmental Health.

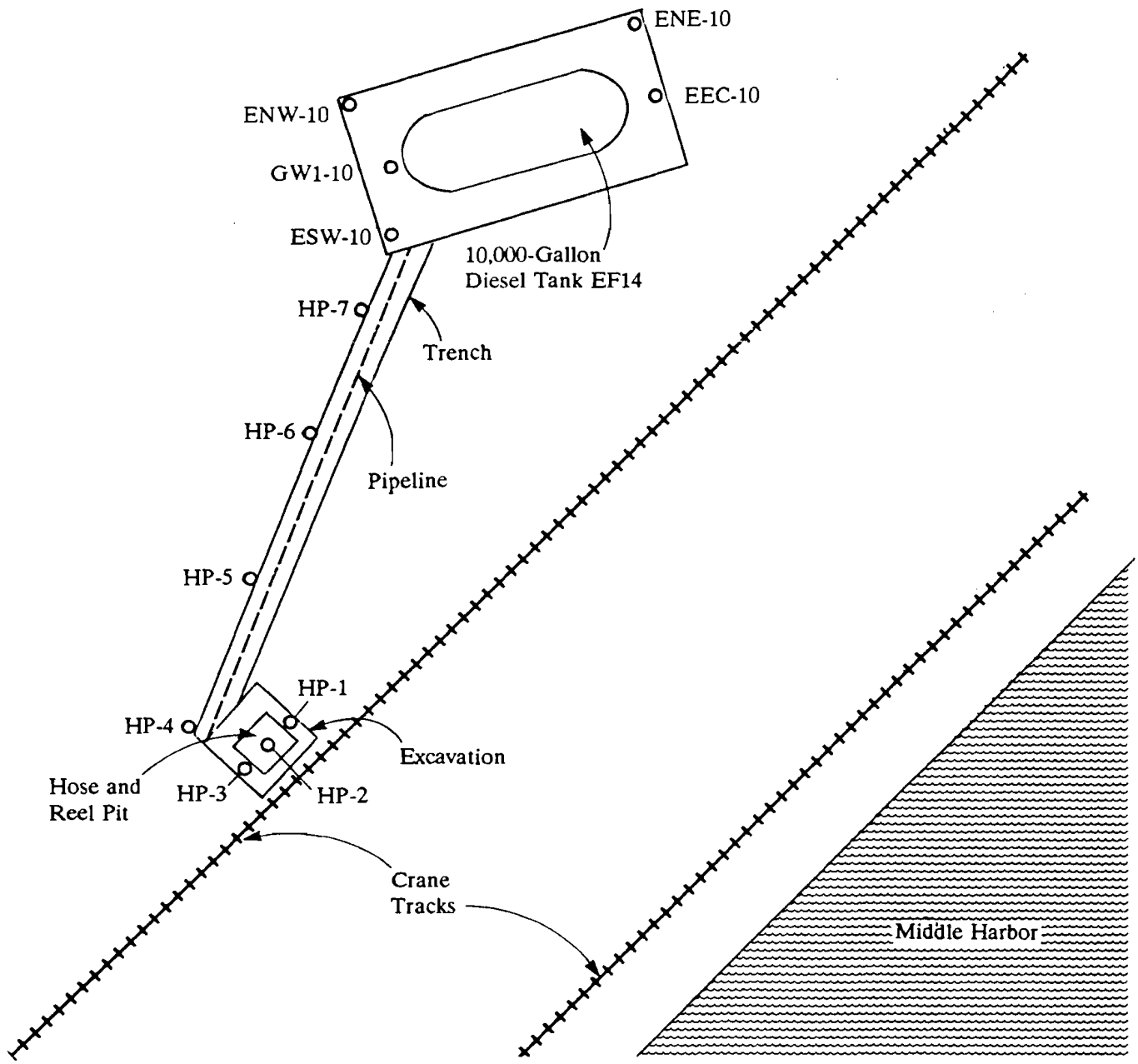
The soil samples were collected after removal of about six inches of the surface soil; a brass liner was driven into the soil mass, then removed and capped with aluminum foil and plastic caps, sealed with tape, placed in a ziplock bag, and placed in a cooled container. All samples were delivered to Curtis & Tompkins Laboratory in Berkeley for analysis, following strict chain-of-custody and sample labeling procedures. The laboratory reports and chain-of-custody documents are included as Appendix C. Tank removal activities and analytical results for soils collected from each of the excavation areas are described below.

Tank EF14 (Wharf Location)

IT Corporation removed tank EF14 on 30 August 1990 (Figure 2). BASELINE observed a number of cracks along the fiberglass tank seams during its removal. Groundwater accumulated in the excavation at a depth of approximately 10 feet below the ground surface. The tank invert was located 12 feet below the ground surface.

SOIL SAMPLING LOCATIONS
Tank EF14 (Wharf Area)

Figure 2



American President Companies ("APL")
1395 Middle Harbor Road
Oakland, California

Approximate
0 20 Feet

BASELINE

TABLE 1

ANALYTICAL RESULTS, VERIFICATION SAMPLING, SOIL AND GROUNDWATER
APL Container Yard Earthquake Repair
1395 Middle Harbor Road, Oakland[1]
Tank EF14 (Wharf Area)
(mg/kg, except where noted)

Sample Location[2]	Date Sampled	Sample Depth (feet)	Diesel	Benzene	Toluene	Xylenes	Ethyl-benzene
Tank EF14 Excavation							
EEC-10	8/30/90	10.0	ND	ND	ND	ND	ND
ENE-10	8/30/90	10.0	ND	ND	ND	ND	ND
ENW-10	8/30/90	10.0	ND	ND	ND	ND	ND
ESW-10	8/30/90	10.0	ND	ND	ND	ND	ND
GW1-10 (mg/L)[3]	8/30/90	11.0	NA	ND	ND	ND	ND
Hose and Reel Pit							
P-1-4[4]	8/30/90	4.0	14,000	ND	ND	0.320	0.038
HP-1	9/11/90	5.0	2.1	ND	ND	0.010	ND
HP-2	9/11/90	5.0	200	ND	ND	0.0091	ND
HP-3	9/11/90	4.0	2.7	ND	ND	0.0073	ND
Trench							
HP-4	9/11/90	3.0	1.8	ND	ND	0.0061	ND
HP-5	9/11/90	2.75	5.3	ND	ND	0.0073	ND
HP-6	9/11/90	2.75	9.7	ND	ND	0.010	ND
HP-7	9/11/90	2.5	2.3	ND	ND	0.0052	ND
EPA Method:[5]			8015M	5030/8020	5030/8020	5030/8020	5030/8020
Detection Limit (mg/kg):			1.0	0.005	0.005	0.005	0.005

[1] Tank EF14, a 10,000-gallon diesel tank, was located at the 1579 Middle Harbor Road address until APL assumed operational responsibility for the site. The tank is now considered part of 1395 Middle Harbor Road.

[2] *In situ* samples collected after completion of overexcavation activities. Sampling locations are shown in Figure 2; laboratory reports are included as Appendix C. All samples, except for sample P-1-4, represent the quality of the soil remaining in the ground after excavation.

[3] Groundwater sample; not analyzed for diesel in laboratory due to insufficient sample volume.

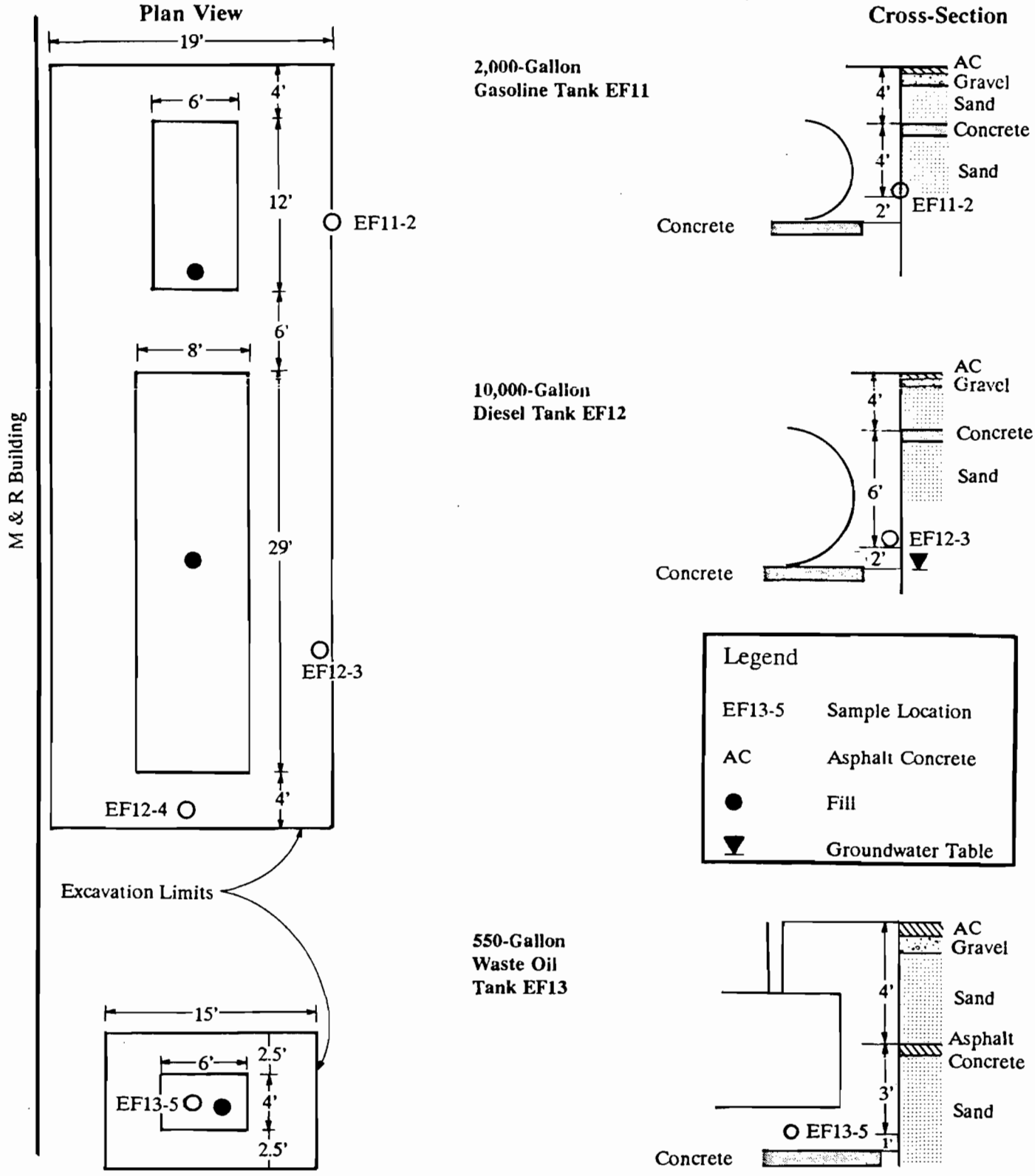
[4] Sample P-1-4 was also analyzed for Title 26 metals, pH, acute aquatic toxicity, and volatile organics to determine whether the soils would be classified as hazardous waste according to CCR Title 26. The analytical results indicated that the soils would not be considered hazardous waste (laboratory report in Appendix C). The sample material was excavated and stockpiled on plastic.

[5] Soils analytical method only.

Notes: ND = None detected.
NA = Not analyzed.

SOIL SAMPLING LOCATIONS
Tanks EF11, EF12, and EF13 (" M & R Building")

Figure 3



American President Companies ("APL")
1395 Middle Harbor Road
Oakland, California

BASELINE

TABLE 2

ANALYTICAL RESULTS, SOILS AND GROUNDWATER
APL Container Yard Earthquake Repair
1395 Middle Harbor Road, Oakland[1]
Tanks EF11, EF12, EF13 (M & R Building[2])
(mg/kg, except where noted)

Sample Location[3]	Date Sampled	Sample Depth (feet)	Diesel	Gasoline	Oil and Grease	Benzene	Toluene	Xylenes	Ethyl-benzene	Organic Lead	Metals[4]	Volatile Organics	Semi-Volatile Organics
Tank EF11													
EF11-1	9/05/90	8.0	NA	8.3	NA	0.024	ND	0.130	0.096	ND	NA	NA	NA
EF11-2	9/05/90	8.0	NA	1.7	NA	0.036	ND	0.010	0.070	ND	NA	NA	NA
Tank EF12													
EF12-3	9/05/90	10.0	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EF12-4	9/05/90	10.0	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
GW6/GW7[5]	9/05/90	11.5	5.8	NA	NA	ND	0.009	0.008	ND	NA	NA	NA	NA
Tank EF13													
EF13-5[6]	9/05/90	7.0	NA	NA	94	NA	NA	NA	NA	NA	Cd 0.6 Cr 15.0 Pb ND Zn 28.0	ND	ND
	EPA Method:[7]			8015M	8015M	503E[7]	5030/8020	5030/8020	5030/8020		7420	6010[9]	5030/8240/8270
	Detection Limit (mg/kg):		10.0	10.0	0.005	0.005	0.005	0.005	0.005	0.5	Rept.	Rept.	Rept.

1 Tanks EF11, EF12, and EF13 were located at the 1579 Middle Harbor Road address until APL assumed operational responsibility for the site. The tanks are now considered part of 1395 Middle Harbor Road.

2 Referred to by APL as the Rigging Loft Building.

3 All samples were collected in place after completion of overexcavation activities (except for sample EF13-5). Sampling locations are shown in Figure 3; laboratory reports are included in Appendix C.

4 Cd = Cadmium, Cr = Chromium (total), Pb = Lead, and Zn = Zinc.

5 Groundwater sample; results reported as mg/L.

6 Sampled material subsequently excavated and stockpiled. Due to presence of oil and grease, excavated materials were transported to PORT site for bioremediation (see Soils Management).

7 Soils analytical methods only.

8 Source: Standard Methods for the Examination of Water and Wastewater.

9 EPA Method 7420 used for analysis of lead.

Notes: NA = Not analyzed.
ND = None detected.
Rept. = See laboratory report in Appendix C.

The accumulated water was evacuated by a vacuum truck (Laidlaw Environmental) and the groundwater allowed to recharge before a sample was collected (see Appendix B for the manifest). Insufficient water accumulated in the tank excavation to allow for collection of samples for analysis of total petroleum hydrocarbons (TPH). Samples were collected in VOA containers for analysis of the volatile compounds benzene, toluene, xylenes, and ethylbenzene (BTXE). Laboratory analysis indicated no detectable levels of BTXE. Analytical results for in-place soil and groundwater samples collected in the former tank EF14 area are discussed below for three components of removal: 1) tank excavation, 2) hose and reel pit, and 3) pipeline trench. All sample results shown in Table 1, except for P-1-4 collected in the hose and reel pit, represent the quality of soil remaining in the ground after excavation.

Tank Excavation. Four in-place soil samples (EEC-10, ENE-10, ENW-10, and ESW-10) were collected in the excavation side walls at a depth of approximately 10 feet below the ground surface following overexcavation activities (Figure 3). The invert of tank EF14 was 12 feet below the ground surface. The sampled soils consisted of sandy fill material. Laboratory analyses indicated that none of the samples contained detectable levels of diesel or BTXE. Table 1 contains a summary of the analytical results.

Hose and Reel Pit. The hose and reel pit and approximately 67 feet of pipeline associated with tank EF14 were removed on 11 September 1990. The hose and reel pit consisted of a concrete vault approximately 7 feet by 7 feet by 4 feet in depth and contained a pump and fuel dispensing equipment. A total of four soil samples were collected in the area of the former hose and reel pit (Figure 2). Sample P-1-4 was collected in the gravel immediately underlying the concrete floor (prior to removal of the vault). The sample contained 14,000 mg/kg diesel, 0.320 mg/kg xylenes, and 0.038 mg/kg ethylbenzene.[3] The gravels were subsequently removed from the pit and stockpiles (see Soils Management).

Samples HP-1 and HP-3 were collected from the side walls and sample HP-2 was collected in-place from the bottom of the hose and reel pit after removal of the vault and completion of overexcavation. These samples contained residual diesel hydrocarbons ranging from 2.1 mg/kg to 200 mg/kg and residual xylenes ranging from 0.0073 to 0.01 mg/kg. Benzene, toluene, and ethylbenzene were not detected in these samples.

Pipeline Trench. Four soil samples (HP-4, HP-5, HP-6, and HP-7) were collected in the bottom of the trench at 20-foot intervals. The trench formerly contained the pipeline connecting tank EF14 to the hose and reel pit. The samples contained diesel hydrocarbons at concentrations ranging from 1.8 to 9.7 mg/kg and xylenes at concentrations ranging from 0.0052 to 0.01 mg/kg. Benzene, toluene, and ethylbenzene were not detected.

Excavated soils were placed in stockpiles on plastic for subsequent sampling to determine disposal or treatment options (see Soils Management). Final dimensions of the diesel tank (EF14) excavation were 21 feet by 38 feet by 12 feet deep. Final dimensions of the hose and reel pit excavation were 10 feet by 10 feet by 5 feet deep. The trench excavation was 65 feet by 5 feet by 3 feet deep.

---

[3]Sample P-1-4 was analyzed further to verify that the gravel was not hazardous waste according to California Code of Regulations (CCR) Title 26. The analytical results (Appendix C) indicated the presence of metals at levels below the CCR Title 26 TTLCs and below ten times the STLCs. Acetone and 2-butanone were detected in sample P-1-4 by EPA Method 8240 at concentrations of 0.13 and 0.065 mg/kg, respectively. The flash point of sample P-1-4 was 177° C. The pH was 11.8 standard units. A 96-hour static acute bioassay of sample P-1-4 yielded an LC_{50} of greater than 750 mg/L.

Tanks EF11, EF12, and EF13 (M & R Building)

IT Corporation removed tanks EF11, EF12, and EF13 and associated pipelines on 5 September 1990. Two excavations were created to remove the tanks: tanks EF11 and EF12 were located in one excavation and tank EF13, in a second excavation (Figure 3). All tanks had been strapped down to concrete pads. Upon removal of the three tanks, BASELINE did not observe evidence of corrosion or holes in the tanks.

Gasoline odors were detected by the excavating contractor during excavation of tank EF11. Groundwater accumulated at a depth of 11.5 feet in the west end of the excavation (former location of 10,000-gallon diesel tank EF12). A groundwater sample (GW6/GW7) was collected for laboratory analysis. The sample contained 5.8 mg/kg of diesel, 0.0009 mg/kg of toluene, 0.0008 mg/kg of xylenes; no detectable levels of benzene or ethylbenzene were identified. Groundwater was not encountered at the eastern portion of the excavation (former location of the 2,000-gallon gasoline tank EF11), which was excavated to a depth of only 10 feet.[4]

BASELINE collected two soil samples at each end of former tanks EF11 and EF12 (a total of four samples) to determine whether releases of product had occurred. Soil samples consisted of sandy fill material. The soil samples EF11-1 and EF11-2 were collected from the side walls of tank EF11 excavation area at a depth of 8 feet. The samples contained 8.3 and 1.7 mg/kg of gasoline, 0.024 and 0.036 mg/kg of benzene, 0.13 and 0.01 mg/kg of xylenes, and 0.096 and 0.07 mg/kg of ethylbenzene, respectively. Organic lead was not detected in either sample.

The soil samples EF12-3 and EF12-4 were collected from the side walls of the tank EF12 excavation area at a depth of 10 feet below the ground surface. The samples contained no detectable concentrations of petroleum hydrocarbons. The groundwater sample collected in the excavation (GW6/GW7) contained 5.8 mg/L diesel, 0.009 mg/L toluene, and 0.008 mg/L xylenes.

After removal of tank EF13, BASELINE collected one soil sample (EF13-5) in the excavation at a depth of approximately 1 foot below the former tank invert (7 feet). The soils at this depth appeared to be stained. Sample EF13-5 was analyzed in the laboratory as containing 94 mg/kg of oil and grease, no detectable volatile organics (EPA Method 8240), no detectable semi-volatile organics (EPA Method 8270), 0.6 mg/kg of cadmium, 15 mg/kg of chromium, no detectable levels of lead, and 28 mg/kg of zinc. No odors were detected in the excavation for tank EF13 and no groundwater was observed in the former tank area.

Based on groundwater sampling results for tank EF12 and on analytical results of soil sampling in the tank EF11 and EF13 excavations, the former tank areas were overexcavated to remove soils that could contain petroleum hydrocarbons. Vertical excavation was limited by the presence of concrete pads (Figure 3). Excavated soils were placed on plastic for subsequent sampling (see Soils Management).

Final dimensions of the excavation for tanks EF11 and EF12 were 55 feet by 19 feet; the depths in the areas of former tanks EF11 and EF12 were 12 feet and 10 feet, respectively. Final dimensions of the excavation for tank EF13 were 15 feet by 9 feet by 7 feet deep.

Unauthorized Release/Contamination Site Reports

Based on the soils and groundwater sampling results and on visual observations of tank failure (tank EF14), Underground Storage Tank Unauthorized Release/Contamination Site Reports were completed for tanks EF11, EF12, EF13, and EF14. The reports are included in Appendix D.

---

[4]The inverts of tanks EF11 and EF12 were located at depths of 10 and 12 feet, respectively, below the ground surface.

Soil Management

All excavated soils were stockpiled near the respective excavations. Soils potentially containing petroleum hydrocarbons were segregated and placed on plastic. The locations of the stockpiles generated by the excavation of tank EF14 (stockpiles A, B, C, D) and the hose and reel pit and pipeline excavation are shown in Figure 4. The stockpiles from the excavation of tanks EF11, EF12, and EF13 are shown in Figure 5.

Each stockpile was sampled to identify one of the following soil disposition methods: 1) use soils as backfill in the tank excavation (if no detectable levels of hydrocarbons), 2) transport soils to the PORT's soil treatment site at Langley and Doolittle streets in Oakland (if contaminated soils were not hazardous, as defined by CCR Title 26), or 3) transport soils to a Class I disposal site as hazardous waste. One soil sample was collected and analyzed for each 20 cubic yards of excavated soils to determine the appropriate disposal options for the soil. According to the RWQCB, soils may not be used as backfill unless sampling indicates that chemical constituents are not detected and the sampling frequency is one sample per 20 cubic yards.

All samples were collected by clearing six inches of soils from the sampling location in the stockpile and driving the hand sampler into the soil mass. After collection, samples were handled in the same manner as described above for sampling in the excavation areas. The stockpile analytical results indicated that the excavated soils did not contain petroleum hydrocarbons at levels that may render the soils hazardous. A total of approximately 332 cubic yards (cy) of soils containing petroleum hydrocarbons were transported to the PORT's site for treatment by Bay Area Tank and Marine of Pacheco, California. The remaining soils, those not containing petroleum hydrocarbons, were used as backfill on-site.

Soils transported to the Langley and Doolittle site were placed on plastic and covered with plastic. The site has been approved by the RWQCB for temporary bioremediation of non-hazardous waste soils. Soil treatment would be expected to require no more than three months and would be performed in accordance with a work plan and site safety plan that have been reviewed and approved by the RWQCB. Upon completion of soil treatment and verification sampling, soils would be used as fill on PORT property. The PORT would provide advance notification to the County and the RWQCB of all fill activities.

Specific stockpile sampling results and the disposition of the excavated soils are described below for the Wharf Area and M & R Building tanks.

Tank EF14 (Wharf Area)

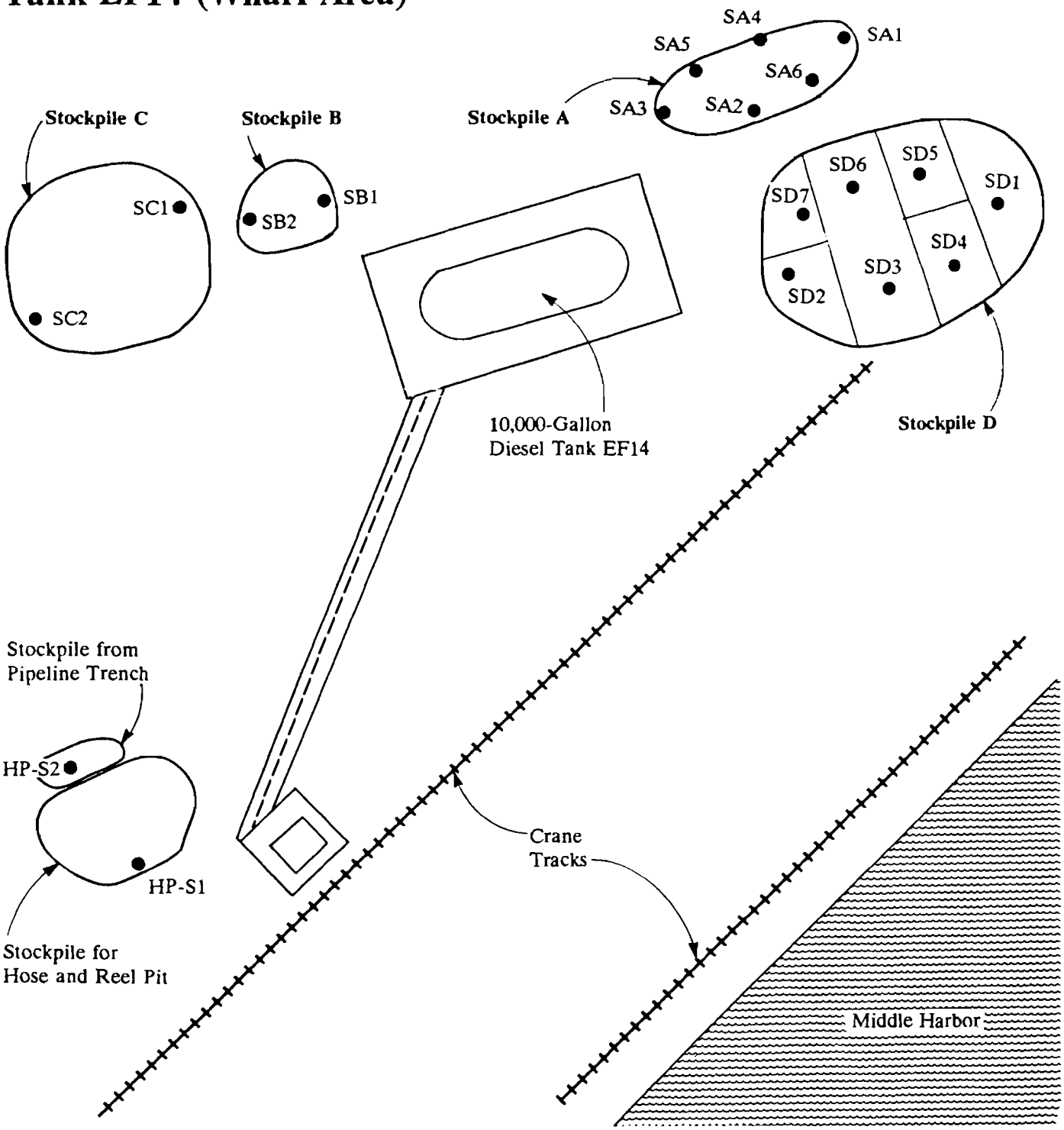
A total of 189 cy of soils were transported to the Langley and Doolittle site from tank EF14, pit, and trench excavations combined. Analytical results for samples collected in the stockpiles of excavated soils are presented in Table 3; stockpile sampling locations are depicted in Figure 4. Based on the analytical results, stockpiles A, B, C, and portions of D (soils excavated from the former tank area) were transported to the PORT site at Langley and Doolittle streets for bioremediation. Two samples (SA-5 and SA-6), collected from stockpile A for further analyses, verified that these soils were not hazardous waste according to CCR Title 26.[5] Sample HP-S1 collected from the hose and reel pit spoils was analyzed for volatile organics by EPA Method 8240 because organics had been detected in another sample, P-1-4, from the hose and reel pit. Volatile organics were not detected.

Stockpile D soils were used as backfill with the exception of soils in the vicinity of sampling location SD-6. Approximately 20 cubic yards from this sampling location were transported to the Langley and Doolittle site for bioremediation. Based on the analytical results, all soils and gravels excavated from the former hose and reel pit area and pipeline excavation were transported to the Langley and Doolittle site for bioremediation.

[5]Verification that the soils were not hazardous waste was performed to ensure compliance with the RWQCB conditions for approval of the Langley and Doolittle site as a soils treatment area.

STOCKPILED SOIL SAMPLING LOCATIONS
Tank EF14 (Wharf Area)

Figure 4



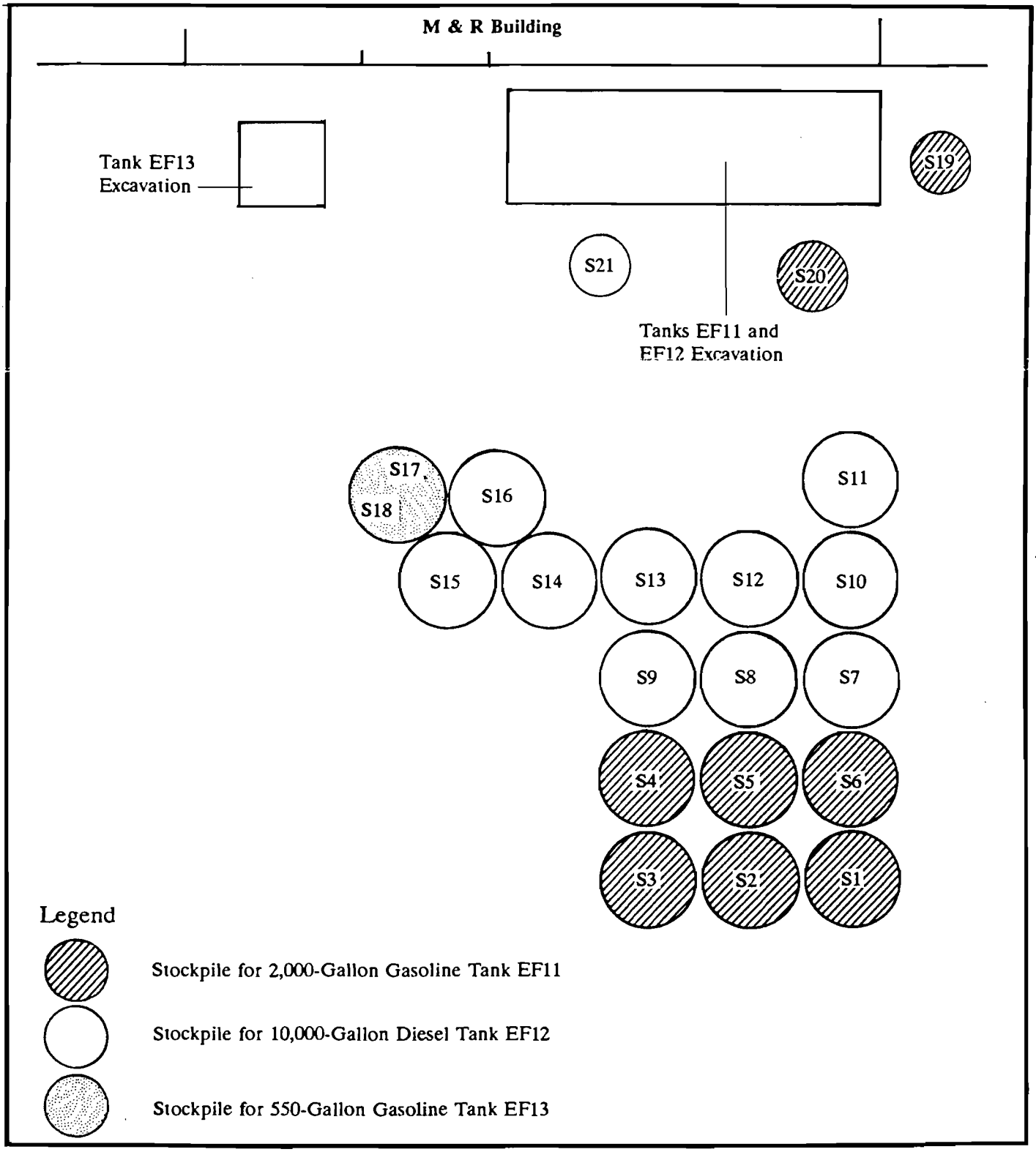
American President Companies ("APL")
1395 Middle Harbor Road
Oakland, California

Approximate
0 20 Feet

BASELINE

STOCKPILED SOIL SAMPLING LOCATIONS
Tanks EF11, EF12, and EF13 ("M & R Building")

Figure 5



American President Companies ("APL")
1395 Middle Harbor Road
Oakland, California

Not to Scale

BASELINE

TABLE 3

ANALYTICAL RESULTS, STOCKPILED SOILS
APL Container Yard Earthquake Repair
1395 Middle Harbor Road, Oakland
Tank EF14 (Wharf Area)

(mg/kg)

Source of Soils and Sample I.D.[1]	Date Sampled	Diesel	Benzene	Toluene	Xylenes	Ethyl-benzene
Tank EF14						
Stockpile A						
SA-1,2,3,4*	8/30/90	150	ND	ND	ND	ND
SA-5[2]	8/30/90	NA	NA	NA	NA	NA
SA-6[2]	8/30/90	NA	NA	NA	NA	NA
Stockpile B						
SB-1,2*	8/30/90	390	ND	ND	ND	ND
Stockpile C						
SC-1,2*	8/30/90	120	ND	ND	ND	ND
Stockpile D						
SD-1,2*	8/30/90	ND	ND	ND	ND	ND
SD-3	9/04/90	ND	ND	ND	ND	ND
SD-4	9/04/90	ND	ND	ND	ND	ND
SD-5	9/04/90	ND	ND	ND	ND	ND
SD-6	9/04/90	420	ND	ND	ND	ND
SD-7	9/04/90	ND	ND	ND	ND	ND
Hose and Reel Pit Stockpile						
HP-S1	9/11/90	32	ND	ND	0.010	ND
Pipeline Stockpile						
HP-S2[4]	9/11/90	ND	ND	ND	0.0065	ND
EPA Method:		8015M	5030/8020	5030/8020	5030/8020	5030/8020
Detection Limit (mg/kg):		10.0	0.005	0.005	0.005	0.005

[1] Locations shown in Figure 4; laboratory results are in Appendix C.

[2] Samples SA-5 and SA-6 were collected from stockpile A to verify that these soils were not hazardous waste according to CCR Title 26. Sample SA-5 was analyzed for Title 26 metals. None were detected at levels greater than Title 26 STLCs or TTLCs.

[3] Sample SA-6 was analyzed by Kennedy/Jenks/Chilton Laboratory for aquatic toxicity by a 96-hour static acute bioassay. The LC_{50} exceeded 750 mg/L.

[4] Sample HP-S1 was also analyzed for volatile organics by EPA Method 8240 because a previous sample, P-1-4, collected in the hose and reel pit contained acetone and 2-butanone. Volatile organics were not detected in sample HP-S1.

Notes: * = Composited samples.
ND = None detected.
NA = Not analyzed.

ANALYTICAL RESULTS, STOCKPILED SOILS
APL Container Yard Earthquake Repair
1395 Middle Harbor Road, Oakland[1]
Tanks EF11, EF12, EF13 (M & R Building[2])
(mg/kg)

Tank Excavation (stockpile source)	Stockpile	Sample Depth (feet)	Diesel	Gasoline	Oil and Grease	Benzene	Toluene	Xylenes	Ethyl-benzene	Cadmium	Chromium	Lead	Zinc	Volatile Organics	Semi-Volatile Organics
Tank EF11	S1	EF11	NA	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
(2,000-	S2	EF11	NA	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
gallon	S3	EF11	NA	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
gasoline)	S4	EF11	NA	ND	NA	0.0078	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S5	EF11	NA	1.5	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S6	EF11	NA	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Tank EF12	S7	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
(10,000-	S8	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
gallon	S9	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
diesel)	S10	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S11	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S12	EF12	41	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S13	EF12	50	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S14	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S15	EF12	63	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
	S16	EF12	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Tank EF13	S17	EF13	NA	NA	ND	NA	NA	NA	NA	1.3	15	23	37	ND	ND
(550-gallon	S18	EF13	NA	NA	ND	NA	NA	NA	NA	0.9	13	12	26	ND	ND
waste oil)															
EPA Method:			8015M	8015M	503E	5030/8020	5030/8020	5030/8020	5030/8020	6010	6010	5030/7420	3550/8270	8240	8270
Detection Limit (mg/kg):			10.0	10.0	50	0.005	0.005	0.005	0.005	0.5	0.5	2.5	0.5	Rept.	Rept.

Notes: NA = Not analyzed.
ND = None detected.
Sampling locations depicted in Figure 5; laboratory reports are included as Appendix C.
Samples collected on 5 September 1990.
Rept. = See laboratory report in Appendix C.
Stockpiles S19, S20, and S21 (see Figure 5) were not sampled. Stockpiles S19, S20, and S21 were not sampled because the soils would be transported to the Langley and Doolittle site for treatment. Combustible vapor readings were elevated for stockpiles S19 and S20; stockpile S21 was assumed to contain diesel hydrocarbons in the same range as stockpiles S12 and S15.

Tanks EF11, EF12, and EF13 (M & R Building)

Soils excavated from these tank areas were stockpiled on plastic in piles of approximately 20 cubic yards or less and a sample collected from each stockpile. Analytical results for samples collected in the stockpiles of excavated soils are presented in Table 4; samples are identified by the number of the stockpile from which the sample was collected. Stockpile sampling locations are shown in Figure 5. A total of 145 cy were transported from the M & R Building tank removal excavations to the Langley and Doolittle site for soil treatment. Based on the analytical results, soils from stockpiles S4, S5, S19, and S20 were transported to the Langley and Doolittle site for aeration treatment; stockpiles S1, S2, S3, and S6 were used as backfill.[6]

Samples S7 through S16 were collected in the stockpiled soils excavated from former tank EF12 (10,000-gallon diesel tank) area. The analytical results indicated the presence of diesel hydrocarbons at 41 mg/kg (S12), 50 mg/kg (S13), and 63 mg/kg (S15). Benzene, toluene, xylenes, and ethylbenzene were not detected in any of the samples. Stockpile S21 was not sampled because the soils would be transported to the Langley and Doolittle site for bioremediation. Stockpiles S12, S13, S15, and S21 were transported to the Langley and Doolittle site for bioremediation treatment. The remaining stockpiles (S7 through S11, S14, and S16) were used as backfill.

Samples S17 and S18 were collected in the stockpiled soils excavated from the former tank EF13 (550-gallon waste oil tank) area. Although the analytical results for these samples indicated that there were no detectable levels of oil and grease, volatile or semi-volatile organics, and that metals were present at low levels, the soils were transported to the Langley and Doolittle site for bioremediation treatment. The stockpiles contained soils excavated from beneath tank; and a sample (EF13-5) collected in the former tank area before overexcavation activities contained 94 mg/kg of oil and grease (described in Tank Removal).

CONCLUSIONS AND RECOMMENDATIONS

Based on field observations and the analytical results from soil and groundwater sampling, the following conclusions can be drawn:

- Soil samples collected during and after tank removal activities indicate that unauthorized releases of hydrocarbons to soils underlying the site have occurred through operation of the four former underground storage tanks.

- The major sources of potential groundwater contamination posed by the four underground tanks have been removed.

- No obvious punctures, holes, or corrosion were observed on the walls of tanks EF11 (2,000-gallon gasoline), EF12 (10,000-gallon diesel), and EF13 (550-gallon waste oil). These tanks were located at the M & R Building.

- The results of analytical testing of *in situ* soils at the former tank EF11 area indicate that there are residual levels of gasoline hydrocarbons ranging from 1.7 to 8.3 mg/kg remain in the ground.

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[6]Stockpiles S19 and S20 were not sampled because combustible vapor readings in the stockpiles indicated elevated levels (less than 100 ppm). Since the soils would require treatment to reduce hydrocarbon levels, sampling to ascertain whether the soils could be used as backfill was not necessary.

- The results of analytical testing of *in situ* soils at the former tank EF12 area indicate that there are no detectable residual levels of diesel hydrocarbons.

- All soils in the former tank EF13 area that were located between the underlying concrete and the tank invert have been removed.

- Observed cracks in tank EF14 (10,000-gallon diesel) at the wharf indicated that releases occurred as a result of tank failure; analytical results of samples collected in the former hose and reel pit and pipeline area indicate that releases occurred as a result of spillage. The results of analytical testing of in-situ soils at the former tank EF14 area indicate that there are: 1) no detectable residual levels of hydrocarbons in the former tank area; 2) residual levels of diesel hydrocarbons ranging from 2.1 to 200 mg/kg in the former hose and reel pit; and 3) residual levels of hydrocarbons in the former pipeline area ranging from 1.8 to 9.7 mg/kg.

No further actions are recommended for this site at the current time. The analytical results obtained as part of site activities will be part of a data base being developed by the Port of Oakland in cooperation with Alameda County Department of Environmental Health and the Regional Water Quality Control Board, San Francisco Bay Region. The purpose of the data base is to develop and design a regional monitoring program for the Port Area, including the project site, by the end of 1990.

LIMITATIONS

The conclusions presented in this report are professional opinions based on the indicated data described in this report. They are intended only for the purpose, site, and project indicated. Opinions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the subject property can occur with time, because of natural processes or the works of man, on the subject sites or on adjacent properties. Changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

APPENDIX A

UNDERGROUND STORAGE TANK CLOSURE PERMITS AND NOTIFICATION OF BAY AREA AIR QUALITY MANAGEMENT DISTRICT

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

7/14/90

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

1. Business Name: Eagle Marine Services, Ltd.
   Business Owner: American President Companies
2. Site Address: 1579 Middle Harbor (APL Middle Harbor Rd. Terminal)
   City: Oakland Zip: 94607 Phone: 272-2040
3. Mailing Address: 1395 Middle Harbor Road
   City: Oakland Zip: 94607 Phone: 272-1178
4. Land Owner: Port Of Oakland
   Address: 530 Water Street City, State: Oakland, CA Zip: 94607
5. EPA I.D. No.: CAC00030113
6. Contractor: IT Corporation (O.C. Jones and Sons - Gen'l. Contractor)
   Address: 4575 Pacheco Boulevard
   City: Martinez Phone: 372-9100
   License Type: A,C33, C34, C61, C57 D38, B, Haz.Sub.Rem.ID# 137422 (IT Corporation)
   Certificate
7. Consultant: Baseline Environmental Consulting
   Address: 5900 Hollis Street, Suite D
   City: Emeryville, CA Phone: 420-8686

COPY

8. Contact Person for Investigation

Name Michele Heffes Title JuniorEnviron. Scientist

Phone 272-1178

9. Total No. of Tanks at facility 4 (To Be Removed)

10. Have permit applications for all tanks been submitted to this office? Yes [x] No [ ]

11. State Registered Hazardous Waste Transporters/Facilities

a) Product/Waste Tranporter

Name Refinery Services EPA I.D. No. CAD083166728

Address P.O. Box 1171

City Patterson State CA Zip 95363

b) Rinsate Transporter

Name See (a) EPA I.D. No. _____

Address _____

City _____ State _____ Zip _____

c) Tank Transporter

Name Erickson Inc. EPA I.D. No. CAD009466392

Address 255 Parr Boulevard

City Richmond State CA Zip 94801

d) Tank Disposal Site

Name See (c) EPA I.D. No. _____

Address _____

City _____ State _____ Zip _____

e) Contaminated Soil Transporter

Name Chism Trucking EPA I.D. No. CAD980584817

Address P.O. Box 755

City Riverdale State CA Zip 93656

12. Sample Collector

Name Yane Nordhav

Company Baseline Environmental Consulting

Address 5900 Hollis Street, Suite D

City Emeryville State CA Zip 94607 Phone 420-8686

13. Sampling Information for each tank or area

Tank or Area			Material sampled	Location & Depth
Capacity	Historic Contents (past 5 years)			
2,000-gallon	Gasoline	(EF11)	All Tanks: Soils and ground-water	1' to 2' in native soils beneath tank invert at opposite ends of tank (soils)
10,000-gallon	Diesel	(EF12)		
550-gallon	Waste Oil	(EF13)		Accumulated water in excavation
10,000-gallon	Diesel	(Ef14)		

14. Have tanks or pipes leaked in the past? Yes [ ] No [ ] Unknown

If yes, describe. _____

15. NFPA methods used for rendering tank inert? Yes [X] No [ ]

If yes, describe. Three pounds dry ice per 100 gallons of tank capacity

An explosion proof combustible gas meter shall be used to verify tank inertness.

16. Laboratories

Name Curtis & Tompkins, Ltd.

Address 2323 Fifth Street

City Berkeley State CA Zip 94710

State Certification No. 159

17. Chemical Methods to be used for Analyzing Samples

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Number
TVH (gasoline)	5030	8015 Mod.
TEH (diesel)	3550	8015 Mod.
BTXE	5030	8020/602
Oil & Grease	3550	SMWW 503E
Chlorinated HC	5030	8240/624
Cd, Cr, Pb, Zn	3050/3010	ICP
TPH-D		GC FID 3550
TPH-G		GC FID 5030
BTXE		8020 or 8240
PCB, PAH, PNA, Creosote		8270

18. Submit Site Safety Plan

19. Workman's Compensation: Yes [X] No [ ]

Copy of Certificate enclosed? Yes [X] No [ ]

Name of Insurer National Union Fire Insurance Company (Insured: IT Corp.)

20. Plot Plan submitted? Yes [X] No [ ]

21. Deposit enclosed? Yes [X] No [ ]

22. Please forward to this office the following information within 60 days after receipt of sample results.

a) Chain of Custody Sheets

b) Original Signed Laboratory Reports

c) TSD to Generator copies of wastes shipped and received

d) Attachment A summarizing laboratory results

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true. I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Saftey and Health Administration) requirements concerning personnel and safety.

I will notify the Department of Environmental Health at least two (2) working days (48 hours) after approval of this closure plan in advance to schedule any required inspections. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Signature of Contractor

Name (please type) PATRICK M. IGNOFFO - ENGINEER - O.C. JONES & SONS

Signature Patrick M. Ignoffo

Date July 16, 1990

Signature of Site Owner or Operator

Name (please type) Michele Heffes, Port of Oakland

Signature Michele Heffes for Port of Oakland

Date 7/12/90

IT CORPORATION

STANDARD PROCEDURE

PROCEDURE NO. ITC PRO 9532.7A

DATE February 23, 1987

SUPERSEDES 9532.7 (02/17/83)

APPROVED David R. Smith

SUBJECT: UNDERGROUND STORAGE TANK REMOVAL AND CLOSURE

CONTENTS

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JUN 2[illegible]
BASELINE

place or removal). As of 1985, states have designated state or local agencies that are responsible for implementing and enforcing underground tank regulations, including closures.

Steps involved in tank removal and closure include agency notification, permitting, excavation, hazardous substance removal, tank cleaning, tank removal, groundwater and/or soil testing for chemical contamination, backfilling, and post-closure notification (tank de-listing).

The protection of IT employees, subcontractors, and the public is a major concern during tank closure project design and implementation. Several health and safety concerns require evaluation and include excavation/trenching hazards; confined space hazards; toxic, flammable and/or oxygen deficient atmospheres; hot work and cold cutting operations; tank removal; physical hazards; and others.

All underground storage tank closure projects shall be reviewed by the Regional Health and Safety Office in accordance with ITC PRO 9021.1A (Review of New Jobs, New Projects, New Construction and Proposals).

V. DEFINITIONS - FOR THE PURPOSE OF THIS DIRECTIVE

A. Cold Cutting

Methods of material cutting that utilize a nonelectric or nonflammable gas system, such as pneumatic chisels or drills, or a high pressure water device.

B. Confined Space

Normally considered to be enclosures having limited means for entry and exit, by reason of location, size, or number of openings; and unfavorable natural ventilation which could contain or produce dangerous air contaminants, flammable or explosive atmospheres, and/or oxygen deficiency. Confined spaces may include storage tanks, excavations, or trenches.

C. Competent Person - Excavation and Trenching

A person, such as a supervisor or engineer, who is capable of identifying existing and predictable hazards in the excavation/trenching work area and who has the authority to take prompt corrective measures to eliminate them.

D. Excavation

Any manmade cavity or depression in the earth's surface, including its sides, walls or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation.

E. Hot Work

Any work involving burning, welding, riveting, or similar fire-producing operations, as well as work which produces a source of ignition, such as drilling, grinding, abrasive blasting, etc.

exposure to toxic substances, confined space entry procedures, and in the use of atmospheric testing instruments is required. These training requirements can be satisfied through the successful completion of IT's Excavation Safety and the Hazards and Protection/Confined Space training courses.

2. Qualified Person - Excavation and Trenching

A person, such as an engineer, who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated his/her ability to design shoring, sloping/benching, or alternate systems that meet accepted regulatory and engineering requirements.

M. Trench

An excavation made below the surface of the ground. In general, the depth is greater than the width at the bottom, but the width of a trench at the bottom is not greater than 15 feet.

N. Underground Storage Tank

By regulatory definition, a tank with ten percent or more of its volume below ground. Included in the volume is all piping attached to the tank (RCRA, Subtitle I, Section 9001(1)).

VI. MEDICAL EXAMINATION

A. All IT Corporation personnel on-site shall have successfully completed a preplacement or periodic/update physical examination in accordance with ITC PRO 9410.1.

B. All subcontractor personnel who, because of their job assignments, may incur exposures to the hazardous materials present at the jobsite, must have successfully completed a physical examination similar to the IT Corporation preplacement physical exam required by ITC PRO 2010.1 (Contractor/Subcontractor Relationships and Documentation) unless otherwise indicated by the Regional Health and Safety Office.

VII. EMPLOYEE TRAINING AND INDOCTRINATION

A. All IT personnel assigned to underground storage tank closure projects shall have completed, at a minimum, the appropriate formal training courses designated in ITC PRO 9030.1A (Employee and Contractor Training Requirements).

B. All subcontractor personnel shall have completed minimum training requirements as specified in ITC PRO 2010.1A (Contractor/ Subcontractor Relationships and Documentation).

c. Trees, boulders, poles and other surface encumbrances located at the work site shall be made safe or removed prior to initiation of the tank closure project.

d. Assure that construction equipment (not in transit) and personnel do not come closer than 15 feet to any energized overhead high voltage conductor such as electric utility lines.

B. Operating Requirements

1. Hazard Assessment

At the beginning of the project, each work shift, and as often as necessary to ensure safety, a competent person shall conduct an area survey to locate work place hazards and determine appropriate safety control measures.

2. Excavation Safety

a. All work involving excavation or trenching shall be subject to the requirements of ITC PRO 9532.9 (Excavation and Trenching).

b. Personnel entry into any excavation or trench that is more than five feet deep shall only be permitted if the excavation or trench is properly shored or sloped and safe for entry as determined by a qualified person.

c. Daily inspections of an excavation shall be made by a competent person. If there is evidence of possible cave-ins or slides, all work in the excavation shall cease until the necessary safeguards have been taken.

d. Trenches more than four feet deep shall have ladders or steps located so as to require no more than 25 feet of lateral travel between means of egress. Ladders shall be placed at an angle not more than 30 degrees from vertical and secured as necessary. Ladder side rails shall extend at least three feet above the original ground surface.

e. All spoil shall be located at least two feet from the edge of the excavation to prevent spoil from falling back into the excavation. No method that disturbs the soil in place (such as driving stakes) shall be used to contain spoil material.

4. Fire Safety

a. Hot work shall not be conducted unless all requirements of ITC PRO 9571.1 (Welding, Cutting, and Other Hot Work in Hazardous Locations) have been met.

b. Cold cutting of underground storage tanks to facilitate cleaning shall only be performed under direct supervision of a qualified person.

c. Equipment on-site shall be bonded and grounded, spark-proof, and explosion resistent, as appropriate. Particular attention to bonding/grounding shall be made during transfer of flammable/combustible liquids into vacuum trucks and when ventilation equipment is utilized.

d. A fire extinguisher with a minimum rating of 10B:C shall be strategically located in the area of active work.

e. No smoking shall be allowed in the work area.

5. Underground Storage Tank Decontamination

Underground storage tanks that have been removed, but not cleaned, are considered hazardous waste. These tanks must be transported in accordance with Department of Transportation hazardous material packaging and shipping requirements, including manifesting, and taken to a permitted hazardous waste disposal site.

Minimum decontamination procedures that shall be performed to allow transportation of removed tanks under a bill of lading, disposal at a non-hazardous waste facility, or tank demolition for scrap include:

a. Removal of all residual liquid material, followed by triple rinsing with an appropriate cleaning solution to remove remaining sludge and/or scale from the interior surfaces of the tank.

b. Routine tank testing to determine the effectiveness of the cleansing, flushing and rinsing procedure. Residual liquid in tanks shall not be less than a pH of 3, nor greater than 11. Tanks that have contained flammable or combustible liquids shall be checked with a combustible gas indicator. Readings above 0% LEL shall require additional tank cleansing.

c. A physical examination of the tank interior to confirm that the rinsing process has removed all residual material. When triple rinsing is not sufficient to remove all sludge or scale, tanks shall be entered (once the tank space has been evaluated by a qualified person - industrial confined space) through available manways or cold cut open so that personnel can

Regional Health and Safety Office. All tests shall be repeated as often as necessary to assure safety since changing conditions may result in varying atmospheric contaminant concentrations.

c. All work activity is prohibited in atmospheres where tests indicate that the concentration of flammable vapors is greater than 10% of the lower explosive limit (LEL), or the concentration of oxygen is less than 20% or greater than 25%. Positive steps, such as ventilation, shall be taken to establish acceptable atmosphere conditions prior to resumption of operations.

d. Tests indicating the presence of toxic contaminants in concentrations at or above the threshold limit value (TLV) mandate that work in such an atmosphere proceed only when personal protective equipment appropriate for the specific contaminants is provided to all affected employees, based on recommendations of the Regional Health and Safety Office.

e. Proper maintenance and operation of air monitoring equipment is an essential component of underground storage tank closure operations. Use of combustible gas/oxygen indicators is subject to the following precautions:

(1) Combustible gas indicators must be routinely and properly calibrated based on known mixtures of gas (i.e., pentane, methane) in air. Other combustible gases or vapors will read aproximately correctly in terms of explosivity, but for maximum accuracy, a calibration curve for the specific substance or mixture of concern should be consulted.

(2) The presence of certain materials in the sample atmosphere may seriously impair the meter response of a combustible gas indicator. These include tetraethyl lead (TEL), used in leaded gasoline, and silicon compounds, in the form of silanes, silicones and silicates, often found in hydraulic fluids. Certain manufacturers supply inhibitor filaments designed to nullify the effects of TEL on meter response.

(3) Ambient oxygen concentrations of less than 10% will cause an inaccurately low reading on the combustible gas meter scale.

d. Food articles or smoking materials will not be allowed in the work area.

e. All IT procedures applicable to each specific job are to be followed in addition to these noted underground storage tank closure work practices and conditions.

f. Adequate provisions shall be made for:

(1) Washing of hands and face prior to eating, drinking, or consuming tobacco products.

(2) Providing drinking water to site personnel. During the summer months particularly, electrolyte replacement fluids, such as Gatorade, should be made available.

9532-7/PLP

ACORD. CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)

PRODUCER

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

CODE SUB-CODE

INSURED International Technology Corporation; IT Corporation; IT Transportation Corp.; McGill Environmental Systems, Inc.; IT Environmental Services, Inc.; PEI Assoc., Inc.; Underground Resources Management; IT Italia, Inc.; IT Engineering of New York, P.C.; IT McGill International, Ltd.; IT Espana; IT Deutschland, Inc.
23456 Hawthorne Blvd.,
Torrance, California 90505

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A NATIONAL UNION FIRE INSURANCE COMPANY

COMPANY LETTER B BIRMINGHAM FIRE

COMPANY LETTER C LANDMARK

COMPANY LETTER D

COMPANY LETTER E

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	ALL LIMITS IN THOUSANDS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$ 1,000,000
A	X COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OPS AGGREGATE	$
	X CLAIMS MADE OCCUR	RMGLA2498049	4/1/90	4/1/91	PERSONAL & ADVERTISING INJURY	$
	OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$ 1,000,000
					FIRE DAMAGE (Any one fire)	$
					MEDICAL EXPENSE (Any one person)	$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	$ 1,000,000
A	X ANY AUTO	RMBA5529114 (A/O)	4/1/90	4/1/91		
	ALL OWNED AUTOS	RMBATX562115 (Texas)			BODILY INJURY (Per person)	$
	SCHEDULED AUTOS					
	HIRED AUTOS				BODILY INJURY (Per accident)	$
	NON-OWNED AUTOS					
	GARAGE LIABILITY				PROPERTY DAMAGE	$
	EXCESS LIABILITY				EACH OCCURRENCE $	AGGREGATE $
	OTHER THAN UMBRELLA FORM					
A		RMWC112-7811 (CA)			STATUTORY	
A	WORKER'S COMPENSATION	RMWC112-8772 (A/O)			$ 1,000,000	(EACH ACCIDENT)
B	AND	RMWC112-8773 (MD)	4/1/90	4/1/91	$ 1,000,000	(DISEASE—POLICY LIMIT)
C	EMPLOYERS' LIABILITY	RMWC112-8774 (LA)			$ 1,000,000	(DISEASE—EACH EMPLOYE
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/RESTRICTIONS/SPECIAL ITEMS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

©ACORD CORPORATION 1988

CITY OF OAKLAND
FIRE MARSHAL'S OFFICE
ROOM 201, CITY HALL
OAKLAND, CALIFORNIA 94612
273-3851

Permit No._____
Copies to_____
Date Issued_____

APPLICATION for PERMIT to INSTALL, REMOVE or REPAIR TANKS

IN THE CITY OF OAKLAND

Date 13 July 1990

Application is hereby made for permit to ~~remove~~ / ~~install~~ / repair gasoline / fuel oil tank and excavate, commencing four feet inside the curb line / inside the property line on the ____ side of American President Line Middle Harbor Rd. St. Terminal, 1579 Middle Harbor Road Ave. ____ feet ____ of ____ Ave.

House No. and Street _____ Street / Avenue Present storage _____

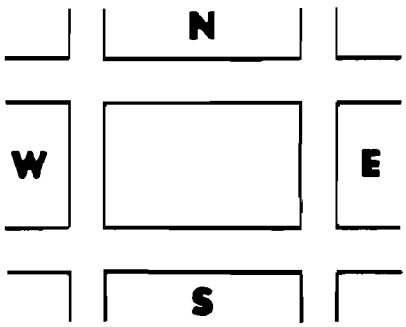
Owner Port of Oakland Address 530 Water Street Phone 272-1178

Applicant O. C. Jones and Sons Address 1520 Fourth Street Phone 526-3424

Remarks Tanks will be removed in phases

Sidewalk surface to be disturbed ____ X ____ Number of Tanks Four Capacity 2,000 / 10,000 / 550 Gallons ~~each~~

Signature Richard M. Reynolds



838-67 (8/67) 93

BAY AREA AI' QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO CALIFORNIA 94109
(415) 771-6000

REGU. TION 8, RULE 40
Aeration of Contaminanted Soil and
Removal of Underground Storage Tanks

NOTIFICATION FORM

☑ Removal or Replacement of Tanks
☑ Excavation of Contaminated Soil

SITE INFORMATION

SITE ADDRESS American President Line (Eagle Marine Services), 1579 Middle Harbor Road
CITY, STATE, ZIP Oakland, CA 94607
OWNER NAME Port of Oakland
SPECIFIC LOCATION OF PROJECT Port Tank ID EF14 (10,000-gal. diesel) - Phase A

TANK REMOVAL

SCHEDULED STARTUP DATE August 9, 1990
VAPORS REMOVED BY:
[ ] WATER WASH
[X] VAPOR FREEING (CO^2)
[ ] VENTILATION

CONTAMINATED SOIL EXCAVATION

SCHEDULED STARTUP DATE August 9, 1990
STOCKPILES WILL BE COVERED? YES ____ NO ____
ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
_____
(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME IT Corporation CONTACT Larry Hutson
ADDRESS 4575 Pacheco Boulevard PHONE (415) 372-9100
CITY, STATE, ZIP Martinez, CA

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME Baseline Environmental Consulting CONTACT Yane Nordhav or Irene Kan
ADDRESS 5900 Hollis Street, Suite D PHONE (415) 420-8686
CITY, STATE, ZIP Emeryville, CA 94608

FOR OFFICE USE ONLY

DATE RECEIVED _____ BY _____ (INIT.)
CC: INSPECTOR NO. _____ DATE _____ BY _____ (INIT.)
TELEPHONE UPDATE: CALLER _____ CHANGE MADE _____
BAAQMD N # _____

89

APPENDIX B

HAZARDOUS WASTE MANIFESTS AND CERTIFICATES OF DISPOSAL

California—Health and Welfare Agency
Approved OMB No. 2050—0039 (Expires 9-30-91) 142240
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000301113
Manifest Document No.: 6288
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND, P.O. BOX 2064, OAKLAND, CA 94607
4. Generator's Phone: 415 272-1589

A. State Manifest Document Number: 90262888
B. State Generator's ID: HYHQ36025831

5. Transporter 1 Company Name: Refinery Services
6. US EPA ID Number: CAD083166728
C. State Transporter's ID: 102070
D. Transporter's Phone: 800-874-4444

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: Refinery Services, P.O. Box 1171, Patterson, CA 95363
10. US EPA ID Number: CAD083166728
G. State Facility's ID:
H. Facility's Phone: 800-874-4444

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON RCRA HAZARDOUS WASTE LIQUID (#2 DIESEL, OIL, WATER)	001	TT	04750	G	State: 221; EPA/Other: NON RCRA
b.					State:; EPA/Other:
c.					State:; EPA/Other:
d.					State:; EPA/Other:

J. Additional Descriptions for Materials Listed Above:
#2 DIESEL 80%
LUBE OIL 5%
WATER 15%

K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information:
INCASE OF SPILL DIKE AND CONTAIN. Notify IT Emergency Response At 415-372-9100

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: KELVIN Z. DAVIS. Signature: [signature] Month Day Year: 10 27 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JEROME R. VOSS Signature: [signature] Month Day Year: 08 27 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Signature: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Signature: Month Day Year:

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS

NOV 13 '90 11:03 FROM MTZ ENVIRO SVC PC2221 PAGE.009

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91) 142240
Please print or type. (Form designed for use on elite (12-pitch) typewriter).

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000310113 Manifest Document No. 91689	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address: PORT OF OAKLAND, P.O. BOX 2064, OAKLAND, CA 94607		A. State Manifest Document Number
4. Generator's Phone (415) 272-1519		B. State Generator's ID
5. Transporter 1 Company Name: Erickson, Inc.	6. US EPA ID Number: CAD009466392	C. State Transporter's ID
		D. Transporter's Phone (415) 235-
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID
		F. Transporter's Phone
9. Designated Facility Name and Site Address: Erickson, Inc., 255 Parr Blvd., Richmond, Ca. 94801	10. US EPA ID Number: CAD009466392	G. State Facility's ID: CAD009466392
		H. Facility's Phone (415) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I.
a. Waste empty storage tank NON-RCRA hazardous waste solid.	001	TP	014000	P	State / EPA/Other: None
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: EMPTY TANK LAST CONTAINED DIESEL. EMPTY TANK #4329 ICED WITH 150 LBS DRY ICE.

K. Handling Codes for Wastes Listed Above: a. 01 b. c. d.

15. Special Handling Instructions and Additional Information

Keep away form sources of ignition. Always wear hardhats when working around U.S.T.'s

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
FRANCIS Y. MORIGUCHI	[signature]	08 30 90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Rodney G Prewett	[signature]	08 30 90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
	RECEIVED	

19. Discrepancy Indication Space

RECEIVED NOV 06 1990 A/P-MTZ

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
DONALD H. ROSSON JR	[signature]	08 30 90

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DA
To: P.O. Box 3000, Sacramento, CA 95812

...n and Welfare Agency
...o 2050—0039 (Expires 9-30-91) 142240

(Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000903011136
Manifest Document No.: 2887
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND, P.O. BOX 2064, OAKLAND, CA 94607
4. Generator's Phone ( )

A. State Manifest Document Number: 90262887
B. State Generator's ID: HYHQ36025823

5. Transporter 1 Company Name: LAIDLAW ENVIRONMENTAL
6. US EPA ID Number: CAD000008121
C. State Transporter's ID: 001300
D. Transporter's Phone: 415-372-4800

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: Refinery Services, P.O. BOX 1171, Patterson, CA 95363
10. US EPA ID Number: CAD083166728
G. State Facility's ID:
H. Facility's Phone: 800-874-4404

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON-RCRA HAZARDOUS WASTE LIQUID (DIESEL AND WATER)	001	TT	05000	G	State 221 EPA/Other NON RCRA
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
DIESEL 2%
WATER 98%

K. Handling Codes for Wastes Listed Above
a. b.
c. d.

15. Special Handling Instructions and Additional Information
IN CASE OF SPILL DIKE AND CONTAIN, NOTIFY IT EMERGENCY RESPONSE AT 415-372-9100

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
KELVIN Z DAVIS	[signature]	08	30	90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Walter L. Tucker	[signature]	08	30	90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR / TRANSPORTER / FACILITY

...8022 A (1/88)
...8700—22
...v. 9-88) Previous editions are obsolete

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

Form Approved OMB No. 2050—0039 (Expires 9-30-91) 142240 See Instructions on Back of Page 7 and Front of Page 7 92754 Department of Health Servic Toxic Substances Control Divis Sacramento, Califor

Please print or type. (Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000030113 Manifest Document No. 89891864

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Port of Oakland, P.O. Box 2064, Oakland, CA 94607

4. Generator's Phone ( ): 415 272 1472

A. State Manifest Document Number: 89891864

B. State Generator's ID: HW H0136025823

5. Transporter 1 Company Name: Erickson, Inc. — 6. US EPA ID Number: CAD009466392

C. State Transporter's ID: 106250

D. Transporter's Phone: (415)235-1393

7. Transporter 2 Company Name — 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Erickson, Inc., 255 Parr Blvd., Richmond, Ca. 94801 — 10. US EPA ID Number: CAD009466392

G. State Facility's ID: CAD009466392

H. Facility's Phone: (415)235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste empty storage tank NON-RCRA hazardous waste solid.	003	TP	12550	P	State: EPA/Other: 512 None
b.					State: EPA/Other:
c.					State: EPA/Other:
d.					State: EPA/Other:

J. Additional Descriptions for Materials Listed Above:
#4379 - Empty Tank Last Contained Diesel
4380 - Empty Tank Last Contained Gasoline
4381 - Empty Tank Last Contained Waste Oil

K. Handling Codes for Wastes Listed Above: a. 01 b. c. d.

15. Special Handling Instructions and Additional Information

Keep away form sources of ignition. Always wear hardhats when working around U.S.T.'s

16.

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
FRANCIS MORIGUCHI		09	05	90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
JERRY E. BROWN	Jerry E. Brown	09	05	90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Donald H. Rosson Jr	Donald H. Rosson	09	05	90

Do Not Write Below This Line

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS

To: P.O. Box 3000, Sacramento, CA 95812

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89891864

EPA 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

№ 4349 – 10114

I.T. Corp

CERTIFICATE

Certified Services Company
255 Parr Boulevard
Richmond, California 94801

Day or Night
Telephone
(415) 235-1393

For: Erickson, Inc. Tank No.(s.) 4349 Location: Richmond Date: 9-5 [redacted] Time: 2:00 p.m.

Test Method: ~~Visual Gastech/1314 SMPN~~ Last Product: Diesel

This is to certify that I have personally determined that the tank(s) in the following list are in accordance with the American Petroleum Institute and have found the condition of each to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Tank(s)	Condition	
1 10,000 Gal. Tank	Safe for Fire	Oxy 20.9%
		LEL – Less than 0.1%

Remarks:

In the event of any physical or atmospheric changes affecting the gas-free condition of the above tanks, or if in any doubt immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

Standard Safety Designation:

Safe for Men: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

Safe for Fire: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration than permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

K. Hughes

Representative Title Inspector

CP58

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

INCORRECT BILL OF LADING. TANK DISPOSED OF AT BFI WASTE SYSTEM, LIVERMORE

Shipper's No.

CARRIER: Erickson, Trucking Inc. SCAC

Carrier's No. 019

Date

TO: Consignee Street Destination: IMC Corp. 600 S. 4th St. Richmond, Ca. 94805 Zip

FROM: Shipper Street Origin: Erickson, Inc. 255 Parr Blvd. Richmond, Ca. 94801 Zip

Route:

Vehicle Number

No. Shipping Units	HM	Kind of Packages, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	ID Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED
		NON-D.O.T. REGULATED MATERIAL	NON-HAZARDOUS, GAS FREE				
		UNDERGROUND STORAGE TANKS FOR SCRAP.					
		72714/4349	NONE	N/A	N/A	N/A	NONE
		72531/4062					
		72611/4348					

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE: Prepaid ☐ Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per [signature]

PLACARDS REQUIRED: NO

PLACARDS SUPPLIED ☐ YES ☐ NO — FURNISHED BY CARRIER DRIVER SIGNATURE

SHIPPER: Erickson, Inc.
PER: Shannan Lowry
DATE: 9-5-90

CARRIER:
PER:
DATE:

EMERGENCY RESPONSE TELEPHONE NUMBER: (415) 235-1393

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge.

9-BLS-A3 (Rev. 8/88)

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

WEIGHMASTER CERTIFICATE

S IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster whose signature is on this certificate who is a recognized authority of accuracy as prescribed by pter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

LMC METALS
A DIVISION OF SIMSMETAL USA CORPORATION
600 SOUTH 4th STREET
RICHMOND, CALIFORNIA 94804
(415) 236-0606

TICKET# 19600

MATL. 10201-1 UNP
PRICE / TON:$
PAY WEIGHT: 5530
TOTAL PRICE:$
WEIGHT ADJUSTMENT: 0 PERCENT:*****%
INBOUND WEIGHT: 36080 Lbs.

ACCOUNT:22168801
ERICKSON INC.

CASH I.D.:

TRUCK NO. LICENSE NO.

DRIVER:AL

36080 (M) Gross Weight Lbs.
30500 Tare Weight Lbs.
5580 Net.Weight Lbs.

FRT. CODE:1 COST:$ 0.00

SIGNATURE OF SELLER OR AGENT [signature: Alfred Davis]

SALVAGE VEHICLE SALES: I ... certify, under penalty of ..., that any vehicles sold have been cleared for dismantling with ... Department of Motor Vehicles.

HOLD HARMLESS AGREEMENT: Seller will indemnify and hold buyer harmless from damages, demands and liabilities, including reasonable attorney's fees, resulting from the breach of any warranty hereunder and shall be responsible for damage to vehicle during unloading.

BILL OF SALE: I warrant that I am the owner ... of the material described ... and have the right to sell same, free of ...

LMC METALS WEIGHMASTER [signature]

2-40409

...IGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

Shipper's No. _____

Carrier's No. _____ Date

CARRIER: Erickson Trucking, Inc. SCAC

TO: Consignee / Street / Destination: BFI Waste System, 4001 Vasco, Livermore, CA 94550 Zip

FROM: Shipper / Street / Origin: Erickson, Inc., [illegible] Blvd., Richmond, [illegible] Zip

Route:

Vehicle Number

No. Packages	HM	Kind of Package, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED (if exemption)
		Non-Dot regulated metrial gas free triple rinsed underground storage tank for scrap.					
			None	N/A	N/A	N/A	None

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE:
Prepaid ☐
Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

FREIGHT CHARGES
☐ PREPAID ☐ COLLECT

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Erickson, Inc.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO — FURNISHED BY CARRIER

DRIVER SIGNATURE:

SHIPPER: Shannan Lowry

PER:

DATE:

CARRIER:

PER:

DATE:

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge

9-8L5-A3
(Rev. 5/90)

NOV 15 '90 16:34 FROM ERICKSON INC PAGE.002

IN- 4073- 10104
I.T. CORP.

CERTIFICATE

Certified Services Company
255 Parr Boulevard
Richmond, California 94801

Day or Night
Telephone
(415) 235-1393

For: Erickson, Inc. Tank No.(s.) 4379 Location: Richmond Date: 9-7-90 Time: 11:00 a.m.

Test Method: ~~Visual Gastech/1314 SMPN~~ Last Product: Diesel

This is to certify that I have personally determined that the tank(s) in the following list are in accordance with the American Petroleum Institute and have found the condition of each to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Tank(s)	Condition
1- 10,000 Gal. Tank	Safe for Fire Oxy 20.9% ~~LEL~~ Less than 0.1%

Remarks:

In the event of any physical or atmospheric changes affecting the gas-free condition of the above tanks, or if in any doubt immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

Standard Safety Designation:

Safe for Men: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

Safe for Fire: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration than permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

K. Hughes
Representative

Title

L. Lopez
Inspector

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL LEAK FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

THIS SHIPPING ORDER must be legibly filled in, in Ink, in Indelible Pencil, or in Carbon, and retained by the Agent.

Shipper's No. _____

Carrier's No. 019 Date _____

CARRIER: Erickson, Trucking Inc. SCAC

TO: Consignee LMC Corp. Street 600 S. 4th St. Destination Richmond, Ca. 94805 Zip

FROM: Shipper Erickson, Inc. Street 255 Parr Blvd. Origin Richmond, Ca. 94801 Zip

Route: Vehicle Number

No. Shipping Units	HM	Kind of Packages, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED (or exemption)
		NON-D.O.T. REGULATED MATERIAL	NON-HAZARDOUS, GAS FREE				
		UNDERGROUND STORAGE TANKS FOR SCRAP.					
		72759/4376	NONE	N/A	N/A	N/A	NONE
		72754/4379 —					
		72741/43666 —					

Remit C.O.D. to: Address: City: State: Zip:

COD Amt: $

C.O.D. FEE: Prepaid ☐ Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

FREIGHT CHARGES ☐ PREPAID ☐ COLL

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per S. Lowry

PLACARDS REQUIRED NO PLACARDS SUPPLIED ☐ YES ☐ NO — FURNISHED BY CARRIER DRIVER SIGNATURE:

SHIPPER: Erickson, Inc.
PER: Shannan Lowry
DATE: 9-7-90

CARRIER:
PER:
DATE:

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Manned 24 hours/day by a person with knowledge of the hazards of the material a emergency response information or who has access to a person with that knowledge

Agent must detach and retain this Shipping Order and must sign the Original Bill of La

9-BLS-
(Rev. 9/

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster whose signature is on this certificate who is a recognized authority of accuracy as prescribed Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculty

LMC METALS
A DIVISION OF SIMSMETAL USA CORPORATION
600 SOUTH 4th STREET
RICHMOND, CALIFORNIA 94804
(415) 235-0005

TICKET# 17363

MATL. 10201-1 UNP
PRICE / TON: $
TOTAL PRICE: $
PAY WEIGHT: 11520
WEIGHT ADJUSTMENT: 0 PERCENT: *****%
INBOUND WEIGHT: 40960 Lbs.

ACCOUNT: 22168801
ERICKSON INC.

CASH I.D.:

TRUCK NO. LICENSE NO.

DRIVER:

40960	(M)	Gross Weight Lbs.	9/07/90- 12:41	FRT. CODE: 1 COST: $ 0.00
29440		Tare Weight Lbs.	9/07/90- 13:38	
11520		Net Weight Lbs.		

SIGNATURE OF SELLER OR AGENT

LMC METALS WEIGHMASTER 2-38681

FOR SALVAGE VEHICLE SALES: I hereby certify, under penalty of perjury, that any vehicles sold have been cleared for dismantling with the Department of Motor Vehicles.

HOLD HARMLESS AGREEMENT: Seller will indemnify and hold buyer harmless from damages, demands and liabilities, including reasonable attorney's fees, resulting from the breach of any warranty hereunder and shall agree to be responsible for damage to vehicle during unloading.

BILL OF SALE: I represent that I am the owner (or owner's representative) of the material described hereon and have the right to sell same, that it contains no hazardous material as defined by Federal or State law and that for payment hereby received, I sell and convey title to LMC METALS.

PAGE.004
NOV 13 '90 10:59 FROM MTZ ENVIRO SVC PC2221

I.T. CORP 12 107

CERTIFICATE

Certified Services Company
255 Parr Boulevard
Richmond, California 94801

Day or Night
Telephone
(415) 235-1393

For: Erickson, Inc. Tank No.(s.) 4380 Location: Richmond Date: 9-7-90 Time: 2:00 p.m.

Test Method: ~~Visual Gastech/1314 SMPN~~ Last Product: Gasoline

This is to certify that I have personally determined that the tank(s) in the following list are in accordance with the American Petroleum Institute and have found the condition of each to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Tank(s)	Condition
1- 21000 Gal. Tank	Safe for Fire Oxy 20.9% ~~LEL- less than 0.1%~~

Remarks:

In the event of any physical or atmospheric changes affecting the gas-free condition of the above tanks, or if in any doubt immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

Standard Safety Designation:

Safe for Men: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

Safe for Fire: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration than permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

K. Hughes
Representative

Title

Inspector

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

Shipper's No. _____

Carrier's No. 019

CARRIER: Erickson, Trucking Inc. SCAC Date _____

TO: Consignee / Street / Destination: LMC Corp. 600 S. 4th St. Richmond, Ca. 94805 Zip	FROM: Erickson, Inc. Shipper / Street: 255 Parr Blvd. Richmond, Ca. 94801 Origin Zip

Route:

Vehicle Number 3E7652)

No. Shipping Units	HM	Kind of Packages, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED (if exemption)
		NON-D.O.T. REGULATED MATERIAL	NON-HAZARDOUS, GAS FREE				
		UNDERGROUND STORAGE TANKS FOR SCRAP.					
		72715/4340	NONE	N/A	N/A	N/A	NONE
		72759/4375 -					
		72[illegible]/4380 -					

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE: Prepaid ☐ Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his agents.

This is to certify that the above-named commodity was properly classified, described, packaged, marked and labeled and was in proper condition for transportation according to the applicable regulations of the Department of Transportation.
Per _____

PLACARDS REQUIRED PLACARDS SUPPLIED ☐ YES ☐ NO — FURNISHED BY CARRIER
DRIVER SIGNATURE:

SHIPPER: Erickson, Inc.
PER: Sharman Lowry
DATE: 9/7/90

CARRIER: Jack Parker Trucking
PER: [signature]
DATE: 9-7-90

EMERGENCY RESPONSE TELEPHONE NUMBER: 415 235-1543

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge.

9-81LS-A3 (Rev. 9/88)

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

WEIGHMASTER CERTIFICATE

IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster whose signature is on this certificate who is a recognized authority of accuracy as prescribed by er 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture

LMC METALS
A DIVISION OF SIMSMETAL USA CORPORATION
600 SOUTH 4th STREET
RICHMOND CALIFORNIA 94804
(415) 236-0800

TICKET# 17408

MATL. 10201-1 UNP
PRICE / TON: $ PAY WEIGHT: 5360
TOTAL PRICE: $
WEIGHT ADJUSTMENT: 0 PERCENT: *****%
INBOUND WEIGHT: 32400 Lbs.

CCOUNT: 22168801
RICKSON INC.

SH I.D.: TRUCK NO. LICENSE NO.
DRIVER:

32400 (M) Gross Weight Lbs. 9/07/90- 14:52 FRT. CODE: 1 COST: $ 0.00
27040 Tare Weight Lbs. 9/07/90- 15:15
5360 Net Weight Lbs.

SIGNATURE OF SELLER OR AGENT

LMC METALS WEIGHMASTER 2-38707

LVAGE VEHICLE SALES: I ... HOLD HARMLESS AGREEMENT: Seller ... BILL OF SALE: I warrant that I am the owner (or ...

PAGE.005

I.T. Corp

CERTIFICATE

Certified Services Company
255 Parr Boulevard
Richmond, California 94801

Day or Night
Telephone
(415) 235-1393

For: Erickson, Inc. Tank No.(s.) 4381 Location: Richmond Date: 9-7-90 Time: 11:00 a.m.

Test Method: Visual Castech/1314 SMPN Last Product: Waste Oil

This is to certify that I have personally determined that the tank(s) in the following list are in accordance with the American Petroleum Institute and have found the condition of each to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Tank(s)	Condition
1- 550 Gal. Tank	Safe for Fire Oxy 20.9% LEL- Less than 0.1%

Remarks:

In the event of any physical or atmospheric changes affecting the gas-free condition of the above tanks, or if in any doubt immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

Standard Safety Designation:

Safe for Men: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

Safe for Fire: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration than permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

K. Hughes
Representative

Title

S. Lowry
Inspector

NOV 13 '90 11:00 FROM MTZ ENVIRO SVC PG2221

THIS SHIPPING ORDER

must be legibly filled in, in Ink, in Indelible Pencil, or in Carbon, and retained by the Agent.

Shipper's No. _____

CARRIER: Erickson, Trucking Inc. SCAC Carrier's No. 019 Date _____

TO: Consignee / Street / Destination: LMC Corp. 600 S. 4th St. Richmond, Ca. 94805 Zip

FROM: Shipper / Street / Origin: Erickson, Inc. 255 Parr Blvd. Richmond, Ca. 94801 Zip

Route: Vehicle Number

No. Shipping Units	HM	Kind of Packages, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED (or exemption)
		NON-D.O.T. REGULATED MATERIAL NON-HAZARDOUS, GAS FREE					
		UNDERGROUND STORAGE TANKS FOR SCRAP.					
		72754/4381-	NONE	N/A	N/A	N/A	NONE
		72752/4372-4373					
		72753/4374					

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE: Prepaid ☐ Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

FREIGHT CHARGES ☐ PREPAID ☐ COLLE

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per S. Lowry

PLACARDS REQUIRED: NO PLACARDS SUPPLIED: ☐ YES ☐ NO — FURNISHED BY CARRIER DRIVER SIGNATURE:

SHIPPER: Erickson, Inc. PER: Shannan Lowry DATE: 9-7-90

CARRIER: JACK PARKER TRUCKING PER: DATE: 9-7-90

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge

Agent must detach and retain this Shipping Order and must sign the Original Bill of Lading

9-BLS-A (Rev. 9/8

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster whose signature is on this certificate who is a recognized authority of accuracy as prescribed Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agricult

LMC METALS
A DIVISION OF SIMSMETAL USA CORPORATION
600 SOUTH 4th STREET
RICHMOND CALIFORNIA 94804
(415) 236-0626

TICKET# 17349

MATL. 10201-1 UNP
PRICE / TON:
TOTAL PRICE:
PAY WEIGHT: 13680
WEIGHT ADJUSTMENT: 0 PERCENT: *****%
INBOUND WEIGHT: 40700 Lbs.

ACCOUNT: 22168801
ERICKSON INC.

CASH I.D.:

TRUCK NO. LICENSE NO. 3E96521

DRIVER:

40700 (M) Gross Weight Lbs. 9/07/90- 11:58
27020 Tare Weight Lbs. 9/07/90- 12:43
13680 Net Weight Lbs.

FRT. CODE: 1 COST: $ 0.00

SALVAGE VEHICLE SALES: I hereby certify under penalty of perjury that any vehicles sold have been cleared for dismantling with the Department of Motor Vehicles.

HOLD HARMLESS AGREEMENT: Seller will indemnify and hold buyer harmless from damages, demands and liabilities, including reasonable attorney's fees, resulting from the breach of any warranty hereunder and other agrees to be responsible for damage to vehicle during unloading.

BILL OF SALE: I warrant that I am the owner (or owner's representative) of the Material described hereon and have the right to sell same, that it contains no hazardous material as defined by Federal or State law and that for payment hereby received, I sell and convey title to LMC METALS.

SIGNATURE OF SELLER OR AGENT

LMC METALS WEIGHMASTER

2-38666

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 08/30/90
DATE REPORTED: 08/31/90

LAB NUMBER: 101527

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 5 SOIL SAMPLES
1 WATER SAMPLE
4 SOIL COMPOSITES:

COMPOSITE 1 = SC-1/SC-2
COMPOSITE 2 = SD-1/SD-2
COMPOSITE 3 = SA-1/SA-2/SA-3/SA-4
COMPOSITE 4 = SB-1/SB-2

PROJECT #: S9-134.40
LOCATION: [redacted]

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101527
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL-UST EF 14

DATE RECEIVED: 08/30/90
DATE ANALYZED: 08/30/90
DATE REPORTED: 08/31/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101527-5	EEC-10	ND	ND	ND	ND	5.0
101527-6	ENE-10	ND	ND	ND	ND	5.0
101527-7	ENW-10	ND	ND	ND	ND	5.0
101527-8	ESW-10	ND	ND	ND	ND	5.0
101527-9	P-1-4	ND	ND	320	38	25
101527-17	COMPOSITE 1 SC-1,2	ND	ND	ND	ND	5.0
101527-18	COMPOSITE 2 SD-1,2	ND	ND	ND	ND	5.0
101527-19	COMPOSITE 3 SA-1,3,4	ND	ND	ND	ND	5.0
101527-20	COMPOSITE 4 SB-1,2	ND	ND	ND	ND	5.0

* Reporting limit applies to all analytes.

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	99

101 H Street, Suite L
Petaluma, CA 94952
(707) 762-5233

10152-1

CHAIN OF CUSTODY RECORD

Turn-Around Time 24 HRS
Lab Curtis . Tompkins
Contact Person JACK LEE

Project No.	Project Name and Location
9A-134.40	APL – UST EF 14

Samplers: (Signature) Jack Lee

No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	Analysis: TPH (D)	Analysis: BTEX	Remarks	Detection Limits
SC-1	30 Aug 1990		Soil	–	X	1	Stock pile "C"	X	X	Composite in lab SC-1 and SC-2	
SC-2			Soil	–		1					
SD-1			Soil	–	X	1	Stock pile "D"	X	X	Composite in lab SD1 and SD2	
SD-2			Soil	–		1					
EEC-10'		1500	Soil	10		1		X	X		
ENE-10		1510	Soil	10		1		X	X		
ENW-10		1515	Soil	10		1		X	X		
ESW-10		1520	Soil	10		1		X	X		
P-1-4	30 Aug 90		Soil	4'		1	Pump	X	X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jack Lee	8/30/90 1630	Norma J. Wilson			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: BILL TO PORT OF OAKLAND P.O. # 52840	

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

RECEIVED
SEP 17 1990
BASELINE

DATE RECEIVED: 08/30/90
DATE REPORTED: 09/13/90

LAB NUMBER: 101534

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 2 SOIL SAMPLES

PROJECT #: S9-134.40
LOCATION: APL-UST EF14

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101534
CLIENT: BASELINE ENVIRONMENTAL
PROJECT #: S9-134.40
LOACTION: APL-UST EF14

DATE RECEIVED: 08/30/90
DATE REPORTED: 09/13/90

==========

ANALYSIS: BIOASSAY
ANALYSIS REFERENCE: "GUIDELINES FOR PERFORMING STATIC ACUTE BIOASSAYS IN MUNICIPAL AND INDUSTRIAL WASTEWATERS", JULY 1979 AND CAC TITLE 22, DIV. 4, CHAPTER 30.

==========

LAB ID	SAMPLE ID	RESULT	UNITS
101534-2	SA-6	>750	mg/L

Chain of Custody Form

Curtis & Tompkins, Ltd
2323 Fifth Street
Berkeley, California 94107
(415) 486-0900

Samplers _____

Job Description _____

Job Number 101534

Client Contact Nancy Pattern

Recorder _____

Matrix						# Containers	Method Preserved					Sample Number	Sampling Date				SAMPLE NOTES
Water	Soil	Waste	Oil				H_2SO_4	HNO_3	Ice	None	Other		Yr	Mo	Dy	Time	
	X									X		101534-2	90	08	30		RHJC # 905669

ANALYSIS REQUESTED													
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Title 22 Metals	EPA PP Metals (6)	TPH Method-	Benzene-Toluene-Xylene(s)	Oil and Grease	EPA 608/8080 Pesticides & PCB's	TVH-EPA 8015	TEH-EPA 8015	Total Lead	Organic Lead
													X

Laboratory Notes :

[redacted]

486-0532

FAX when ready

RS

Chain of Custody Record

Relinquished by: (signature) Date/Hr	Received by: (signature)
Nancy Pattern 8/31/90 3:00	Rosa Estrada 8/31/90 4:00pm
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Dispatched by: (signature) Date/Hr	Received for Lab by (signature)

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

RECEIVED
SEP 7 1990
RECEIVE

DATE RECEIVED: 08/30/90
DATE REPORTED: 09/05/90

LAB NUMBER: 101544

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 2 SOIL SAMPLES

PROJECT #: S9-134.40
LOCATION: APL-UST EF 14

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins Ltd

LABORATORY NUMBER: 101544
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL-UST EF14

DATE RECEIVED: 08/30/90
DATE REQUESTED: 09/04/90
DATE ANALYZED: 09/04/90
DATE REPORTED: 09/05/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101544-1	SD-1	ND	ND	ND	ND	5.0
101544-2	SD-2	ND	ND	ND	ND	5.0

ND = Not detected at or above reporting limit.

* Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	78

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 08/30/90
DATE REPORTED: 09/05/90

LAB NUMBER: 101556

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 1 SOIL SAMPLE

PROJECT #: S9-134.40
LOCATION: APL-UST EF14

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

STATIC ACUTE BIOASSAY

Kennedy/Jenks/Chilton, Laboratory Division
303 Second Street, Tenth Floor North
San Francisco, CA 94107
415-362-6065

Received	09/07/90
Reported	09/12/90

For: Curtis & Tompkins, Ltd
Attention: Nancy Patten
Address: 2323 Fifth Street
Berkeley, CA 94710

Lab.SampleNo.: 908829 Sample Description: Soil - #101527-9 Sampling Procedure: --
Date Sampled: -- Time Sampled: -- Sampled by: Curtis & Tompkins Test Begun: 09/07/90 End: 09/11/90

TIME	INITIAL					24 HOURS				48 HOURS				72 HOURS				96 HOURS			
Test	pH	D.O.	Temp	T.Alk.	T.Hard.	No.	pH	D.O.	Temp	No.	pH	D.O.	Temp	No.	pH	D.O.	Temp	No.	pH	D.O.	Temp
Conc.	Unit	mg/L	° C	mg/L	mg/L	Dead	Unit	mg/L	° C	Dead	Unit	mg/L	° C	Dead	Unit	mg/L	° C	Dead	Unit	mg/L	° C
Control	7.2	8.7	20	31	44	0	7.2	8.6	20	0	--	--	--	0	7.2	8.0	20	0	7.1	8.0	20
750 mg/L	7.2	8.7	20	26	79	0	8.4	8.4	20	0	--	--	--	0	7.8	8.4	20	1	7.2	7.6	20
500 mg/L	7.4	8.7	20	30	67	0	8.0	8.4	20	0	--	--	--	0	7.7	8.2	20	0	7.3	7.8	20
250 mg/L	7.1	8.7	20	25	60	0	7.6	8.7	20	0	--	--	--	0	7.5	8.1	20	0	7.3	8.1	20
pH adj. Control	7.3	8.7	20	32	50	0	7.3	8.6	20	0	--	--	--	0	7.4	8.2	20	0	7.1	8.0	20

Test Species: Fathead Minnow, Pimephales promelas Avg. Length: 2.9 cm Max. Length 3.2 cm Min. Length: 2.6 cm
Source of test species: Thomas Fish Co., Anderson, CA Avg. Wt.: 0.27 gm Max. Wt.: 0.33 gm Min. Wt.: 0.21 gm
Organisms/Conc.: 10 Dilution Water: Reconstituted Freshwater (Very Hard)
Test Solution Volume: 10 Liters Depth: 12.6 cm Aeration: Compressed Air Dead in Acclimation Tank: 0 %
Accl. Tank Water: Dechlorinated tap water Acclimation Period: 7 days Acclimation Temp.: 17 ° C

96 hour LC50	>750	mg/L
95 % Confidence Limits for LC50	--	

Comments:

Analyst Polly Cheung Manager Leverett Smith

Reference: "Guidlines for Performing Static Acute Bioassays in Municipal and Industrial Wastewaters", July 1979, SWRCB and DFG.: and " California Administrative Code Title 22, Div. 4, Chapter 30. Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes. Paragraph 66696", 1985.

This report applies only to the sample investigated and is not necessarily indicative of the quality of apparently identical or similar samples. The liability of the laboratory is limited to the amount paid for the report by the issuee. The issuee assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101556
CLIENT: BASELINE ENVIRONMENTAL
PROJECT #: S9-134.40
LOCATION: APL-UST EF14

DATE RECEIVED: 08/30/90
DATE REQUESTED: 09/06/90
DATE ANALYZED: 09/10/90
DATE REPORTED: 09/10/90

ANALYSIS: pH
ANALYSIS METHOD: EPA 9045

LAB ID	SAMPLE ID	RESULT	UNITS
101556-1	P-1-4	11.8	S.U.

QA/QC SUMMARY

RPD, %	<1

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101556-1
CLIENT: BASELINE ENVIRONMENTAL
PROJECT #: S9-134.40
SAMPLE ID: P-1-4

DATE RECEIVED: 08/30/90
DATE REQUESTED: 09/04/90
DATE ANALYZED: 09/05/90
DATE REPORTED: 09/05/90

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	ND	2.5	EPA 6010
Barium	73	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	2.6	0.5	EPA 6010
Chromium (total)	31	0.5	EPA 6010
Cobalt	5.8	0.5	EPA 6010
Copper	49	1	EPA 6010
Lead	33	2.5	EPA 7420
Mercury	ND	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	27	0.5	EPA 6010
Selenium	ND	2.5	EPA 7740
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	14	1	EPA 6010
Zinc	610	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	2	103	Mercury	<1	96
Arsenic	3	102	Molybdenum	<1	112
Barium	1	97	Nickel	4	100
Beryllium	1	98	Selenium	1	104
Cadmium	1	94	Silver	2	88
Chromium	1	101	Thallium	4	98
Cobalt	<1	99	Vanadium	1	97
Copper	<1	96	Zinc	1	102
Lead	4	112			

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 19[illegible]
2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

RECEIVED
SEP 11 1990
BASELINE

DATE RECEIVED: 09/04/90
DATE REPORTED: 09/05/90

LAB NUMBER: 101554

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 5 SOIL SAMPLES

PROJECT #: S9-134.40
LOCATION: APL

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins Ltd

LABORATORY NUMBER: 101554
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL

DATE RECEIVED: 09/04/90
DATE ANALYZED: 09/04/90
DATE REPORTED: 09/05/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101554-1	SD-3	ND	ND	ND	ND	5.0
101554-2	SD-4	ND	ND	ND	ND	5.0
101554-3	SD-5	ND	ND	ND	ND	5.0
101554-4	SD-6	ND	ND	ND	ND	5.0
101554-5	SD-7	ND	ND	ND	ND	5.0

ND = Not detected at or above reporting limit.

* Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	97

Curtis & Tompkins, Ltd., Analytical Laboratories Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

RECEIVED
SEP 1 2 1990
BASELINE

DATE RECEIVED: 09/05/90
DATE REPORTED: 09/07/90

LAB NUMBER: 101572

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 5 SOIL SAMPLES

PROJECT #: S9-134.40
LOCATION: APL:UST EF-11,EF-12,EF-13

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins Ltd

LABORATORY NUMBER: 101572
CLIENT: BASELINE ENVIRONMENTAL
PROJECT #: S9-134.40
LOCATION: APL:UST EF-11,EF-12,EF-13

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/07/90
DATE REPORTED: 09/07/90

ANALYSIS: ORGANIC LEAD
ANALYSIS METHOD: EPA 7420
METHOD: CA DHS METHOD, LUFT MANUAL OCT 1989

LAB ID	CLIENT ID	RESULT	UNITS	REPORTING LIMIT
101572-1	EF11-1	ND	mg/Kg	0.5
101572-2	EF11-2	ND	mg/Kg	0.5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	108

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101572
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL: UST EF-11,EF-12, EF-13

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/05/90
DATE REPORTED: 09/07/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101572-3	EF12-3	ND	ND	ND	ND	5.0
101572-4	EF12-4	ND	ND	ND	ND	5.0

ND = Not detected at or above reporting limit.

* Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	97

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101572-5
CLIENT: BASELINE ENVIRONMENTAL
JOB #: S9-134.40
SAMPLE ID: EF13-5

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/07/90
DATE REPORTED: 09/07/90

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
acetone	ND	10
carbon disulfide	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
2-butanone	ND	10
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
vinyl acetate	ND	10
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
dibromochloromethane	ND	5.0
1,1,2-trichloroethane	ND	5.0
benzene	ND	5.0
trans-1,3-dichloropropene	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
1,1,2,2-tetrachloroethane	ND	5.0
tetrachloroethylene	ND	5.0
toluene	ND	5.0
chlorobenzene	ND	5.0
ethyl benzene	ND	5.0
styrene	ND	5.0
total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	108%
Toluene-d8	100%
Bromofluorobenzene	100%

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101572-5 EPA 8270
SAMPLE ID: EF13-5

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	85%	Nitrobenzene-d5	75%
Phenol-d5	102%	2-Fluorobiphenyl	77%
2,4,6-Tribromophenol	99%	Terphenyl-d14	55%

101 H Street, Suite L
Petaluma, CA 94952
(707) 762-5233

CHAIN OF CUSTODY RECORD

Turn-Around Time _____

Lab Curtis-Tompkins

Contact Person Jodi Lee

Project No. 99-131-40

Project Name and Location APL: UST EF-11 (2,000 UST) EF-12 (10,000 UST) EF-13 (550 UST)

Samplers: (Signature)

	No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	Analysis: TPH (GASOLINE)	TPH (DIESEL)	[illegible]	BTEX	ORGANIC LEAD	EPA 8240	EPA 8270	Oil & Grease	Lead, Cr, Cd, Zn 503E	Remarks	Detection Limits
1	EF11-1	9/5/90	—	Soil	8'	—	1	—	✓			✓	✓						24 hr. TA	LUFT Manual
2	EF11-2		—		8'	—	1	—	✓			✓	✓					✓	✓	
3	EF12-3		—		10'	—	1	—		✓		✓						✓	✓	
4	EF12-4		—		10'	—	1	—		✓		✓						✓	✓	
5	EF13-5		—		7'	—	1	—						✓	✓	✓	✓	✓	✓	
6	EF12-GW6		—	Water	11.5'	—	3	—		✓		✓						Normal TA		
7	EF12-GW7		—		11.5'	—	3	—		✓		✓						✓	✓	

101572

101573

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jodi Lee	9/5/90 2:40p	Mary E. Printer			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Charge to Port of Oakland - P.O. # [redacted] 52840	

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101573
CLIENT: BASELINE ENVIRONMENTAL
JOB #: S9-134.40
LOCATION: APL:UST EF-11,EF-12,EF-13

DATE RECEIVED: 09/05/90
DATE EXTRACTED: 09/12/90
DATE ANALYZED: 09/17/90
DATE REPORTED: 09/17/90

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (mg/L)	DIESEL RANGE (mg/L)	REPORTING LIMIT (mg/L)
101573-2	EF12-GW7	ND	5.8	0.5

ND = Not Detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	91

BROADBENT
101 H Street, Suite L
Petaluma, CA 94952
(707) 762-5233

CHAIN OF CUSTODY RECORD

Turn-Around Time _____

Lab Curtis-Tompkins

Contact Person Jack Lee

Project No. 91-134.40

Project Name and Location APL: UST EF-11 (2,000 UST) EF-12 (10,000 UST) EF-13 (550 UST)

Samplers: (Signature)

No.	Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	TPH (Gasoline)	TPH (Diesel)	BTEX	Organic Lead	EPA 8240	EPA 8270	Oil & Grease	Lead, Cr, Cd, Zn	503E	Remarks	Detection Limits
1	EF11-1	9/5/90	—	Soil	8'	—	1	—	✓		✓	✓						24 hr. TA	LUFT Manual
			—		8'	—	1	—	✓		✓	✓						✓ ✓	
	EF12-3		—		10'	—	1	—		✓	✓							✓ ✓	
4	EF12-4		—		10'	—	1	—		✓	✓							✓ ✓	
5	EF13-5		—		7'	—	1	—				✓	✓	✓	✓			✓ ✓	
6	EF12-GW6		—	Water	11.5'	—	3	—		✓		✓	← don't run					Tf normal TA	
7	EF12-GW7		—		11.5'	—	3	—		✓		✓						✓ ✓	
	no TVPH											↳ don't run BTXE as per Jack Lee 9/5/90							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jack Lee	9/5/90 2:40p	Mary S. Printers			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Charge to Port of Oakland - P.O. # [redacted] 52840	

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101569
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL: EF11,12,13

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/06/90
DATE REPORTED: 09/06/90

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	CLIENT ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
101569-1	EF11-S1	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
101569-2	EF11-S2	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
101569-3	EF11-S3	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
101569-4	EF11-S4	ND(1.0)	7.8	ND(5.0)	ND(5.0)	ND(5.0)
101569-5	EF11-S5	1.5	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
101569-6	EF11-S6	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	91

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101569
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL: EF11,EF12,EF13

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/07/90
DATE REPORTED: 09/08/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101569-7	EF12-S7	ND	ND	ND	ND	5.0
101569-8	EF12-S8	ND	ND	ND	ND	5.0
101569-9	EF12-S9	ND	ND	ND	ND	5.0
101569-10	EF12-S10	ND	ND	ND	ND	5.0
101569-11	EF12-S11	ND	ND	ND	ND	5.0
101569-12	EF12-S12	ND	ND	ND	ND	5.0
101569-13	EF12-S13	ND	ND	ND	ND	5.0
101569-14	EF12-S14	ND	ND	ND	ND	5.0
101569-15	EF12-S15	ND	ND	ND	ND	5.0
101569-16	EF12-S16	ND	ND	ND	ND	5.0

ND = Not detected at or above reporting limit.

* Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD	6
RECOVERY, %	96

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101569-17
CLIENT: BASELINE ENVIRONMENTAL
JOB #: S9-134.40
SAMPLE ID: EF13-S17

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/07/90
DATE REPORTED: 09/07/90

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
acetone	ND	10
carbon disulfide	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
2-butanone	ND	10
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
vinyl acetate	ND	10
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
dibromochloromethane	ND	5.0
1,1,2-trichloroethane	ND	5.0
benzene	ND	5.0
trans-1,3-dichloropropene	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
1,1,2,2-tetrachloroethane	ND	5.0
tetrachloroethylene	ND	5.0
toluene	ND	5.0
chlorobenzene	ND	5.0
ethyl benzene	ND	5.0
styrene	ND	5.0
total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	107%
Toluene-d8	108%
Bromofluorobenzene	94%

LABORATORY NUMBER: 101569-17
SAMPLE ID: EF13-S17

EPA 8270

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1'650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	68%	Nitrobenzene-d5	49%
Phenol-d5	67%	2-Fluorobiphenyl	67%
2,4,6-Tribromophenol	50%	Terphenyl-d14	45%

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101569-18
CLIENT: BASELINE ENVIRONMENTAL
JOB #: S9-134.40
SAMPLE ID: EF13-S18

DATE RECEIVED: 09/05/90
DATE ANALYZED: 09/07/90
DATE REPORTED: 09/07/90

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
acetone	ND	10
carbon disulfide	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
2-butanone	ND	10
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
vinyl acetate	ND	10
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
dibromochloromethane	ND	5.0
1,1,2-trichloroethane	ND	5.0
benzene	ND	5.0
trans-1,3-dichloropropene	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
1,1,2,2-tetrachloroethane	ND	5.0
tetrachloroethylene	ND	5.0
toluene	ND	5.0
chlorobenzene	ND	5.0
ethyl benzene	ND	5.0
styrene	ND	5.0
total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	106%
Toluene-d8	91%
Bromofluorobenzene	103%

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101569-18
SAMPLE ID: EF13-S18

EPA 8270

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	69%	Nitrobenzene-d5	50%
Phenol-d5	70%	2-Fluorobiphenyl	69%
2,4,6-Tribromophenol	56%	Terphenyl-d14	51%

141761

BASELINE

5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

CHAIN OF CUSTODY RECORD

Turn-Around Time 24 hrs.
Lab Curtis - Tompkins
Contact Person Jack Lee

Project No.	Project Name and Location
89-134.40	APL: EF 11, EF 12, EF 13

Samplers: (Signature) Jack Lee

No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	TPH(D)	BTEX	TPH(Gas)	EPA 8240	EPA 8270	Metals (Pb, Cr, Zn)	Oil & Grease	Remarks	Detection Limits
✓ EF12-S10 (10)	9/5/90		Soil			1	EF 12	✓	✓							PWQCB LIMITS
✓ EF12-S11 (11)						1		✓	✓							
✓ EF12-S12 (12)						1		✓	✓							
✓ EF12-S13 (13)						1		✓	✓							
✓ EF12-S14 (14)						1		✓	✓							
✓ EF12-S15 (15)						1		✓	✓							
✓ EF12-S16 (16)						1		✓	✓							
✓ EF13-S17 (17)						1	EF 13			✓	✓	✓	✓			
✓ EF13-S18 (18)						1				✓	✓	✓	✓			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Jack Lee	9/5/90 10 40	Irene Kan	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time
			9/5/90 12:40

Condition of Samples upon Arrival at Laboratory:
Bill to Port of Oakland
P.O. # 52840

Remarks: * OIL & GREASE ANALYSIS BY SMWW 503 E
TPH(D) = TPH - DIESEL

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

RECEIVED
SEP 14 1990
BASELINE

DATE RECEIVED: 09/11/90
DATE REPORTED: 09/12/90

LAB NUMBER: 101625

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 2 SOIL SAMPLES

PROJECT #: S9-134.40
LOCATION: APL UST EF:HP-S

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 101625
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL UST EF-14:HP-S

DATE RECEIVED: 09/11/90
DATE ANALYZED: 09/11/90
DATE REPORTED: 09/12/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101625-1	HP-S1	ND	ND	10	ND	5.0
101625-2	HP-S2	ND	ND	6.5	ND	5.0

ND = Not detected at or above reporting limit.

* Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	88

101 II Street, Suite L
Petaluma, CA 94952
(707) 762-5233

101625

CHAIN OF CUSTODY RECORD

Turn-Around Time 24 hrs.

Lab Curtis - Tompkins

Contact Person Jack Lee

Project No.	Project Name and Location
91-134.40	APL UST EF-14: HP-S

Samplers: (Signature) Jack Lee

No.	Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	TPH (D)	BTEX	EPA 8240 (added 9/11 11:15 am by Jack Lee)	Remarks	Detection Limits
	HP-S1	9/10/90		Soil				Excavated HP Random - pile	✓	✓	✓	24 HR TAT	
	HP-S2	9/10/90		Soil				Pipeline Random - pile	✓	✓		24 HR TAT	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jack Lee	9/11/90	9/11/90 950am Nancy Ahlen			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Charge to Port of Oakland P.O. # 52814-0	

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101626
CLIENT: BASELINE ENVIRONMENTAL
JOB NUMBER: S9-134.40
JOB LOCATION: APL:UST EF14-HP

DATE RECEIVED: 09/11/90
DATE ANALYZED: 09/14/90
DATE REPORTED: 09/18/90

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT * (ug/kg)
101626-1	HP-1	ND	ND	10	ND	5.0
101626-2	HP-2	ND	ND	9.1	ND	5.0
101626-3	HP-3	ND	ND	7.3	ND	5.0
101626-4	HP-4	ND	ND	6.1	ND	5.0
101626-5	HP-5	ND	ND	7.3	ND	5.0
101626-6	HP-6	ND	ND	10	ND	5.0
101626-7	HP-7	ND	ND	5.2	ND	5.0

ND = Not detected at or above reporting limit.

* Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	6
RECOVERY, %	83

APPENDIX D

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE/ (LEAK) CONTAMINATION SITE REPORTS

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY ☐ YES ☒ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☒ NO

REPORT DATE: 09/17/90 CASE #:

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFTY CODE.
SIGNED _____ DATE _____

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: Jack Lee
PHONE: (707) 762-5233
SIGNATURE: Jack Lee JL

REPRESENTING ☒ OWNER/OPERATOR ☐ REGIONAL BOARD ☐ LOCAL AGENCY ☐ OTHER _____
COMPANY OR AGENCY NAME: Baseline Environmental Consulting

ADDRESS: 101 H Street, Suite L (STREET) Petaluma (CITY) California (STATE) 94952 (ZIP)

RESPONSIBLE PARTY

NAME: Port of Oakland ☐ UNKNOWN
CONTACT PERSON: Neil Werner
PHONE: (415)272-1176

ADDRESS: 530 Water Street (STREET) Oakland (CITY) California (STATE) 94607 (ZIP)

SITE LOCATION

FACILITY NAME (IF APPLICABLE): American President Lines
OPERATOR: same
PHONE: (415)272-2040

ADDRESS: 1395 Middle Harbor Road (STREET) Oakland (CITY) Alameda (COUNTY) 94607 (ZIP)

CROSS STREET:
TYPE OF AREA ☐ COMMERCIAL ☒ INDUSTRIAL ☐ RURAL ☐ RESIDENTIAL ☐ OTHER _____
TYPE OF BUSINESS ☐ RETAIL FUEL STATION ☐ FARM ☒ OTHER shipping

IMPLEMENTING AGENCIES

LOCAL AGENCY / AGENCY NAME: Alameda County Environmental Health
CONTACT PERSON: Dennis Byrne
PHONE: (415)271-4320

REGIONAL BOARD: San Francisco
PHONE: ( )

SUBSTANCES INVOLVED

(1) NAME: Diesel — QUANTITY LOST (GALLONS): _____ ☒ UNKNOWN

(2) _____ ☐ UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: 09/17/90
HOW DISCOVERED ☐ INVENTORY CONTROL ☐ SUBSURFACE MONITORING ☐ NUISANCE CONDITIONS ☐ TANK TEST ☒ TANK REMOVAL ☐ OTHER _____

DATE DISCHARGE BEGAN: __/__/__ ☒ UNKNOWN

HAS DISCHARGE BEEN STOPPED? ☒ YES ☐ NO IF YES, DATE 09/05/90

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
☐ REMOVE CONTENTS ☐ REPLACE TANK ☒ CLOSE TANK ☐ REPAIR TANK ☐ REPAIR PIPING ☐ CHANGE PROCEDURE ☒ OTHER tank removed

SOURCE/CAUSE

SOURCE OF DISCHARGE: ☐ TANK LEAK ☒ UNKNOWN ☐ PIPING LEAK ☐ OTHER

TANKS ONLY/CAPACITY: 10,000 GAL. AGE _____ YRS ☐ UNKNOWN

MATERIAL: ☐ FIBERGLASS ☒ STEEL ☐ OTHER _____

CAUSE(S): ☐ OVERFILL ☐ RUPTURE/FAILURE ☐ CORROSION ☒ UNKNOWN ☐ SPILL ☐ OTHER _____

CASE TYPE

CHECK ONE ONLY
☐ UNDETERMINED ☒ SOIL ONLY ☐ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS

CHECK ONE ONLY
☐ SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) ☐ CLEANUP IN PROGRESS ☐ SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY)
☒ NO ACTION TAKEN ☐ POST CLEANUP MONITORING IN PROGRESS ☐ NO FUNDS AVAILABLE TO PROCEED ☐ EVALUATING CLEANUP ALTERNATIVES

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☒ CAP SITE (CD) ☐ EXCAVATE & DISPOSE (ED) ☐ REMOVE FREE PRODUCT (FP) ☐ ENHANCED BIO DEGRADATION (IT)
☐ CONTAINMENT BARRIER (CB) ☒ EXCAVATE & TREAT (ET) ☐ PUMP & TREAT GROUNDWATER (GT) ☐ REPLACE SUPPLY (RS)
☐ TREATMENT AT HOOKUP (HU) ☐ NO ACTION REQUIRED (NA) ☐ OTHER (OT) _____

COMMENTS

Port Tank I.D. - EF12, EF11, EF13

HSC 05 (4/87)

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY ☐ YES ☒ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☒ NO

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFTY CODE.
SIGNED _____ DATE _____

REPORT DATE: 09/04/90 CASE #:

REPORTED BY
NAME OF INDIVIDUAL FILING REPORT: Jack Lee
PHONE: (707) 762-5233
SIGNATURE: Jack Lee SK
REPRESENTING ☒ OWNER/OPERATOR ☐ REGIONAL BOARD ☐ LOCAL AGENCY ☐ OTHER
COMPANY OR AGENCY NAME: Baseline Environmental Consulting
ADDRESS (STREET): 101 H Street, Suite L
CITY: Petaluma STATE: California ZIP: 94952

RESPONSIBLE PARTY
NAME: Port of Oakland ☐ UNKNOWN
CONTACT PERSON: Neil Werner
PHONE: (415) 272-1176
ADDRESS (STREET): 530 Water Street
CITY: Oakland STATE: California ZIP: 94607

SITE LOCATION
FACILITY NAME (IF APPLICABLE): American President Lines
OPERATOR: same
PHONE: (415) 272-2040
ADDRESS (STREET): 1395 Middle Harbor Road
CITY: Oakland COUNTY: Alameda ZIP: 94607
CROSS STREET:
TYPE OF AREA ☐ COMMERCIAL ☒ INDUSTRIAL ☐ RURAL ☐ RESIDENTIAL ☐ OTHER
TYPE OF BUSINESS ☐ RETAIL FUEL STATION ☐ FARM ☒ OTHER shipping

IMPLEMENTING AGENCIES
LOCAL AGENCY / AGENCY NAME: Alameda County Environmental Health
CONTACT PERSON: Dennis Byrne
PHONE: (415) 271-4320
REGIONAL BOARD: San Francisco Regional Water Quality Control Board
PHONE: ( )

SUBSTANCES INVOLVED
(1) NAME: Diesel
QUANTITY LOST (GALLONS): _____ ☒ UNKNOWN
(2) NAME:
QUANTITY LOST (GALLONS): _____ ☐ UNKNOWN

DISCOVERY/ABATEMENT
DATE DISCOVERED: 08/30/90
HOW DISCOVERED ☐ INVENTORY CONTROL ☐ SUBSURFACE MONITORING ☐ NUISANCE CONDITIONS ☐ TANK TEST ☒ TANK REMOVAL ☐ OTHER
DATE DISCHARGE BEGAN: ☒ UNKNOWN
HAS DISCHARGE BEEN STOPPED? ☒ YES ☐ NO IF YES, DATE: 08/30/90
METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
☐ REMOVE CONTENTS ☐ REPLACE TANK ☒ CLOSE TANK ☐ REPAIR TANK ☐ REPAIR PIPING ☐ CHANGE PROCEDURE ☒ OTHER tank removed

SOURCE/CAUSE
SOURCE OF DISCHARGE: ☒ TANK LEAK ☐ UNKNOWN ☐ PIPING LEAK ☐ OTHER
TANKS ONLY/CAPACITY: 10,000 GAL. AGE _____ YRS ☐ UNKNOWN
MATERIAL: ☒ FIBERGLASS ☐ STEEL ☐ OTHER
CAUSE(S): ☐ OVERFILL ☐ RUPTURE/FAILURE ☐ CORROSION ☐ UNKNOWN ☐ SPILL ☒ OTHER tank seams

CASE TYPE
CHECK ONE ONLY
☐ UNDETERMINED ☒ SOIL ONLY ☐ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS
CHECK ONE ONLY
☐ SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) ☐ CLEANUP IN PROGRESS ☐ SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY)
☒ NO ACTION TAKEN ☐ POST CLEANUP MONITORING IN PROGRESS ☐ NO FUNDS AVAILABLE TO PROCEED ☐ EVALUATING CLEANUP ALTERNATIVES

REMEDIAL ACTION
CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☒ CAP SITE (CD) ☐ EXCAVATE & DISPOSE (ED) ☐ REMOVE FREE PRODUCT (FP) ☐ ENHANCED BIO DEGRADATION (IT)
☐ CONTAINMENT BARRIER (CB) ☒ EXCAVATE & TREAT (ET) ☐ PUMP & TREAT GROUNDWATER (GT) ☐ REPLACE SUPPLY (RS)
☐ TREATMENT AT HOOKUP (HU) ☐ NO ACTION REQUIRED (NA) ☐ OTHER (OT)

COMMENTS
Port Tank I.d. - EF14

HSC 05 (4/87)

EF-06, EF-07, EF-08, EF-09

GEOMATRIX

OE

UNDERGROUND STORAGE TANK REMOVAL REPORT

American President Lines Terminal
1395 Middle Harbor Road
Oakland, California 94607

Prepared for

Port of Oakland
530 Water Street
Oakland, California

Prepared by

Geomatrix Consultants, Inc.
100 Pine Street, 10th Floor
San Francisco, California 94111

June 1992
Project No. 2026

GEOMATRIX

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GEOMATRIX

UNDERGROUND STORAGE TANK REMOVAL REPORT
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

1.0 INTRODUCTION

This report describes tank removal activities conducted 6 January through 4 March 1992 at the American President Lines (APL) Terminal at the Port of Oakland in Oakland, California (Figures 1 and 2). Removal and disposal procedures for four underground storage tanks, soil sampling, laboratory analytical results, conclusions, and recommendations are presented in this report. This report is being submitted to the Port of Oakland by Geomatrix Consultants, Inc. (Geomatrix).

We understand that the four tanks at the site had been used for storage of diesel (one 10,000-gallon capacity fiberglass, and one 5,000-gallon capacity steel), gasoline (one 1,000-gallon capacity fiberglass), and waste oil (one 550-gallon capacity steel). It is not known when the four tanks were installed. The four tanks were used until their removal in early 1992.

2.0 TANK REMOVAL ACTIVITIES

The Port of Oakland retained Tank Protect Engineering (Tank Protect) of Union City, California to remove the underground storage tanks, excavate soil as required, and backfill and resurface the excavation. The tanks were removed under the Alameda County Department of Environmental Health (ACDEH) Underground Tank Closure Plan, approved and stamped by Dennis Byrne of ACDEH on 11 November 1991. A copy of the plan is included in Appendix A. A Geomatrix representative was on site to observe tank removal activities, collect soil samples from the tank excavation, and observe backfilling. Dennis Byrne was on site to observe tank removal and soil sampling. A representative of the Oakland Fire Department (OFD), Steve Hallert, was on site to observe tank removal activities on 7 January 1992. Because tank removal activities were conducted over several

days, the OFD representative indicated in the field that the ACDEH could approve tank removal activities on behalf of the OFD.

2.1 SITE PREPARATION

We understand that an underground utility check was conducted by Tank Protect before beginning tank removal activities. The four underground storage tanks were beneath a twelve-inch thick, rebar-reinforced concrete slab. Tank Protect removed the concrete slab using a Kato HD-700 excavator on 6 and 7 January 1992. Approximately 50 cubic yards of concrete was disposed of off site by Tank Protect at Landfill Management in Hayward, California.

For access purposes, a chain link fence on the north side of the excavation was removed by Tank Protect during field activities. Temporary fencing was used during excavation activities to restrict access to the work area, and the permanent fence was replaced upon completion of field activities.

2.2 TANK STABILIZATION AND DISPOSAL OF TANK CONTENTS

Before removing the tanks, each tank was rendered inert by pumping the remaining fluid from the tank and placing dry ice in the tank. On 6 January 1992, the site occupant, APL, pumped approximately 4,000 gallons of diesel from the 10,000-gallon capacity diesel tank into one of their fuel storage trucks to be used as fuel in their vehicles on site. Because APL could not remove all of the tank contents, Tank Protect pumped an additional 240 gallons of diesel into 55-gallon drums; the diesel subsequently was transferred from the drums into a truck by Alviso Independent Oil (Alviso) for recycling at their facility in Alviso, California. On 7 January 1992, APL pumped 2,000 gallons of diesel from the 5,000-gallon capacity tank into one of their trucks for reuse. Tank Protect pumped an additional 5 gallons of diesel from the tank into a 55-gallon drum that was subsequently collected by Alviso for recycling. The 1,000-gallon gasoline tank contained no liquid at the time of removal. On 7 and 8 January 1992, Tank Protect pumped approximately 550 gallons of liquid consisting of water and petroleum product, from the waste oil tank into 55-

gallon drums. Alviso subsequently transferred the liquid from the drums into a truck for transport to their recycling facility.

On 7 and 8 January 1992, Tank Protect inserted dry ice into each of the tanks to remove organic vapors and oxygen from the tank. Approximately 250 pounds of dry ice were inserted into the 10,000-gallon capacity diesel tank, 300 pounds of dry ice were inserted into the 5,000-gallon capacity diesel tank, 100 pounds of dry ice were inserted into the 1,000-gallon capacity gasoline tank, and 30 pounds of dry ice were inserted into the waste oil tank.

Explosivity and oxygen content were measured in the tanks following inserting. Explosivity meter readings taken in the tanks before removal indicated that organic vapor concentrations were below the Lower Explosive Limit (LEL) of 20 percent. A summary of the explosivity and oxygen content is presented below. The ACDEH representative approved removal of the tanks based on these readings.

Tank	Explosivity Meter Reading (%)	Oxygen Content (%)
10,000 gallon	0	10
5,000 gallon	1	3
1,000 gallon	10	15
550 gallon	0	0

2.3 TANK EXCAVATION AND FIELD OBSERVATIONS

Observations were made by a Geomatrix representative during removal of the tanks regarding the condition of each tank and the occurrence of petroleum product in the soil and groundwater. The former tank locations and excavation boundary are shown on Figure 3. Soil excavated during tank removal activities was segregated based on the location from which it was removed in the tank excavation and stockpiled on plastic sheeting on site. The stockpiled soil was sampled and subsequently covered with plastic sheeting.

Following inerting, the tanks were removed from the excavation and observed by the ACDEH inspector and Geomatrix personnel for holes. The top of the 10,000-gallon diesel tank was exposed at 2.5 feet below ground surface. The tank was 8 feet in diameter and 30 feet in length and contained no visible holes. The top of 5,000-gallon diesel tank was exposed at 3 feet below ground surface. The tank was 8 feet in diameter and 14 feet long and contained no visible holes. During tank removal activities, Tank Protect punctured the 1,000-gallon gasoline tank. The top of the tank was exposed at 3 feet below ground surface. The gasoline tank was 4 feet in diameter and 10.5 feet long and contained no visible holes, except for the puncture created during removal activities. The top of the waste oil tank was exposed at 6 feet below ground surface. When the tank was exposed, it appeared that the waste oil tank had been overfilled in the past, based on staining observed on the tank and in the soil around the tank. The waste oil tank was 4 feet in diameter and 6.5 feet long. Two holes were observed in the tank: a one-inch-long gash on the side of the tank and a three-quarter-inch diameter hole in the top of the tank.

Following removal, excess gravel and loose straps were removed from the tanks. The 1,000-gallon gasoline tank was wrapped in plastic and secured with tape. The tanks were transported off site by a licensed hazardous waste transportation company (Erickson, Inc.), to their receiving facility in Richmond, California. Tank Protect also removed the fuel island, pumps, and appurtenant piping. Copies of the Uniform Hazardous Waste Manifests are included in Appendix A.

Fill surrounding the tanks was composed of a sandy material. Field measurements of volatile organic compounds (VOCs) made using a photoionization detector (PID) during soil removal, and visual inspection and odors, indicated that fill surrounding the tanks contained VOCs and petroleum product. Groundwater accumulated in the tank excavation at a depth of approximately 4 to 6 feet below ground surface. Groundwater within the excavation had visible petroleum product, approximately one-half inch in thickness, floating on the surface.

2.4 GROUNDWATER SAMPLING

A total of approximately 2,600 gallons of liquid, consisting of water and petroleum product was pumped from the tank excavation on 10 January 1992. Tank Protect pumped approximately 600 gallons of liquid into 55-gallon drums. Alviso, retained by Tank Protect, pumped approximately 2,000 gallons of liquid from the tank excavation and transported it off site for recycling. Tank Protect reportedly arranged for the liquid in the drums to be transferred into a truck and transported off site for recycling. Tank Protect also placed sorbent pads on the surface of the groundwater in the excavation to absorb petroleum product.

At the request of the Port of Oakland, Geomatrix collected two grab groundwater samples after the groundwater was pumped from the excavation and allowed to recharge for chemical analysis for volatile organic compounds (VOCs). One sample was collected from the west end of the excavation near the large diesel tank (WDA-1). The second sample was collected from a drum containing groundwater and petroleum product pumped from the east end of the excavation near the waste oil tank (WWO-1). The samples were collected in 40-milliliter (ml) volatile organic analysis vials to minimize headspace. The samples were stored in an ice-cooled chest until delivered to a state-certified analytical laboratory under Geomatrix chain-of-custody procedures. The grab groundwater samples were analyzed by GTEL Environmental Laboratories, Inc. (GTEL), of Concord, California, a state-certified analytical laboratory selected by the Port. Copies of the chain-of-custody record and analytical laboratory report are included in Appendix B. Analytical methods and results are discussed in Section 3.0 of this report.

2.5 TRENCHING AND SOIL SAMPLING

On 14 January 1992, one trench was advanced to the north and one to the south of the excavation (Figure 3) to assess the lateral extent of petroleum-affected soil in the vicinity of the waste oil tank. The trench locations were selected in the end of the excavation where the waste oil tank was located because holes were observed in the tank when it was

The trenches extended laterally approximately 15 feet in each direction (Figure 3). The trenches were advanced to a maximum depth of approximately seven feet below ground surface, where groundwater was observed to be entering the trenches. The stratigraphy observed in the trenches was 1 to 2 feet of fill material underlain by 1 to 3 feet of gray clay, which in turn is underlain by a greenish sand. Based on observations in the trenches, this lower sand is 1 to 2 feet in thickness and is underlain by dark gray clay. Samples of the upper clay and sand layers were collected at five-foot intervals away from the tank excavation. The soil samples were collected in clean, thin-walled brass tubes from the bucket of the backhoe. The sample tubes were sealed at the ends with aluminum foil, plastic end caps, and duct tape, and placed in an ice-cooled chest. Based on observations made in the field, including lithology and possible staining of the soil, six samples (T1-5-4, T1-10-5, T2-5-6, T2-5-5, T2-10-7, and T2-13-5) were delivered under Geomatrix chain-of-custody procedures to GTEL for chemical analysis. A copy of the chain-of-custody record is included as part of the analytical laboratory report in Appendix B. Analytical methods and results are discussed in Section 3.0 of this report.

2.6 EXCAVATION SOIL SAMPLING

Seven soil samples were collected from the excavation sidewalls (APL-1 through APL-7) on 15 January 1992 (Figure 3). The sidewall samples were collected from immediately above the groundwater table at depths of four to six feet below ground surface. The soil from APL-1 was fill, APL-5 was a clay and APL-7 was a sand. All the other samples were collected in an aggregate base. The soil samples were collected directly from the bucket of the excavator or backhoe by driving a clean, thin-walled brass tube into the soil. The samples were sealed at each end with aluminum foil, plastic end caps, and duct tape. The soil samples were labeled and stored in an ice-cooled container until delivery under Geomatrix chain-of-custody procedure to GTEL. Copies of the chain-of-custody records and analytical laboratory reports are included as part of the analytical laboratory report in Appendix B. The analytical methods and results are discussed in Section 3.0 of this report.

2.7 ADDITIONAL SOIL EXCAVATION

On 3 February 1992, additional soil was excavated at the west end of the excavation to remove petroleum-affected soil in the direction of the APL Terminal building. Additional soil excavation was not conducted to the south, near samples APL-3 and APL-7, due to space limitations and the presence of a large concrete slab, or to the north, near sample APL-2, due to the requirements of APL and the Port of Oakland regarding maintaining the security fence. Geomatrix personnel were on site to observe the excavation and screen soil for petroleum hydrocarbons using thin-layer chromatography (TLC). As the excavation advanced to the west, results of the TLC indicated the concentrations of petroleum hydrocarbons in the soil were greater than 1,000 milligrams per kilogram (mg/kg); soil removal was discontinued approximately 5 to 10 feet beyond the initial excavation due to the proximity of the APL Terminal building. Two soil samples (APL2-1 and APL2-2) were collected from the excavation walls in the area of additional soil removal for chemical analysis to document the concentration of petroleum hydrocarbons left in place at the site (Figure 3). The soil samples were collected in clean, thin-walled brass tubes from the bucket of the backhoe. The samples were stored in an ice-cooled chest and delivered under Geomatrix chain-of-custody procedures to BC Analytical (BCA) of Emeryville, California, a state-certified analytical laboratory. A copy of the chain-of-custody record is included as part of the analytical laboratory report in Appendix B. Analytical methods and results are discussed in Section 3.0 of this report.

2.8 STOCKPILE SOIL SAMPLING

The stockpiled soil was sampled for chemical analysis. The soil samples were collected by removing the top half- to one-foot of soil from the pile and driving a clean, thin-walled brass tube into the soil. The samples were sealed at each end with aluminum foil, plastic end caps, and duct tape. Four samples were collected for every 50 cubic yards of stockpiled soil and were then composited into one sample by the analytical laboratory before analysis. The soil samples were labeled and stored in an ice-cooled container until delivery under Geomatrix chain-of-custody procedure to GTEL. A copy of the chain-of-

custody records as part of the analytical laboratory report is included in Appendix B. The analytical methods and results are discussed in Section 3.0 of this report.

2.9 EXCAVATION BACKFILLING

At the request of the Port of Oakland, Geomatrix observed backfilling activities at the site. Backfilling and compaction operations were performed by Tank Protect. As a result of rain, the excavation filled with water before backfilling activities began. To remove the excess water and allow proper placement of the backfill, approximately 10,000 gallons of liquid was pumped from the excavation by Evergreen Environmental Services (Evergreen) of Newark, California on 3 March 1992. Imported pea gravel was placed in the excavation to a depth of 18-inches below the existing pavement and was compacted using a sheepsfoot attachment on the excavator. On 4 March 1992, Evergreen pumped an additional 10,000 gallons of liquid from the excavation to bring the water level to 6 inches below the top of the pea gravel. Filter fabric was placed on top of the pea gravel, and a one-foot thick layer of aggregate base was placed and compacted on top of the filter fabric. Tank Protect paved the excavation area with a six-inch layer of asphalt-concrete matching the existing grade on 31 March 1992. We understand that the piping associated with the waste-oil tank line in the APL Terminal building was cut and grout sealed by Tank Protect on 24 April 1992.

3.0 ANALYTICAL METHODS AND RESULTS

A summary of analytical methods and results for soil and groundwater samples collected during field activities is presented in the following sections. Chemical analyses were performed by GTEL. Copies of the laboratory analytical reports are included in Appendix B.

3.1 GRAB GROUNDWATER SAMPLES

At the request of the Port of Oakland, grab groundwater samples were analyzed by U.S. Environmental Protection Agency (EPA) Method 8240 for VOCs for characterization for disposal. Analytical results of the grab groundwater samples are summarized in Table 1.

The results indicate the grab groundwater sample collected from the drum (WWO-1) contains VOCs, including vinyl chloride, 1,2-dichloroethene (1,2-DCE), trichloroethene (TCE), methylene chloride, benzene, toluene, ethylbenzene, xylenes, acetone, and tetrachloroethene (PCE) at concentrations of 50 to 3900 micrograms per liter (μg/l). Most of these VOCs also were reported at concentrations up to 300 μg/l in the grab groundwater sample collected from the west end of the excavation (WDA-1). Chemical concentrations of the grab groundwater sample collected from the 55-gallon drum are generally higher than for the sample collected from the excavation; the higher results likely are caused by the presence of free-phase hydrocarbons in the drums; the fluid in the drums was collected to remove the free product from the excavation.

In summary, groundwater beneath the site appears to have been affected by petroleum hydrocarbons and halogenated organic compounds.

3.2 EXCAVATION SOIL SAMPLES

Based on discussions with the ACDEH representative in the field, soil samples were analyzed in accordance with the recommendations in the California Regional Water Quality Control Boards's "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites," August 1990. Soil samples collected from near the two diesel tanks were analyzed for total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene and xylenes (BTEX); the soil sample collected from near the gasoline tank was analyzed for TPHg, and BTEX; and the soil samples collected adjacent to the waste-oil tank were analyzed for TPHg, TPHd, BTEX, oil and grease, VOCs, and total cadmium (Cd), chromium (Cr), lead (Pb), zinc (Zn), and nickel (Ni). The soil sampling locations are shown on Figure 3 and the analytical methods used for each sample are listed in Table 2.

The analytical results for excavation soil samples are summarized in Table 3. Soil represented by samples APL-4 and APL-6 was subsequently removed during the additional soil excavation (Figure 3). Results indicated that TPHd in the excavation samples either

were not reported above the laboratory detection limit of 10 milligrams per kilogram (mg/kg; samples APL-1 and APL-5) or were detected at concentrations ranging from 1,000 to 11,000 mg/kg (samples APL-2, APL-3, APL-4, APL-6, APL-7, APL2-1, and APL2-2). TLC performed in the field indicated the concentrations of petroleum hydrocarbons in the soil were greater than 1,000 milligrams per kilogram (mg/kg). These results were confirmed by the analytical results of soil samples APL2-1 and APL2-2, that were reported to contain 5,000 mg/kg TPHd each.

TPHg was either not reported above the laboratory detected limit of 1 mg/kg (APL-1 and APL-5) or was detected at concentrations ranging from 140 to 500 mg/kg (APL-2, APL-3, APL-4, APL-6, and APL-7). BTEX was detected at maximum concentrations of 0.6, 12, 11, and 61 mg/kg, respectively, in the excavation soil samples. Of the three soil samples analyzed for halogenated VOCs, only APL-2 was reported to contain 1,2-dichloroethene at a concentration of 1.1 mg/kg. The two samples analyzed for oil and grease, APL-5 and APL-6, contained 11 and 1200 mg/kg, respectively. Samples APL-5 and APL-6 also were analyzed for Cd, Cr, Pb, Ni, and Zn. Analytical results for these metals are within expected background concentrations for soil.

In summary, the results of the excavation soil samples indicate the primary petroleum hydrocarbon detected in soil is TPHd. Soil samples collected from the north, south, and west walls of the excavation contain TPHd at 2100 to 11,000 mg/kg. Low concentrations of TPHg and BTEX also were reported.

3.3 TRENCH SOIL SAMPLES

The soil samples collected from the trenches were analyzed for the compounds associated with sampling in the vicinity of the waste oil tank, including TPHd; TPHg; oil & grease; BTEX; and total Cd, Cr, Pb, Ni, and Zn (Table 2). Selected samples (T1-5-4 and T2-5-6) from the trenches also were analyzed for halogenated VOCs by EPA Method 8010. The soil samples contained no TPHd above the laboratory detection limit of 10 mg/kg. TPHg was detected only in two of the six soil samples (T2-5-6 and T2-10-7) at concentrations of

35 and 5 mg/kg, respectively. Oil and grease was reported in five of the six soil samples at concentrations ranging from 10 to 180 mg/kg. BTEX were detected in three of the soil samples at maximum concentrations of 0.15, 1.2, 0.45, and 2.5 mg/kg, respectively. Metals concentrations reported for the six trench soil samples are within expected background concentrations. No halogenated VOCs were detected in the two samples analyzed by EPA Method 8010.

In summary, the results of the trench sampling program indicate that soil at the east end of the excavation contains relatively low concentrations of petroleum hydrocarbons.

3.4 STOCKPILE SOIL SAMPLES

Soil samples collected from the stockpiled material were analyzed for TPHg, TPHd, and VOCs. Soil samples collected from soil that was excavated from the vicinity of the waste oil tank, designated SWO(1-4) and SWO(5-8), also were analyzed for oil and grease, and total Cd, Cr, Pb, Ni, and Zn. At the request of the Port of Oakland for characterization for bioremediation, soil samples collected from soil that was excavated from the vicinity of the diesel and gasoline tanks, designated SDA(1-4), SDA(5-8), and SDA2(1-4), and soil samples SWO (9-12) also were analyzed for semivolatile organic compounds, and total metals specified by the California Code of Regulations, Title 22. At the request of the Port of Oakland, one soil sample also was collected for an aquatic toxicity test to confirm that the soil is not a hazardous waste and for characterization for bioremediation. The analytical methods used for each of the composited stockpile samples are listed in Table 2.

The analytical results of the composited stockpile samples are summarized in Table 4. TPHg was either not reported above the laboratory detection limit of 10 or was detected at concentrations ranging from 43 to 610 mg/kg. TPHd was reported at concentrations between 300 and 2600 mg/kg. Oil and grease was detected at concentrations ranging from 1000 to 2400 mg/kg. Semivolatile compounds detected in the four soil samples analyzed include naphthalene, 2-methylnaphthalene, dibenzofuran, fluorene, phenanthrene, fluoranthene, pyrene, bis(2-ethylhexyl)phthalate, benzo(k)fluoranthene, benzo(a)pyrene,

indeno(1,2,3-c,d)pyrene, and benzo(g,h,i)perylene at concentrations ranging from 0.34 to 5.4 mg/kg. VOCs, including primarily TCE, BTEX, and PCE, were detected in the stockpiled soil samples at concentrations up to 32 mg/kg (Table 4). Metals concentrations detected in the composited soil samples are within expected background concentrations. The results of the aquatic toxicity test indicated 100 percent survival of the fish. Based on these results and Title 22 (of the California Code of Regulations) criteria, the stockpile soil does not constitute a hazardous waste.

In summary, analytical results indicate the stockpiled soil contains petroleum hydrocarbons, including TPHd, TPHg, and oil and grease, at concentrations up to 2,600 mg/kg. Semi-volatile and halogenated volatile organic compounds also were detected in the soil samples from the stockpiled soil. Results of the aquatic toxicity test indicate that the soil is not a hazardous waste.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results of excavation sidewall samples and field screening using TLC indicate that soil in the vicinity of the former underground diesel storage tank in the central and western portions of the excavation contains elevated concentrations of petroleum hydrocarbons. Soil containing total petroleum hydrocarbons at concentrations greater than 1000 mg/kg at the north, south, and west ends of the excavation could not be removed due to the location of the security fence, concrete slab, and the proximity of the building to the tank excavation and was left in place. Analytical results of the excavation and trench samples indicate that affected soil in the vicinity of the former underground storage tanks at the eastern end of the excavation was removed and soil above the water table, left in place, has not been significantly impacted by petroleum hydrocarbons. The analytical results of the grab groundwater samples collected from the excavation indicate the presence of volatile organic compounds in groundwater at the site.

Based on the results presented in this report, we recommend that a work plan be developed to evaluate the impacts from the former underground tanks at the APL terminal.

The analytical results of the composited soil samples indicate that the stockpiled material contains elevated concentrations of petroleum hydrocarbons and VOCs. At the request of the Port of Oakland, Geomatrix applied for a permit to aerate the stockpiled soil from the Bay Area Air Quality Management District (BAAQMD). The BAAQMD approved aeration of the stockpiled soil in a 10 February 1992 letter to Geomatrix. A copy of this letter is included in Appendix A. We understand that the analytical results performed for bioremediation characterization indicate that the soil will meet the Port of Oakland requirements for bioremediation at their on-site remediation pad after aeration of the chlorinated hydrocarbons. Therefore, once aeration is complete, we recommend the soil be bioremediated to reduce the concentrations of TPH in the soil to acceptable levels for disposal at an off-site Class III facility or used as fill in the Port area.

GEOMATRIX

TABLE 1
SUMMARY OF EPA METHOD 8240 ANALYTICAL RESULTS[1]
GRAB GROUNDWATER SAMPLES
American President Lines Terminal
Oakland, California

concentrations in micrograms per liter (µg/l)

Analyte Detected[2]	WDA-1	WWO-1
Vinyl Chloride	300	130
Methylene Chloride	18	3900
Acetone	ND[3]	1300
1,1-DCA	ND	84
1,2-DCE	79	160
1,1,1-TCA	ND	90
TCE	15	2100
Benzene	41	1400
PCE	6.2	940
Toluene	71	2300
Ethylbenzene	32	320
Xylenes	180	1600
Trichlorofluoromethane	ND	50

[1] Samples collected by Geomatrix Consultants, Inc., and analyses performed by GTEL Environmental Laboratories, Inc. of Concord, California, using EPA Method 8240.

[2] DCA - dichloroethane
DCE - dichloroethene
TCA - trichlorothane
TCE - trichlorothene
PCE - tetrachloroethene

[3] ND - indicates analyte not detected.

GEOMATRIX

TABLE 2

ANALYTICAL METHODS FOR EXCAVATION, TRENCH, AND STOCKPILE SOIL SAMPLES[1]

American President Lines Terminal
Oakland, California

Sample Identification	TPH as gasoline	TPH as diesel	Oil & Grease	BTEX	EPA Method 8240	EPA Method 8010	EPA Method 8270	Cd, Cr, Pb, Ni, Zn	Title 22 Metals
Excavation Soil Samples									
APL-1	X	X		X					
APL-2	X	X			X				
APL-3	X	X		X					
APL-4	X	X		X					
APL-5	X	X	X		X			X	
APL-6	X	X	X		X			X	
APL-7	X	X		X					
APL2-1		X		X					
APL2-2		X		X					
Trench Soil Samples									
T1-5-4	X	X	X	X		X		X	
T1-10-5	X	X	X	X				X	
T2-5-6	X	X	X	X		X		X	
T2-5-5	X	X	X	X				X	
T2-10-7	X	X	X	X				X	
T2-13-5	X	X	X	X				X	

TABLE 2

ANALYTICAL METHODS FOR EXCAVATION, TRENCH, AND STOCKPILE SOIL SAMPLES[1]

Sample Identification	TPH as gasoline	TPH as diesel	Oil & Grease	BTEX	EPA Method 8240	EPA Method 8010	EPA Method 8270	Cd, Cr, Pb, Ni, Zn	Title 22 Metals
Composited Stockpile Soil Samples									
SWO (1-4)	X	X	X		X			X	
SWO (5-8)	X	X	X		X			X	
SWO (9-12)	X	X	X		X		X		X
SDA (1-4)	X	X			X		X		X
SDA (5-8)	X	X			X		X		X
SDA2 (1-4)	X	X			X		X		X

[1] Total petroleum hydrocarbons (TPH) as gasoline by modified EPA Method 8015; TPH as diesel by EPA Method 8015; oil and grease by Standard Method 5520C; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020; cadmium (Ca), chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn) by EPA Method 6010; Title 22 metals by EPA Methods 6010 and 7471.

GEOMATRIX

TABLE 3
SUMMARY OF ANALYTICAL RESULTS[1]
EXCAVATION AND TRENCH SOIL SAMPLES
American President Lines Terminal
Oakland, California

concentrations in milligrams per kilogram (mg/kg)

	TPHg	TPHd	Benzene	Toluene	Ethyl benzene	Xylenes	EPA Method 8240	Oil & Grease	EPA Method 8010	Cd	Cr	Pb	Ni	Zn
Excavation														
APL-1	<1	<10	<0.005	0.005	<0.005	<0.015	NA[2]	NA	NA	NA	NA	NA	NA	NA
APL-2	500	2100	0.47	11	9.8	39	1.1[3]	NA	NA	NA	NA	NA	NA	NA
APL-3	290	3200	0.59	2	2.3	15	NA	NA	NA	NA	NA	NA	NA	NA
APL-4[4]	170	1800	0.13	0.65	1.5	8	NA	NA	NA	NA	NA	NA	NA	NA
APL-5	<1	<10	<0.005	<0.005	<0.005	<0.005	ND[5]	11	NA	<1	48	49	51	81
APL-6[4]	140	1000	<0.3	0.76	0.87	4.3	ND[5]	1200	NA	<1	9	<5	12	22
APL-7	210	11,000	0.17	1.62	4.7	20.4	NA	NA	NA	NA	NA	NA	NA	NA
APL2-1	NA	5000	<0.5	3.3	3.2	21	NA	NA	NA	NA	NA	NA	NA	NA
APL2-2	NA	5000	0.7	12	11	61	NA	NA	NA	NA	NA	NA	NA	NA
Trenches														
T1-5-4	<1	<10	<0.005	<0.005	<0.005	<0.015	NA	10	ND	<1	47	25	40	61
T1-10-5	<1	<10	<0.005	<0.005	<0.005	<0.015	NA	56	NA	<1	42	10	31	66
T2-5-6	35	<10	0.15	1.2	0.45	2.5	NA	180	ND	<1	19	<5	17	49
T2-5-5	<1	<10	<0.005	<0.005	<0.005	<0.015	NA	33	NA	<1	47	52	42	81
T2-10-7	5	<10	<0.005	<0.005	<0.005	0.02	NA	<5	NA	<1	26	<5	14	14
T2-13-5	<1	<10	0.006	0.008	<0.005	<0.015	NA	40	NA	<1	40	76	42	83

1 Analyses performed by GTEL Environmental Laboratories, Inc. of Concord, California with the exception of APL2-1 and APL2-2. Analyses were performed on these two samples by BC Analytical of Emeryville, California. Refer to Table 2 of this report for methods used.

2 Soil sample not analyzed by the test method or for the analyte indicated.

3 Sample APL-2 contains 1.1 milligram per kilogram 1,2-dichloroethene.

4 Soil samples APL-4 and APL-6 excavated during additional soil removal activities.

5 No analytes for the test method reported above laboratory detection limits.

GEOMATRIX

TABLE 4
SUMMARY OF ANALYTICAL RESULTS[1]
STOCKPILE SOIL SAMPLES
American President Lines Terminal
Oakland, California

concentrations in milligrams per kilogram (mg/kg)

Analyte[2]	SWO (1-4)	SWO (5-8)	SWO (9-12)	SDA (1-4)	SDA (5-8)	SDA2 (1-4)
TPH-gasoline	180	210	43	<10	270	610
TPH-diesel	650	570	300	1100	490	2600
Total Oil & Grease	2100	2400	1000	NA[3]	NA	NA
EPA Method 8270						
Naphthalene	NA	NA	1.1	1.8	2.9	4
2-Methylnaphthalene	NA	NA	1.7	5.4	4.1	6
Dibenzofuran	NA	NA	<0.3	0.43	<0.3	<3
Fluorene	NA	NA	<0.3	0.64	<0.3	<3
Phenanthrene	NA	NA	1.2	1.8	1.2	<5
Fluoranthene	NA	NA	1.3	0.7	0.34	<3
Pyrene	NA	NA	0.81	1.3	0.99	<3
Bis(2-ethylhexyl) phthalate	NA	NA	<0.3	0.65	0.99	<5
Benzo(k)fluoranthene	NA	NA	0.55	<0.3	<0.3	<8
Benzo(a)pyrene	NA	NA	0.36	<0.3	<0.3	<3
Indeno(1,2,3-c,d)pyrene	NA	NA	0.76	0.83	<0.3	<5
Benzo(g,h,i)perylene	NA	NA	0.92	0.89	0.66	<3
EPA Method 8240						
Methylene chloride	0.1	0.22	<.027	<0.006	0.075	<4
Acetone	0.172	0.25	<5.4	<0.1	<0.56	<20
1,1-Dichloroethane	0.022	0.043	<0.27	<0.006	<0.028	<0.8
1,2-Dichloroethene, total	0.058	0.078	<0.27	0.021	0.035	<0.8
1,1,1-Trichloroethane	0.065	0.12	<0.27	<0.006	0.1	<0.8
Trichloroethene	11	16	1.8	1.3	6.7	<0.8
Benzene	1.6	2.1	<0.27	0.07	0.75	<0.8
Tetrachloroethene	5.9	9.4	1.0	0.11	7.1	<0.8
Toluene	11	13	2.5	0.89	8	2.2
Ethylbenzene	4.2	4.2	1.7	0.51	0.83	1.7
Xylenes, total	25	26	10	4.5	32	12
Trichlorofluoromethane	0.061	0.12	<0.27	<0.006	<0.028	<0.8

TABLE 4
SUMMARY OF ANALYTICAL RESULTS[1]

concentrations in milligrams per kilogram (mg/kg)

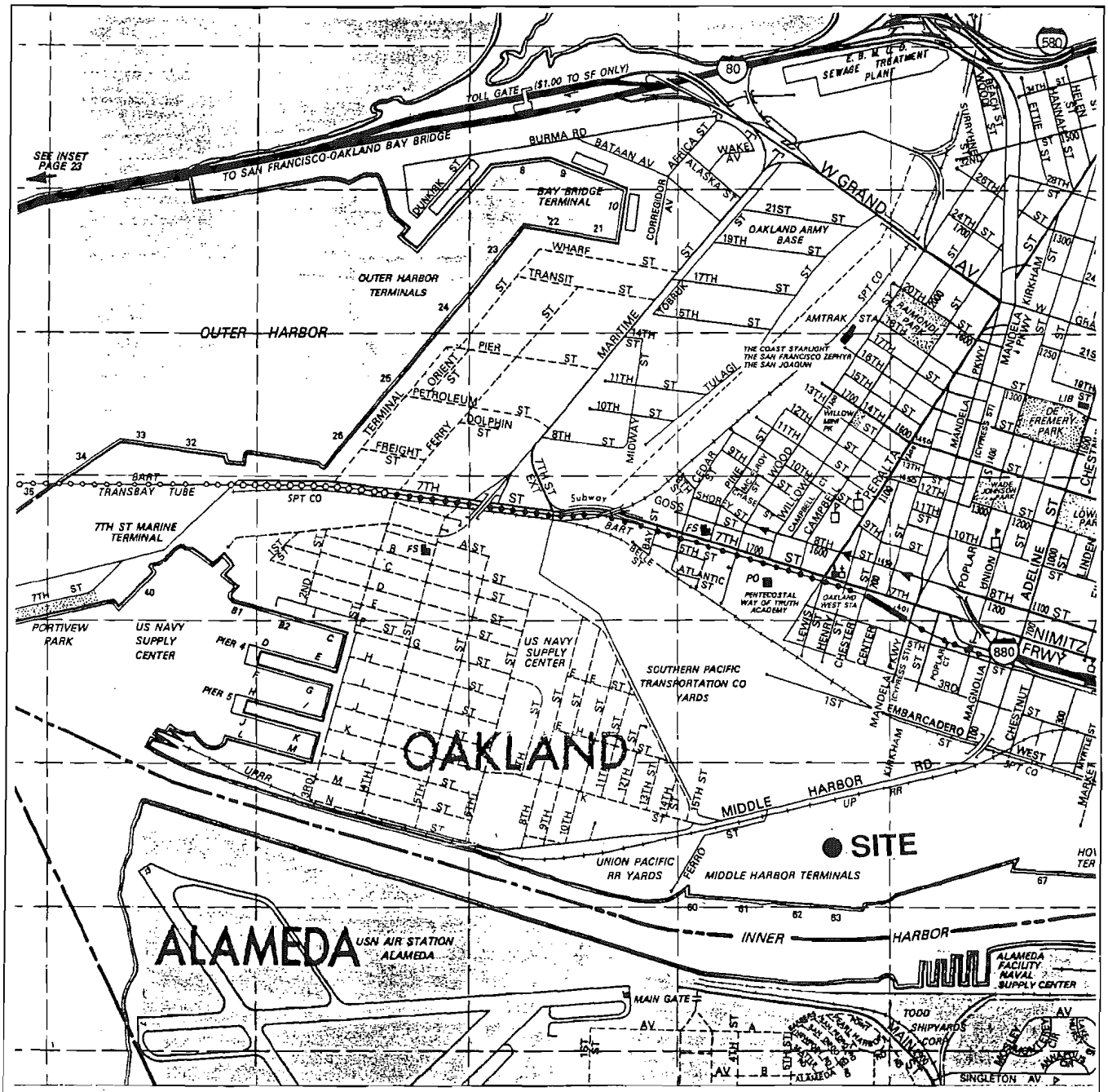
Analyte[2]	SWO (1-4)	SWO (5-8)	SWO (9-12)	SDA (1-4)	SDA (5-8)	SDA2 (1-4)
Title 22 Metals						
Antimony	NA	NA	<5	<5	<5	<4
Arsenic	NA	NA	7	<5	<5	0.8
Barium	NA	NA	87	55	46	71
Beryllium	NA	NA	<1	<1	<1	0.3
Cadmium	<1	<1	<1	<1	<1	5
Chromium (total)	27	27	26	21	24	13
Cobalt	NA	NA	6	5	5	6
Copper	NA	NA	16	13	14	9
Lead	12	17	5	9	19	8
Mercury	NA	NA	0.09	NA	NA	0.05
Molybdenum	NA	NA	<1	<1	<1	<4
Nickel	28	32	29	25	28	14
Selenium	NA	NA	<5	<5	<5	<0.4
Silver	NA	NA	<2.5	<2.5	<2.5	<1
Thallium	NA	NA	18	<10	<10	<4
Vanadium	NA	NA	24	20	19	19
Zinc	93	110	42	41	190	29

Notes:

[1] Soil samples were collected by Geomatrix Consultants, Inc. and were composited by the analytical laboratory before analysis. Analyses performed on SWO (1-4), SWO (5-8), SWO (9-12), SDA (1-4), and SDA (5-8) by GTEL Laboratories, Inc. of Concord, California. Analyses on SDA2 (1-4) performed by BC Analytical of Emeryville, California. Refer to Table 2 of this report for methods used.

[2] TPH - total petroleum hydrocarbons.

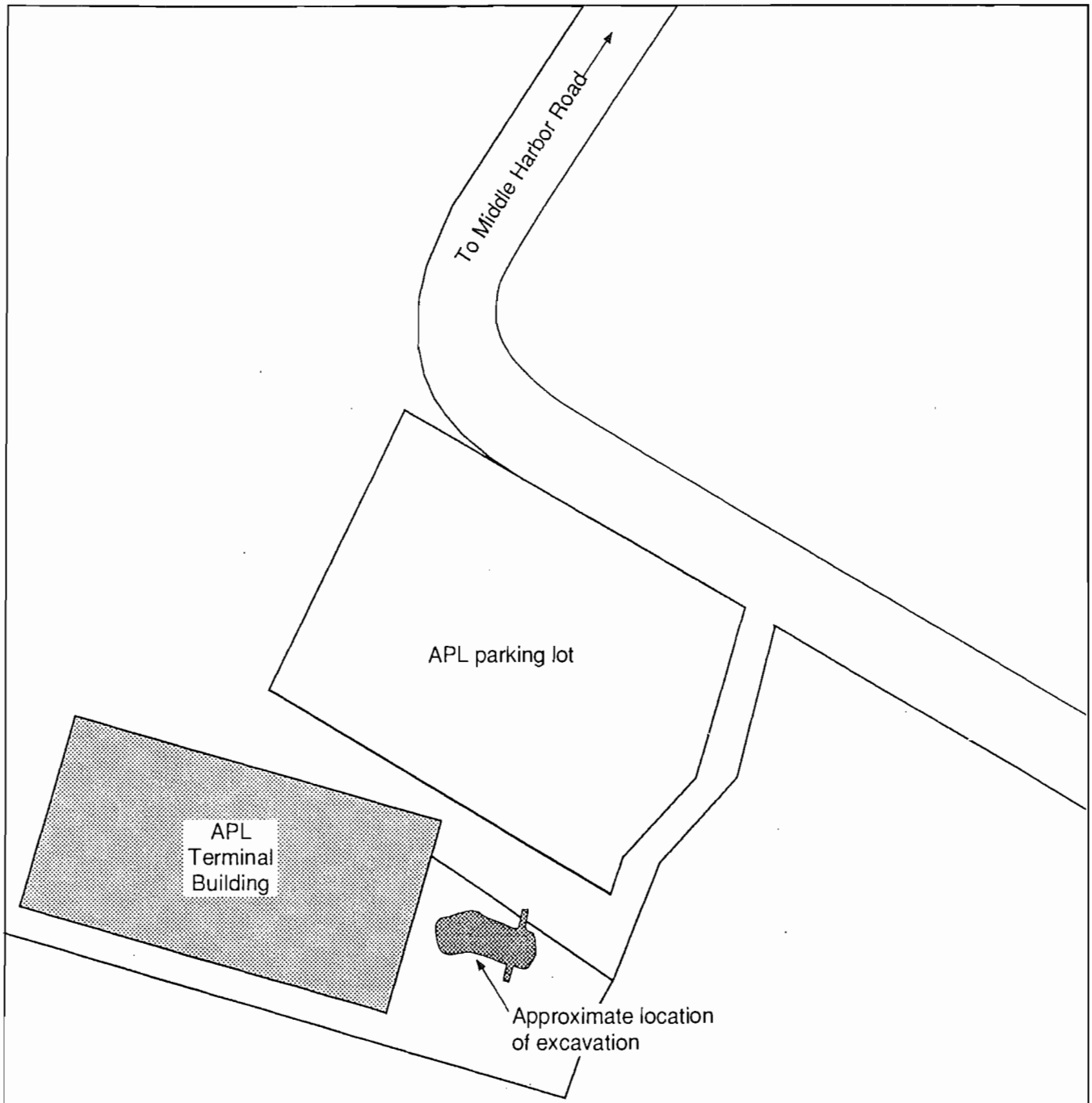
[3] NA - indicates not analyzed for this compound.



Reference: Thomas Brothers Maps
Alameda County
1990

0 2200 Feet

GEOMATRIX	SITE LOCATION MAP American President Lines Terminal 1395 Middle Harbor Road Oakland, California	Figure 1 Project No. 2026



N

0 100 Feet

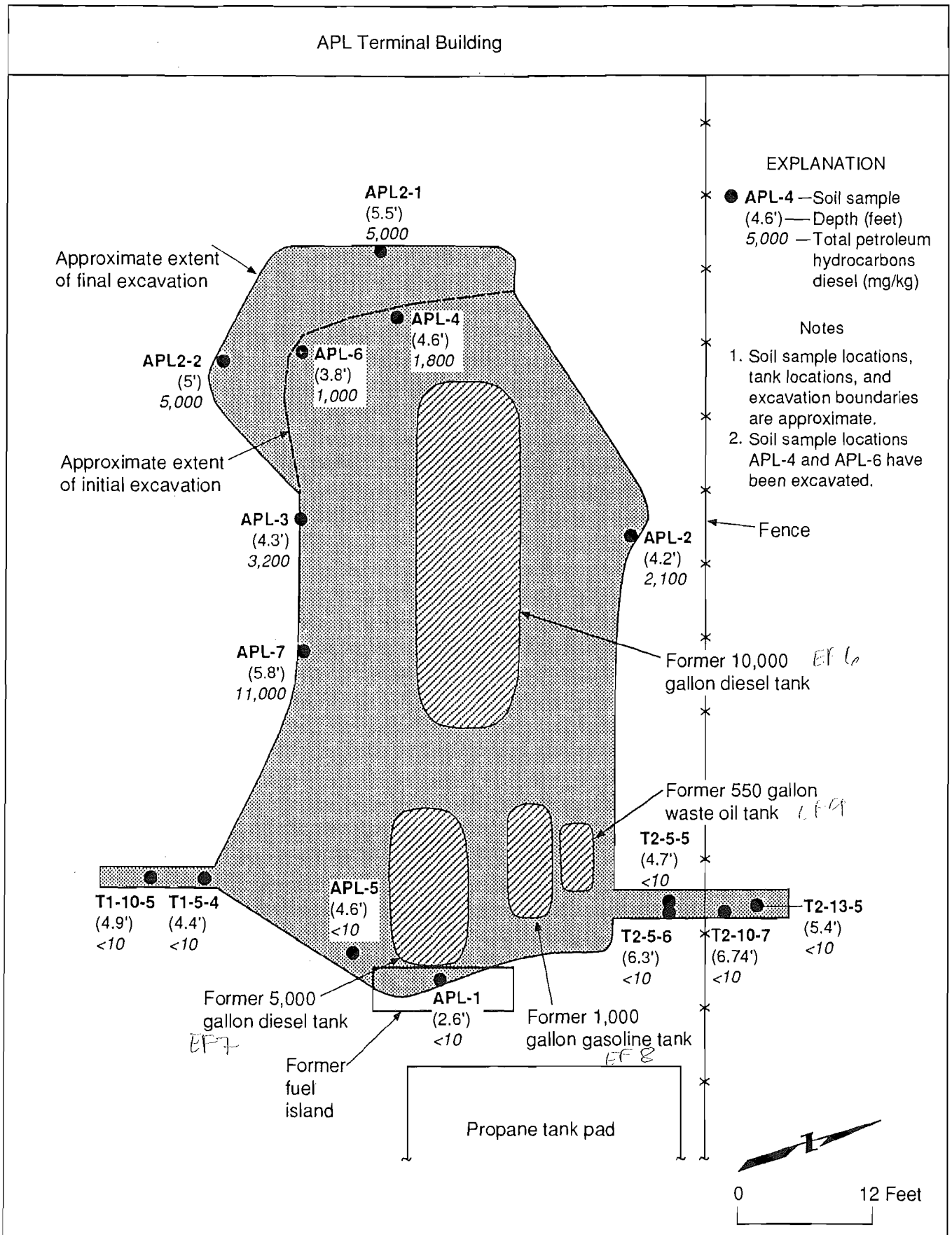
Based on figure provided by the Port of Oakland

GEOMATRIX

SITE PLAN
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

Figure
2

Project No.
2026



GEOMATRIX	EXCAVATION, TANK, AND SOIL SAMPLE LOCATIONS AND CONCENTRATIONS OF TOTAL PETROLEUM HYDROCARBONS AS DIESEL American President Lines Terminal 1395 Middle Harbor Road Oakland, California	Figure 3 Project No. 2026

GEOMATRIX

APPENDIX A

UNDERGROUND STORAGE TANK CLOSUSRE PLAN, UNIFORM HAZARDOUS WASTE MANIFESTS, AND SOIL AERATION PERMIT

Project Specialist (print) Dennis Byrne

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

11/18/91

ACCEPTED

DEPARTMENT OF ENVIRONMENTAL HEALTH
470 - 27th Street, Third Floor
Oakland CA 94612
Telephone: (415) 874-7237

These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction.

One copy of these accepted plans must be on the job site available to all contractors and craftsmen involved with the removal.

Removal of Tank and Piping

UNDERGROUND TANK CLOSURE PLAN

* * * Complete according to attached instructions * * *

1. Business Name Port of Oakland

   Business Owner Board of Port Commissioners of the City of Oakland

   1395

2. Site Address Middle Harbor Terminal (EF06, EF07, EF08, EF09)

   City Oakland, CA Zip 94607 Phone _____

3. Mailing Address 530 Water Street, P.O. Box 2064, Environmental Dept.

   City Oakland, CA Zip 94604-2064 Phone (510) 272-1184

4. Land Owner Port of Oakland

   Address 530 Water Street City, State Oakland, CA Zip 94604-2064

5. Generator name under which tank will be manifested _____

   Port of Oakland

   EPA I.D. No. under which tank will be manifested CAC000627912

rev 12/90

SENT

6. Contractor Tank Protect Engineering of Northern California

Address 2821 Whipple Road

City Union City, CA 94587-1233 Phone (510) 429-8088

License Type A ID# 575837

7. Consultant Geomatrix Consultants

Address 100 Swan Way, Suite 100

City Oakland, CA Phone (510) 957-9557

8. Contact Person for Investigation

Name Jon Amdur Title Asst. Env. Scientist

Phone (510) 272-1184

9. Number of tanks being closed under this plan 4

Length of piping being removed under this plan 50

Total number of tanks at facility 4

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled ** as hazardous waste

a) Product/Residual Sludge/Rinsate Transporter

Name Excel Trans. EPA I.D. No. CAD981982663

Hauler License No. 2283 License Exp. Date 12/31/91

Address 290 West Channel Road

City Benicia State CA Zip 94510

b) Product/Residual Sludge/Rinsate Disposal Site

Name Enviro. Safe Services EPA I.D. No. IDD073114654

Address P.O. Box 417

City Boise State Idaho Zip 83701-0417

5.

c) Tank and Piping Transporter

Name Erickson, Inc. EPA I.D. No. CAD009466392

Hauler License No. 0019 License Exp. Date 5/92

Address 255 Parr Blvd.

City Richmond State CA Zip 94801

d) Tank and Piping Disposal Site

Name Erickson, Inc. EPA I.D. No. CAD009466392

Address 255 Parr Blvd.

City Richmond State CA Zip 94801

11. Experienced Sample Collector

Name Phil Tringale

Company Geomatrix Consultants

Address 100 Swan Way, Suite 100

City Oakland State CA Zip 94111 Phone (510) 957-9557

12. Laboratory

Name GTEL Environmental Laboratories

Address 4080 Pike Lane

City Concord State CA Zip 94520

State Certification No. 1994

13. Have tanks or pipes leaked in the past? Yes [ ] No [ ]

If yes, describe. No leaks documented.

14. Describe methods to be used for rendering tank inert

Use 15 lbs. of dry ice per each 1,000 gallon capacity for each tank.

Verify with on-site LEL meter.

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, groundwater, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
1,000 gallon	Gasoline	Soil	One sample at each end of the tank pit, max. of 2 ft. below the tank pit.
10,000 gallon	Diesel	Soil	" "
5,000 gallon	Diesel	Soil	" "
550 gallon	Waste Oil	Soil	One sample at fill or pump end of the tank.
	Piping	Soil	One sample every 20 lineal feet, or under swing joint dispenser.
	Groundwater to be sampled	if encountered.	

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimated)	Sampling Plan One sample for every 20 cubic yards maximum or 1 sample every 50 cubic yards minimum.

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
Gasoline			
TPHG	EPA 5030	GCFID	1ppm
BTEX	EPA 5030	8020/8240	.005ppm
Diesel			
TPHD	EPA 3550	GCFID	1ppm
BTEX	EPA 5030	8020/8240	.005ppm
Waste Oil			
TPHG	EPA 5030	GCFID	1ppm
TPHD	EPA 3550	GCFID	1ppm
BTEX	EPA 5030	8020/8240	.005ppm
O & G	EPA SM 5520 E & F (Gravimetric)		
CL CH	EPA 5030		
METALS	AA Cd, Cr, Ni, Zn, Pb	8010/8240	
PCB, PCP, PNA creosote		8270	
If groundwater	encountered: TPHG 5030/GCFID TPHD 3510/GCFID BTEX 5030/602 or 624		

17. Submit Site Health and Safety Plan (See Instructions)

18. Submit Worker's Compensation Certificate copy

Name of Insurer STATE COMPENSATION INSURANCE FUND

19. Submit Plot Plan (See Instructions)

20. Enclose Deposit (See Instructions)

21. Report any leaks or contamination to this office within 5 days of discovery. The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see Instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

Signature of Contractor

Name (please type) JAFAR FARHOOMAND

Signature Jafar Farhoomand

Date 11/12/91

Signature of Site Owner or Operator

Name (please type) DAVID McANENY PORT OF OAKLAND

Signature David J. McAneny

Date 11-13-91

rev 12/90

Excavation Permit Granted _____ No. _____

CITY OF OAKLAND

Tank Permit

Permit to Excavate and Install, Repair, or Remove Inflammable Liquid Tanks. No. 9516

Oakland, California, November 19, 19 91

PERMISSION IS HEREBY GRANTED TO ~~Install~~ remove ~~repair~~ Gasoline tank and excavate commencing _____ feet inside property line

on the south side of Middle Harbor Road Street Avenue feet _____ of _____ Street Avenue

House No. 1395 Middle Harbor Road Street Avenue Present Storage _____

Owner Port of Oakland Address 530 Water Street Phone 272-1184

Applicant Tank Protect Engineering Address 2821 Whipple Rd. Union City 94587 Phone 429-8088

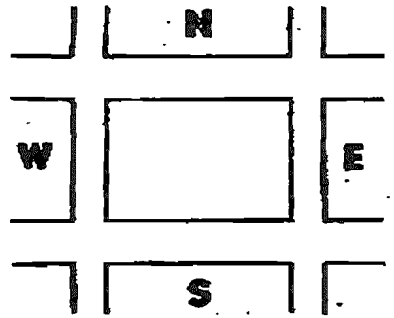
Dimensions of street (sidewalk) surface to be disturbed _____ X _____ Number of Tanks 1 1 1 1 Capacity 10,000 5,000 1,000 500 Gallons, each

Remarks: _____

This Permit is granted in accordance with existing City Ordinances.
Owner hereby agrees to remove tanks on discontinuance of use or when notified by the City Authorities.
When installing, removing or repairing tanks, no open flame to be on or near premises.

Approved _____
Fire Marshal

Approved _____
Drainage Division Engineering Dept.



EXCAVATING PERMIT

Issued in accordance with Ord. No. 278 CMS, Sec. 6-2.04

_____ square feet of digging or removal granted.

The receipt of $ _____ special deposit is hereby acknowledged.

GENERAL DEPOSIT.

BUREAU OF PERMITS AND LICENSES.

CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

Inspected and passed on _____ 19 ____

By _____
Fire Marshal

Inspection Fee Paid . . . . . $ 200.00 ck#2269 rec# 658512

Received by V. Arnold
FIRE PREVENTION BUREAU

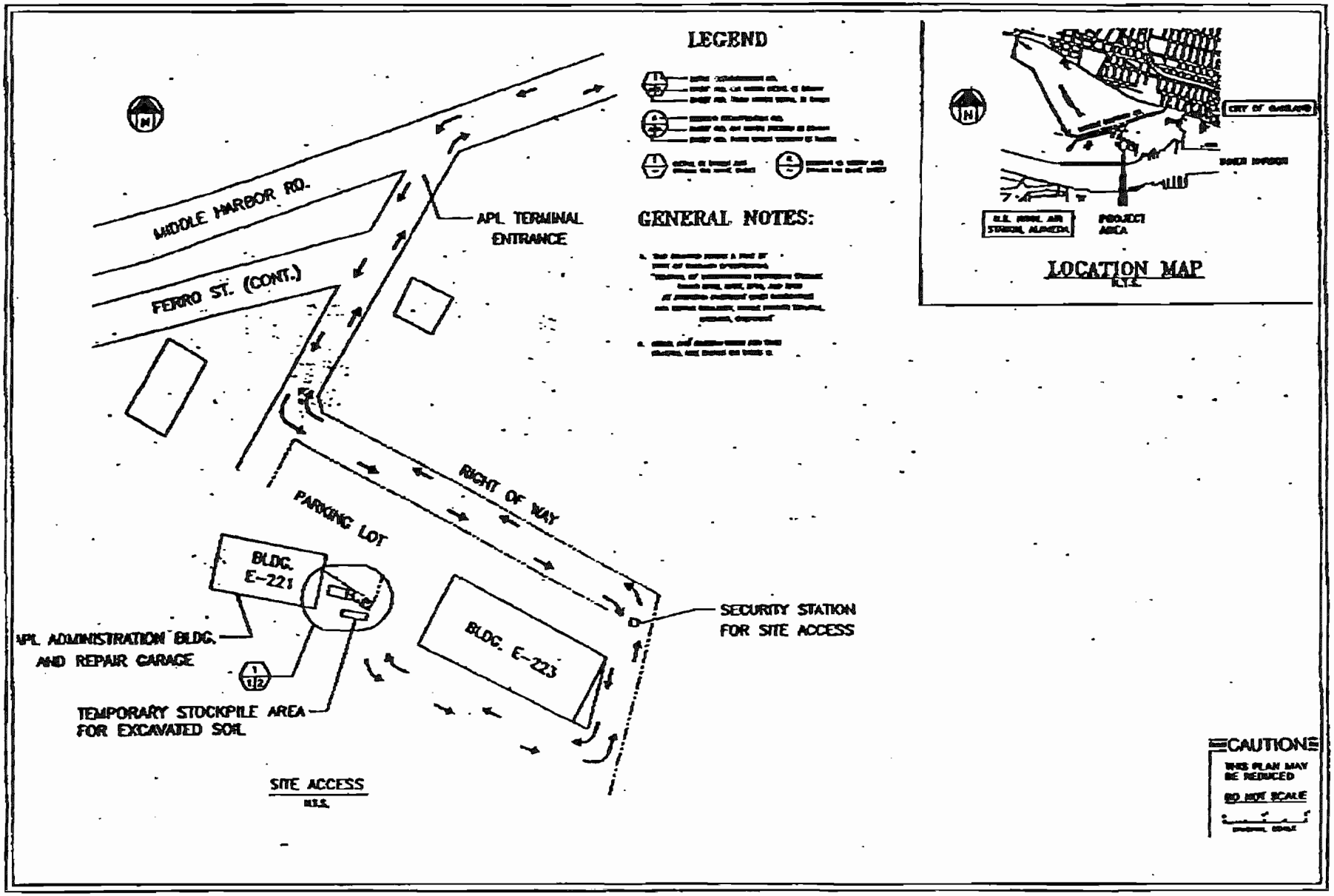
NOTICE

Before Covering Tanks, Above Certificate Must Be Signed.

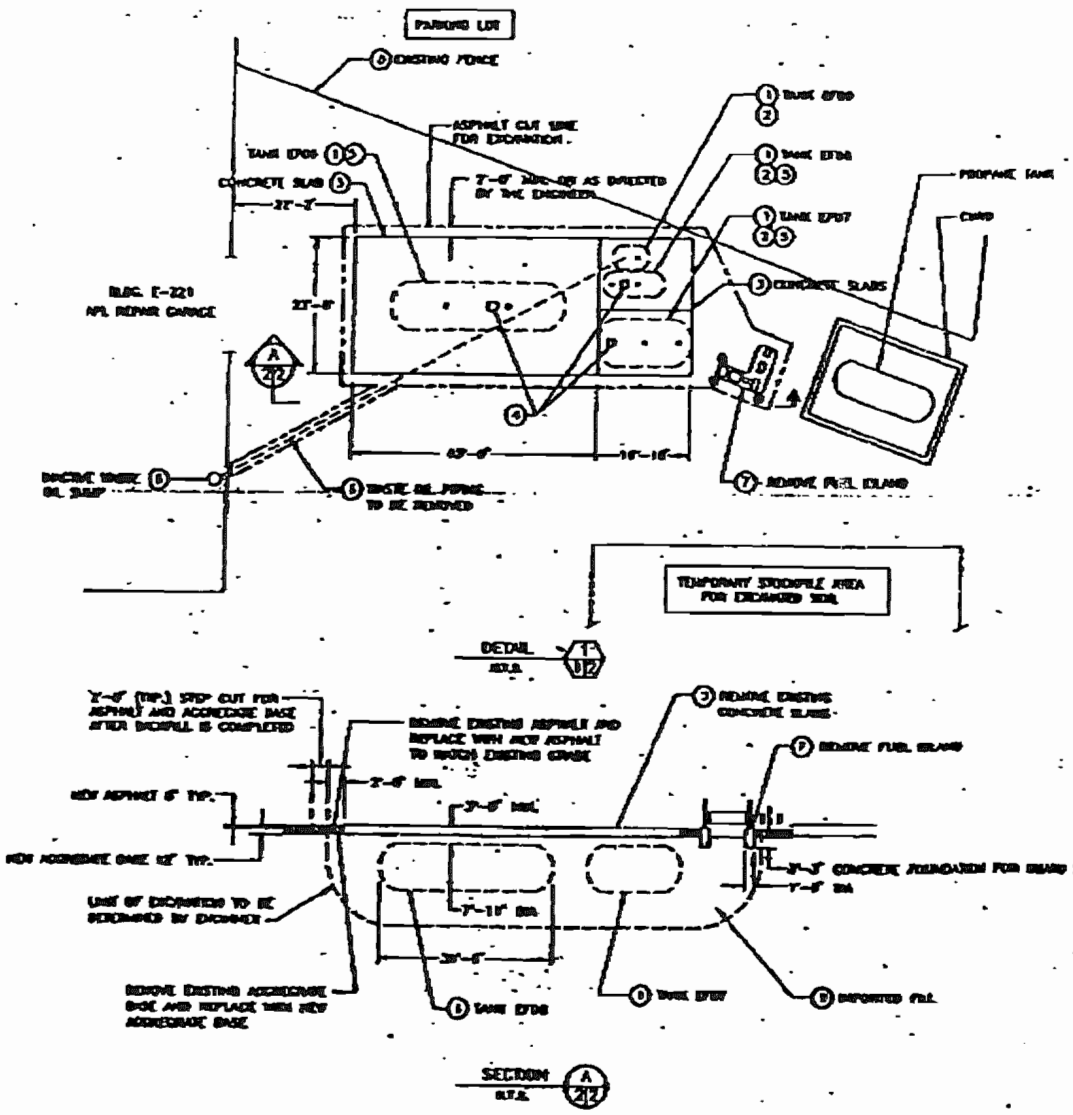
When ready for inspection notify Fire Prevention Bureau, 273-3831

THIS PERMIT MUST BE LEFT ON THE WORK AS AUTHORITY THEREFOR.

200.00 10.079



TANK PROTECT ENGINEERING 2821 WHIPPLE ROAD UNION CITY, CA 94587	PLOT PLAN 1395 MIDDLE HARBOR TERMINAL OAKLAND, CA 94607	SUBMITTAL 3



NOTES:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

CAUTION

THIS PLAN MAY BE REDUCED

DO NOT SCALE

TANK PROTECT ENGINEERING 2821 WHIPPLE ROAD UNION CITY, CA 94587	PLOT PLAN 1395 MIDDLE HARBOR TERMINAL OAKLAND, CA 94607	SUBMITTAL 3

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. Form designed for use on elite (12-pitch typewriter).

#77428

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000627912 Manifest Document No. 96796
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
PORT OF OAKLAND P.O. BOX 2064/ENVIRONMENTAL DEPT. OAKLAND CALIF 94604-2064
4. Generator's Phone 510 272-1184

A. State Manifest Document Number 90796796
B. State Generator's ID

5. Transporter 1 Company Name: Erickson Trucking Inc.
6. US EPA ID Number: CAD009466392
C. State Transporter's ID 205166
D. Transporter's Phone 510 235-1393

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Erickson, Inc.
255 Parr Blvd.
Richmond, Ca. 94801
10. US EPA ID Number: CAD009466392
G. State Facility's ID
H. Facility's Phone (510) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank NON-RCRA Hazardous Waste Solid.	001	TP	03000	P	State 512 EPA/Other NONE
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
Qty. ONE Empty Storage Tank (s) #7901
Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name PORT OF OAKLAND Phone (510) 272-1184

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: David T. McAleny | Signature: [signature] | Month Day Year 6 | 6 | 7 | 9 | 2

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Steve Fleming | Signature: [signature] | Month Day Year 6 | 6 | 7 | 9 | 2

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW: GENERATOR RETAINS

[illegible] (Expires 9-30-91)

[illegible]m designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

[UNIF]ORM HAZARDOUS [W]ASTE MANIFEST

1. Generator's US EPA ID No. [illegible] Manifest Document No. [illegible]

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address [illegible handwriting]

4. Generator's Phone ( ) [illegible]

A. State Manifest Document Number 88119621

B. State Generator's ID

5. Transporter 1 Company Name: Erickson Trucking, Inc.

6. US EPA ID Number: CAD009466392

C. State Transporter's ID [illegible]

D. Transporter's Phone (415) 235-1393

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Erickson, Inc.
255 Parr Blvd.
Richmond, CA 94801

10. US EPA ID Number: CAD009466392

G. State Facility's ID

H. Facility's Phone (415) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste empty storage tank Non-RCRA Hazardous Waste Solid	[illegible]	TP	[illegible]	P	State 512; EPA/Other None
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above
[illegible handwriting] TANK # 7708-7710 [illegible] WITH 15 LBS DRY ICE PER 1000 GAL CAP

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
KEEP away from sources of ignition. Always wear hardhats when working around U.S.T.'s
[illegible handwriting] (510) [illegible]

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: [illegible handwriting] | Signature: [signature] | Month Day Year [illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: [illegible handwriting] | Signature: [signature] | Month Day Year [illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

GENERATOR / TRANSPORTER / FACILITY

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DA[YS]
To: P.O. Box 400 Sacramento, CA 95812-0400

...m designed for use on elite (12 pitch) typewriter) 11128 and Front of Page ...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: CAC000627912
Manifest Document No: 96784
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND P.O. BOX 2064 ATTN. ENVIRONMENTAL DEPT. OAKLAND, CALIFORNIA 94604-2064
4. Generator's Phone (510) 272-1184

A. State Manifest Document Number: 90796784
B. State Generator's ID

5. Transporter 1 Company Name: ERICKSON TRUCKING, INC.
6. US EPA ID Number: CAD009466392
C. State Transporter's ID: 205169
D. Transporter's Phone: (510) 235-1393

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
Erickson, Inc.
255 Parr Blvd.
~~Richmond, Ca. 94801~~

10. US EPA ID Number: CAD009466392
G. State Facility's ID: CAD009466392
H. Facility's Phone: (510) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank ~~NON-RCRA Hazardous Waste Solid.~~	001	TP	00400	P	State 512 EPA/Other NONE
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
Qty. One Empty Storage Tank (s) #7909, ____, ____, ____. Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name PORT OF OAKLAND & Phone (510) 272-1184

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
JON BUNIFIELD	[signature]	01	07	92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Rodney G Prowett	[signature]	01	07	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR — TRANSPORTER — FACILITY

Do Not Write Below This Line

DTSC 8022 A (1/88) EPA 8700-22 ... Previous editions are obsolete

nia—Health and Welfare Agency

See Instructions on back of page 6.

Department of Health Servic
Toxic Substances Control Progr
Sacramento, Califor

or type. Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000627912 — Manifest Document No.: 53891
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND - ENVIRON. DEPT.
P.O. BOX 2064
OAKLAND, CA. 94604
4. Generator's Phone (510) 272 1184

A. State Manifest Document Number: 91553891
B. State Generator's ID

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL
6. US EPA ID Number: CAD980695340
C. State Transporter's ID: 204776
D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
ALVISO INDEPENDENT OIL
5002 ARCHER
ALVISO, CALIF. 95002
10. US EPA ID Number: CAL000048571
G. State Facility's ID: CAL000048571
H. Facility's Phone: (408) 262-2715

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270	001	TT	2000	G	State 221; EPA/Other
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above:
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above: a. 01 b. c. d.

15. Special Handling Instructions and Additional Information
GLOVES
** In Case of Emergency Call - 510 272 1184

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: DAVID J. McANENY — Signature: [signature] — Month Day Year: 01 10 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: H MOORE — Signature: H Moore — Month Day Year: 4 1 1 4 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DO NOT WRITE BELOW THIS LINE.

DHS 8022A (12/90)

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN 30 DA

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
CAC002627782	00041		

3. Generator's Name and Mailing Address
PORT OF OAKLAND
530 WATER ST. OAKLAND, CALIF.

4. Generator's Phone 510 272-1471

A. State Manifest Document Number: 91053403

B. State Generator's ID:

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL
6. US EPA ID Number: CAD980695340
C. State Transporter's ID: 20-1774
D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
ALVISO INDEPENDENT OIL
5002 ARCHER
ALVISO, CALIF. 95002
10. US EPA ID Number: CAL000048571
G. State Facility's ID: CAL000048571
H. Facility's Phone: (408) 262-2715

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270 OIL-WATER MIX	001	TT	00440	G	State 221 / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above
a. 01
b.
c.
d.

15. Special Handling Instructions and Additional Information
GLOVES

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
JON BONIFIELD		01	17	92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
PERRY EVANS		01	17	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
PERRY EVANS		01	23	92

Do Not Write Below This Line

HS 8022 A
PA 8730—22
(Rev. 6-89) Previous editions are obsolete.

RECEIVED FEB 3 1992

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

GENERATOR

TRANSPORTER

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

Health and Welfare Agency

See Instructions on back of page 6.

Department of Health
Toxic Substances Control
Sacramento, C

ype. *Form designed for use on elite (12-pitch typewriter).*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C A C 0 0 0 6 2 7 9 1 2 | Manifest Document No. 0 0 0 0 4 | 2. Page 1 of 1 | Information in the shaded are is not required by Federal law

3. Generator's Name and Mailing Address
PORT OF OAKLAND
1395 Middle Harbor Terminal, Oakland, CA. 94607
4. Generator's Phone (510) 272-1993

A. State Manifest Document Number 915083
B. State Generator's ID
C. State Transporter's ID 300950
D. Transporter's Phone (415) 543-4835

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
G. State Facility's ID: C A D 0 0 4 7 7 1 1 6 8
H. Facility's Phone: (415) 543-4835

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Numbe
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	0 0 1	T T	03000	G	State 134,1 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
FUEL, OIL AND WATER
PROFILE #A1606

K. Handling Codes for Wastes Listed Above
a. 01 b.
c. d.

15. Special Handling Instructions and Additional Information
JOB #10211
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classif packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulatio

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GENERATOR

Printed/Typed Name	Signature	Month	Day
DAVID J MCANENY		0 3	1 0 4 1 9

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day
ESTEBAN M. PENALVER		0 3	0 4 1

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day

DO NOT WRITE BELOW THIS LINE.

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA, CALL 1-800-852-7550

915083 /

DHS 8022A (12/90)
EPA 8700-22

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN
To: P.O. Box 400, Sacramento, CA 95812-0400

...lth and Welfare Agency

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
	CA C0 0 0 0 6 2 7 9 1 2	0 0 0 0 3		

3. Generator's Name and Mailing Address
PORT OF OAKLAND
1395 Middle Harbor Terminal, Oakland, CA. 94607
4. Generator's Phone (510) 272-1993

A. State Manifest Document Number: 91508356
B. State Generator's ID:
C. State Transporter's ID: 300949
D. Transporter's Phone: (415) 543-4835
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID: CAD004771168
H. Facility's Phone: (415) 543-4835

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: CAD004771168
7. Transporter 2 Company Name:
8. US EPA ID Number:
9. Designated Facility Name and Site Address: H & H Ship Service Company, 220 China Basin Street, San Francisco, CA 94107
10. US EPA ID Number: CAD004771168

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	001	TT	04000	G	State: 134,135 EPA/Other:
b.					State: EPA/Other:
c.					State: EPA/Other:
d.					State: EPA/Other:

J. Additional Descriptions for Materials Listed Above:
FUEL, OIL AND WATER
PROFILE #A1606

K. Handling Codes for Wastes Listed Above:
a: 01
b:
c:
d:

15. Special Handling Instructions and Additional Information
JOB #10211
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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GENERATOR	Printed/Typed Name	Signature	Month	Day	Year
	DAVID McAWENY		03	04	92

TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials				
	Printed/Typed Name	Signature	Month	Day	Year
	ROBERT S. HANSEN		03	04	92
	18. Transporter 2 Acknowledgement of Receipt of Materials				
	Printed/Typed Name	Signature	Month	Day	Year

FACILITY	19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.				
Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER (800) 424-8802

DHS 8022A (12/90)
EPA 8700-22

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN 30 DAYS.
To: P.O. Box 400, Sacramento, CA 95812-0400

...and Welfare Agency

Form designed for use on elite (12-pitch typewriter).

See Instructions on back of page 6.

Department of Health Servi[ces]
Toxic Substances Control Progr[am]
Sacramento, Califo[rnia]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000127912
Manifest Document No.: 01967814
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND PO BOX 2064 ATTN ENVIRONMENTAL DEPT OAKLAND CALIF. 94604 2064

A. State Manifest Document Number: 9155386[2]

B. State Generator's ID

4. Generator's Phone (510) 272 1184

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL
6. US EPA ID Number: CAD980695340
C. State Transporter's ID: 20479
D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
ALVISO INDEPENDENT OIL
5002 ARCHER
ALVISO, CALIF. 95002

10. US EPA ID Number: CAL000048571
G. State Facility's ID: CAL000048571
H. Facility's Phone: (408) 262-2715

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270	001	TT	2000	G	State 221 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above
a. 01 b.
c. d.

15. Special Handling Instructions and Additional Information

GLOVES

** In Case of Emergency Call -

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Printed/Typed Name	Signature	Month Day Year
Jon Bonifield	[signature]	01 1 49[?]

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
H MOORE	H moore	01 1 019[?]

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DO NOT WRITE BELOW THIS LINE.

DHS 8022A (12/90)
EPA 8700-22

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN 30 DAY[S]
To: P.O. Box 400, Sacramento, CA 95812-0400

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

ALAMEDA COUNTY
Edward R. Campbell
Loni Hancock
Greg Harper
Frank H. Ogawa

CONTRA COSTA COUNTY
Paul L. Cooper
(Chairperson)
Sunne Wright McPeak
Tom Powers

MARIN COUNTY
Al Aramburu

NAPA COUNTY
Paul Battisti

SAN FRANCISCO COUNTY
Roberta Achtenberg
Harry G. Britt

SAN MATEO COUNTY
Gus J. Nicolopulos
Anna Eshoo
(Vice Chairperson)

SANTA CLARA COUNTY
Martha Clevenger
Rod Diridon
Joe Head
Dianne McKenna

SOLANO COUNTY
Osby Davis

SONOMA COUNTY
Jim Harberson
Patricia Hilligoss
(Secretary)

February 10, 1992

Peylina Chu *and* Sally Goodin
Geomatrix
100 Pine Street - 10th Floor
San Francisco, CA 94111

Greetings:

This letter is in response to your letter dated January 29, 1992 for your Project 2026 at the Port of Oakland. We have evaluated the information you have submitted and have determined that this project is exempt from District permit requirements subject to compliance with the following conditions:

1. **No more than 300 cubic yards of soil shall be aerated.**

2. **The aeration operation shall not last more than 60 days.**

3. **The aeration operation shall not cause a public nuisance. If a public nuisance is caused, the soil being aerated shall be covered with a tarp or other covering and a Permit to Operate shall be applied for from the District.**

This exemption applies solely to permits. The equipment must be operated in compliance with any other applicable District regulations, primarily Regulation 8, Rule 40. Note that this exemption is not permanent. Any change in your operation or in District regulations may require you to obtain permits in the future.

Please retain this letter as a record of your exempt status. If you have any questions, please call me at **(415) 749-4735.**

Very truly yours,

John Swanson
Director of Permit Services

JAS:all

GEOMATRIX

APPENDIX B

CHAIN-OF-CUSTODY RECORDS AND ANALYTICAL LABORATORY REPORTS

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-227

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0609.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		01	02*		
Client Identification		WDA-1	WWO-1		
Date Sampled		01/10/92	01/10/92		
Date Analyzed		01/10/92	01/10/92		
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	10	<10	<50		
Bromomethane	10	<10	<50		
Vinyl chloride	10	300	130		
Chloroethane	10	<10	<50		
Methylene chloride	5	18	3900		
Acetone	100	<100	1300		
Carbon disulfide	5	<5	<25		
1,1-Dichloroethene	5	<5	<25		
1,1-Dichloroethane	5	<5	84		
1,2-Dichloroethene, total	5	79	160		
Chloroform	5	<5	<25		
1,2-Dichloroethane	5	<5	<25		
2-Butanone	100	<100	<500		
1,1,1-Trichloroethane	5	<5	90		
Carbon tetrachloride	5	<5	<25		
Vinyl acetate	50	<50	<250		
Bromodichloromethane	5	<5	<25		
1,2-Dichloropropane	5	<5	<25		
cis-1,3-Dichloropropene	5	<5	<25		
Trichloroethene	5	15	2100		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
* Sample diluted due to matrix interference.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		01	02*		
Client Identification		WDA-1	WWO-1		
Date Sampled		01/10/92	01/10/92		
Date Analyzed		01/10/92	01/10/92		
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Dibromochloromethane	5	<5	<25		
1,1,2-Trichloroethane	5	<5	<25		
Benzene	5	41	1400		
trans-1,3-Dichloropropene	5	<5	<25		
2-Chloroethylvinyl ether	10	<10	<50		
Bromoform	5	<5	<25		
4-Methyl-2-pentanone	50	<50	<250		
2-Hexanone	50	<50	<250		
Tetrachloroethene	5	6.2	940		
1,1,2,2-Tetrachloroethane	5	<5	<25		
Toluene	5	71	2300		
Chlorobenzene	5	<5	<25		
Ethylbenzene	5	32	320		
Styrene	5	<5	<25		
1,2-Dichlorobenzene	5	<5	<25		
1,3-Dichlorobenzene	5	<5	<25		
1,4-Dichlorobenzene	5	<5	<25		
Xylene, total	5	180	1600		
Trichlorofluoromethane	5	<5	50		
Quantitation Limit Multiplier		1	5		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
* Sample diluted due to matrix interference.

2a 1

Chain-of-Custody Record

No 0609

Date: 1-10-92

Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/10	1115	WDA-1			X					X	W	Y	3
1/10	1100	WWD-1			X					X	W	Y	3

ANALYSES

REMARKS

Additional comments

Rush 48-hr TAT

Please hold samples after analysis

Please return coolers to Geomatrix

Turnaround time: 48-hours

Results to: Elizabeth Wells

Total No. of containers: 6

	Date:		Date:		Date:	
Relinquished by: Stacy Anich	1-10	Relinquished by: Susan House	1/10	Relinquished by:		Method of shipment: Courier
Signature: STACY ANICH	1992	Signature: Susan House		Signature:		Laboratory comments and Log No.:
Printed name: Geomatrix		Printed name: Susan	1:00	Printed name:		
Company:		Company: Concord Courier		Company:		
Received by: Susan	**Time:**	**Received by:** Jamie Davis	**Time:**	**Received by:**	**Time:**	
Signature: Susan House	1230	Signature: JAMIE DAVIS		Signature:		
Printed name: Susan House		Printed name: 1-10-92 1:05		Printed name:		
Company: Concord Courier		Company:		Company:		

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-306

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0628.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Halogenated Volatile Organics in Soil

EPA Method 8010[a]

GTEL Sample Number		01	02		
Client Identification		T1-5-4	T2-5-6		
Date Sampled		01/14/92	01/14/92		
Date Extracted		01/15/92	01/15/92		
Date Analyzed		01/16/92	01/16/92		
Analyte	Quantitation Limit, mg/Kg	Concentration[b], mg/Kg			
Chloromethane	0.5	<0.5	<0.5		
Bromomethane	0.5	<0.5	<0.5		
Vinyl chloride	1	<1	<1		
Chloroethane	0.5	<0.5	<0.5		
Methylene chloride	0.5	<0.5	<0.5		
1,1-Dichloroethene	0.2	<0.2	<0.2		
1,1-Dichloroethane	0.5	<0.5	<0.5		
1,2-Dichloroethene	0.5	<0.5	<0.5		
Chloroform	0.5	<0.5	<0.5		
1,2-Dichloroethane	0.5	<0.5	<0.5		
1,1,1-Trichloroethane	0.5	<0.5	<0.5		
Carbon tetrachloride	0.5	<0.5	<0.5		
Bromodichloromethane	0.5	<0.5	<0.5		
1,2-Dichloropropane	0.5	<0.5	<0.5		
cis-1,3-Dichloropropene	0.5	<0.5	<0.5		
Trichloroethene	0.5	<0.5	<0.5		
Dichlorodifluoromethane	0.5	<0.5	<0.5		
Dibromochloromethane	0.5	<0.5	<0.5		
1,1,2-Trichloroethane	0.5	<0.5	<0.5		
trans-1,3-Dichloropropene	0.5	<0.5	<0.5		
2-Chloroethylvinyl ether	1	<1	<1		
Bromoform	0.5	<0.5	<0.5		
Tetrachloroethene	0.5	<0.5	<0.5		
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5		
Chlorobenzene	0.5	<0.5	<0.5		
1,2-Dichlorobenzene	0.5	<0.5	<0.5		
1,3-Dichlorobenzene	0.5	<0.5	<0.5		
1,4-Dichlorobenzene	0.5	<0.5	<0.5		
Trichlorofluoromethane	0.5	<0.5	<0.5		
Quantitation Limit Multiplier		1	1		
Percent solids		74	83		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample prepared by EPA Method 5030 (high-level solvent extraction and purge and trap).
b. Results reported on a wet weight basis.

GTEL ENVIRONMENTAL LABORATORIES, INC.

A-2 MMC01.0PK01 C201306

Chain-of-Custody Record

№ 0628

Date: 1-14-92 | Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Ornch

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	Oil & Grease	[illegible]	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/14	1030	T1-5-4	X 01				X	X	X	X	X	X	S		1
	1110	T1-10-5					X	X	X	X	X	X	S		1
	1345	T2-5-6	X 02				X	X	X	X	X	X	S		1
	1310	T2-5-5					X	X	X	X	X	X	S		1
	1445	T2-10-7					X	X	X	X	X	X	S		1
	1510	T2-13-5					X	X	X	X	X	X	S		1

REMARKS

Additional comments:
RUSH 48 HR TAT
Please hold samples after analysis.
Please return [illegible] to [illegible].

Turnaround time: 48-HOUR

Results to: [illegible]

Total No. of containers: 6

Relinquished by: Stacy Ornch
Signature: [illegible] ANCH
Printed name: [illegible]
Company:
Date: 1/14 1992

Relinquished by:
Signature:
Printed name:
Company:
Date:

Relinquished by:
Signature:
Printed name:
Company:
Date:

Method of shipment: [illegible]

Received by:
Signature: James Percival
Printed name: James Percival
Company: Concord Courier
Time:

Received by:
Signature:
Printed name:
Company:
Time:

Received by: Lisa Gowk
Signature:
Printed name:
Company:
Time: 8:15 1/15

Laboratory comments and Log No.:

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

GTEL
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LABORATORIES, INC.

Northwest Region
4080 Pike Lane
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(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-307

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		T1-5-4	T1-10-5	T2-5-6	T2-5-5
Date Sampled		01/14/92	01/14/92	01/14/92	01/14/92
Date Extracted		01/15/92	01/15/92	01/15/92	01/15/92
Date Analyzed		01/16/92	01/16/92	01/16/92	01/16/92
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	<0.005	0.15	<0.005
Toluene	0.005	<0.005	<0.005	1.2	<0.005
Ethylbenzene	0.005	<0.005	<0.005	0.45	<0.005
Xylene, total	0.015	<0.015	<0.015	2.5	<0.015
BTEX, total	--	--	--	4	--
Gasoline	1	<1	<1	35	<1
Detection Limit Multiplier		1	1	1	1
Percent solids		74	69	83	73

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-307

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05	06		
Client Identification		T2-10-7	T2-13-15		
Date Sampled		01/14/92	01/14/92		
Date Extracted		01/15/92	01/15/92		
Date Analyzed		01/16/92	01/16/92		
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	0.006		
Toluene	0.005	<0.005	0.008		
Ethylbenzene	0.005	<0.005	<0.005		
Xylene, total	0.015	0.02	<0.015		
BTEX, total	--	0.02	0.014		
Gasoline	1	5	<1		
Detection Limit Multiplier		1	1		
Percent solids		70	82		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-308

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-308

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel in Soil

Modified EPA Methods 3550/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	04
Client Identification		T1-5-4	T1-10-5	T2-5-6	T2-5-5
Date Sampled		01/14/92	01/14/92	01/14/92	01/14/92
Date Extracted		01/15/92	01/15/92	01/15/92	01/15/92
Date Analyzed		01/15/92	01/15/92	01/15/92	01/15/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	<10	<10	<10
Quantitation Limit Multiplier		1	1	1	1
Percent solids		74	69	83	73

GTEL Sample Number		05	06		
Client Identification		T2-10-7	T2-13-15		
Date Sampled		01/14/92	01/14/92		
Date Extracted		01/15/92	01/15/92		
Date Analyzed		01/15/92	01/15/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	<10		
Quantitation Limit Multiplier		1	1		
Percent solids		70	82		

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Client Number: GMC01OPK01
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Project ID: Not Given
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January 17, 1992

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-309

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		01	02	03	04
Client Identification		T1-5-4	T1-10-5	T2-5-6	T2-5-5
Date Sampled		01/14/92	01/14/92	01/14/92	01/14/92
Date Prepared		01/15/92	01/15/92	01/15/92	01/15/92
Date Analyzed		01/15/92	01/15/92	01/15/92	01/15/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	10	56	180	33
Quantitation Limit Multiplier		1	1	1	1
Percent solids		74	69	83	73

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

Table 1 (Continued)

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		05	06		
Client Identification		T2-10-7	T2-13-15		
Date Sampled		01/14/92	01/14/92		
Date Prepared		01/15/92	01/15/92		
Date Analyzed		01/15/92	01/15/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	<5	40		
Quantitation Limit Multiplier		1	1		
Percent solids		70	82		

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-310

January 17, 1992

Elizabeth Wells
Geomatrix Corporation
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-311

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*	02	03*	
Client Identification		APL-2	APL-5	APL-6	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/15/92	01/15/92	01/15/92	
Date Analyzed		01/15/92	01/15/92	01/15/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<520	<11	<590	
Bromomethane	10	<520	<11	<590	
Vinyl chloride	10	<520	<11	<590	
Chloroethane	10	<520	<11	<590	
Methylene chloride	5	<260	<5	<300	
Acetone	100	<5200	<110	<5900	
Carbon disulfide	5	<260	<5	<300	
1,1-Dichloroethene	5	<260	<5	<300	
1,1-Dichloroethane	5	<260	<5	<300	
1,2-Dichloroethene, total	5	1100	<5	<300	
Chloroform	5	<260	<5	<300	
1,2-Dichloroethane	5	<260	<5	<300	
2-Butanone	100	<5200	<110	<5900	
1,1,1-Trichloroethane	5	<260	<5	<300	
Carbon tetrachloride	5	<260	<5	<300	
Vinyl acetate	50	<2600	<53	<3000	
Bromodichloromethane	5	<260	<5	<300	
1,2-Dichloropropane	5	<260	<5	<300	
cis-1,3-Dichloropropene	5	<260	<5	<300	
Trichloroethene	5	<260	<5	<300	
Dibromochloromethane	5	<260	<5	<300	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Samples diluted due to non target matrix interference.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*	02	03*	
Client Identification		APL-2	APL-5	APL-6	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/15/92	01/15/92	01/15/92	
Date Analyzed		01/15/92	01/15/92	01/15/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<260	<5	<300	
Benzene	5	470	<5	<300	
trans-1,3-Dichloropropene	5	<260	<5	<300	
2-Chloroethylvinyl ether	10	<520	<11	<590	
Bromoform	5	<260	<5	<300	
4-Methyl-2-pentanone	50	<2600	<53	<3000	
2-Hexanone	50	<2600	<53	<3000	
Tetrachloroethene	5	<200	<5	<300	
1,1,2,2-Tetrachloroethane	5	<260	<5	<300	
Toluene	5	11000	<5	760	
Chlorobenzene	5	<260	<5	<300	
Ethylbenzene	5	9800	<5	870	
Styrene	5	<260	<5	<300	
1,2-Dichlorobenzene	5	<260	<5	<300	
1,3-Dichlorobenzene	5	<260	<5	<300	
1,4-Dichlorobenzene	5	<260	<5	<300	
Xylene, total	5	39000	<5	4300	
Trichlorofluoromethane	5	<260	<5	<300	
Quantitation Limit Multiplier		52	1.05	59	
Percent solids		96	95	85	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Samples diluted due to non target matrix interference.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-312

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-312

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Gasoline in Soil

Modified EPA Method 8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	04
Client Identification		APL-1	APL-2	APL-3	APL-4
Date Sampled		01/15/92	01/15/92	01/15/92	01/15/92
Date Extracted		01/16/92	01/16/92	01/17/92	01/16/92
Date Analyzed		01/16/92	01/16/92	01/17/92	01/16/92
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<1	500	290	170
Detection Limit Multiplier		1	1	1	1
Percent solids		90	97	95	93

GTEL Sample Number		05	06	07	
Client Identification		APL-5	APL-6	APL-7	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/16/92	01/16/92	01/16/92	
Date Analyzed		01/16/92	01/16/92	01/16/92	
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<1	140	210	
Detection Limit Multiplier		1	1	1	
Percent solids		78	95	86	

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Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-313

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel in Soil

Modified EPA Methods 3550/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	04
Client Identification		APL-1	APL-2	APL-3	APL-4
Date Sampled		01/15/92	01/15/92	01/15/92	01/15/92
Date Extracted		01/16/92	01/16/92	01/16/92	01/16/92
Date Analyzed		01/16/92	01/16/92	01/16/92	01/16/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	2100	3200	1800
Quantitation Limit Multiplier		1	1	1	1
Percent solids		90	97	95	93

GTEL Sample Number		05	06	07	
Client Identification		APL-5	APL-6	APL-7	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/16/92	01/16/92	01/16/92	
Date Analyzed		01/16/92	01/16/92	01/16/92	
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	1000	11000	
Quantitation Limit Multiplier		1	1	1	
Percent solids		78	95	86	

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-314

January 17, 1992

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Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics in Soil

EPA Methods 5030 and 8020[a]

GTEL Sample Number		01	02	03	04
Client Identification		APL-1	APL-3	APL-4	APL-7
Date Sampled		01/15/92	01/15/92	01/15/92	01/15/92
Date Extracted		01/16/92	01/16/92	01/16/92	01/16/92
Date Analyzed		01/16/92	01/16/92	01/16/92	01/17/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	0.59	0.13	0.17
Toluene	0.005	0.005	2	0.65	1.62
Ethylbenzene	0.005	<0.005	2.3	1.5	4.7
Xylene, total	0.015	<0.015	15	8	20.4
BTEX, total	--	0.005	20	10	27
Quantitation Limit Multiplier		1	1	1	1
Percent solids		90	95	93	86

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-315

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-315

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		01	02		
Client Identification		APL-5	APL-6		
Date Sampled		01/15/92	01/15/92		
Date Prepared		01/15/92	01/15/92		
Date Analyzed		01/16/92	01/16/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	11	1200		
Quantitation Limit Multiplier		1	1		
Percent solids		95	85		

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

GTEL
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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-316

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-316

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01	02		
				Sample Identification	APL-5	APL-6		
				Date Sampled	01/15/92	01/15/92		
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/16/92	<1	<1		
Chromium	mg/Kg	1	EPA 6010	01/16/92	48	9		
Lead, total	mg/Kg	5	EPA 6010	01/16/92	49	<5		
Nickel	mg/Kg	2.5	EPA 6010	01/16/92	51	12		
Zinc	mg/Kg	2.5	EPA 6010	01/16/92	81	22		

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-212

January 15, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	
Client Identification		SW01-4	SDA1-4	SDA5-8	
Date Sampled		01/09/92	01/09/92	01/09/92	
Date Extracted		01/13/92	01/13/92	01/13/92	
Date Analyzed		01/11/92	01/11/92	01/11/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10	<10	<56	
Bromomethane	10	<10	<10	<56	
Vinyl chloride	10	<10	<10	<56	
Chloroethane	10	<10	<10	<56	
Methylene chloride	5	100	<6	75	
Acetone	100	172	<100	<560	
Carbon disulfide	5	<6	<6	<28	
1,1-Dichloroethene	5	<6	<6	<28	
1,1-Dichloroethane	5	22	<6	<28	
1,2-Dichloroethene, total	5	58	21	35	
Chloroform	5	<6	<6	<28	
1,2-Dichloroethane	5	<6	<6	<28	
2-Butanone	100	<100	<100	<560	
1,1,1-Trichloroethane	5	65	<6	100	
Carbon tetrachloride	5	<6	<6	<28	
Vinyl acetate	50	<60	<60	<280	
Bromodichloromethane	5	<6	<6	<28	
1,2-Dichloropropane	5	<6	<6	<28	
cis-1,3-Dichloropropene	5	<6	<6	<28	
Trichloroethene	5	11000	1300	6700	
Dibromochloromethane	5	<6	<6	<28	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	
Client Identification		SW01-4	SDA1-4	SDA5-8	
Date Sampled		01/09/92	01/09/92	01/09/92	
Date Extracted		01/13/92	01/13/92	01/13/92	
Date Analyzed		01/11/92	01/11/92	01/11/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<6	<6	<28	
Benzene	5	1600	70	750	
trans-1,3-Dichloropropene	5	<6	<6	<28	
2-Chloroethylvinyl ether	10	<10	<10	<56	
Bromoform	5	<6	<6	<28	
4-Methyl-2-pentanone	50	<60	<60	<280	
2-Hexanone	50	<60	<60	<280	
Tetrachloroethene	5	5900	110	7100	
1,1,2,2-Tetrachloroethane	5	<6	<6	<28	
Toluene	5	11000	890	8000	
Chlorobenzene	5	<6	<6	<28	
Ethylbenzene	5	4200	510	830	
Styrene	5	<6	<6	<28	
1,2-Dichlorobenzene	5	<6	<6	<28	
1,3-Dichlorobenzene	5	<6	<6	<28	
1,4-Dichlorobenzene	5	<6	<6	<28	
Xylene, total	5	25000	4500	32000	
Trichlorofluoromethane	5	61	<6	<28	
Quantitation Limit Multiplier		1.26	1.11	5.55	
Percent solids		79	90	91	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

C20127

Chain-of-Custody Record

No 0607

Date: 1-9-92

Page | of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

ANALYSES

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	TOTAL Cd, Cr, Pb, Zn, Ni	TOG	TITLE 24 METALS	FISH BIOASSAY								Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/9	1030	SWO-1 → SWO-4	X		X	X				X											X	S		4
	1300	SDA-1 → SDA-4	X	X	X	X					X										X	S		4
	1330	SDA-5 → SDA-8	X	X	X	X					X										X	S		4
↓	1600	SDA-FB											X								X	S		1

D-2

REMARKS

Additional comments

Homogenize samples prior to analysis

Please hold samples after analysis for possible additional analysis

Turnaround time: 5-DAY TAT

Results to: ELIZABETH WELLS

Total No. of containers: 13

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment:
Stacy Anich	1/9/92					PICK-UP
Signature: STACY ANICH		Signature:		Signature:		Laboratory comments and Log No.:
Printed name: Geomatrix		Printed name:		Printed name:		
Company:		Company:		Company:		
Received by:	**Time:**	**Received by:**	**Time:**	**Received by:**	**Time:**	
Signature: James Percival		Signature: J. DAVIS		Signature:		
Printed name: James Percival		Printed name: CTEL		Printed name:		
Company: Concord Courier		Company: 1-10-92 8:55		Company:		

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

Table 1

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil
EPA Method 8270[a]

GTEL Sample Number		01	02		
Client Identification		SDA1-4	SDA5-8		
Date Sampled		01/09/92	01/09/92		
Date Extracted		01/13/92	01/13/92		
Date Analyzed		01/14/92	01/14/92		
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Phenol	300	<300	<300		
bis(2-Chloroethyl)ether	300	<300	<300		
2-Chlorophenol	300	<300	<300		
1,3-Dichlorobenzene	300	<300	<300		
1,4-Dichlorobenzene	300	<300	<300		
Benzyl alcohol	300	<300	<300		
1,2-Dichlorobenzene	300	<300	<300		
2-Methylphenol	300	<300	<300		
bis-(2-Chloroisopropyl)ether	300	<300	<300		
4-Methylphenol	300	<300	<300		
N-Nitroso-di-propylamine	300	<300	<300		
Hexachloroethane	300	<300	<300		
Nitrobenzene	300	<300	<300		
Isophorone	300	<300	<300		
2-Nitrophenol	300	<300	<300		
2,4-Dimethylphenol	300	<300	<300		
Benzoic acid	1500	<1500	<1500		
bis(2-Chloroethoxy)methane	300	<300	<300		
2,4-Dichlorophenol	300	<300	<300		
1,2,4-Trichlorobenzene	300	<300	<300		
Naphthalene	300	1800	2900		
4-Chloroaniline	300	<300	<300		
Hexachlorobutadiene	300	<300	<300		
4-Chloro-3-methylphenol	300	<300	<300		
2-Methylnaphthalene	300	5400	4100		
Hexachlorocyclopentadiene	300	<300	<300		
2,4,6-Trichlorophenol	300	<300	<300		
2,4,5-Trichlorophenol	1500	<1500	<1500		
2-Chloronaphthalene	300	<300	<300		
2-Nitroaniline	1500	<1500	<1500		
Dimethylphthalate	300	<300	<300		
Acenaphthylene	300	<300	<300		
3-Nitroaniline	1500	<1500	<1500		
Acenaphthene	300	<300	<300		
2,4-Dinitrophenol	1500	<1500	<1500		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil
EPA Method 8270[a]

GTEL Sample Number		01	02		
Client Identification		SDA1-4	SDA5-8		
Date Sampled		01/09/92	01/09/92		
Date Extracted		01/13/92	01/13/92		
Date Analyzed		01/14/92	01/14/92		
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
4-Nitrophenol	1500	<1500	<1500		
Dibenzofuran	300	430	<300		
2,4-Dinitrotoluene	300	<300	<300		
2,6-Dinitrotoluene	300	<300	<300		
Diethylphthalate	300	<300	<300		
4-Chlorophenyl-phenylether	300	<300	<300		
Fluorene	300	640	<300		
4-Nitroaniline	1500	<1500	<1500		
4,6-Dinitro-2-methylphenol	1500	<1500	<1500		
N-Nitrosodiphenylamine	300	<300	<300		
4-Bromophenyl-phenylether	300	<300	<300		
Hexachlorobenzene	300	<300	<300		
Pentachlorophenol	1500	<1500	<1500		
Phenanthrene	300	1800	1200		
Anthracene	300	<300	<300		
Di-n-butylphthalate	300	<300	<300		
Fluoranthene	300	700	340		
Pyrene	300	1300	990		
Butylbenzylphthalate	300	<300	<300		
3,3'-Dichlorobenzidine	600	<600	<600		
Benzo(a)anthracene	300	<300	<300		
bis(2-Ethylhexyl)phthalate	300	650	990		
Chrysene	300	<300	<300		
Di-n-octylphthalate	300	<300	<300		
Benzo(b)fluoranthene	300	<300	<300		
Benzo(k)fluoranthene	300	<300	<300		
Benzidine	600	<600	<600		
Benzo(a)pyrene	300	<300	<300		
Indeno(1,2,3-cd)pyrene	300	830	<300		
Dibenz(a,h)anthracene	300	<300	<300		
Benzo(g,h,i)perylene	300	890	660		
Quantitation Limit Multiplier		1	1		
Percent solids		90	91		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-214

January 18, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek/RC
Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-214

Table 1

ANALYTICAL RESULTS

TPH as Gasoline and Diesel in Soil

Method: GC-FID[a]

a. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	
Client Identification		SW01-4	SDA1-4	SDA5-8	
Date Sampled		01/09/92	01/09/92	01/09/92	
Date Extracted		01/13/92	01/13/92	01/13/92	
Date Analyzed		01/13/92	01/13/92	01/13/92	
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	180	<10	270	
Diesel	10	650	1100	490	
Quantitation Limit Multiplier		1	1	1	
Percent solids		85	90	91	

GTEL
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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-215

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-215

Table 1

ANALYTICAL RESULTS

Total Oil and Grease in Soil by Infrared Spectrometry

EPA 3550[1] (Mod.)/EPA 413.2[2](SM 5520 C[3])

GTEL Sample Number		01			
Client Identification		SWO1-4			
Date Sampled		01/09/92			
Date Prepared		01/14/92			
Date Analyzed		01/14/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total oil and grease	5	2100			
Quantitation Limit Multiplier		1			

1. Test Methods for Evaluating Solid Waste, SW-846.
2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Revised March 1983, U.S. Environmental Protection Agency.
3. Standard Methods for the Examination of Water and Wastewater, 17th ed., 1898, American Public Health Association.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-216

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Total CAM Metals

GTEL Sample Number			01	02		
Client Identification			SDA1-4	SDA5-8		
Date Sampled			01/09/92	01/09/92		
Date Prepared			01/14/92	01/14/92		
Date Analyzed (Method 6010)			01/14/92	01/14/92		
Date Analyzed (Method 7471)			01/17/92	01/17/92		
Analyte	Method[a]	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Antimony	EPA 6010	5	<5	<5		
Arsenic	EPA 6010	5	<5	<5		
Barium	EPA 6010	1	55	46		
Beryllium	EPA 6010	1	<1	<1		
Cadmium	EPA 6010	1	<1	<1		
Chromium, total	EPA 6010	1	21	24		
Cobalt	EPA 6010	1	5	5		
Copper	EPA 6010	2	13	14		
Lead	EPA 6010	5	9	19		
Mercury	EPA 7471	0.05	<0.05	0.07		
Molybdenum	EPA 6010	1	<1	<1		
Nickel	EPA 6010	2.5	25	28		
Selenium	EPA 6010	5	<5	<5		
Silver	EPA 6010	2.5	<2.5	<2.5		
Thallium	EPA 6010	10	<10	<10		
Vanadium	EPA 6010	2	20	19		
Zinc	EPA 6010	2	41	190		
Quantitation Limit Multiplier			1	1		
Percent Solids			87	83		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

GTEL
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LABORATORIES, INC.

Northwest Region
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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-262

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-262

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01			
				Sample Identification	SWO1-4			
				Date Sampled	01/09/92			
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/14/92	<1			
Chromium	mg/Kg	1	EPA 6010	01/14/92	27			
Lead, total	mg/Kg	5	EPA 6010	01/14/92	12			
Nickel	mg/Kg	2.5	EPA 6010	01/14/92	28			
Zinc	mg/Kg	2.5	EPA 6010	01/14/92	93			
Percent solids					87			

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL
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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-255

January 15, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Extracted		01/13/92			
Date Analyzed		01/11/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10			
Bromomethane	10	<10			
Vinyl chloride	10	<10			
Chloroethane	10	<10			
Methylene chloride	5	220			
Acetone	100	250			
Carbon disulfide	5	<6			
1,1-Dichloroethene	5	<6			
1,1-Dichloroethane	5	43			
1,2-Dichloroethene, total	5	78			
Chloroform	5	<6			
1,2-Dichloroethane	5	<6			
2-Butanone	100	<100			
1,1,1-Trichloroethane	5	120			
Carbon tetrachloride	5	<6			
Vinyl acetate	50	<60			
Bromodichloromethane	5	<6			
1,2-Dichloropropane	5	<6			
cis-1,3-Dichloropropene	5	<6			
Trichloroethene	5	16000			
Dibromochloromethane	5	<6			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Extracted		01/13/92			
Date Analyzed		01/11/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<6			
Benzene	5	2100			
trans-1,3-Dichloropropene	5	<6			
2-Chloroethylvinyl ether	10	<10			
Bromoform	5	<6			
4-Methyl-2-pentanone	50	<60			
2-Hexanone	50	<60			
Tetrachloroethene	5	9400			
1,1,2,2-Tetrachloroethane	5	<6			
Toluene	5	13000			
Chlorobenzene	5	<6			
Ethylbenzene	5	4200			
Styrene	5	<6			
1,2-Dichlorobenzene	5	<6			
1,3-Dichlorobenzene	5	<6			
1,4-Dichlorobenzene	5	<6			
Xylene, total	5	26000			
Trichlorofluoromethane	5	120			
Quantitation Limit Multiplier		1.17			
Percent solids		85			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

C2026

Chain-of-Custody Record

No 0608

Date: 1-10-92

Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	TOG	TOTAL Cd, Cr, Pb, Zn, Ni	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/10	930	SWD-5 → SWD-8	(2)		X		X	X		X	X	X	S		4

ANALYSES

REMARKS

Additional comments

Please Homogenize samples prior to analysis

Please hold samples after analysis for possible additional analysis.

Please return coolers to Geomatrix

Turnaround time: 5-DAY TAT

Results to: ELIZABETH WELLS

Total No. of containers: 4

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment:
Stacy Anich	1/10	Susan	1/10			Courier
Signature: STACY ANICH		Signature: Susan Howse		Signature:		Laboratory comments and Log No.:
Printed name: Geomatrix	1992	Printed name: Susan	11/45	Printed name:		
Company:		Company: Concord Courier		Company:		
Received by:	**Time:**	**Received by:**	**Time:**	**Received by:**	**Time:**	
Susan		Jamie Davis				
Signature: Susan Howse.	1015	Signature: J. DAVIS		Signature		
Printed name: Susan		Printed name: 1-10-92		Printed name:		
Company: Concord Courier.		Company: 11:45		Company:		

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(415) 434-9400

GTEL
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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-256

January 15, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

TPH as Gasoline and Diesel in Soil

Method: GC-FID[a]

a. Results reported on a wet weight basis.

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Extracted		01/13/92			
Date Analyzed		01/13/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	210			
Diesel	10	570			
Quantitation Limit Multiplier		1			
Percent solids		85			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-257

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-257

Table 1

ANALYTICAL RESULTS

Total Oil and Grease in Soil by Infrared Spectrometry

EPA 3550[1] (Mod.)/EPA 413.2[2](SM 5520 C[3])

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Prepared		01/14/92			
Date Analyzed		01/14/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total oil and grease	5	2400			
Quantitation Limit Multiplier		1			

1. Test Methods for Evaluating Solid Waste, SW-846.
2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Revised March 1983, U.S. Environmental Protection Agency.
3. Standard Methods for the Examination of Water and Wastewater, 17th ed., 1898, American Public Health Association.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-258

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-258

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01			
				Sample Identification	SWO5-8			
				Date Sampled	01/10/92			
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/14/92	<1			
Chromium	mg/Kg	1	EPA 6010	01/14/92	27			
Lead, total	mg/Kg	430	EPA 6010	01/14/92	17			
Nickel	mg/Kg	2.5	EPA 6010	01/14/92	32			
Zinc	mg/Kg	2.5	EPA 6010	01/14/92	110			
Percent solids					86			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-317

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/15/92			
Date Analyzed		01/15/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<540			
Bromomethane	10	<540			
Vinyl chloride	10	<540			
Chloroethane	10	<540			
Methylene chloride	5	<270			
Acetone	100	<5400			
Carbon disulfide	5	<270			
1,1-Dichloroethene	5	<270			
1,1-Dichloroethane	5	<270			
1,2-Dichloroethene, total	5	<270			
Chloroform	5	<270			
1,2-Dichloroethane	5	<270			
2-Butanone	100	<5400			
1,1,1-Trichloroethane	5	<270			
Carbon tetrachloride	5	<270			
Vinyl acetate	50	<2700			
Bromodichloromethane	5	<270			
1,2-Dichloropropane	5	<270			
cis-1,3-Dichloropropene	5	<270			
Trichloroethene	5	1800			
Dibromochloromethane	5	<270			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Sample diluted due to non target matrix interference.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/15/92			
Date Analyzed		01/15/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<270			
Benzene	5	<270			
trans-1,3-Dichloropropene	5	<270			
2-Chloroethylvinyl ether	10	<540			
Bromoform	5	<270			
4-Methyl-2-pentanone	50	<2700			
2-Hexanone	50	<2700			
Tetrachloroethene	5	1000			
1,1,2,2-Tetrachloroethane	5	<270			
Toluene	5	2500			
Chlorobenzene	5	<270			
Ethylbenzene	5	1700			
Styrene	5	<270			
1,2-Dichlorobenzene	5	<270			
1,3-Dichlorobenzene	5	<270			
1,4-Dichlorobenzene	5	<270			
Xylene, total	5	10000			
Trichlorofluoromethane	5	<270			
Quantitation Limit Multiplier		54			
Percent solids		92			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Sample diluted due to non target matrix interference.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-318

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270[a]

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/17/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Phenol	300	<300			
bis(2-Chloroethyl)ether	300	<300			
2-Chlorophenol	300	<300			
1,3-Dichlorobenzene	300	<300			
1,4-Dichlorobenzene	300	<300			
Benzyl alcohol	300	<300			
1,2-Dichlorobenzene	300	<300			
2-Methylphenol	300	<300			
bis-(2-Chloroisopropyl)ether	300	<300			
4-Methylphenol	300	<300			
N-Nitroso-di-propylamine	300	<300			
Hexachloroethane	300	<300			
Nitrobenzene	300	<300			
Isophorone	300	<300			
2-Nitrophenol	300	<300			
2,4-Dimethylphenol	300	<300			
Benzoic acid	1500	<1500			
bis(2-Chloroethoxy)methane	300	<300			
2,4-Dichlorophenol	300	<300			
1,2,4-Trichlorobenzene	300	<300			
Naphthalene	300	1100			
4-Chloroaniline	300	<300			
Hexachlorobutadiene	300	<300			
4-Chloro-3-methylphenol	300	<300			
2-Methylnaphthalene	300	1700			
Hexachlorocyclopentadiene	300	<300			
2,4,6-Trichlorophenol	300	<300			
2,4,5-Trichlorophenol	1500	<1500			
2-Chloronaphthalene	300	<300			
2-Nitroaniline	1500	<1500			
Dimethylphthalate	300	<300			
Acenaphthylene	300	<300			
3-Nitroaniline	1500	<1500			
Acenaphthene	300	<300			
2,4-Dinitrophenol	1500	<1500			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270[a]

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/17/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
4-Nitrophenol	1500	<1500			
Dibenzofuran	300	<300			
2,4-Dinitrotoluene	300	<300			
2,6-Dinitrotoluene	300	<300			
Diethylphthalate	300	<300			
4-Chlorophenyl-phenylether	300	<300			
Fluorene	300	<300			
4-Nitroaniline	1500	<1500			
4,6-Dinitro-2-methylphenol	1500	<1500			
N-Nitrosodiphenylamine	300	<300			
4-Bromophenyl-phenylether	300	<300			
Hexachlorobenzene	300	<300			
Pentachlorophenol	1500	<1500			
Phenanthrene	300	1200			
Anthracene	300	<300			
Di-n-butylphthalate	300	<300			
Fluoranthene	300	1300			
Pyrene	300	810			
Butylbenzylphthalate	300	<300			
3,3'-Dichlorobenzidine	600	<600			
Benzo(a)anthracene	300	<300			
bis(2-Ethylhexyl)phthalate	300	<300			
Chrysene	300	<300			
Di-n-octylphthalate	300	<300			
Benzo(b)fluoranthene	300	<300			
Benzo(k)fluoranthene	300	550			
Benzidine	600	<600			
Benzo(a)pyrene	300	360			
Indeno(1,2,3-cd)pyrene	300	760			
Dibenz(a,h)anthracene	300	<300			
Benzo(g,h,i)perylene	300	920			
Quantitation Limit Multiplier		1			
Percent solids		89			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-319

January 18, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Ernma P. Popek

Ernma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-319

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Gasoline in Soil

Modified EPA Method 8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/17/92			
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	43			
Detection Limit Multiplier		1			
Percent solids		89			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-320

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-320

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel in Soil

Modified EPA Methods 3550/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/16/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	300			
Quantitation Limit Multiplier		1			
Percent solids		89			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-321

January 20, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-321

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Prepared		01/17/92			
Date Analyzed		01/20/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	1000			
Quantitation Limit Multiplier		1			
Percent solids		92			

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Client Number: GMC01OPK01
Consultant Project Number 2026
Project ID: Not Given
Work Order Number: C2-01-322

January 18, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek /MGM

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number 2026
Project ID: Not Given
Work Order Number: C2-01-322

Table 1

ANALYTICAL RESULTS

Total CAM Metals

GTEL Sample Number			01			
Client Identification			SWO9-12			
Date Sampled			01/15/92			
Date Prepared			01/16/92			
Date Analyzed (Method 6010)			01/16/92			
Date Analyzed (Method 7471)			01/17/92			
Analyte	Method[a]	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Antimony	EPA 6010	5	<5			
Arsenic	EPA 6010	5	7			
Barium	EPA 6010	1	87			
Beryllium	EPA 6010	1	<1			
Cadmium	EPA 6010	1	<1			
Chromium, total	EPA 6010	1	26			
Cobalt	EPA 6010	1	6			
Copper	EPA 6010	2	16			
Lead	EPA 6010	5	5			
Mercury	EPA 7471	0.05	0.09			
Molybdenum	EPA 6010	1	<1			
Nickel	EPA 6010	2.5	29			
Selenium	EPA 6010	5	<5			
Silver	EPA 6010	2.5	<2.5			
Thallium	EPA 6010	10	18			
Vanadium	EPA 6010	2	24			
Zinc	EPA 6010	2	42			
Quantitation Limit Multiplier			1			
Percent Solids			86			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

K-2

C201 TAT

Chain-of-Custody Record

No 0610

Date: 1-15-92

Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	5520 F O&G	TOTAL PB, NI, CR, CU, ZN	TITLE 22 METALS	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1-15	845	APL-1					X	X	X				X	S		1
	915	APL-2			X		X	X					X	S		1
	950	APL-3					X	X	X				X	S		1
	1000	APL-4					X	X	X				X	S		1
	1015	APL-5			X		X	X		X	X		X	S		1
	1045	APL-6			X		X	X		X	X		X	S		1
	1050	APL-7					X	X	X				X	S		1
	1110	SWD-9 → SWD-12 01			X	X	X	X		X		X	X	S		4

ANALYSES

REMARKS

Additional comments

Please hold samples after analysis

Total Oil + Grease should be done by method 5520 (with Silica Gel)

48-hr TAT FOR APL-1 THROUGH APL-7

Please composite & homogenize prior to analysis. 5 DAY TAT

Turnaround time: SEE REMARKS

Results to: ELIZABETH WELLS

Total No. of containers: 11

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment:
Stacy Anich	1-15	Susan House				Courier
Signature: STACY ANICH	1992	Signature: Susan House		Signature:		Laboratory comments and Log No.:
Printed name: Geomatrix		Printed name: Susan House		Printed name:		
Company:		Company: Concord Courier		Company:		
Received by: Susan House	Time:	Received by:	Time:	Received by:	Time:	
Signature: Susan House	1830	Signature:		Signature: D. Sawyer 1/15	1:15	
Printed name: Susan House		Printed name:		Printed name:		
Company: Concord Courier		Company:		Company:		

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

ytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Mailed: FEB 19 1992

Elizabeth Wells
rix Consultants
ine Street, 10th Floor
Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
PL2-1	03 FEB 92
PL2-2	03 FEB 92
SDA2-1, 2-4	03 FEB 92

		02-021-1	02-021-2	02-021-3
Metals by ICAP				
		---	---	<1
g		---	---	71
mg/kg		---	---	0.3
g		---	---	5
		---	---	6
g/kg		---	---	13
		---	---	9
mg/kg		---	---	<4
kg		---	---	14
		---	---	8
/kg		---	---	<4
/kg		---	---	<4
g/kg		---	---	19
		---	---	29
		---	---	0.8
kg		---	---	0.05
kg		---	---	<0.4
igestion, Date		---	---	02.04.92
Digestion, Date		---	---	02.04.92

t
4608

510/428-2300
Fax: 510/547-3643

B C Analytical

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
B/N,A Ext. Priority Pollutants			
Date Analyzed	---	---	02.11.92
Date Extracted	---	---	02.05.92
Dilution Factor, Times	---	---	25
1,2,4-Trichlorobenzene, mg/kg	---	---	<5
1,2-Dichlorobenzene, mg/kg	---	---	<5
1,2-Diphenylhydrazine, mg/kg	---	---	<5
1,3-Dichlorobenzene, mg/kg	---	---	<3
1,4-Dichlorobenzene, mg/kg	---	---	<3
2,4,5-Trichlorophenol, mg/kg	---	---	<5
2,4,6-Trichlorophenol, mg/kg	---	---	<3
2,4-Dichlorophenol, mg/kg	---	---	<3
2,4-Dimethylphenol, mg/kg	---	---	<5
2,4-Dinitrophenol, mg/kg	---	---	<8
2,4-Dinitrotoluene, mg/kg	---	---	<8
2,6-Dinitrotoluene, mg/kg	---	---	<3
2-Chloronaphthalene, mg/kg	---	---	<3
2-Chlorophenol, mg/kg	---	---	<5
2-Methyl-4,6-dinitrophenol, mg/kg	---	---	<3
2-Methylnaphthalene, mg/kg	---	---	6
2-Methylphenol (o-Cresol), mg/kg	---	---	<3
2-Nitroaniline, mg/kg	---	---	<8
2-Nitrophenol, mg/kg	---	---	<3
3,3'-Dichlorobenzidine, mg/kg	---	---	<13
3-Nitroaniline, mg/kg	---	---	<8
4-Bromophenylphenylether, mg/kg	---	---	<5

1255 Powell Street
Emeryville, CA 94608

510/428-2300
Fax: 510/547-3643

BCA *B C Analytical*

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
4-Chloro-3-methylphenol, mg/kg	---	---	<5
4-Chloroaniline, mg/kg	---	---	<8
4-Chlorophenylphenylether, mg/kg	---	---	<5
4-Methylphenol (p-Cresol), mg/kg	---	---	<5
4-Nitroaniline, mg/kg	---	---	<8
4-Nitrophenol, mg/kg	---	---	<30
Acenaphthene, mg/kg	---	---	<5
Acenaphthylene, mg/kg	---	---	<3
Aniline, mg/kg	---	---	<10
Anthracene, mg/kg	---	---	<5
Benzidine, mg/kg	---	---	<50
Benzo(a)anthracene, mg/kg	---	---	<3
Benzo(a)pyrene, mg/kg	---	---	<3
Benzo(b)fluoranthene, mg/kg	---	---	<8
Benzo(g,h,i)perylene, mg/kg	---	---	<3
Benzo(k)fluoranthene, mg/kg	---	---	<8
Benzyl alcohol, mg/kg	---	---	<5
Benzoic acid, mg/kg	---	---	<8
Butylbenzylphthalate, mg/kg	---	---	<3
Chrysene, mg/kg	---	---	<3
Di-n-octylphthalate, mg/kg	---	---	<5
Dibenzo(a,h)anthracene, mg/kg	---	---	<3
Dibenzofuran, mg/kg	---	---	<3
Dibutylphthalate, mg/kg	---	---	<3
Diethylphthalate, mg/kg	---	---	<3
Dimethylphthalate, mg/kg	---	---	<3

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BCA *B C Analytical*

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Fluoranthene, mg/kg	---	---	<3
Fluorene, mg/kg	---	---	<3
Hexachlorobenzene, mg/kg	---	---	<5
Hexachlorobutadiene, mg/kg	---	---	<5
Hexachlorocyclopentadiene, mg/kg	---	---	<20
Hexachloroethane, mg/kg	---	---	<3
Indeno(1,2,3-c,d)pyrene, mg/kg	---	---	<5
Isophorone, mg/kg	---	---	<3
N-Nitrosodimethylamine, mg/kg	---	---	<8
N-Nitrosodiphenylamine, mg/kg	---	---	<8
N-Nitrosodi-n-propylamine, mg/kg	---	---	<3
Nitrobenzene, mg/kg	---	---	<5
Naphthalene, mg/kg	---	---	4
Phenanthrene, mg/kg	---	---	<5
Phenol, mg/kg	---	---	<5
Pentachlorophenol, mg/kg	---	---	<8
Pyrene, mg/kg	---	---	<3
Bis(2-chloroethoxy)methane, mg/kg	---	---	<3
Bis(2-chloroethyl)ether, mg/kg	---	---	<3
Bis(2-chloroisopropyl)ether, mg/kg	---	---	<3
Bis(2-ethylhexyl)phthalate, mg/kg	---	---	<5
Other B/N,A Ext. Priority Pollutants	---	---	---
Semi-Quantified Results **			
C7-C35 Hydrocarbon Matrix, mg/kg	---	---	10000

1255 Powell Street
Emeryville, CA 94608

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BCA *B C Analytical*

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.			
Diesel Hydrocarbons 3550/8015			
Date Analyzed	02.07.92	02.07.92	02.04.92
Date Extracted	02.04.92	02.04.92	02.07.92
Dilution Factor, Times	1000	1000	500
C10 to C22 (as diesel), mg/kg	5000	5000	2600
Approximate Character, .	DIESEL	DIESEL	DIESEL
Aromatic Hydrocarbons			
Date Analyzed	02.07.92	02.07.92	---
Dilution Factor, Times	1000	1000	---
Benzene, mg/kg	<0.5	0.7	---
Ethylbenzene, mg/kg	3.2	11	---
Toluene, mg/kg	3.3	12	---
Total Xylene Isomers, mg/kg	21	61	---
TPH - Volatile Hydrocarbons			
Date Analyzed	---	---	02.07.92
Dilution Factor, Times	---	---	1000
C6 to C14 (as gasoline), mg/kg	---	---	610
Approximate Character, .	---	---	UNKNOWN

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Volatile Organics (EPA 8240)			
Date Analyzed	---	---	02.10.92
Time Analyzed	---	---	21:50
Analyst ID, No.	---	---	7835
Detection Limit, mg/kg	---	---	0.8
Dilution Factor, Times	---	---	4
Instrument ID, No.	---	---	517-04
1,1,1-Trichloroethane, mg/kg	---	---	<0.8
1,1,2,2-Tetrachloroethane, mg/kg	---	---	<0.8
1,1,2-Trichloroethane, mg/kg	---	---	<0.8
1,1-Dichloroethane, mg/kg	---	---	<0.8
1,1-Dichloroethene, mg/kg	---	---	<0.8
1,2-Dichloroethane, mg/kg	---	---	<0.8
1,2-Dichlorobenzene, mg/kg	---	---	<0.8
1,2-Dichloroethene (Total), mg/kg	---	---	<0.8
1,2-Dichloropropane, mg/kg	---	---	<0.8
1,3-Dichlorobenzene, mg/kg	---	---	<0.8
1,4-Dichlorobenzene, mg/kg	---	---	<0.8
2-Chloroethylvinylether, mg/kg	---	---	<0.8
2-Hexanone, mg/kg	---	---	<8
4-Methyl-2-Pentanone, mg/kg	---	---	<8
Acetone, mg/kg	---	---	<20
Acrolein, mg/kg	---	---	<4
Acrylonitrile, mg/kg	---	---	<8
Bromodichloromethane, mg/kg	---	---	<0.8
Bromomethane, mg/kg	---	---	<0.8

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Emeryville, CA 94608

510/428-2300
Fax: 510/547-3643

BCA *B C Analytical*

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Benzene, mg/kg	---	---	<0.8
Bromoform, mg/kg	---	---	<0.8
Chlorobenzene, mg/kg	---	---	<0.8
Carbon Tetrachloride, mg/kg	---	---	<0.8
Chloroethane, mg/kg	---	---	<0.8
Chloroform, mg/kg	---	---	<0.8
Chloromethane, mg/kg	---	---	<0.8
Carbon Disulfide, mg/kg	---	---	<0.8
Dibromochloromethane, mg/kg	---	---	<0.8
Ethylbenzene, mg/kg	---	---	1.7
Freon 113, mg/kg	---	---	<0.8
Methyl ethyl ketone, mg/kg	---	---	<8
Methylene chloride, mg/kg	---	---	<4
Styrene, mg/kg	---	---	<0.8
Trichloroethene, mg/kg	---	---	<0.8
Trichlorofluoromethane, mg/kg	---	---	<0.8
Toluene, mg/kg	---	---	2.2
Tetrachloroethene, mg/kg	---	---	<0.8
Vinyl acetate, mg/kg	---	---	<0.8
Vinyl chloride, mg/kg	---	---	<0.8
Total Xylene Isomers, mg/kg	---	---	12
cis-1,2-Dichloroethene, mg/kg	---	---	<0.8
cis-1,3-Dichloropropene, mg/kg	---	---	<0.8
trans-1,2-Dichloroethene, mg/kg	---	---	<0.8
trans-1,3-Dichloropropene, mg/kg	---	---	<0.8

1255 Powell Street
Emeryville, CA 94608

510/428-2300
Fax: 510/547-3643

BCA *B C Analytical*

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Semi-Quantified Results **			
C8-C13 Hydrocarbon Matrix, mg/kg	---	---	1

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

This report includes all data excluding EPA 8270 faxed to Ms. Wells on 2/11/92. The 8270 data was faxed on the following day. Rush surcharge for 8270 analysis was removed. C. Ho

Sim D. Lessley, Ph.D., Laboratory Director

1255 Powell Street
Emeryville, CA 94608

510/428-2300
Fax: 510/547-3643

BCA B C Analytical

9202021

Chain-of-Custody Record

No 0630

Date: 2-3-92

Page 1 of 1

Project No.: 2026 B

Samplers (Signatures): Stacy Hauch, Stephanie Poberson

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	TITLE 22 METALS	Cooled	Soil (S) or water (W)	Acidified	Number of containers
2/3	1130	APL2-1		X				X			C	S		2
	1330	APL2-2		X				X			C	S		2
↓	1400	SDA2-1 → SDA2-4			X	X	X	X		X	C	S		4

ANALYSES

REMARKS

Additional comments

Please composite & homogenize the SDA 2-1 → SDA2-4 prior to analysis

5-DAY TAT on all samples

Port of Oakland work order #201476

Please Bill Port of Oakland Directly

Results To Geomatrix (Elizabeth Wells)

Turnaround time: 5-DAY

Results to: ELIZABETH WELLS

Total No. of containers: 8

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Signature: Stephanie A. Poberson	2/3/92	Signature:		Signature:	
Printed name: Stephanie A. Poberson		Printed name:		Printed name:	
Company: Geomatrix		Company:		Company:	
Received by: BCA	Time:	Received by:	Time:	Received by:	Time:
Signature: Litvak	0710	Signature:		Signature:	
Printed name: JOANE LITVAK		Printed name:		Printed name:	
Company: BCA		Company:		Company:	

Method of shipment: drop off

Laboratory comments and Log No.:

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

GEOMATRIX

SOIL AND GROUNDWATER INVESTIGATION

American President Lines Terminal
1395 Middle Harbor Road
Port of Oakland
Oakland, California

3747
2485

Prepared for

Port of Oakland
530 Water Street
Oakland, California

April 1993
Project No. 2026

Geomatrix Consultants

PORT OF OAKLAND

May 10, 1993

Ms. Jennifer Eberle
Hazardous Materials Division
Department of Environmental Health
Alameda County Health Services Agency
80 Swan Way, Room 200
Oakland, CA 94621

SUBJECT: American President Lines (APL), Berth 60-63, Port of Oakland, Oakland, California

Dear Ms. Eberle:

Enclosed, you will find a copy of the Soil and Groundwater Investigation, American President Lines Terminal, 1395 Middle Harbor Road, Port of Oakland, Oakland, California. The report was completed by Geomatrix Consultants for the Port of Oakland. Four Underground Storage Tanks (USTs), two diesel, one gasoline and one waste oil, were removed from this site between 6 January and 4 March 1992. The sampling and analysis for this report was conducted in accordance with the workplan prepared by Geomatrix dated October 1992.

Please call me at (510)-272-1184 if you have any comments or questions.

Sincerely,

Jon Amdur
Environmental Scientist

cc: Mr. Rich Hiett, SFRWQCB, 2101 Webster Street, 5th Floor, Oakland, CA 94612

enclosure\

530 Water Street ■ Jack London's Waterfront ■ P.O. Box 2064 ■ Oakland, California 94604-2064
Telephone (510) 272-1100 ■ Fax (510) 272-1172 ■ Cable address, PORTOFOAK, Oakland

4721 Tidewater Avenue, Suite C
Oakland, CA 94614
(510) 535-2445 • FAX (510) 535-2408

GEOMATRIX

29 April 1993
Project 2026

Mr. Jon Amdur
Port of Oakland
530 Water Street
Oakland, California 94607

Subject: Soil and Groundwater Investigation
American President Lines Terminal
1395 Middle Harbor Road
Port of Oakland
Oakland, California

Dear Mr. Amdur:

Enclosed is the Soil and Groundwater Investigation report for the subject site. The report presents the results of sampling and analyses conducted at the subject site in accordance with our October 1992 Work Plan.

We appreciate the opportunity to continue to provide our consulting services to the Port of Oakland. If you have any questions about this report or require further information, please contact either of the undersigned.

Sincerely,

GEOMATRIX CONSULTANTS, INC.

Elizabeth K. Wells

Elizabeth K. Wells, P.E.
Project Engineer

Sally E. Goodin

Sally E. Goodin, R.G.
Senior Geologist

EKW/SEG/lam
2026\2026SAGI.LTR

Enclosure

GEOMATRIX

SOIL AND GROUNDWATER INVESTIGATION

American President Lines Terminal
1395 Middle Harbor Road
Port of Oakland
Oakland, California

Prepared for

Port of Oakland
530 Water Street
Oakland, California

April 1993
Project No. 2026

Geomatrix Consultants

GEOMATRIX

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GEOMATRIX

SOIL AND GROUNDWATER INVESTIGATION

American President Lines Terminal
1395 Middle Harbor Road
Port of Oakland
Oakland, California

1.0 INTRODUCTION

This report presents the results of field activities conducted to assess the lateral extent of soil affected by petroleum hydrocarbons and volatile organic compounds and to assess groundwater quality in the vicinity of the former underground storage tanks at the American President Lines (APL) Terminal, 1395 Middle Harbor Road, at the Port of Oakland (Port), Oakland, California (Figure 1). The work was conducted in response to the 13 November 1992 Alameda County Health Care Services Agency letter to the Port. The work was performed on behalf of the Port by Geomatrix Consultants, Inc. (Geomatrix), in accordance with our 30 December 1992 scope of services. This report presents site background information, a summary of field activities, analytical results, and our conclusions and recommendations.

2.0 BACKGROUND

Four underground storage tanks were removed from the site between 6 January and 4 March 1992. It is unknown when the tanks were installed. Until removal in 1992, two tanks were used to store diesel (one 10,000-gallon capacity fiberglass and one 5,000-gallon capacity steel), one tank was used to store gasoline (1,000-gallon capacity fiberglass), and one tank was used to store waste oil (550-gallon capacity steel) . Observations of the tanks upon removal indicated that the diesel tanks contained no holes, the gasoline tank was punctured during removal, and the waste oil tank contained several small holes. In addition, free-phase petroleum product was observed floating on the groundwater in the tank excavation.

Approximately 300 cubic yards of soil containing petroleum hydrocarbons and halogenated volatile organic compounds (VOCs) were excavated. The soil was then aerated on site to remove halogenated VOCs and subsequently transported off site to the Port's bioremediation facility for treatment. Soil samples collected from the excavation indicated that soil in the northern, western, and southern portions of the tank excavation contained petroleum hydrocarbons and halogenated VOCs. Some of the affected soil was left in place due to physical obstructions preventing further excavation. A grab groundwater sample collected from the tank excavation contained elevated concentrations of VOCs. Details of the tank removal, excavation, and sampling activities are presented in Geomatrix's "Underground Storage Tank Removal Report", dated June 1992.

3.0 FIELD ACTIVITIES

Field activities conducted as part of this investigation included drilling and sampling soil borings, installing and developing monitoring wells, measuring water levels, and sampling groundwater. These activities are described below.

Geomatrix obtained a drilling and well installation permit from the Alameda County Flood Control and Water Conservation District before drilling began. A copy of the permit is included in Appendix A. Boring and monitoring well locations were cleared for underground utilities before drilling by Cruz Brothers of Milpitas, California. Drilling, well installation, and well development were performed between 18 January and 4 February 1993 by Gregg Drilling and Testing, Inc. (Gregg), of Pacheco, California, under the observation of a Geomatrix field engineer. Drilling, sampling, and well construction and development activities were conducted in accordance with Geomatrix protocols.

All down-hole equipment (augers, samplers, rods, etc.) was either steam-cleaned or washed with Alconox detergent and rinsed with municipal water before being advanced into

boreholes or wells. Soil cuttings and development and purge water from the boreholes and wells were placed in 55-gallon drums and stored temporarily on site.

3.1 SOIL BORINGS

To further assess the extent of petroleum hydrocarbons and VOCs in the vicinity of the former tank excavation, eleven exploratory soil borings were drilled to an approximate depth of ten feet below ground surface. Boring locations are shown on Figure 3. Drilling was conducted using a Mobil B53 drill rig with 6.5 and 8-inch outside diameter (O.D.) hollow-stem augers. The borings were continuously cored using a 5-foot continuous core barrel or sampled using an 18-inch split-spoon drive sampler, depending on field conditions. Soil samples were collected by the field engineer for visual soil classification and for chemical analysis. Lithologic logs were made in the field. The lithologic logs are presented in Appendix B. ✓

Soil samples for chemical analysis generally were collected from immediately above the water table, and at a depth of 5 feet below the water table when soil recovery permitted. Samples were collected in clean, brass liners, which were sealed with Teflon sheeting, plastic end caps, wrapped with duct tape, and then stored in an ice-cooled chest. The samples were delivered to Clayton Environmental Consultants (Clayton), of Pleasanton, California, a state-certified analytical laboratory, under Geomatrix chain-of-custody procedures. Chain-of-custody records are included in Appendix C. Natural samples from boring B-9 were collected, due to elevated field readings using a photoionization detector (PID) during drilling. why? Reverse logic.

Completed boreholes that were not converted to monitoring wells were grouted to ground surface using a high-solids bentonite grout. Boring locations were surveyed for horizontal control by the Port's survey department.

3.2 MONITORING WELL INSTALLATION AND DEVELOPMENT

Three of the eleven soil borings, one in the assumed upgradient direction and two in the assumed downgradient direction from the tank excavation, were converted to monitoring wells. Well locations are shown on Figure 2. The monitoring wells were drilled to a maximum depth of 11.5 feet, and screened between the depths of 3 and 10 feet. The wells were constructed using 2-inch-diameter, flush-threaded, schedule-40 polyvinyl chloride (PVC) casing and with a 0.01-inch slot size factory slotted PVC screen. The annulus was backfilled with Lonestar #0/30 quartz sand filter pack from the base of the boring to one-half foot above the slotted screen section. Two to four inches of 3/8-inch bentonite pellets were placed as a seal above the filter pack, and the remaining annulus was backfilled with a neat cement grout to provide protection from surface water runoff. A locking cap and traffic-rated Christy Box were placed over the monitoring well at the ground surface. Following well completion, the well casings were surveyed by the Port to establish their locations and top-of-casing elevations. Well construction details are presented in Appendix B.

After allowing the well seals to set for 72 hours, Gregg developed the wells using surging and bailing methods under the observation of a Geomatrix field engineer. During development, a surge block was used to pull in sediment that may have accumulated in the filter pack during well installation, to consolidate the filter pack around the well screen, and to enhance the hydraulic connection between the water-bearing zone and the well. A stainless steel bailer was then used to remove the sediment that had accumulated in the bottom of the well and to remove water standing inside the well. This procedure was repeated until the produced groundwater was visually clear and the temperature, pH, and conductivity measurements had stabilized.

3.3 WATER-LEVEL MEASUREMENTS

On 8 March 1993, water levels were measured in the three monitoring wells to determine the direction of the horizontal hydraulic gradient beneath the site. Water levels were

measured at both low and high tides to evaluate tidal effects, if any. Water-levels were measured to the nearest 0.01 foot using a steel tape.

3.4 GROUNDWATER SAMPLING

On 5 February 1993, a groundwater sample was collected from each of the newly installed monitoring wells for chemical analysis. To obtain samples representative of groundwater beneath the site, the wells were purged until temperature, pH, and conductivity had stabilized. A minimum of four casing volumes were purged. The samples were collected using a clean disposable plastic bailer lowered to the approximate mid-point of the screened interval. The sample was decanted from the bailer directly into the appropriate container. After samples were collected and labeled, they were stored in an ice-cooled chest. Groundwater samples were delivered under Geomatrix chain-of-custody procedures to Clayton. Chain-of-custody records are included in Appendix D.

4.0 RESULTS

The results of the investigation are presented in this section. The stratigraphy in the vicinity of the tank excavation area is discussed in Section 4.1; the occurrence and movement of groundwater are discussed in Section 4.2; the analytical results of the soil sampling are presented in Section 4.3; the analytical results of the groundwater sampling are presented in Section 4.4.

4.1 STRATIGRAPHY

The lithologic data collected from the soil borings advanced in the tank excavation area generally indicate that the site is underlain by 3 to 6 feet of fill consisting of silty sand and gravel, which is underlain by approximately 1 to 10 feet of sand. The sand is underlain by either an organic soil or a lean clay (Bay Mud) to the maximum depth of the borings (15.5 feet). Groundwater was encountered during drilling at depths of 3.5 to 6.5 feet below ground surface.

4.2 OCCURRENCE AND MOVEMENT OF GROUNDWATER

At low tide on 8 March 1993, water levels in monitoring wells MW-1, MW-2, and MW-3 were measured at elevations of 7.07, 6.58, and 6.76 feet Mean Low Low Water Port Datum (MLLW; Jim Baker, Port of Oakland, personal communication, March 1993), respectively (Figure 3). This indicates that the horizontal hydraulic gradient is oriented toward the southwest. Water-levels elevations in monitoring wells MW-1, MW-2, and MW-3 at high tide were 7.08, 6.69, and 6.98 feet MLLW, respectively. These high tide elevations indicate a horizontal hydraulic gradient oriented toward the west-southwest.

4.3 SOIL ANALYTICAL RESULTS

Soil samples were analyzed for the compounds that were detected at elevated concentrations in the tank excavation. These include total petroleum hydrocarbons as gasoline (TPHg) by modified U.S. Environmental Protection Agency (EPA) Method 8015; total petroleum hydrocarbons as diesel (TPHd) by EPA Method 8015; total oil and grease (TOG) by Standard Method 5520E and F; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020; and halogenated VOCs by EPA method 8010. In addition, samples from boring B-3, the boring closest to the former waste oil tank location, also was analyzed by EPA Method 8270. Analytical results of the soil samples are summarized in Table 1.

TOG was reported in 5 of the 16 samples analyzed at concentrations of 60 to 710 milligrams per kilogram (mg/kg). A concentration of 710 mg/kg was detected in the soil sample from B-4 collected at a depth of 4 feet; the concentration decreased to 110 mg/kg in the sample collected from a depth of 10 feet. TPHg was reported in 8 of 16 samples analyzed at concentrations of 0.3 to 480 mg/kg. TPHg was detected at a concentration greater than 100 mg/kg only in the sample from B-4 collected at a depth of 4 feet. Clayton characterized samples from a depth of 4 feet from borings B-1, B-2, B-3, B-4, and B-6 as weathered gasoline. TPHd was reported in 5 of 16 samples analyzed at concentrations up to 120 mg/kg. TPHd was detected at a concentration greater than 100 mg/kg only in the sample from B-4 collected at a depth of 4 feet. BTEX were detected at a maximum

concentration of 0.14, 2.9, 4.8, and 22 mg/kg, respectively. Halogenated VOCs by EPA Method 8010 were not detected in any of the samples. The two samples collected from boring B-3, closest to the former waste oil tank, contained no detectable semi-volatile organic compounds when analyzed by EPA Method 8270.

In summary, elevated concentration of TPH as diesel and TPH as gasoline were observed only in the soil samples from a depth of 4 feet in boring B-4. TOG was detected at concentrations greater than 100 mg/kg in samples B-2 (at a depth of 4 feet), B-4 (at a depths of 4 and 10.5 feet), and B-10 (at a depth of 5.5 feet).

4.4 GROUNDWATER ANALYTICAL RESULTS

Groundwater samples were analyzed for TPHg by modified U.S. EPA Method 8015; TPHd by EPA Method 8015; TOG by Standard Method 5520C and F; halogenated VOCs by EPA Method 8010; and BTEX by EPA Method 8020. In addition, each sample was analyzed for total dissolved solids to assess the general groundwater quality. Copies of the analytical laboratory reports are included in Appendix B. Analytical results of groundwater samples are summarized in Table 2.

TPHg, TPHd, and TOG were detected in the sample from monitoring well MW-1, the upgradient well, at concentrations of 1,800, 4,700, and 5,000 micrograms per liter (µg/l), respectively. BTEX were detected in the sample from MW-1 at concentrations of 9.2, 1.6, 8.9, and 2.7 µg/l, respectively. The only VOC detected in the sample from MW-1, 1,1-dichloroethane (DCA), was reported at a concentration of 0.8 µg/l. The groundwater sample from monitoring well MW-2, downgradient of the tank excavation, contained TPHd and TOG at concentrations of 840 and 2,000 µg/l, respectively. TPHg, BTEX, and VOCs were not detected in the sample from MW-2. The groundwater sample from monitoring well MW-3, also downgradient of the former tank excavation, contained TPHd and TOG at concentrations of 3,400 and 2,000 µg/l, respectively. BTEX were detected in the sample from MW-3 at concentrations of 2.1, 0.9, 1.7, and 3.1 µg/l respectively. Cis-1,2-

dichloroethylene (DCE), the only VOC detected in the sample from MW-3, was reported at a concentration of 0.4 µg/l. TPHg was not detected in the sample from MW-3. Total dissolved solids were reported at concentrations of 3,000, 23,000, and 1,600 milligrams per liter (mg/l) in MW-1, MW-2, and MW-3, respectively.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Soil analytical results indicate that soil containing petroleum hydrocarbon concentrations greater that 100 mg/kg extends to the west of the former excavation and is not fully defined in the westerly direction. Affected soil may extend under the APL Terminal building. Affected soil is generally located downgradient of the former APL tank excavations, west of boring B-6. Soil affected by BTEX is generally located above the water table downgradient of the former APL tank excavations, and to the west of boring B-6.

On 8 March 1993, the horizontal hydraulic gradient was oriented to the southwest. Groundwater analytical results indicate upgradient monitoring well MW-1 contains elevated concentrations of TPHg, TPHd, TOG, and benzene. Affected groundwater at the MW-1 location is considered unlikely to be associated with the former underground storage tanks at APL. Groundwater from the downgradient monitoring wells MW-2 and MW-3 also contain elevated concentrations of TPHd, TOG, and benzene; however, the concentrations in MW-2 and MW-3 are less than those in MW-1. Affected groundwater at MW-2 and MW-3 locations may be associated with the former APL underground storage tanks.

We recommend continued quarterly groundwater monitoring in the three on site wells. Following the fourth quarterly sampling event, the water-level elevation data and the groundwater analytical data will be evaluated and recommendations for future action, if necessary, will be made.

GEOMATRIX

TABLE 1

SUMMARY OF COMPOUNDS DETECTED IN SOIL SAMPLES
American President Lines Terminal
1395 Middle Harbor Road
Port of Oakland
Oakland, California

Concentrations in parts per million (mg/kg)

Boring No.	Sample Depth (feet)	TPH as Gasoline	TPH as Diesel	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Total Xylenes	EPA Method 8010	EPA Method 8270
B-1	4	1.6(a)	ND	ND	ND	ND	0.011	0.013	ND	--
B-2	4	8(a)	7	[illegible]	ND	0.08	0.06	0.16	ND	--
B-2	9	ND	ND	ND	ND	ND	ND	ND	ND	--
B-3	4	1.4(a)	ND	ND	ND	0.007	ND	0.006	ND	ND
B-3	10.5	ND	ND	60	0.007	ND	ND	ND	ND	ND
B-4	4	[illegible]	120	710	[illegible]	2.9	4.8	22	ND	--
B-4	10.5	0.5	12	110	ND	ND	ND	ND	ND	--
B-5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	--
B-5	11.5	ND	ND	ND	ND	ND	ND	ND	ND	--
B-6	4	11(a)	10	ND	ND	0.011	0.035	0.11	ND	--
B-7	3.5	0.3	ND	ND	ND	0.007	ND	0.02	ND	--

GEOMATRIX

TABLE 1

SUMMARY OF COMPOUNDS DETECTED IN SOIL SAMPLES

Boring No.	Sample Depth (feet)	TPH as Gasoline	TPH as Diesel	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Total Xylenes	EPA Method 8010	EPA Method 8270
B-7	12	ND	ND	ND	ND	ND	ND	ND	ND	--
B-8	6	ND	25	ND	ND	ND	ND	ND	ND	--
B-8A	11	ND	ND	ND	ND	ND	ND	ND	ND	--
B-9										
B-10	5.5	ND	ND	140	ND	ND	ND	ND	ND	--
B-11	6	3.9	ND	ND	ND	0.034	0.015	0.022	ND	--

Notes:

1. Samples collected by Geomatrix Consultants, Inc. and analyzed by Clayton Environmental Consultants of Pleasanton, California, for TPH as gasoline by modified EPA Method 8015; TPH as diesel by EPA Method 8015; total oil and grease by Standard Method 5520 E and F; and benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020. No soil samples from boring B-9 were collected for chemical analysis.

2. TPH = total petroleum hydrocarbons
   ND = not detected at or above detection limit
   -- = not analyzed
   (a) = Clayton Environmental Consultants noted that the petroleum hydrocarbon detected appears to be weathered gasoline

GEOMATRIX

TABLE 2

SUMMARY OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES

American President Lines Terminal
1395 Middle Harbor Road
Port of Oakland
Oakland, California

Concentrations in parts per billion (µg/l)

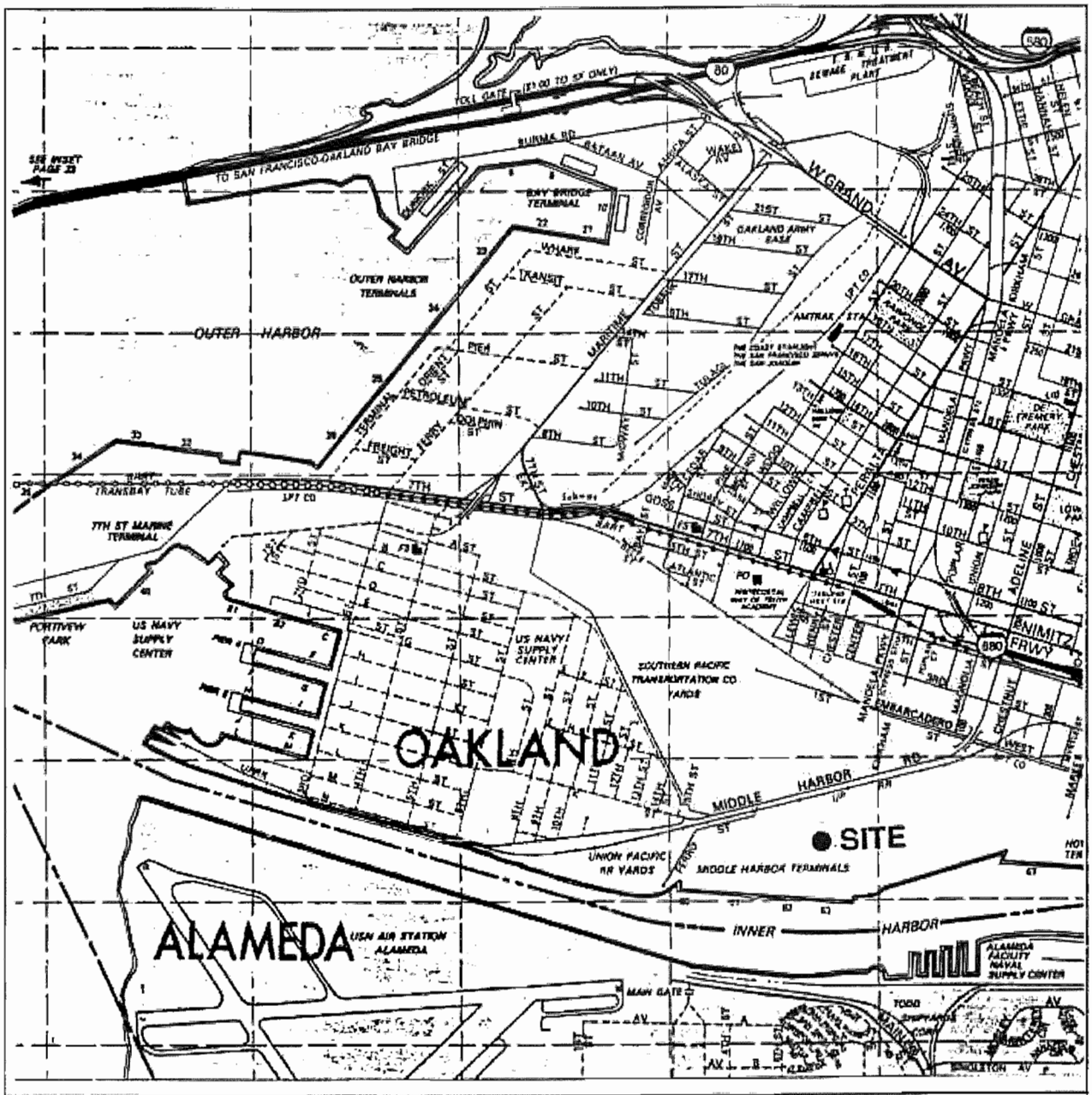
Well No.	TPH as Gasoline	TPH as Diesel	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Total Xylenes	EPA Method 8010
MW-1	1,800	4,700	5,000	9.2	1.6	8.9	2.7	1,1-DCA 0.8
MW-2	ND	840	2,000	ND	ND	ND	ND	ND
MW-3	ND	3,400	2,000	2.1	0.9	1.7	3.1	Cis-1,2-DCE 0.4

Notes:

1. Samples collected by Geomatrix Consultants, Inc. and analyzed by Clayton Environmental Consultants of Pleasanton, California, for TPH as gasoline by modified EPA Method 8015; TPH as diesel by EPA Method 8015; total oil and grease by Standard Method 5520 C and F; benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020; and halogenated volatile organic compounds by EPA Method 8010. Samples also analyzed for total dissolved solids (TDS) by EPA Method 160.1; samples from monitoring wells MW-1, MW-2, and MW-3 contained 3,000, 23,000, and 1,600 milligrams per liter (ppm) TDS, respectively.

2. TPH = total petroleum hydrocarbons
   ND = not detected at or above detection limit

3. Total Dissolved Solids reported in parts per million (mg/l).



Reference: Thomas Brothers Maps
Alameda County
1990

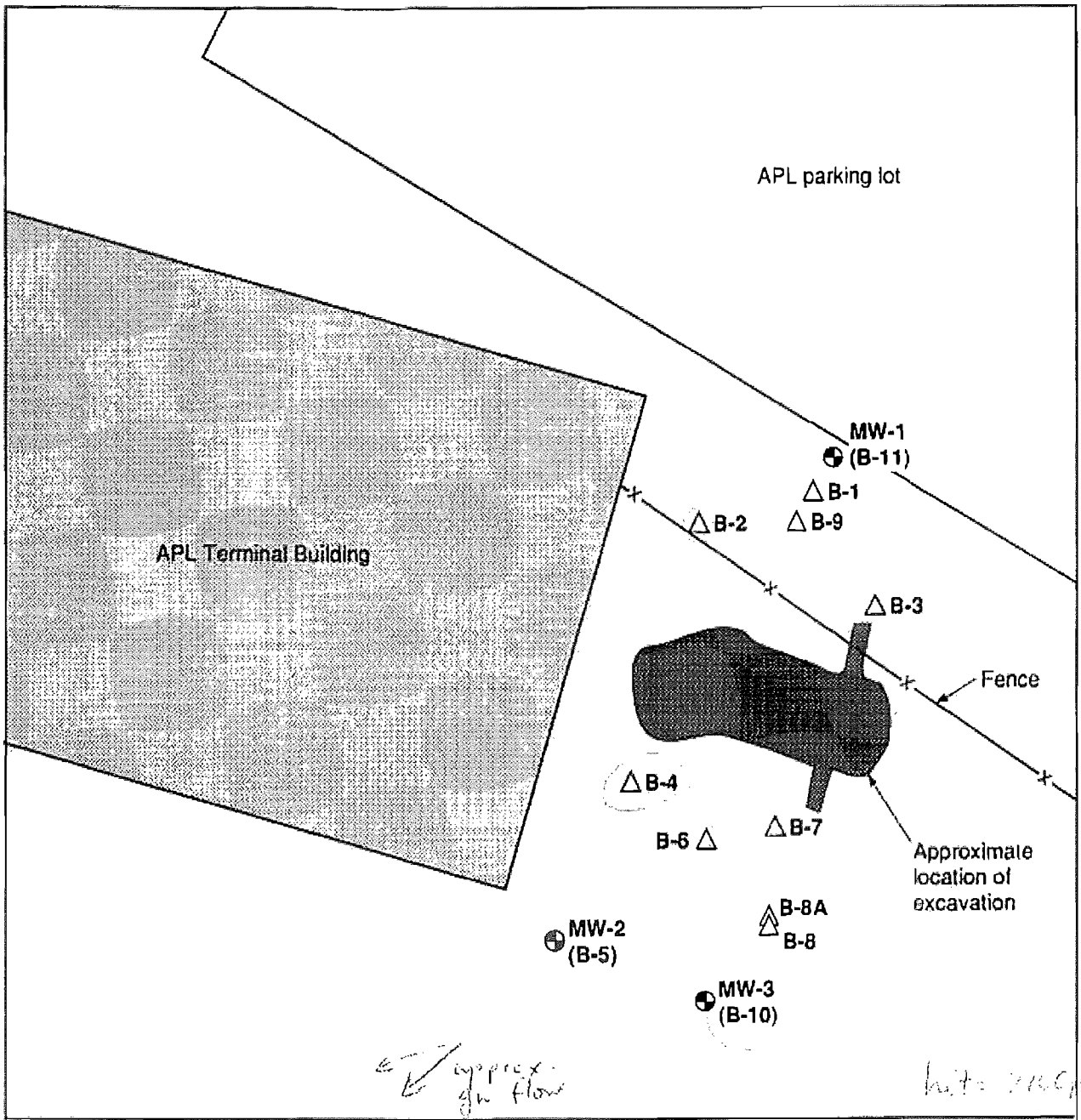
0 2200 Feet

GEOMATRIX

SITE LOCATION MAP
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

Figure
1

Project No.
2026



EXPLANATION

MW-2 ◓ Monitoring well

B-1 △ Soil boring

Based on figure provided by the Port of Oakland

N

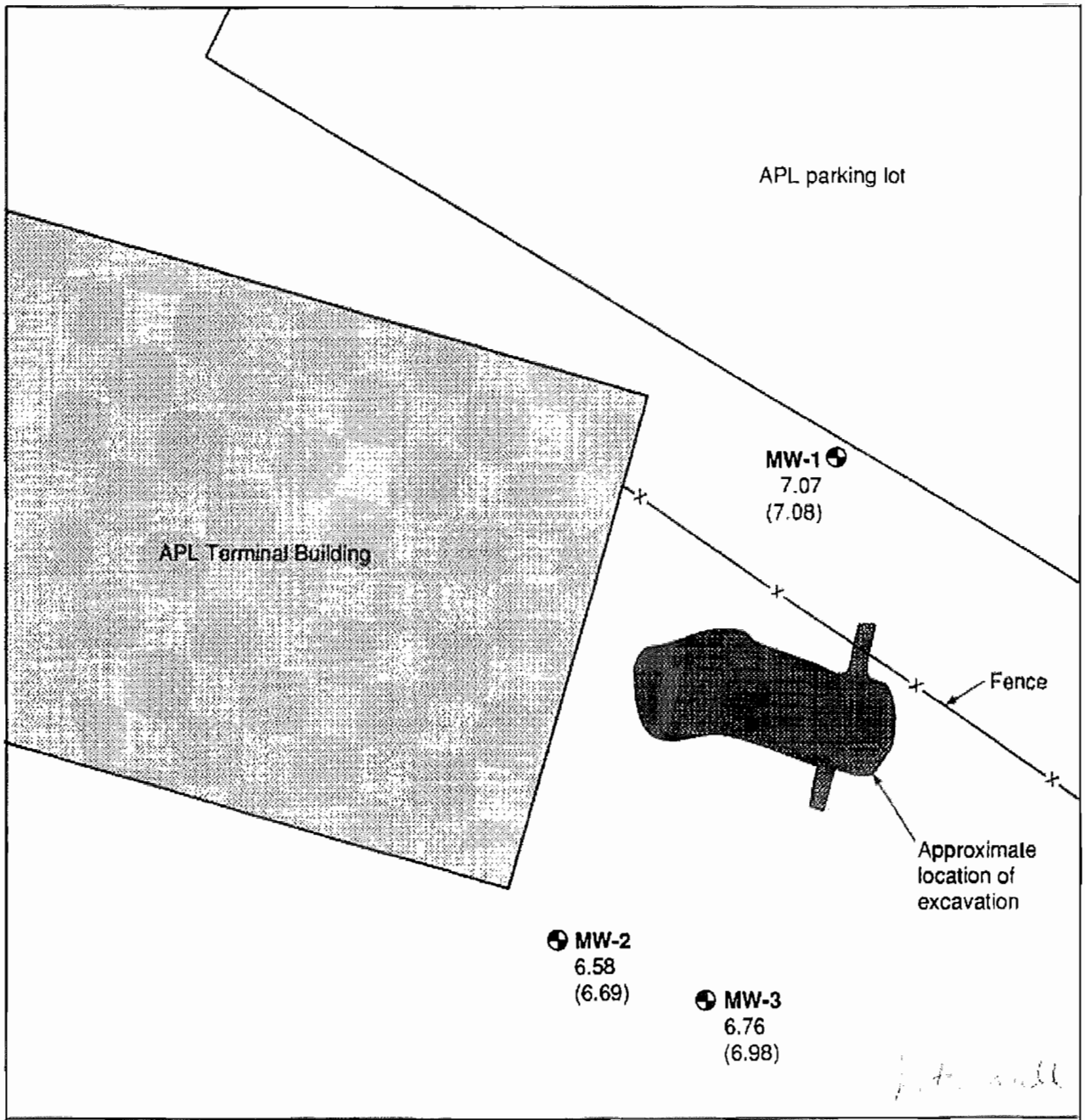
0 50 Feet

GEOMATRIX

LOCATION OF SOIL BORINGS AND MONITORING WELLS
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

Figure
2

Project No
2026



EXPLANATION

MW-2 Monitoring well

6.58 Water-level elevation, in feet, at low tide; 8 March 1993

(6.69) Water-level elevation, in feet, at high tide; 8 March 1993

0 50 Feet

Based on figure provided by the Port of Oakland.

Elevations referenced to Mean Low Low Water Port Datum.

GEOMATRIX

WATER-LEVEL ELEVATIONS – 8 MARCH 1993
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

Figure 3

Project No 2026

GEOMATRIX

APPENDIX A

DRILLING PERMIT

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT APL Terminal
1395 Middle Harbor Road
Oakland, CA

CLIENT
Name Port of Oakland
Address 530 Water Street Phone (510) 272-1184
City Oakland Zip 94607

APPLICANT
Name James Abita
Geomatrix Consultants, Inc.
Address 100 Pine St. 10th Fl. Phone (415) 434-9400
City San Francisco Zip 94111

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	✓
Monitoring	✓	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ✓
Cable ___ Other ___

DRILLER'S LICENSE NO. 485165

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 0.5 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings 11 Maximum
Hole Diameter 8 in. Depth 20 ft.

ESTIMATED STARTING DATE 18 January 1993
ESTIMATED COMPLETION DATE 21 January 1993

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ Date 1/4/93

FOR OFFICE USE

PERMIT NUMBER 93001
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 4 Jan 93
Wyman Hong

31992

GEOMATRIX

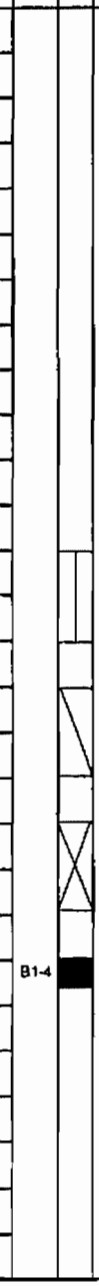
APPENDIX B

LITHOLOGIC LOGS AND WELL CONSTRUCTION DETAILS

PROJECT: APL TERMINAL 1395 Middle Harbor Road Port of Oakland		**Boring Log Explanation Sheet**	
BORING LOCATION:		ELEVATION AND DATUM:	
DRILLING CONTRACTOR:		DATE STARTED:	DATE FINISHED:
DRILLING METHOD:		TOTAL DEPTH:	MEASURING POINT:
DRILLING EQUIPMENT:		DEPTH TO WATER / FIRST	COMPL. / 24 HRS.
SAMPLING METHOD:		LOGGED BY:	
HAMMER WEIGHT:	DROP:	RESPONSIBLE PROFESSIONAL:	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	OVM Reading	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS

1. Soil descriptions are in accordance with the USCS as set forth by ASTM D2488-90 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)."
2. Soil color described according to Munsell Color Chart.
3. Dashed lines separating soil strata represent inferred boundaries between sampled intervals that may be abrupt or gradual transitions. Solid lines represent approximate boundaries observed within sampled intervals.
4. OVM = organic vapor meter, readings in parts per million.
5. Odor, if noted, is subjective and not necessarily indicative of specific compounds or concentrations.



Interval of recovered soil core collected with split-barrel continuous sampler

Interval of recovered soil core collected with split-spoon drive sampler

Interval of no recovery

Sample collected for chemical analysis and sample identification

First water level ▽

Final water level ▼

B-1-Expl (11/92)

Geomatrix Consultants	Project No. 2026	Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-1

BORING LOCATION: 45 feet north of former excavation	ELEVATION AND DATUM: 10.24 MLLW			
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/19/93	DATE FINISHED: 1/19/93		
DRILLING METHOD: Hollow stem auger (8 1/4" diameter)	TOTAL DEPTH: 10.5'	MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER	FIRST 4.0	COMPL. ---	24 HRS. ---
SAMPLING METHOD: 5' CME continuous core	LOGGED BY: J. M. Abitz			
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin		REG. NO. RG 3743	

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
0					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Light olive brown (2.5Y5/6), moist, 60% fine to coarse sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3						
4	B-1-4				ATD ▽ Color change to greenish gray (5GY 5/1)	
5						
6					SAND (SP) Dark gray (7.5YR 4/0), wet, 95% fine sand, 5% low plasticity fines	Dark brown liquid observed
7					SILT (ML) Greenish gray (5GY 5/1), 100% fines, low plasticity, very stiff [BAY MUD]	
8						
9						
10						
11					Bottom of boring at 10.5 feet	
12						
13						
14						

B-1 (11/92)

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-2

BORING LOCATION: 30 feet north of former excavation

ELEVATION AND DATUM: 10.03 MLLW

DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.

DATE STARTED: 1/18/93

DATE FINISHED: 1/18/93

DRILLING METHOD: Hollow stem auger (6 1/4" diameter)

TOTAL DEPTH: 15.5'

MEASURING POINT: Ground surface

DRILLING EQUIPMENT: Mobile B-53

DEPTH TO WATER	FIRST	COMPL.	24 HRS.
	4.0	---	---

SAMPLING METHOD: 5' CME continuous core

LOGGED BY: J. M. Abitz

HAMMER WEIGHT: 140 lbs

DROP: 40 inches

RESPONSIBLE PROFESSIONAL: Sally E. Goodin

REG. NO. RG 3743

DEPTH (feet)	SAMPLES Sample No.	SAMPLES Sample	SAMPLES Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
0					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Dark reddish brown (5YR 3/3), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3						
4	B-2-4			41	SAND with SILT and GRAVEL (SW - SM) Dark greenish gray (5GY 4/1), moist, 70% fine sand, 20% fine gravel, 10% low plasticity fines [FILL] ATD ▽	
5						
6						
7					SILT (ML) Olive (5Y 4/4), wet, 100% fines, low plasticity, very soft [BAY MUD]	
8					Color change to black (5Y 2.5/1), with dark red (2.5YR 3/6) lenses, roots and wood pieces	
9	B-2-9			1.8	LEAN CLAY (CL) Dark greenish gray (5G 4/1), wet, 100% fines, low plasticity, firm [BAY MUD]	
10						
11						
12						
13						
14						

B-1 (11/92)

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-2 cont'd

DEPTH (feet)	SAMPLES Sample No.	SAMPLES Sample	SAMPLES Blows/ Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
15					LEAN CLAY (CL) (continued)	
					SAND with SILT (SW - SM) Black (10 YR 2/1), wet, 90% fine sand, 10% low plasticity fines	
16					Bottom of boring at 15.5 feet	
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Geomatrix Consultants	Project No. 2026J	Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-3

BORING LOCATION: Near former north-extending trench

ELEVATION AND DATUM: 10.51 MLLW

DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.

DATE STARTED: 1/18/93 | DATE FINISHED: 1/18/93

DRILLING METHOD: Hollow stem auger (6 1/4" diameter)

TOTAL DEPTH: 15.5' | MEASURING POINT: Ground surface

DRILLING EQUIPMENT: Mobile B-53

DEPTH TO WATER	FIRST	COMPL.	24 HRS.
	4.5	---	---

SAMPLING METHOD: 5' CME continuous core

LOGGED BY: J. M. Abitz

HAMMER WEIGHT: --- | DROP: ---

RESPONSIBLE PROFESSIONAL: Sally E. Goodin | REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION: NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
					Surface Elevation:	
					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Brown (10YR 4/3), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3						
4	B-3-4				Lean CLAY with SAND (CL) Dark gray (5Y 4/1), moist, 70% fines, 30% fine sand, high plasticity, firm ATD ▽	
				8.3		
5					SAND (SP) Dark greenish gray (5GY 4/1), wet, 95% fine sand, 5% low plasticity fines	
6						
7						
8						
9						
10	B-3-10.5			26.9		
11					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 100% fines, high plasticity, roots, firm [BAY MUD]	
12						
13					Change to no roots	
14						

B-1 [11/92]

Geomatrix Consultants | Project No. 2026J | Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-3 cont'd

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION: NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
15					LEAN CLAY (CL) (continued)	
					CLAYEY SAND (SC) Dark gray (N 4/), wet, 70% firm sand, 30% high plasticity fines	
16					Bottom of boring at 15.5 feet	
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

PROJECT: APL TERMINAL 1395 Middle Harbor Road Port of Oakland	**Log of Boring No. B-4**
BORING LOCATION: 10 feet southwest of former excavation	ELEVATION AND DATUM: 9.99 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/18/93 / DATE FINISHED: 1/18/93
DRILLING METHOD: Hollow stem auger (6 1/4" diameter)	TOTAL DEPTH: 15.5' / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER: FIRST 4.0 / COMPL. --- / 24 HRS. ---
SAMPLING METHOD: 5' CME continuous core	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
0					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Dark greenish gray (5GY 4/1), moist, 60% fine to coarse sand, 30% fine to medium coarse gravel, 10% low plasticity fines [FILL]	
2						
3						
4	B-4-4			420	ATD ▽	
5				159	SAND (SP) Black (5Y 2.5/1), wet, 95% fine sand, 5% low plasticity fines	
6				340	SAND with SILT and GRAVEL (SP - SM) Dark gray (5Y 4/1), wet, 70% fine to medium sand, 20% fine gravel, 10% low plasticity fines	
7						Sheen
8						
9						
10	B-4-10.5					
11					LEAN CLAY (CL) Dark gray (5Y 4/1), wet, 100% fines, high plasticity, firm, some roots [BAY MUD]	
12						
13				42		
14						

B-1 (11/92)

Geomatrix Consultants	Project No. 2026J	Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

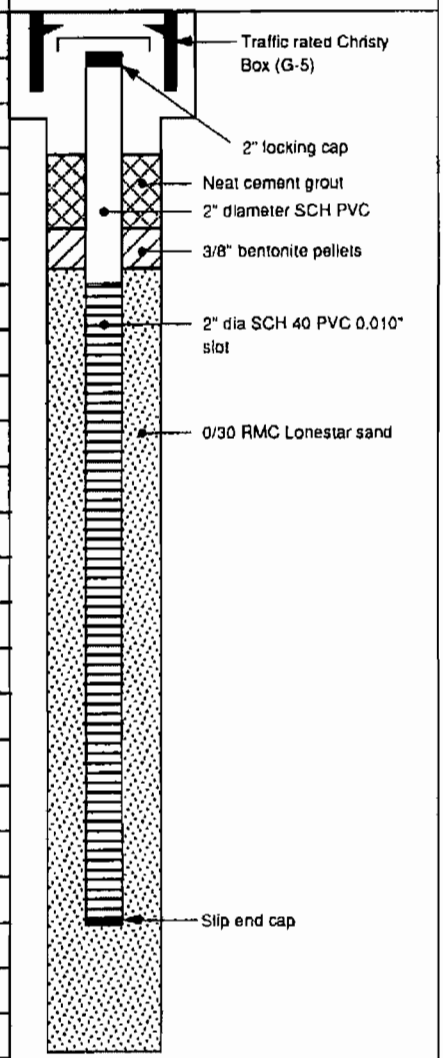
Log of Boring No. B-4 cont'd

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
15					LEAN CLAY (CL) (continued)	
16					CLAYEY SAND (SM) Very dark gray (7.5YR N/3), wet, 70% firm sand, 30% low plasticity fines, roots	
17					Bottom of boring at 15.5 feet	
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

PROJECT: APL TERMINAL 1395 Middle Harbor Road - Port of Oakland	**Log of Well No. MW-2 (B-5)**
BORING LOCATION: 50 feet southwest of former excavation	ELEVATION AND DATUM: 10.03 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/20/93 / DATE FINISHED: 1/20/93
DRILLING METHOD: Hollow stem auger (8 1/4" and 10 1/4" OD)	TOTAL DEPTH: 10' / SCREEN INTERVAL: 3 - 10'
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER ATD: 5.5' / CASING: 2" dia SCH 40 PVC
SAMPLING METHOD: 5' CME continuous core and 18" x 2" split spoon	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	OVM Reading	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:
0					Asphalt
1					SAND with SILT and GRAVEL (SW - SM) Light olive brown (2.5Y 5/6), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]
2					
3					
4					
5					
6	B-5-6.5				SAND with SILT and CLAY (SW - SC) Dark greenish gray (5GY 4/1), moist, 60% fine sand, 20% low plastic fines, 20% high plastic fines
7					SAND (SP Dark greenish gray (5GY 4/1), wet, 100% firm sand
8					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 70% fines, 30% organics, high plasticity, firm [BAY MUD]
9					
10					Organic SOIL (OL/OH) Dark greenish gray (5GY 4/1), wet, 50% high plastic fines, 50% organics, very soft [BAY MUD]
11	B-6-11.5				
12					Bottom of boring at 11.5 feet
13					
14					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



W-1 (11/92)

Geomatrix Consultants	Project No. 2067	Figure ---

PROJECT: APL TERMINAL 1395 Middle Harbor Road Port of Oakland	**Log of Boring No. B-6**
BORING LOCATION: 20 feet south of former excavation	ELEVATION AND DATUM: 9.85 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/18/93 / DATE FINISHED: 1/18/93
DRILLING METHOD: Hollow stem auger (6 1/4" diameter)	TOTAL DEPTH: 15.5' / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER: FIRST 4.0 / COMPL. --- / 24 HRS. ---
SAMPLING METHOD: 5' CME continuous core	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
1					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Olive (5Y 4/4), moist, 65% fine sand, 25% fine gravel, 10% low plasticity fines [FILL]	
2						
3				27.9		
4	B-6-4				ATD ▽	
4				240	SAND with SILT and GRAVEL (SW - SM) Dark gray (5Y 4/1), wet, 50% fine to coarse sand, 40% fine to coarse gravel, 10% low plasticity fines	
5				371		
5				173	Color change to black (5Y 2.5/1)	
6					SAND (SP) Black (5Y 2.5/1), wet, 95% fine sand, 5% low plasticity fines	
7						
8						
9						
10						
11						
12						
13						
14						

B-1 (11/92)

Geomatrix Consultants	Project No. 2026J	Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-6 cont'd

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
15		X			SAND (SP) (continued)	
16					Bottom of boring at 15.5 feet	
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

PROJECT: APL TERMINAL 1395 Middle Harbor Road Port of Oakland				**Log of Boring No. B-7**
BORING LOCATION: Near former south-extending trench			ELEVATION AND DATUM: 9.97 MLLW	
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.			DATE STARTED: 1/18/93	DATE FINISHED: 1/18/93
DRILLING METHOD: Hollow stem auger (6 1/4" diameter)			TOTAL DEPTH: 15.5'	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Mobile B-53			DEPTH TO WATER / FIRST: 3.5'	COMPL.: --- / 24 HRS.: ---
SAMPLING METHOD: 5' CME continuous core			LOGGED BY: J. M. Abitz	
HAMMER WEIGHT: ---	DROP: ---		RESPONSIBLE PROFESSIONAL: Sally E. Goodin	REG. NO. RG 3743

DEPTH (feet)	SAMPLES Sample No.	SAMPLES Sample	SAMPLES Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
0					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Yellowish brown (10YR 5/8), moist, 65% fine to coarse sand, 25% fine gravel, 10% low plasticity fines [FILL]	
2					CLAYEY SAND (SC) Black (10YR 2/1), moist, 70% fine sand, 30% low plasticity fines, wood chunks [FILL]	
3	B-7-3.5			8.3	CLAYEY SAND (SC) Dark greenish gray (5GY 4/1), wet, 70% fine sand, 30% medium plasticity fines, decreasing clay with depth ATD ▽	
4						
5						
6						
7						
8						
9						
10						
11						
12	B-7-12			1.7	Lean CLAY (CL) Dark gray (5Y 4/1), wet, 100% fines, high plasticity, firm [BAY MUD]	
13						
14						

B-1 (11/92)

Geomatrix Consultants	Project No. 2026J	Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-7 cont'd

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
15		X			Lean CLAY (CL) (continued)	
16					CLAYEY SAND (SM) Very dark gray (7.5YR N/3), wet, 70% fine sand, 30% low plasticity fines Bottom of boring at 15.5 feet	
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

PROJECT: APL TERMINAL 1395 Middle Harbor Road Port of Oakland	**Log of Boring No. B-8**
BORING LOCATION: 30 feet south of former excavation	ELEVATION AND DATUM: 9.86 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/19/93 / DATE FINISHED: 1/19/93
DRILLING METHOD: Hollow stem auger (8 1/4" diameter)	TOTAL DEPTH: 12' / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER: FIRST 6' / COMPL. --- / 24 HRS. ---
SAMPLING METHOD: 5' CME continuous core	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: --- / DROP: ---	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
0					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Olive (5Y 4/4), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3						
4					Lean CLAY (CL) Dark greenish gray (5GY 4/1), moist, 100% fines, trace fine sand seams, high plasticity, firm, shell fragments [BAY MUD]	
5						
6	B-8-6				ATD ▽	
7					SAND (SP) Dark greenish gray (5GY 4/1), wet, 85% fine sand, 10% fine gravel, 5% high plasticty fines	
8						No recovery from 7 to 12 feet. See boring B-8A for lithology.
9						
10						
11						
12					Bottom of boring at 12 feet	
13						
14						

Geomatrix Consultants	Project No. 2026J	Figure ---

PROJECT: APL TERMINAL 1395 Middle Harbor Road Port of Oakland	**Log of Boring No. B-8A**
BORING LOCATION: 30 feet south of former excavation	ELEVATION AND DATUM: 9.84 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/19/93 / DATE FINISHED: 1/19/93
DRILLING METHOD: Hollow stem auger (8 1/4" diameter)	TOTAL DEPTH: 11.5' / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER / FIRST: --- / COMPL.: --- / 24 HRS.: ---
SAMPLING METHOD: 18"x2" split spoon	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	REMARKS
0					Asphalt	Lithology from boring B-8 for 0' to 7'
1					SAND with SILT and GRAVEL (SW - SM) Olive (5Y 4/4), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3						
4					Lean CLAY (CL) Dark greenish gray (5GY 4/1), moist, 100% fines, fine sand seams, shell fragments, high plasticity, firm	
5						
6					SAND (SP) Dark greenish gray (5GY 4/1), wet, 85% fine sand, 10% fine gravel, 5% high plasticity fines	
7					Organic SOIL (OL/OH) Dark greenish gray (5GY 4/1), wet, 50% high plasticity fines, 50% organics, very soft [BAY MUD]	
8						
9						
10						
11	B-8A -11				Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 100% fines, fine sand seams, high plasticity, firm [BAY MUD]	
12					Bottom of boring at 11.5 feet	
13						
14						

B-1 (11/92)

Geomatrix Consultants	Project No. 2026J	Figure ---

PROJECT: APL TERMINAL
1395 Middle Harbor Road
Port of Oakland

Log of Boring No. B-9

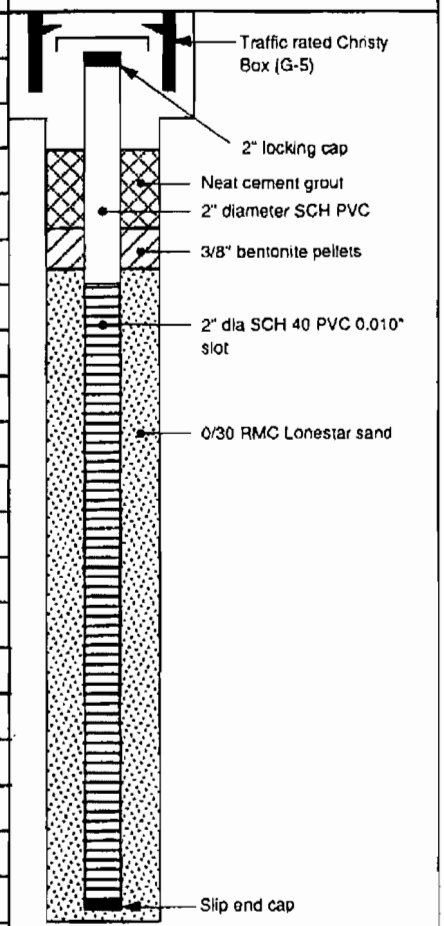
BORING LOCATION: 35 feet north of former excavation	ELEVATION AND DATUM: 10.24 MLLW			
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/21/93	DATE FINISHED: 1/21/93		
DRILLING METHOD: Hollow stem auger (8 1/4" diameter)	TOTAL DEPTH: 7'	MEASURING POINT: Ground surface		
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER	FIRST 4.5'	COMPL. ---	24 HRS. ---
SAMPLING METHOD: 5' CME continuous core	LOGGED BY: J. M. Abitz			
HAMMER WEIGHT: --- DROP: ---	RESPONSIBLE PROFESSIONAL: Sally E. Goodin		REG. NO. RG 3743	

DEPTH (feet)	SAMPLES Sample No.	SAMPLES Sample	SAMPLES Blows/Foot	PID (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
					Surface Elevation:	
					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Olive (5Y 5/3), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3				304		
4				295	ATD ▽	
5						
6						
7					Bottom of boring at 7 feet	
8						
9						
10						
11						
12						
13						
14						

B-1 (11/92)

PROJECT: APL TERMINAL 1395 Middle Harbor Road - Port of Oakland	**Log of Well No. MW-3 (B-10)**
BORING LOCATION: 60 feet south of former excavation	ELEVATION AND DATUM: 9.84 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/20/93 / DATE FINISHED: 1/20/93
DRILLING METHOD: Hollow stem auger (8 1/4" and 10 1/4" OD)	TOTAL DEPTH: 10' / SCREEN INTERVAL: 3 - 10'
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER ATD: 6.5' / CASING: 2" dia SCH 40 PVC
SAMPLING METHOD: 5' CME continuous core and 18" x 2" split spoon	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	OVM Reading	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation:	
0					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Reddish brown (5Y 5/3), moist, 60% fine sand, 30% fine gravel, 10% low plastic fines, increasing plasticity with depth [FILL]	
2						
3						
4						
5	B-10 -5.5				ATD ▽	
6					SAND (SP) Dark greenish gray (5GY 4/1), wet, 95% fine to medium sand, 5% low plasticity fines Gravel	
7						
8					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 80% fines, 20% organics, trace gravel, high plasticity, decreasing organics with depth, firm [BAY MUD]	
9						
10					Bottom of boring at 10 feet	
11						
12						
13						
14						



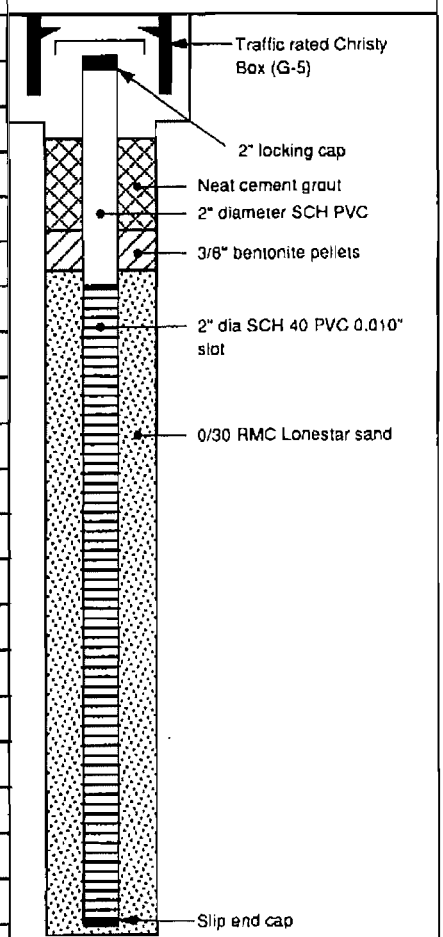
W-1 (11/92)

Geomatrix Consultants	Project No. 2067	Figure ---

PROJECT: APL TERMINAL 1395 Middle Harbor Road - Port of Oakland	**Log of Well No. MW-1 (B-11)**
BORING LOCATION: 50 feet north of former excavation	ELEVATION AND DATUM: 10.37 MLLW
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.	DATE STARTED: 1/21/93 / DATE FINISHED: 1/21/93
DRILLING METHOD: Hollow stem auger (8 1/4" and 10 1/4" OD)	TOTAL DEPTH: 10' / SCREEN INTERVAL: 3 - 10'
DRILLING EQUIPMENT: Mobile B-53	DEPTH TO WATER ATD: 6' / CASING: 2" dia SCH 40 PVC
SAMPLING METHOD: 5' CME continuous core and 18" x 2" split spoon	LOGGED BY: J. M. Abitz
HAMMER WEIGHT: 140 lbs / DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin / REG. NO. RG 3743

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	OVM Reading	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:
0					Asphalt
1					SAND with SILT and GRAVEL (SW - SM) Light olive brown (2.5Y 5/4), moist, 60% fine to coarse sand, 30% fine gravel, 10% low plasticity fines [FILL]
2					
3					
4					
5					
6	B-11-6				ATD ▽
7					SAND (SP) Dark greenish gray (5GY 4/1), wet, 95% fine to medium sand, 5% low plasticity fines
8					Organic SOIL (OL/OH) Dark greenish gray (5GY 4/1), wet, 50% high plasticity fines, 50% organics, very soft [BAY MUD]
9					
10					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 100% fines, high plasticity [BAY MUD]
11					Bottom of boring at 10 feet
12					
13					
14					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



W-1 (11/92)

Geomatrix Consultants	Project No. 2067	Figure ...

GEOMATRIX

APPENDIX C

ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS
SOIL SAMPLES

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

February 2, 1993

Ms. Elizabeth Wells
GEOMATRIX CONSULTANTS
100 Pine Street, 10th Floor
San Francisco, CA 94111

Client Ref. 2026
Clayton Project No. 93012.00

Dear Ms. Wells:

Attached is our analytical laboratory report for the samples received on January 22, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	B-11-6	Date Sampled:	01/21/93
Lab Number:	9301200-01A	Date Received:	01/22/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.034	0.005
Ethylbenzene	100-41-4	0.015	0.005
p,m-Xylenes	--	0.013	0.005
o-Xylene	95-47-6	0.009	0.005
Gasoline	--	3.9	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	60	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301200-02A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	67	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	B-11-6	Date Sampled:	01/21/93
Lab Number:	9301200-01A	Date Received:	01/22/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	B-11-6	Date Sampled:	01/21/93
Lab Number:	9301200-01A	Date Received:	01/22/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	92	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301200-02A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301200-02A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	115	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification: B-11-6
Lab Number: 9301200-01
Sample Matrix/Media: SOIL

Date Sampled: 01/21/93
Date Received: 01/22/93

Analyte	Concentration	Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Analysis Method
Diesel	ND	1	mg/kg	01/26/93	02/01/93	EPA 3550	EPA 8015
Hydrocarbons	ND	50	mg/kg	01/25/93	01/28/93	SM 5520E	SM 5520F
Total Oil & Grease	60	50	mg/kg	01/25/93	01/28/93	SM 5520E	SM 5520E

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification: METHOD BLANK
Lab Number: 9301200-02
Sample Matrix/Media: SOIL

Date Sampled: --
Date Received: --

Analyte	Concentration	Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Analysis Method
Diesel	ND	1	mg/kg	01/26/93	02/01/93	EPA 3550	EPA 8015
Hydrocarbons	ND	50	mg/kg	01/25/93	01/28/93	SM 5520E	SM 5520F
Total Oil & Grease	ND	50	mg/kg	01/25/93	01/28/93	SM 5520E	SM 5520E

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
--- Information not available or not applicable

Results are reported on a wet weight basis, as received

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301202-01A	Analytical Method:	EPA8015_8020
Ext./Prep. Method:	EPA 5030	Instrument ID:	05587
Date:	01/26/93	Date:	01/26/93
Analyst:	PF	Time:	19:21
Std. Source:	V921223-01W	Analyst:	PF
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	0.0100	0.00800	80	0.00800	80	80	53	140	0.0	28
GASOLINE	(FID)	ND	0.500	0.387	77	0.374	75	76	41	164	3.4	37
TOLUENE	(PID)	ND	0.0400	0.0290	73	0.0310	78	75	60	139	6.7	22

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301174-14A	Analytical Method:	EPA8010_8020
Ext./Prep. Method:	EPA5030	Instrument ID:	02911
Date:	01/27/93	Date:	01/27/93
Analyst:	CB	Time:	22:36
Std. Source:	V930118-01W	Analyst:	CB
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,1-DICHLOROETHENE	(HALL)	ND	2.00	1.44	72	1.64	82	77	41	149	13	30
CHLOROBENZENE	(HALL)	ND	2.00	1.60	80	1.77	89	84	66	151	10	30
TRICHLOROETHENE	(HALL)	ND	2.00	1.71	86	1.78	89	87	38	161	4.0	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301202-MB	Analytical Method:	EPA8015
Ext./Prep. Method:	EPA3550	Instrument ID:	02883
Date:	01/26/93	Date:	02/01/93
Analyst:	GD	Time:	14:04
Std. Source:	G930111-01W	Analyst:	AM
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	11.0	9.78	89	10.2	93	91	51	147	4.5	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301200-01A	Analytical Method:	SM5520EF
Ext./Prep. Method:	SM5520EF	Instrument ID:	02883
Date:	01/25/93	Date:	01/28/93
Analyst:	HYT	Time:	16:34
Std. Source:	E920917-01W	Analyst:	CS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	11.0	6.04	55	5.30	48	52	51	147	13	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301200-01A	Analytical Method:	SM5520E
Ext./Prep. Method:	SM5520E	Instrument ID:	AE200
Date:	01/25/93	Date:	01/28/93
Analyst:	HYT	Time:	15:00
Std. Source:	E920917-01W	Analyst:	CS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
OIL AND GREASE	60.0	1,040	1,090	99	1,030	93	96	75	125	5.2	25

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301200-01A	Analytical Method:	SM5520EF
Ext./Prep. Method:	SM5520EF	Instrument ID:	AE200
Date:	01/25/93	Date:	01/28/93
Analyst:	HYT	Time:	15:30
Std. Source:	E920917-01W	Analyst:	CS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
TOTAL PETROLEUM HYDROCARBONS	40.0	1,040	885	81	850	78	80	73	103	4.0	25

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

February 2, 1993

Ms. Elizabeth Wells
GEOMATRIX CONSULTANTS
100 Pine Street, 10th Floor
San Francisco, CA 94111

Client Ref. 2026
Clayton Project No. 93012.00

Dear Ms. Wells:

Attached is our analytical laboratory report for the samples received on January 22, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	B-11-6	Date Sampled:	01/21/93
Lab Number:	9301200-01A	Date Received:	01/22/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.034	0.005
Ethylbenzene	100-41-4	0.015	0.005
p,m-Xylenes	--	0.013	0.005
o-Xylene	95-47-6	0.009	0.005
Gasoline	--	3.9	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	60	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301200-02A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	67	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Clayton
ENVIRONMENTAL
CONSULTANTS

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	B-11-6	Date Sampled:	01/21/93
Lab Number:	9301200-01A	Date Received:	01/22/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Clayton
ENVIRONMENTAL
CONSULTANTS

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	B-11-6	Date Sampled:	01/21/93
Lab Number:	9301200-01A	Date Received:	01/22/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	92	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301200-02A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301200-02A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/27/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	115	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification: B-11-6
Lab Number: 9301200-01
Sample Matrix/Media: SOIL

Date Sampled: 01/21/93
Date Received: 01/22/93

Analyte	Concentration	Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Analysis Method
Diesel	ND	1	mg/kg	01/26/93	02/01/93	EPA 3550	EPA 8015
Hydrocarbons	ND	50	mg/kg	01/25/93	01/28/93	SM 5520E	SM 5520F

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93012.00

Sample Identification: METHOD BLANK
Lab Number: 9301200-02
Sample Matrix/Media: SOIL

Date Sampled: --
Date Received: --

Analyte	Concentration	Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Analysis Method
Diesel	ND	1	mg/kg	01/26/93	02/01/93	EPA 3550	EPA 8015
Hydrocarbons	ND	50	mg/kg	01/25/93	01/28/93	SM 5520E	SM 5520F

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number: 9301202-01A
Ext./Prep. Method: EPA 5030
Date: 01/26/93
Analyst: PF
Std. Source: V921223-01W
Sample Matrix/Media: SOIL

Analytical Method: EPA8015 8020
Instrument ID: 05587
Date: 01/26/93
Time: 19:21
Analyst: PF
Units: MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	0.0100	0.00800	80	0.00800	80	80	53	140	0.0	28
GASOLINE	(FID)	ND	0.500	0.387	77	0.374	75	76	41	164	3.4	37
TOLUENE	(PID)	ND	0.0400	0.0290	73	0.0310	78	75	60	139	6.7	22

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number: 9301174-14A
Ext./Prep. Method: EPA5030
Date: 01/27/93
Analyst: CB
Std. Source: V930118-01W
Sample Matrix/Media: SOIL

Analytical Method: EPA8010_8020
Instrument ID: 02911
Date: 01/27/93
Time: 22:36
Analyst: CB
Units: MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,1-DICHLOROETHENE	(HALL)	ND	2.00	1.44	72	1.64	82	77	41	149	13	30
CHLOROBENZENE	(HALL)	ND	2.00	1.60	80	1.77	89	84	66	151	10	30
TRICHLOROETHENE	(HALL)	ND	2.00	1.71	86	1.78	89	87	38	161	4.0	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301202-MB	Analytical Method:	EPA8015
Ext./Prep. Method:	EPA3550	Instrument ID:	02883
Date:	01/26/93	Date:	02/01/93
Analyst:	GD	Time:	14:04
Std. Source:	G930111-01W	Analyst:	AM
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	11.0	9.78	89	10.2	93	91	51	147	4.5	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301200-01A	Analytical Method:	SM5520EF
Ext./Prep. Method:	SM5520EF	Instrument ID:	02883
Date:	01/25/93	Date:	01/28/93
Analyst:	HYT	Time:	16:34
Std. Source:	E920917-01W	Analyst:	CS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	11.0	6.04	55	5.30	48	52	51	147	13	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301200-01A	Analytical Method:	SM5520E
Ext./Prep. Method:	SM5520E	Instrument ID:	AE200
Date:	01/25/93	Date:	01/28/93
Analyst:	HYT	Time:	15:00
Std. Source:	E920917-01W	Analyst:	CS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
OIL AND GREASE	60.0	1,040	1,090	99	1,030	93	96	75	125	5.2	25

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93012.00

Clayton Lab Number:	9301200-01A	Analytical Method:	SM5520EF
Ext./Prep. Method:	SM5520EF	Instrument ID:	AE200
Date:	01/25/93	Date:	01/28/93
Analyst:	HYT	Time:	15:30
Std. Source:	E920917-01W	Analyst:	CS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
TOTAL PETROLEUM HYDROCARBONS	40.0	1,040	885	81	850	78	80	73	103	4.0	25

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Chain-of-Custody Record

No. 5356

Date: 1 | 22 | 93

Page 1 of 1

Project No.: 2076

Samplers (Signatures):

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	Total oil & grease	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/21	1300	B-11-6	X				X	X	X	X	X	S		1

ANALYSES

REMARKS

Additional comments:

Bill Port of Oakland
Directly

1. Standard Method 5520 E & F.

Turnaround time: 2 weeks

Results to: E. K. Wells

Total No. of containers: 1

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Signature:	1/22/93	Signature: Jim Mitchell	1/22/93	Signature:	
Printed name: JAMES ABRAHAM		Printed name: JIM MITCHELL		Printed name:	
Company: GEOMATRIX		Company: CEC		Company:	
Received by:	**Time:**	**Received by:**	**Time:**	**Received by:**	**Time:**
Signature: Jim Mitchell	1495	Signature: Tracy B. Bullock	1525	Signature:	
Printed name: JIM MITCHELL		Printed name: TRACY B. BULLOCK		Printed name:	
Company: CEC		Company: CLAYTON		Company:	

Method of shipment: Lab Pickup

Laboratory comments and Log No.:

2x4 EC

cc

93012001

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA 94111
(415) 434 9400

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

January 29, 1993

Ms. Elizabeth Wells
GEOMATRIX CONSULTANTS
100 Pine Street, 10th Floor
San Francisco, CA 94111

Client Ref. 2026
Clayton Project No. 93011.74

Dear Ms. Wells:

Attached is our analytical laboratory report and quality assurance data package for the samples received on January 20, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-7-3.5	Date Sampled:	01/18/93
Lab Number:	9301174-01A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.007	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	0.014	0.005
o-Xylene	95-47-6	0.006	0.005
Gasoline	--	0.3	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	78	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-7-12	Date Sampled:	01/18/93
Lab Number:	9301174-02A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	1a

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	77	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

a Detection limits increased due to presence of heavier hydrocarbons

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-6-4	Date Sampled:	01/18/93
Lab Number:	9301174-03A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.011	0.005
Ethylbenzene	100-41-4	0.035	0.005
p,m-Xylenes	--	0.060	0.005
o-Xylene	95-47-6	0.050	0.005
Gasoline	--	11a	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	80	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

a Sample appears to weathered gasoline

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-4-4	Date Sampled:	01/18/93
Lab Number:	9301174-04A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	0.14	0.005
Toluene	108-88-3	2.9	0.005
Ethylbenzene	100-41-4	4.8	0.005
p,m-Xylenes	--	15	0.005
o-Xylene	95-47-6	7.0	0.005
Gasoline	--	480 [a]	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	79	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

a Sample appears to weathered gasoline

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-4-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-05A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	0.5	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	68	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-2-4	Date Sampled:	01/18/93
Lab Number:	9301174-06A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.03
Toluene	108-88-3	0.08	0.03
Ethylbenzene	100-41-4	0.06	0.03
p,m-Xylenes	--	0.11	0.03
o-Xylene	95-47-6	0.05	0.03
Gasoline	--	8[a]	2
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	78	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

a Sample appears to weathered gasoline
Note: Detection limits increased due to dilution necessary for quantitation

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-2-9	Date Sampled:	01/18/93
Lab Number:	9301174-07A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	64	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/22/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.007	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	0.006	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	1.4	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	87	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	0.007	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	72	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-1-4	Date Sampled:	01/19/93
Lab Number:	9301174-10A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	0.011	0.005
p,m-Xylenes	--	0.008	0.005
o-Xylene	95-47-6	0.005	0.005
Gasoline	--	1.6	0.3
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
a,a,a-Trifluorotoluene	98-08-8	71	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-8-6	Date Sampled:	01/19/93
Lab Number:	9301174-11A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/22/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	76	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-8A-11	Date Sampled:	01/19/93
Lab Number:	9301174-12A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/25/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	73	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-5-6.5	Date Sampled:	01/19/93
Lab Number:	9301174-13A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	64	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-5-11.5	Date Sampled:	01/19/93
Lab Number:	9301174-14A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	62	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-10-5.5	Date Sampled:	01/20/93
Lab Number:	9301174-15A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/26/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	60	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301174-16A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/22/93
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
p,m-Xylenes	--	ND	0.005
o-Xylene	95-47-6	ND	0.005
Gasoline	--	ND	0.3

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
a,a,a-Trifluorotoluene	98-08-8	85	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-7-3.5	Date Sampled:	01/18/93
Lab Number:	9301174-01A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-7-3.5	Date Sampled:	01/18/93
Lab Number:	9301174-01A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	97	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-7-12	Date Sampled:	01/18/93
Lab Number:	9301174-02A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-7-12	Date Sampled:	01/18/93
Lab Number:	9301174-02A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	97	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-6-4	Date Sampled:	01/18/93
Lab Number:	9301174-03A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-6-4	Date Sampled:	01/18/93
Lab Number:	9301174-03A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	97	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-4-4	Date Sampled:	01/18/93
Lab Number:	9301174-04A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-4-4	Date Sampled:	01/18/93
Lab Number:	9301174-04A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	98	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-4-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-05A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-4-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-05A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	121	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-2-4	Date Sampled:	01/18/93
Lab Number:	9301174-06A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-2-4	Date Sampled:	01/18/93
Lab Number:	9301174-06A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	109	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-2-9	Date Sampled:	01/18/93
Lab Number:	9301174-07A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-2-9	Date Sampled:	01/18/93
Lab Number:	9301174-07A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	97	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	111	50	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	113	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-1-4	Date Sampled:	01/19/93
Lab Number:	9301174-10A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-1-4	Date Sampled:	01/19/93
Lab Number:	9301174-10A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	99	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-8-6	Date Sampled:	01/19/93
Lab Number:	9301174-11A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-8-6	Date Sampled:	01/19/93
Lab Number:	9301174-11A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/26/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	109	50	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-8A-11	Date Sampled:	01/19/93
Lab Number:	9301174-12A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-8A-11	Date Sampled:	01/19/93
Lab Number:	9301174-12A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	95	50	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-5-6.5	Date Sampled:	01/19/93
Lab Number:	9301174-13A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-5-6.5	Date Sampled:	01/19/93
Lab Number:	9301174-13A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	114	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-5-11.5	Date Sampled:	01/19/93
Lab Number:	9301174-14A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-5-11.5	Date Sampled:	01/19/93
Lab Number:	9301174-14A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	110	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-10-5.5	Date Sampled:	01/20/93
Lab Number:	9301174-15A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-10-5.5	Date Sampled:	01/20/93
Lab Number:	9301174-15A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	113	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301174-16A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.03
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301174-16A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	01/22/93
Preparation Method:	EPA 5030	Date Analyzed:	01/27/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	116	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-4	Date Sampled:	01/18/93
Lab Number:	9301174-08A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	57	25	121
Phenol-d6	13127-88-3	47	24	113
Nitrobenzene-d5	4165-60-0	61	23	120
2-Fluorobiphenyl	321-60-8	68	30	115
2,4,6-Tribromophenol	118-79-6	40	19	122
Terphenyl-d14	98904-43-9	88	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	B-3-10.5	Date Sampled:	01/18/93
Lab Number:	9301174-09A	Date Received:	01/20/93
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	74	25	121
Phenol-d6	13127-88-3	70	24	113
Nitrobenzene-d5	4165-60-0	81	23	120
2-Fluorobiphenyl	321-60-8	83	30	115
2,4,6-Tribromophenol	118-79-6	76	19	122
Terphenyl-d14	98904-43-9	111	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification: METHOD BLANK
Lab Number: 9301174-16A
Sample Matrix/Media: SOIL
Extraction Method: EPA 3550
Analytical Method: EPA 8270

Date Sampled: --
Date Received: --
Date Extracted: 01/23/93
Date Analyzed: 01/25/93

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301174-16A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301174-16A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9301174-16A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	01/23/93
Extraction Method:	EPA 3550	Date Analyzed:	01/25/93
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	83	25	121
Phenol-d6	13127-88-3	83	24	113
Nitrobenzene-d5	4165-60-0	92	23	120
2-Fluorobiphenyl	321-60-8	95	30	115
2,4,6-Tribromophenol	118-79-6	84	19	122
Terphenyl-d14	98904-43-9	113	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Matrix/Media: SOIL
Preparation Method: SM 5520E
Analysis Method: SM 5520F

Date Received: 01/20/93
Date Prepared: 01/21/93
Date Analyzed: 01/26/93

Lab Number	Sample Identification	Date Sampled	Hydrocarbons (mg/kg)	Detection Limit (mg/kg)
01A	B-7-3.5	01/18/93	ND	50
02A	B-7-12	01/18/93	ND	50
03A	B-6-4	01/18/93	ND	50
04A	B-4-4	01/18/93	1,400	50
05A	B-4-10.5	01/18/93	130	50
06A	B-2-4	01/18/93	710	50
07A	B-2-9	01/18/93	ND	50
08A	B-3-4	01/18/93	ND	50
09A	B-3-10.5	01/18/93	60	50
10A	B-1-4	01/19/93	ND	50
11A	B-8-6	01/19/93	ND	50
12A	B-8A-11	01/19/93	ND	50
13A	B-5-6.5	01/19/93	ND	50
14A	B-5-11.5	01/19/93	ND	50
15A	B-10-5.5	01/20/93	310	50
16A	METHOD BLANK	--	ND	50

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Matrix/Media: SOIL
Preparation Method: EPA 3550
Analysis Method: EPA 8015

Date Received: 01/20/93
Date Prepared: 01/25/93
Date Analyzed: 01/27/93

Lab Number	Sample Identification	Date Sampled	Diesel (mg/kg)	Detection Limit (mg/kg)
01A	B-7-3.5	01/18/93	ND	1
02A	B-7-12	01/18/93	ND	1
03A	B-6-4	01/18/93	10	1
04A	B-4-4	01/18/93	120	1
05A	B-4-10.5	01/18/93	12	1
06A	B-2-4	01/18/93	7	1
07A	B-2-9	01/18/93	ND	1
08A	B-3-4	01/18/93	ND	1
09A	B-3-10.5	01/18/93	ND	1
10A	B-1-4	01/19/93	ND	1
11A	B-8-6	01/19/93	25	1
12A	B-8A-11	01/19/93	ND	10[a]
13A	B-5-6.5	01/19/93	ND	10[a]
14A	B-5-11.5	01/19/93	ND	10[a]
15A	B-10-5.5	01/20/93	ND	10[a]
16A	METHOD BLANK	--	ND	1

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received
a Detection limit increased due to presence of heavier hydrocarbons

Chain-of-Custody Record

No 3548 | Date: 1/18/93 | Page 1 of 2

Project No.: 3026

Samplers (Signatures):

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	Total Oil & Grease	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/18	1100	B-7-3.5	X				X	X	X	X	X	S		1
	1125	B-2-12	X				X	X	X	X	X	S		1
	1205	B-6-4	X				X	X	X	X	X	S		1
	1013	B-4-4	X				X	X	X	X	X	S		1
	1040	B-4-10.5	X				X	X	X	X	X	S		1
	1330	B-2-4	X				X	X	X	X	X	S		1
	1340	B-2-9	X				X	X	X	X	X	S		1
	1415	B-3-4	X			X	X	X	X	X	X	S		1
	1515	B-3-10.5	X			X	X	X	X	X	X	S		1
1/19	1210	B-1-4	X				X	X	X	X	X	S		1
	1400	B-8-6	X				X	X	X	X	X	S		1
	1515	B-8A-11	X				X	X	X	X	X	S		1

Turnaround time: 2 weeks

Results to: Elizabeth K. Wells

Total No. of containers: 12

REMARKS

Additional comments

Bill Port of Oakland Directly

1. Standard Method 5520 E and F.

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Signature:		Signature: Jim Mitchell	1/20/93	Signature:	
Printed name: James Abitz	1/20/93	Printed name: JIM MITCHELL		Printed name:	
Company: GEOMATRIX		Company: CEC		Company:	
Received by:	**Time:**	**Received by:** Tammi R. Alton	**Time:**	**Received by:**	**Time:**
Signature: Jim Mitchell	1/20/93	Signature: TAMMI R. ALTON	6:10 pm	Signature:	
Printed name: JIM MITCHELL		Printed name:		Printed name:	
Company: CEC		Company: CEC		Company:	

Method of shipment: Lab Pickup

Laboratory comments and Log No.:

9301171

OK

Geomatrix Consultants
100 Pine St 10th Floor
San Francisco, CA 94111
(415) 434-9400

Chain-of-Custody Record

No 3549 | Date: 1/19/93 | Page 2 of 2

Project No.: 2026

Samplers (Signatures):

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	Total Oil & Grease	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/19	1615	B-5-6.5	X				X	X	X	X	X	S		1
↓	1645	B-5-11.5	X				X	X	X	X	X	S		1
1/20	1245	B-10-5.5	X				X	X	X	X	X	S		1

ANALYSES

REMARKS

Additional comments

Bill Port of Oakland Directly

1. Standard Method 5520 E and F.

Turnaround time: 2 weeks

Results to: Elizabeth K. Wells

Total No. of containers: 3

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Signature:		Signature: Jim Mitchell	1/20/93	Signature:	
Printed name: JAMES ABIOD	1/20/93	Printed name: JIM MITCHELL		Printed name:	
Company: GEOMATRIX		Company: CEC		Company:	
Received by	**Time:**	**Received by**	**Time:**	**Received by:**	**Time:**
Signature: Jim Mitchell	1600	Signature: Tammi R. Hilton	6:10 pm	Signature:	
Printed name: JIM MITCHELL		Printed name: TAMMI R. HILTON		Printed name.	
Company: CEC		Company: CEC		Company:	

Method of shipment: Lab Pickup

Laboratory comments and Log No.:

930174

OK

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA 94111
(415) 434-9400

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

February 12, 1993

Ms. Elizabeth Wells
GEOMATRIX CONSULTANTS
100 Pine Street, 10th Floor
San Francisco, CA 94111

REVISED REPORT
Client Ref. 2026
Clayton Project No. 93011.74

Dear Ms. Wells:

Attached is our revised analytical laboratory report for the samples received on January 20, 1993 and originally reported to you on January 29, 1993. On February 5, 1993 you requested additional silica gel cleanup on samples B-4-4, B-4-10.5, B-2-4 and B-10-5.5. Those results are presented in this report.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Juliette A. Work for

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

cc: Patricia Murphy

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026
Clayton Project No. 93011.74

Sample Matrix/Media: SOIL
Preparation Method: SM 5520E
Analysis Method: SM 5520F

Date Received: 01/20/93
Date Prepared: 01/21/93
Date Analyzed: 02/11/93

Lab Number	Sample Identification	Date Sampled	Hydrocarbons (mg/kg)	Detection Limit (mg/kg)
04B	B-4-4	01/18/93	710	50
05B	B-4-10.5	01/18/93	110	50
06B	B-2-4	01/18/93	310	50
15B	B-10-5.5	01/20/93	140	50
16B	METHOD BLANK	--	ND	50

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results are reported on a wet weight basis, as received

GEOMATRIX

APPENDIX D

ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS GROUNDWATER SAMPLES

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

February 17, 1993

Ms. Elizabeth Wells
GEOMATRIX CONSULTANTS
100 Pine Street, 10th Floor
San Francisco, CA 94111

Client Ref. 2026.06
Clayton Project No. 93020.91

Dear Ms. Wells:

Attached is our analytical laboratory report for the samples received on February 5, 1993. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-1	Date Sampled:	02/05/93
Lab Number:	9302091-01A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/16/93
Preparation Method:	EPA 5030	Date Analyzed:	02/16/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	0.8	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-1	Date Sampled:	02/05/93
Lab Number:	9302091-01A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/16/93
Preparation Method:	EPA 5030	Date Analyzed:	02/16/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-1	Date Sampled:	02/05/93
Lab Number:	9302091-01A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/16/93
Preparation Method:	EPA 5030	Date Analyzed:	02/16/93
Analytical Method:	EPA 8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	9.2	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	8.9	0.3
Toluene	108-88-3	1.6	0.3
p,m-Xylenes	------	1.3	0.4
o-Xylene	95-47-6	1.4	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL - UCL
Bromochloromethane	74-97-5	100	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-2	Date Sampled:	02/05/93
Lab Number:	9302091-02A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-2	Date Sampled:	02/05/93
Lab Number:	9302091-02A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-2	Date Sampled:	02/05/93
Lab Number:	9302091-02A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	------	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	100	50 -	150
1,4-Difluorobenzene	540-36-3	99	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-3	Date Sampled:	02/05/93
Lab Number:	9302091-03A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	0.4	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-3	Date Sampled:	02/05/93
Lab Number:	9302091-03A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	MW-3	Date Sampled:	02/05/93
Lab Number:	9302091-03A	Date Received:	02/05/93
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	2.1	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	1.7	0.3
Toluene	108-88-3	0.9	0.3
p,m-Xylenes	------	1.2	0.4
o-Xylene	95-47-6	1.9	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	90	50 -	150
1,4-Difluorobenzene	540-36-3	79	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302091-04A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8010		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification: METHOD BLANK
Lab Number: 9302091-04A
Sample Matrix/Media: WATER
Preparation Method: EPA 5030
Analytical Method: EPA 8010

Date Sampled: --
Date Received: --
Date Prepared: 02/11/93
Date Analyzed: 02/11/93

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9302091-04A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	02/11/93
Preparation Method:	EPA 5030	Date Analyzed:	02/11/93
Analytical Method:	EPA 8020		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	------	ND	0.4
o-Xylene	95-47-6	ND	0.4
Surrogates		**Recovery (%)**	**QC Limits (%) LCL UCL**
Bromochloromethane	74-97-5	100	50 - 150
1,4-Difluorobenzene	540-36-3	90	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Matrix/Media: WATER
Analysis Method: SM 5520F

Date Received: 02/05/93
Date Analyzed: 02/16/93

Lab Number	Sample Identification	Date Sampled	Hydrocarbons (mg/L)	Detection Limit (mg/L)
01H	MW-1	02/05/93	5	1
02H	MW-2	02/05/93	2	1
03H	MW-3	02/05/93	2	1
04A	METHOD BLANK	--	ND	1

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Matrix/Media: WATER
Analysis Method: EPA 160.1

Date Received: 02/05/93
Date Analyzed: 02/15/93

Lab Number	Sample Identification	Date Sampled	Total Dissolved Solids (mg/L)	Detection Limit (mg/L)
01G	MW-1	02/05/93	3,000	10
02G	MW-2	02/05/93	23,000	10
03G	MW-3	02/05/93	1,600	10
04A	METHOD BLANK	--	<10	10

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Matrix/Media: WATER
Preparation Method: EPA 3510
Analysis Method: EPA 8015

Date Received: 02/05/93
Date Prepared: 02/10/93
Date Analyzed: 02/16/93

Lab Number	Sample Identification	Date Sampled	Diesel (ug/L)	Detection Limit (ug/L)
01E	MW-1	02/05/93	4,700[a]	50
02E	MW-2	02/05/93	840[a]	50
03F	MW-3	02/05/93	3,400[a]	50
04A	METHOD BLANK	--	ND	50a

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

a The hydrocarbons detected in these samples appear to be intermediate between diesel and motor oil: quantitation was based on diesel standards

Results of Analysis
for
Geomatrix Consultants/ Port of Oakland

Client Reference: 2026.06
Clayton Project No. 93020.91

Sample Matrix/Media: WATER
Preparation Method: EPA 5030
Analysis Method: EPA 8015

Date Received: 02/05/93
Date Prepared: 02/11/93
Date Analyzed: 02/11/93

Lab Number	Sample Identification	Date Sampled	Gasoline (ug/L)	Detection Limit (ug/L)
01C	MW-1	02/05/93	1,800	50
02C	MW-2	02/05/93	ND	50
03C	MW-3	02/05/93	ND	50
04A	METHOD BLANK	--	ND	50

ND Not detected at or above limit of detection
< Not detected at or above limit of detection
-- Information not available or not applicable

Chain-of-Custody Record

No 3370 | Date: 2/5/93 | Page 1 of 1

Project No.: 2026

Samplers (Signatures):

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	total dissolved Solids	total oil & grease	Cooled	Soil (S) or water (W)	Acidified	Number of containers
2/5	1100	MW-1	X	X			X	X		X	X	X	W	X	9
2/5	1200	MW-2	X	X			X	X		X	X	X	W	X	9
2/5	1315	MW-3	X	X			X	X		X	X	X	W	X	9

ANALYSES

REMARKS

Additional comments

Bill Port of Oakland directly.

1. Standard Method 5520 C and F. Report only post gel results.

Turnaround time: 2 WEEKS

Results to: E. K. Wells

Total No. of containers: 27

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Signature:	2/6/93	Signature:		Signature:	
Printed name: JAMES ABID		Printed name:		Printed name:	
Company: GEOMATRIX		Company:		Company:	
Received by:	**Time:**	**Received by:**	**Time:**	**Received by:**	**Time:**
Signature: Tracy B Bullock	2/5/93 1510	Signature:		Signature:	
Printed name: TRACY B BULLOCK		Printed name:		Printed name:	
Company: CLAYTON		Company:		Company:	

Method of shipment: Deliver

Laboratory comments and Log No.: 9302091

DL

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

QUALITY ASSURANCE DATA PACKAGE

CLAYTON PROJECT NO. 93020.91

Quality Assurance Results Summary
for
Clayton Project No. 93020.91

Clayton Lab Number: 9302091-03A
Ext./Prep. Method:
Date: / /
Analyst:
Std. Source: V930118-02W
Sample Matrix/Media: WATER

Analytical Method: EPA601_2/B01020
Instrument ID: 02911
Date: 02/11/93
Time: 14:00
Analyst: CB
Units: UG/L

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,1-DICHLOROETHENE	(HALL)	ND	20.0	20.5	103	21.5	108	105	65	131	4.8	20
CHLOROBENZENE	(HALL)	ND	20.0	23.8	119	22.6	113	116	79	132	5.2	20
TRICHLOROETHENE	(HALL)	ND	20.0	23.5	118	21.8	109	113	69	133	7.5	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93020.91

Clayton Lab Number: 9302093-02B
Ext./Prep. Method:
Date: / /
Analyst:
Std. Source: V930118-02W
Sample Matrix/Media: WATER

Analytical Method: EPA601_2/801020
Instrument ID: 02904
Date: 02/11/93
Time: 14:57
Analyst: CB
Units: UG/L

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,1-DICHLOROETHENE	(HALL)	ND	20.0	18.8	94	18.8	94	94	65	131	0.0	20
CHLOROBENZENE	(HALL)	ND	20.0	22.2	111	22.8	114	113	79	132	2.7	20
TRICHLOROETHENE	(HALL)	ND	20.0	25.2	126	25.3	127	126	69	133	0.4	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93020.91

Clayton Lab Number: 9302091-03D
Ext./Prep. Method:
Date: / /
Analyst:
Std. Source: V920208-03W
Sample Matrix/Media: WATER

Analytical Method: EPA8015 8020
Instrument ID: 05587
Date: 02/11/93
Time: 21:46
Analyst: GD
Units: UG/L

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	5.00	4.96	99	4.85	97	98	81	118	2.2	20
GASOLINE	(FID)	ND	200	165	83	172	86	84	80	150	4.2	25
TOLUENE	(PID)	ND	15.0	13.2	88	12.7	85	86	84	118	3.9	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93020.91

Clayton Lab Number: 9302120-06B
Ext./Prep. Method:
Date: / /
Analyst:
Std. Source: V930118-02W
Sample Matrix/Media: WATER

Analytical Method: EPA501_2/801020
Instrument ID: 02904
Date: 02/16/93
Time: 18:24
Analyst: CB
Units: UG/L

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,1-DICHLORDETHENE	(HALL)	ND	20.0	17.9	90	19.2	96	93	65	131	7.0	20
BENZENE	(PID)	ND	20.0	20.7	104	21.4	107	105	76	134	3.3	20
CHLOROBENZENE	(PID)	ND	20.0	20.4	102	20.8	104	103	75	127	1.9	20
CHLOROBENZENE	(HALL)	ND	20.0	22.8	114	23.5	118	116	79	132	3.0	20
TOLUENE	(PID)	ND	20.0	20.8	104	21.4	107	106	71	125	2.8	20
TRICHLOROETHENE	(HALL)	ND	20.0	24.8	124	26.3	132	128	69	133	5.9	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93020.91

Clayton Lab Number:	93D2091-MB	Analytical Method:	EPA8015
Ext./Prep. Method:	EPA3510	Instrument ID:	02883
Date:	02/10/93	Date:	02/16/93
Analyst:	WS	Time:	18:51
Std. Source:	G930125-01W	Analyst:	AM
Sample Matrix/Media:	WATER	Units:	UG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	1,000	760	76	820	82	79	40	140	7.6	40

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 93020.91

Clayton Lab Number:	9302091-MB	Analytical Method:	SM5520CF
Ext./Prep. Method:	SM5520C	Instrument ID:	07434
Date:	02/12/93	Date:	02/16/93
Analyst:	HYT	Time:	01:01
Std. Source:	E930209-02W	Analyst:	AM
Sample Matrix/Media:	WATER	Units:	MG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
TOTAL PETROLEUM HYDROCARBONS	ND	7.50	6.20	83	6.00	80	81	75	125	3.3	25

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Port of Oakland/Geomatrix

Client Reference: 2026
Clayton Project No. 93002.91

Lab Number:	9302095-03A	Date Analyzed:	02/15/93
Analytical Method:	EPA 160.1	Sample Matrix/Media:	Water
		Units:	mg/L

Analyte	Sample Result	Duplicate Sample	RPD (%)
Total Dissolved Solids	10	10	0

TANK CLOSURE REPORT EF-10

Port of Oakland Tank No. EF-10
Berth 63 - American President Line Terminal
1395 Middle Harbor Road
Oakland, California

Project No. 10-256

October 1995

TANK CLOSURE REPORT

Port of Oakland Tank EF-10
Berth 63 - American President Line Terminal
1395 Middle Harbor Road
Oakland, California

Project No. 10-256-02-004

Prepared for:

Port of Oakland
530 Water Street
Oakland, California

Prepared by:

Alisto Engineering Group
1575 Treat Boulevard, Suite 201
Walnut Creek, California

October 31, 1995

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REGISTERED PROFESSIONAL ENGINEER
ALBERTO SANCHEZ SEVILLA
26392
Exp. Date 3/31/96
CIVIL
STATE OF CALIFORNIA

CONTENTS

1.0 INTRODUCTION

The Port of Oakland retained Alisto Engineering Group to provide engineering consulting services during removal of an underground fuel storage tank, EF-10, piping, and dispenser system, and disposal of petroleum hydrocarbon-impacted soil at Berth 63, doing business as American President Terminal Lines, 1395 Middle Harbor Road, Oakland, California. This report presents the results of field activities and observations during tank closure. A site vicinity map is shown on Figure 1.

2.0 SCOPE OF WORK

The scope of work performed during tank closure included the following tasks:

- Visual inspection during removal of the underground storage tank, piping, and dispenser system
- Documentation of excavation and disposal of petroleum hydrocarbon-impacted soil
- Documentation of purging and disposal of approximately 2500 gallons of water from the tank cavity
- Collection of soil and groundwater samples for laboratory analysis
- Preparation of this report presenting the results of these activities

3.0 FIELD METHODS AND PROCEDURES

The field methods and procedures used were in accordance with the requirements and guidelines of the Alameda County Health Care Services Agency (ACHCSA) and the California Regional Water Quality Control Board, San Francisco Bay Region, including the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Site, August 10, 1990.

Field activities were performed in accordance with the site-specific health and safety plan, a copy of which is presented in Appendix A. The site was secured with a temporary fence and stockpiled soil was placed on and covered by plastic sheeting.

3.1 Underground Storage Tank Removal

On July 25, 1995, one single-walled, tar-covered, steel 4000-gallon underground diesel fuel storage tank was removed from the site for disposal. The tank was approximately 20 feet long and 6 feet in diameter, and the bottom of the tank was at approximately 13 feet below grade. The former location of the tank is shown on Figure 2.

$\pi r^2 l$ = 3.14 × 3² × 20 ft³ gal 7.48 / ft³ = 4,227 gal

Tank removal and subsequent soil excavation were performed by Pacific Rim Engineering, San Francisco, California. Mr. Dale Swain of Alisto Engineering and Mr. Mark Vigeant of Pacific Rim Engineering were onsite during tank removal and soil excavation. Tank closure was initiated by removing product and disconnecting product distribution and electrical wiring systems. Dry ice was placed into the tank through the fill port to displace hydrocarbon vapor. The tank removal was observed by Mr. David McAneny of the Port of Oakland, Ms. Jennifer Eberle of the ACHCSA, and Mr. Gil Cody of the City of Oakland Fire Department.

Since the tank was used for diesel fuel storage, measurement of lower explosive limit and oxygen content in the tank before removal was not required.

Before loading on a flat-bed truck, the condition of the tank was noted. There were no holes, corrosion, or welding failure observed. The tank was transported by H & H Environmental Services, San Francisco, California, to Pacific Rim Corporation, Patterson, California. The certificate of disposal and uniform hazardous waste manifests for disposal of the tank and its contents are presented in Appendix B.

3.2 Soil Sampling

On July 25, 1995, immediately after removal of the tank and backfill material, Soil Samples S-1 and S-2 were collected from the native soil at the bottom of the cavity at 13.5 and 14.0 feet below grade. In addition, Soil Samples S-3 and S-4 were collected from the fill material at the bottom of the former electrical and fuel pump box locations and the piping trench at 2.5 and 3.0 feet below grade.

On August 7, 1995, the hose reel boxes were removed and Soil Samples S-5 and S-6 were collected from native soil at the bottom of the cavity. Based on the concentration of total petroleum hydrocarbons as diesel (TPH-D) detected in S-1 and S-3, additional soil was excavated near the west end of the tank cavity and the fuel pump box, and Soil Samples S-7 and S-8 were collected from the extent of the additional excavation.

On August 14, 1995, additional soil was excavated from the pump box based on the concentration of TPH-D detected in S-8; and Soil Sample S-9 was collected from the bottom of the cavity. Additional soil was also removed from the former location of the hose reel boxes based on the TPH-D levels detected in S-5 and S-6, and Soil Samples S-10 and S-11 were collected.

The results of each soil sampling event was provided to Ms. Jennifer Eberle of the ACHCSA to procure regulatory guidance before additional soil excavation. Ms. Eberle was onsite during tank removal and each soil excavation event.

Backfill used during original installation of the tank and trench lines consisted of imported sand. The material beyond the imported backfill consisted of fine-grained sand fill with occasional brick and timber. Below the fill material, native silty clay was observed at a depth of approximately 11 feet.

Petroleum hydrocarbon odors indicative of diesel were noticed during tank removal and soil excavation. A Thermo Environmental Instruments Model 580B photoionization detector was used to monitor volatile organic compound content in ambient air, and did not detect any above the detection limits of the instrument.

The procedures for soil sampling are presented in Appendix C. The sample locations, designations, and depths are shown on Figure 3, and the analytical results for the soil samples collected are presented in Table 1.

3.3 Grab Groundwater Sampling

Groundwater was not observed in the cavity during tank removal and initial excavation. However, after overexcavation on August 14, 1995, groundwater was in the cavity at approximately 8.5 feet below grade and was observed to rise and fall within the excavation during the field activities.

On August 16, 1995, approximately 2500 gallons of groundwater was pumped from the tank cavity by H & H Environmental Services. The water was brown in color and turbid. A hydrocarbon sheen was only observed on the groundwater in the tank cavity before the pumping event. The uniform hazardous waste manifest for water disposal is presented in Appendix B.

On August 16, 1995, a grab groundwater sample, TP-1, was collected from the tank cavity using a disposable bailer to be analyzed for specific constituents. The sample was collected after groundwater was pumped from the tank cavity and allowed to recharge. The results of grab groundwater sampling and analysis are presented in Table 2.

3.4 Stockpiled Soil Sampling

During tank removal on July 25, 1995, Stockpile A was accumulated from excavation of tank backfill material. Soil generated during subsequent excavation was designated as Stockpile B. On August 7, 1995, Soil Samples SP-2 through SP-5 were collected from Stockpile A and composited into one sample for analysis, and SP-6 through SP-9 were collected from Stockpile B and composited into one sample for analysis. Sample S-1 was not analyzed. The analytical results for the stockpiled soil samples are presented in Table 3.

Based on the results of stockpiled soil sample analysis, approximately 144 yards of excavated material was transported by Denbeste Transportation, Winsor, California, to Vasco Road Landfill, Livermore, California for disposal. The uniform hazardous waste manifest for soil disposal is presented in Appendix B.

3.5 Tank Cavity Backfilling

On August 16, 1995, after tank removal and soil and groundwater sampling, the cavity was backfilled to grade with compacted, imported pea gravel from Tidewater Sand & Gravel, Oakland, California. Backfilling was performed under the direction of Mr. Mark Vigeant of Pacific Rim Environmental.

4.0 ANALYTICAL METHODS

Soil and groundwater samples were analyzed by Pace Environmental Laboratories, Petaluma, California and Clayton Environmental Consultants, Pleasanton, California under direct contract with the Port of Oakland. The samples were analyzed using standard test methods of the United States Environmental Protection Agency (EPA) and the California Department of Health Services for the following constituents:

- TPH-D using EPA Methods 5030/8015 (modified)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Methods 5030/8020

Additionally, composited Soil Samples SP-2 through SP-5 and SP-6 through SP-9 were analyzed for the following to comply with the acceptance requirements of the disposal site:

- Total lead using EPA Method 6010
- ph to determine corrosivity using EPA Method 9045
- Flash point to determine ignitability
- Reactivity to cyanide and sulfide using Method SW846

The results of the laboratory analysis are presented in Tables 1 and 2; and the field procedures for chain of custody documentation, the laboratory reports, and the chain of custody records are presented in Appendix D.

5.0 RESULTS AND FINDINGS

The findings, based on the results of sampling and analysis, are summarized as follows:

- The underground tank was observed to be intact with no holes.
- Analysis of Soil Samples S-1 and S-2, collected at the bottom of the sidewalls at the west end of the tank cavity, detected up to 2600 milligrams per kilogram (mg/kg) TPH-D. BTEX constituents were not detected above the reported detection limits.

- After overexcavation of the west end of the tank cavity, TPH-D was not detected above the reported detection limit in Sample S-7.

- Laboratory analysis of Soil Sample S-8, collected after initial excavation at the former fuel pump box, detected 1300 mg/kg TPH-D, 3.8 micrograms per kilogram (ug/kg) benzene, 13 ug/kg toluene, and 16 ug/kg total xylenes. After additional excavation, Soil Sample S-9 was collected. Analysis of S-9 detected 25 mg/kg TPH-D. BTEX constituents were not detected above the reported detection limits in this sample.

- Analysis of Soil Samples S-10 and S-11, collected after additional soil was removed from the former location of the hose reel boxes, did not detect petroleum hydrocarbons above the reported detection limits.

- TPH-D was detected at 5.8 milligrams per liter (mg/l) in Groundwater Sample TP-1, collected from the tank cavity. BTEX constituents were not detected above the reported detection limits in this sample.

- Analysis of the composited Soil Samples SP-2 through SP-5, collected from Stockpile A, detected up to 430 mg/kg TPH-D, 1.6 ug/kg toluene, 1.5 ug/kg ethylbenzene, and 7.1 ug/kg total xylenes. Analysis of composited Soil Samples SP-6 through SP-9, collected from Stockpile B, detected up to 4600 mg/kg TPH-D, 1.4 ug/kg toluene, and 17 ug/kg total xylenes.

6.0 CONCLUSIONS

Based on the results of the soil sampling and analysis, it appears that the petroleum hydrocarbon-impacted soil has been effectively removed from the former location of the underground tank, piping, and dispenser system.

Since BTEX constituents were not detected above the reported detection limits in the groundwater collected from the cavity, and groundwater is tidally influenced and probably of brackish quality, no further subsurface investigation is warranted at this time.

TABLES

TABLE 1 - SUMMARY OF RESULTS OF SOIL SAMPLING
PORT OF OAKLAND, TANK EF-10, BERTH 63
1395 MIDDLE HARBOR ROAD, OAKLAND, CALIFORNIA

ALISTO PROJECT NUMBER 10-256

SAMPLE ID	SAMPLE DEPTH (fbg)	DATE OF SAMPLING	TPH-D (mg/kg)	B (ug/kg)	T (ug/kg)	E (ug/kg)	X (ug/kg)	LAB
S-1	13.5	07/25/95	2600	ND<500	ND<500	ND<500	ND<500	PACE
S-2	14.0	07/25/95	12	ND<1	ND<1	ND<1	ND<2	PACE
S-3	2.5	07/25/95	~~4600~~	11	8.1	ND<1	64	PACE
S-4	3.0	07/25/95	17	ND<1	1	ND<1	ND<2	PACE
S-5	6.5	08/07/95	580	ND<1	1.9	13	11	PACE
S-6	6.5	08/07/95	5800	ND<1	1.8	30	20	PACE
S-7	14.5	08/07/95	ND<10	ND<1	ND<1	ND<1	ND<2	PACE
S-8	7.0	08/07/95	1300	3.8	13	ND<1	16	PACE
S-9	8.5	08/14/95	25	ND<5	ND<5	ND<5	ND<5	CEC
S-10	8.5	08/14/95	50	ND<5	ND<5	ND<5	ND<5	CEC
S-11	8.0	08/14/95	ND<1	ND<5	ND<5	ND<5	ND<5	CEC

ABBREVIATIONS:

TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
fbg	Feet below grade
mg/kg	Milligrams per kilogram
ND	Not detected above reported detection limit
PACE	Pace, Inc.
CEC	Clayton Environmental Consultants

E:\0\10-256\TANKSOIL.WQ2

TABLE-2 SUMMARY OF GROUNDWATER SAMPLING AND ANALYSIS
PORT OF OAKLAND, TANK EF-10, BERTH 63
1395 MIDDLE HARBOR ROAD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-256

SAMPLE ID	DATE OF SAMPLING	TPH-D (mg/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	LAB
TP-1	08/16/95	5.8	ND<0.5	ND<0.5	ND<0.5	ND<1	PACE
TB-1	08/16/95	---	ND<0.5	ND<0.5	ND<0.5	ND<1	PACE

ABBREVIATIONS:

TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ug/l	Micrograms per liter
---	Not analyzed
ND	Not detected above reported detection limit
TP	Tank pit
TB	Trip blank
PACE	Pace, Inc.

E:\0\10-256\256-2-1\WQ.1

TABLE 3 - SUMMARY OF RESULTS OF STOCKPILED SOIL SAMPLING
PORT OF OAKLAND, TANK EF-10, BERTH 63
1395 MIDDLE HARBOR ROAD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-256

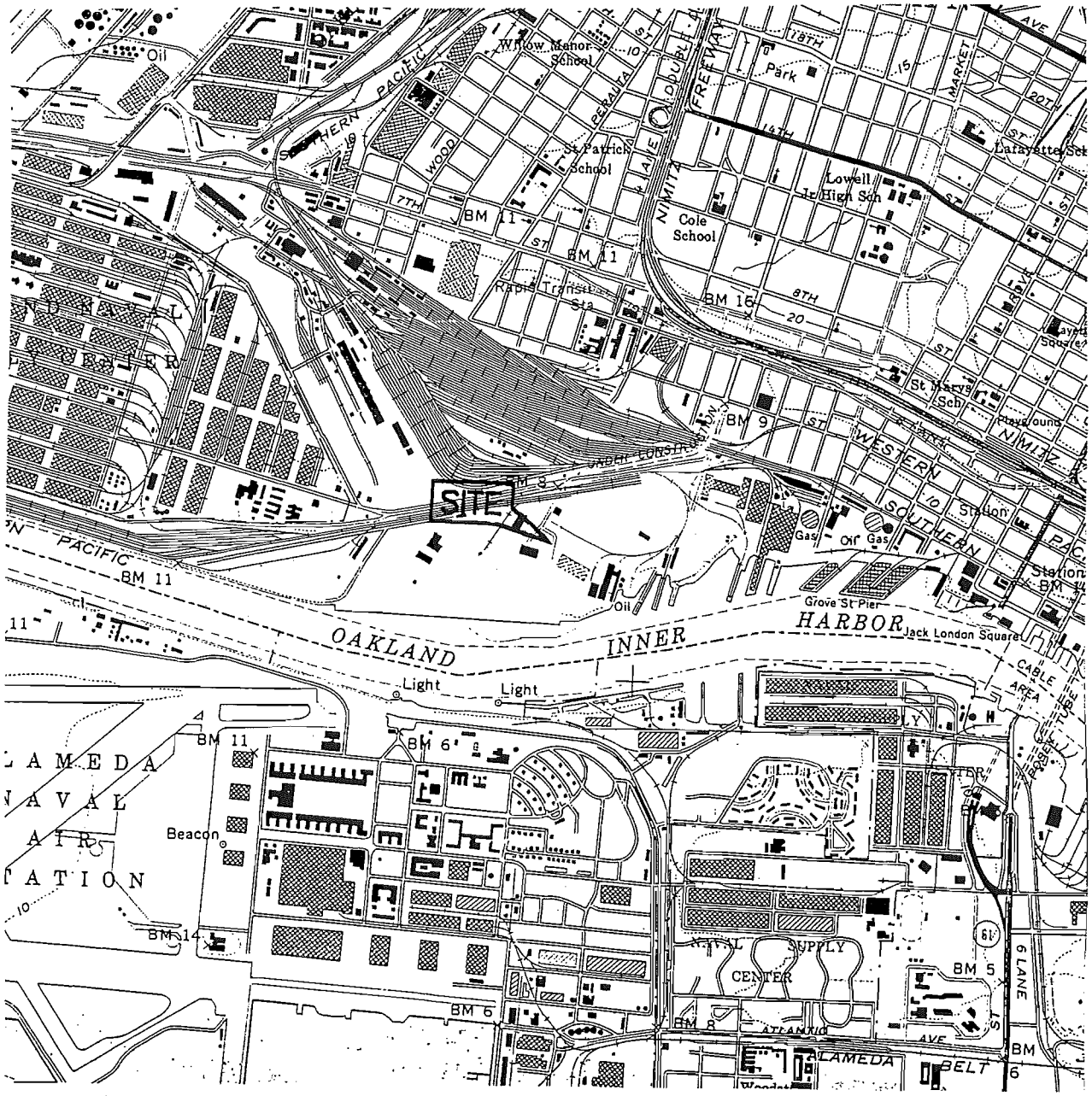
SAMPLE ID	DATE OF SAMPLING	TPH-D (mg/kg)	B (ug/kg)	T (ug/kg)	E (ug/kg)	X (ug/kg)	Total Lead (mg/kg)	ph	Flash Point	Reactivity Cyanide (mg/kg)	Reactivity Sulfide (mg/kg)	LAB
SP-2, SP-3 SP-4, SP-5	08/07/95	430	ND<1	1.6	1.5	7.1	28.5	8.13	Negative	ND<0.495	19.9	PACE
SP-6, SP-7 SP-8, SP-9	08/07/95	4600	ND<1	1.4	ND<1	17	41.2	7.83	Negative	ND<0.5	31.9	PACE

ABBREVIATIONS:

TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
mg/kg	Milligrams per kilogram
ug/kg	Micrograms per killogram
ND	Not detected above reported detection limit
PACE	Pace, Inc.

E:\0\10-256\STOCKPIL.WQ2

FIGURES



SOURCE:
USGS MAP, OAKLAND WEST QUADRANGLE,
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

FIGURE 1

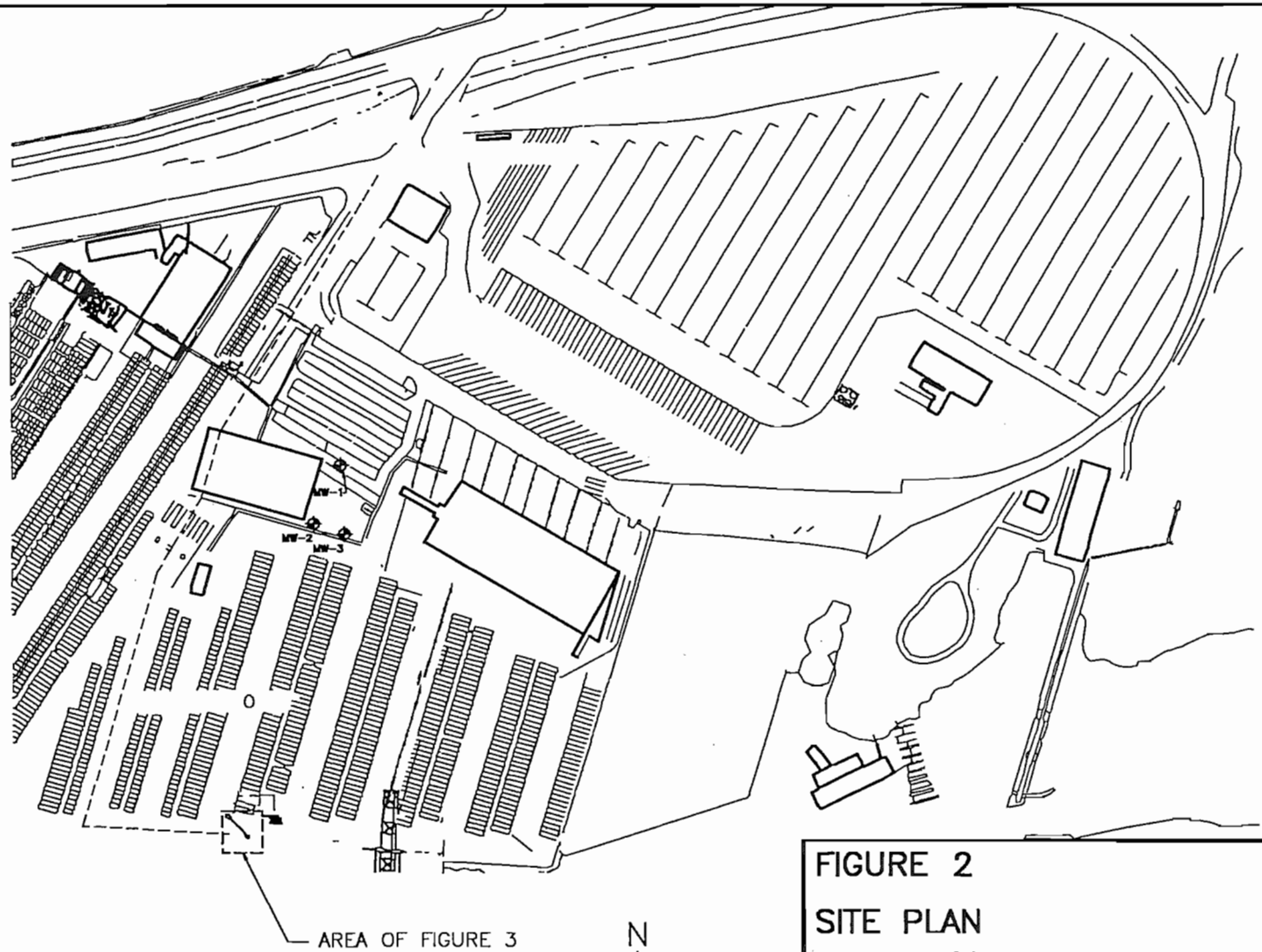
SITE VICINITY MAP

PORT OF OAKLAND
AMERICAN PRESIDENT LINES TERMINAL
1395 MIDDLE HARBOR ROAD
OAKLAND, CALIFORNIA

PROJECT NO. 10-256

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10250D---.DWG 3-21-85 RKW 1-1



LEGEND

◆ GROUNDWATER MONITORING WELLS INSTALLED BY THE PORT OF OAKLAND

N

NOT TO SCALE

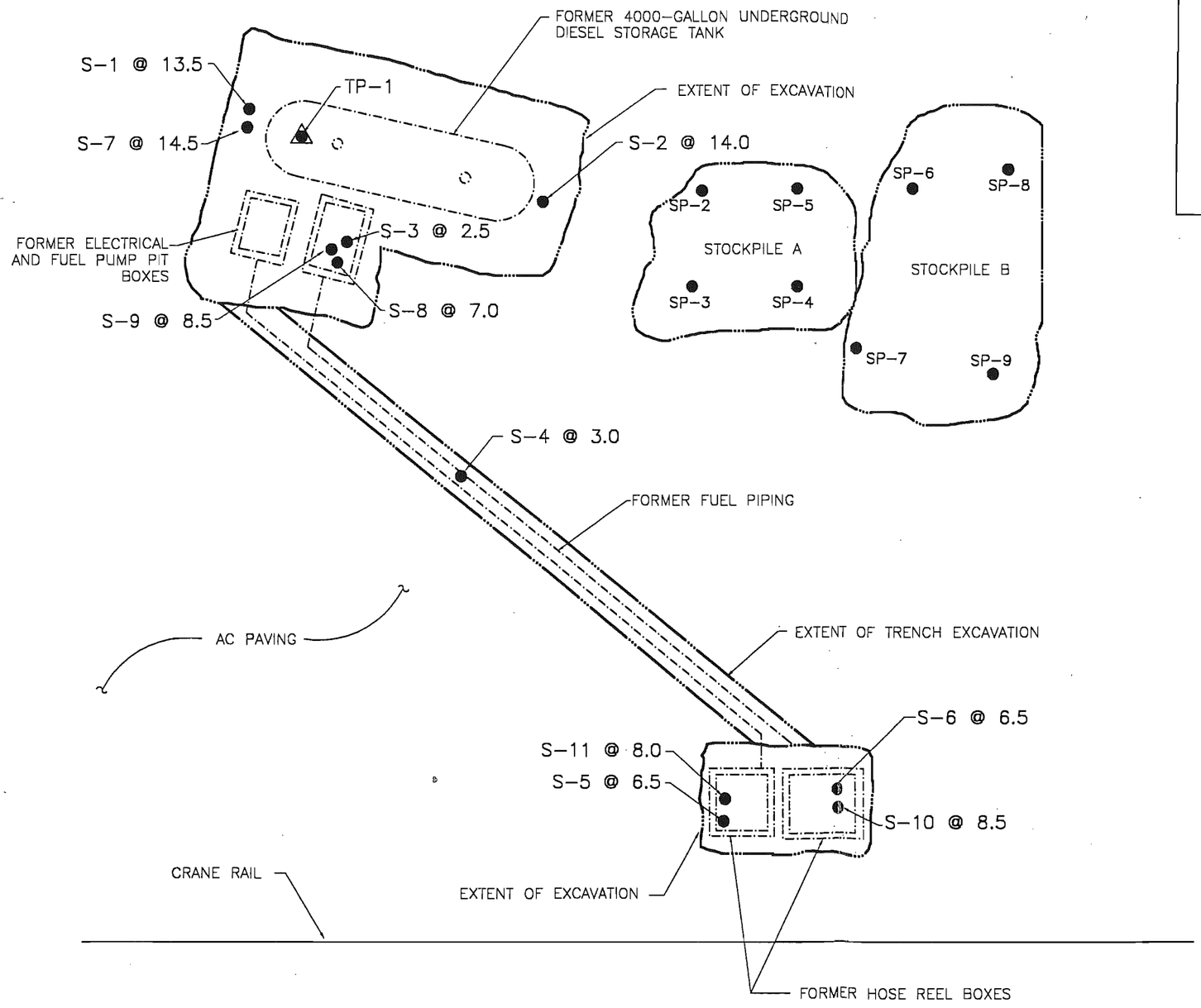
FIGURE 2

SITE PLAN

PORT OF OAKLAND
AMERICAN PRESIDENT LINES TERMINAL
TANK EF–10, BERTH 63
1395 MIDDLE HARBOR ROAD
OAKLAND, CALIFORNIA

PROJECT NO. 10–256–02

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



BUILDING E-222

N

0 10 20

SCALE IN FEET

LEGEND

S-2 @ 14 — SOIL SAMPLE LOCATION, DESIGNATION, AND DEPTH IN FEET BELOW GRADE

GRAB WATER SAMPLE LOCATION

FIGURE 3

SITE PLAN

PORT OF OAKLAND
TANK EF-10, BERTH 63
1395 MIDDLE HARBOR ROAD
OAKLAND, CALIFORNIA

PROJECT NO. 10-256

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

1025TOA-DWG 10-4-95 MAP 1=1

APPENDIX A

SITE SAFETY PLAN

SITE SAFETY PLAN

FOR

Port of Oakland
1385 Middle Harbor Road, Oakland

1.0 INTRODUCTION

This site safety plan (SSP), is designed to address safety provisions during the removal of a 4,000 gallon underground storage diesel tank and subsequent soil and groundwater sampling. The procedures provided in this SSP are intended to protect onsite personnel from physical and chemical hazards. The SSP establishes personnel responsibilities, general safe work practices, safe field procedures, personal protective equipment (PPE) standards, decontamination procedures, and emergency action plans.

The SSP is consistent with the health and safety requirements promulgated by the United States Occupational Safety and Health Administration (OSHA) and California Occupational Safety and Health Administration (Cal-OSHA). Alisto Engineering Group will perform the work for this project at the above property following the procedures set forth in this SSP.

2.0 RESPONSIBILITIES OF KEY PERSONNEL

Onsite personnel will have assigned responsibilities. The Project Manager, assigned to supervise field work, will serve as the site safety officer (SSO). The SSO or a designated alternate will ensure that all onsite personnel have received a copy of the SSP. The SSO will be responsible for ensuring that all personnel understand and comply with this SSP. Additionally, the SSO will be responsible for initiating emergency response procedures, if necessary.

Before the work begins, the SSO will conduct a site-specific training session to ensure all onsite personnel are aware of potential physical and chemical hazards and safe work practices.

Onsite personnel must initially complete a 40-hour hazardous materials training course as required by Code of Federal Regulations (CFR) 1910.120. Thereafter, they are required to complete an 8-hour hazardous materials refresher course annually. Additionally, personnel will be required site. Compliance with the SSP will be monitored at all times by the SSO. Appropriate PPE, listed in Section 7.0, will be available and used by onsite personnel.

Personnel will take reasonable precautions to avoid unforeseen hazards. They will be held responsible to perform only those tasks for which they are qualified. Each person will be responsible for strict adherence to all procedures described in the SSP. Any deviation will be reported to the SSO and corrected.

3.0 STANDARD OPERATING PROCEDURES

Excavation and tank removal site personnel will be briefed each day in "tail-gate" meetings as to the day's goals and equipment to be used. Anticipated contaminants, physical hazards, and emergency procedures will be reviewed. Appropriate PPE will be worn and verified correct by the SSO, including respirator fit. Onsite health and safety procedures will be discussed.

A qualified tank removal contractor will deliver and operate equipment. Only qualified personnel will have contact with this equipment. All onsite personnel are required to wear hard hats and steel-toed boots when close to excavation equipment. Additionally, safety glasses with side shields or goggles and hearing protection may be required. Nitrile or neoprene gloves will be worn by personnel collecting or handling samples, to prevent exposure to contaminants. Gloves will be changed between samples, and used ones discarded, to avoid cross-contamination.

Respiratory equipment will be worn if vapor contamination levels exceed action levels. No onsite smoking, open flame, or sparks will be permitted, to prevent accidental ignition of gasoline. All personnel will adhere to safety procedures and requirements.

4.0 JOB HAZARD ANALYSIS

Physical and chemical hazards which may be encountered onsite include those associated with operating mechanical equipment and dealing with potentially hazardous chemicals.

4.1 Physical Hazard Assessment

Physical hazards which may be encountered during drilling, excavation, site restoration, and system maintenance include the following:

1. Injury from moving machinery, or equipment placed in a walking area.

2. Explosion and fires resulting from punctured natural gas pipelines or combustion of flammable/combustible liquids.

3. Electrocution from buried or overhead power lines.

4. Explosion in excavation if tank contains flammable/combustible chemicals.

5. Asphyxiation or toxic inhalation resulting from entering confined spaces containing less than 19.5 percent oxygen or more than 25 percent oxygen or containing hazardous chemicals.

6. Hearing loss resulting from noise generated during operation of heavy equipment.

7. Heat stress associated with hot weather and/or use of PPE.

4.2 Chemical Hazard Assessment

Hazardous chemicals which may be encountered onsite include gasoline and diesel fuel hydrocarbons; benzene, toluene, ethylbenzene, and total xylenes (BTEX); tetraethyl lead, ethylene dibromide, and various halogenated hydrocarbons such as perchloroethane, tetrachloroethylene, and tricholoroethylene. These chemicals are volatile, flammable, and moderately to extremely toxic. They present a possible inhalation, absorption, and ingestion hazard to onsite personnel. They may damage an unprotected individual's liver, kidneys, central nervous system, and bone marrow. Benzene is a known human carcinogen and ethylbenzene in vapor and liquid form is a skin irritant.

Gasoline vapors in concentrations greater than 300 parts per million (ppm) can cause eye, nose, and throat irritation, headaches, dizziness, and anesthesia. Skin contact with liquid gasoline may result in irritation, dermatitis, and absorption of specific toxic petroleum fractions.

OSHA and the American Conference of Governmental Industrial Hygienists (ACGIH) have established exposure limits for these chemicals. Threshold limit value (TLV) is the exposure limit determined by ACGIH to which workers may be repeatedly exposed without adverse effects. The permissible exposure limit (PEL) is the maximum permitted 8-hour time-weighted average (TWA) of airborne contaminant that a person may be exposed to. The short-term exposure limit (STEL) is a 15-minute TWA exposure which is not to be exceeded at any time during a workday even if the 8-hour TWA is below the PEL. The ceiling limit (CL) is the maximum concentration of an airborne contaminant to which an employee may be exposed at any time.

PEL, STEL, and CL are measured in ppm and/or milligrams per meter cubed (mg/m^3). Exposure limits established by OSHA and ACGIH for contaminants which may become airborne at this site are listed in the following table. Values are from OSHA unless otherwise noted. For purposes of health and safety, the strictest established exposure limit will be used for the following chemicals:

Compound	TLV* (ppm)	PEL (ppm)	STEL (ppm)	CL (ppm)
Gasoline	300	300	500	---
Benzene**	0.1	1.0	5.0	---
Ethylbenzene	100	100	125	---
Toluene	50	100	150	500
Total Xylenes	100	100	150	300
Tetraethyl Lead	0.15 mg/m^3	0.075 mg/m^3	---	---
Diesel	NA	NA	NA	NA

Note: *Values specified by ACGIH.
**Suspected or known human carcinogen.
ppm: parts per million

5.0 SITE MONITORING

Physical and chemical hazards must be monitored at the site to ensure workers are not exposed to hazardous situations. Monitoring will be performed during this project as described below.

5.1 Monitoring of Physical Hazards

Exposure to excessive heat, noise, and hazardous work conditions will be monitored throughout the project. Personnel entering areas where people cannot carry on a normal conversation will be required to wear hearing protection. If heat stress is anticipated due to hot weather or use of PPE, personnel will be monitored by the SSO and provided water, shaded rest areas, and breaks.

Work area safety inspections will be conducted daily before start of work and as conditions change by the SSO. Hazardous conditions reported to or observed by the SSO will be corrected immediately.

5.2 Exposure Monitoring Plan

Fire, explosive, and toxic inhalation hazards will be evaluated throughout the project. A direct-reading combustible gas indicator (CGI) or organic vapor meter (OVM) will be used to evaluate possible formation of flammable atmospheres in the work area. Continuous flammability measurements will be taken near the work crew, throughout the tank removal operation.

6.0 SAFETY PRACTICES AND PRECAUTIONS

Simple precautions will reduce or eliminate physical and chemical hazards associated with excavation and restoration activities. Precautions include using qualified trained personnel, ensuring compliance with the SSP, ensuring proper engineering controls, good housekeeping procedures, using PPE, and familiarity with emergency response procedures.

To prevent injury from moving machinery, automobiles, fires, or other physical hazards, the following procedures will be implemented:

1. Keep backhoe at least 10 feet away from overhead electrical power lines.

2. Identify underground utilities before work begins. Shut down, lock out, and tag power lines and pipelines as appropriate, particularly power supply and emergency shutoffs" for dispenser pumps and associated delivery lines.

3. Bond and ground excavation equipment during all operations. Bond and ground handling and transportation equipment during loading of soils and pumping and transfer of leachate.

4. Maintain equipment in proper working order and inspect before to each use.

5. Use spark-resistant tools in areas where an ignition source could start a fire.

6. If volatile substances are stored in the tank, it will be vented to allow excess pressure to escape. A protective shield will be placed between workers and the opening to prevent direct contamination of workers by material forced out by pressure when the tank is opened.

7. For large tanks, manholes or access portals will be guarded to prevent personnel from falling into the tank. If it is essential that workers inter tank, confined space procedures must be adhered to.

8. Through sampling and analysis, contents will be identified. If characterizations indicates that the contents can be safely moved, they will be vacuumed into a trailer for transportation to a disposal or recycling facility. Tank will be empty and decontaminated before being disposed.

9. If it is necessary to enter the tank (it is a confined space) or the bottom of the tank pit, (to clean off solid materials or sludges on the bottom or side of the tank), the following precautions shall be taken.

    - Ventilate thoroughly
    - Disconnect connecting pipelines
    - Take air samples prior to entry to prove the absence of flammable or hazardous vapors and to demonstrate that adequate levels of oxygen exist.
    - Equip entry personnel with appropriate PPE, safety harnesses, and extricated devises.
    - Dedicate a hole watch, communication system and have emergency response plan available.

10. Monitoring with a PID for organic vapor will be continuous during the tank excavation.

11. Dry ice will be introduced into the tank before it is transported to render it non-explosive.

12. Water down, if necessary, working areas, excavated material, and unpaved roadways during excavation, handling, stockpiling, and backfilling, to minimize dust.

13. Excavated shall be stored under plastic sheeting to prevent any volatile organic compounds (VOCs) from escaping into the atmosphere.

14. Remove materials which may fuel a fire or impede regress of a fire from the work area.

15. Keep access to fire extinguisher (20 lb: B-C dry) clear. Use fire extinguishes on equipment or small fires only.

16. Maintain an adequately stocked first aid kit onsite at all times.

17. Keep the work area clean and free of obstacles.

18. Use a traffic vest in areas of high automobile traffic.

19. Wear ear plugs in areas of high noise (whenever noise makes it difficult for a normal conversation to be carried on).

20. Do not use drugs or alcohol during response operations.

The following procedures must be followed when working with or around hazardous materials or soils which may be contaminated with hazardous chemicals:

1. Do not smoke, eat, drink, or engage in any other activity which would increase hand to mouth contact.

2. Wear respiratory protective equipment and clothing as deemed necessary by the SSO. Do not wear a respirator over facial hair as this prevents a proper seal.

3. Do not walk, sit, lean, or kneel in puddles, leachate, or discolored surfaces.

4. Wash hands and face when leaving the work area.

5. Wash the entire body if decontamination procedures are in effect for outer garments.

6. Clean, sanitize, inspect, and maintain respirators after each use.

7. Establish work areas including the hot (contaminated area) zone, decontamination zone, and safe zone, as necessary. Minimize personnel and equipment in the hot zone.

8. Establish procedures for exiting the hot zone before commencing onsite activities.

7.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) may be required to safely perform onsite work. Onsite personnel will have access to respirators with organic vapor cartridges. Replacement cartridges will be available onsite as needed. When handling samples, the geologist will wear nitrile or neoprene gloves. Personnel will wear hard hats and steel-toed boots when in the proximity of drilling equipment. At the minimum, PPE required for environmental investigation projects and related field activities includes:

- Half-face air purifying respirator with organic vapor cartridges and dust/mist filters
- Hard hat
- Steel-toed boots or chemically-resistant booties
- Safety glasses with side-shields or safety goggles
- Nitrile or Neoprene gloves

- Ear plugs or muffs
- Coveralls or other suitable work clothing such as Tyvek suits

8.0 WORK ZONES AND SECURITY MEASURES

Access to the site will be restricted to authorized personnel. Barricades and/or traffic cones will be placed to form a barricade at least 50 feet away from and surrounding the site during drilling operations. The SSO will be responsible for site security.

9.0 DECONTAMINATION MEASURES

The best method for protection is to avoid contamination. To achieve this, comply with the safety precautions discussed in Section 6.0. Excavation and sampling equipment will be decontaminated by steam cleaning before being brought onsite. Sampling equipment will be decontaminated before each sample is taken. The Project Geologist will oversee operations and log soil samples. He or she will also ensure that proper protocol is used when collecting and handling samples.

10.0 TRAINING

The SSO will conduct a pre-job training session to discuss all points of the SSP. The SSO will ensure that everyone fully understands site hazards before work begins. Onsite personnel will be trained in:

- Anticipated hazards
- Safety practices to be followed
- PPE
- Emergency procedures and location of posted phone numbers

Onsite personnel must initially complete a 40-hour hazardous materials training course as required by Code of Federal Regulations (CFR) 1910.120. Thereafter, personnel are required to annually complete an 8-hour hazardous materials refresher course. Use of respirators must be in accordance with the written respiratory protection program. Personnel must be properly trained and fit-tested for the respirator worn.

11.0 MEDICAL SURVEILLANCE

According to CFR 29, 1910.120, Paragraph (f), employees who wear respirators 30 days or more during 1 year or who have been exposed to hazardous substances or health hazards above established PELs are required to be medically monitored. While airborne contamination levels are anticipated below permissible PELs, respirators fitted with organic vapor cartridges should be worn whenever the smell of gasoline is present. Consequently, onsite personnel must participate in a medical surveillance program.

12.0 RECORD-KEEPING

Documentation will be kept on all personnel exposed to contaminant hazards on the job site according to OSHA regulations. This will include documentation that employees have received training on the SSP, respiratory protection, and all emergency procedures. These will be reviewed during the pre-site training meeting.

Exposure records on each job will be kept for 30 years to meet regulatory requirements. Included will be names and Social Security numbers of employees, medical evaluations, on-the-job logs from entry to exit, first aid administered, visits onsite by non-employees, and personal air monitoring records.

13.0 EMERGENCY RESPONSE AND CONTINGENCY PLAN

In the event of accident, injury, fire, explosion, or other emergency, the Project Geologist, SSO, or designated representative will be responsible for coordinating emergency response activities. The SSO or representative will call 911, and will contact the hospital during a medical emergency, and the appropriate government agencies. During an emergency situation the following steps will be implemented:

1. The SSO will verbally notify onsite personnel of the emergency and direct personnel to perform any required duties, including shutdown of site utilities, if necessary.

2. If the emergency cannot be readily contained, extinguished, or controlled by onsite personnel, the SSO will call 911 and inform them of the location and details of the emergency situation.

3. The SSO will notify the Project Manager and Principal, if necessary.

4. The SSO, with the assistance of the Project Manager, will decide when to resume operations after an incident has been controlled.

13.1 Flammable Atmosphere

Monitoring of the site continously with a L.E.L. will not be required due to the low volatility of diesel. If odors are indicated, the following procedures will be utilized to minimize vapors being generated during the tank removal excavation.

1. Contaminated soils will be sprayed down, if necessary, with deodorizing chemicals to reduce vaporization of volatile organic compounds (VOCs) or permeation of other gases.

2. Vapors from pooled petroleum product will be suppressed, if necessary, by spraying with foam or an appropriate chemical suppressant.

3. Portions of the stockpiled soil will be covered with plastic sheeting.

13.2 Toxic Atmosphere

In the event that airborne concentrations of the chemicals of concern exceed the TLV, the above engineering control measures will be implemented to reduce concentrations to or below the TLVs, if practical. If such reduction is not possible, PPE will be used to limit worker exposure during operations.

In the event that airborne concentrations of the chemicals exceed twice the TLV, work will be suspended and appropriate engineering controls will be implemented to reduce concentrations to or below twice the TLV.

14.0 RESPONSIBLE PARTIES

Responsible parties involved with installation of the ground water recovery well are:

Client

Port of Oakland
530 Water Street
Oakland, California 94607

Contact: Susa Gates
Title: Associate Environmental Scientist
Phone: (510) 272-1118

Alisto Engineering Group
1575 Treat Blvd., Suite 201
Walnut Creek, California 94598

Contact: Brady Nagle
Title: Project Manager
Phone No.: (510) 295-1650

15.0 SUMMARY OF SITE ORGANIZATION AND COORDINATION

Site Safety Officer (SSO) - Brady Nagle, Alisto Engineering

Excavation Subcontractor - Mark Vigeant, Pacific Rim

16.0 EMERGENCY MEDICAL CARE AND PROCEDURES

Nearest Emergency Medical Facility

Name: Summit Medical Center
Address: 350 Hawthorne Avenue
Phone Number: 650-4000

Directions: Take Middle Harbor to 3rd Street, follow 3rd to Broadway. Go East on Broadway to Webster. Hospital is at the corner of Webster and Hawthorne.

Emergency Telephone Numbers

Fire Department: 911

Police Department: 911

Other: Poison Control (800) 523-2222

APPENDIX B

UNIFORM HAZARDOUS WASTE MANIFESTS

PORT of OAKLAND
Interoffice Memo

TO: Dan Schoenholz

FROM: Hope E. Samaras

DATE: September 1, 1995

SUBJECT: Removal of Underground Fuel Storage Tank EF-10, Berth 63, Oakland, California,
Contractor: Pacific Rim Environmental Services Inc.
Contract No.: 95156

"Uniform Hazardous Waste Manifest"
Generator's EPA ID No. CAC001011344

PORT OF OAKLAND
ENVIRONMENTAL DEPT.
RECEIVED
95 SEP 7 PM 1:53

The attached yellow copy of the "Uniform Hazardous Waste Manifest Generator's Copy", Manifest Document No. 95208632 has been received from Petroleum Recycling Corporation (PRC).

The copy certifies that delivery has been made to PRC, Patterson, California and that "...the materials were recycled in accordance to Provisions of 40CFR261.6 and 23.4...."

Hope E. Samaras
Contract Administrator

HES:eu

Attachment

cc: McAneny
Bonifield

RECEIVED
SEP 12 1995

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
C A C D 0 1 0 1 1 3 4 4	0 8 5 4 0		

3. Generator's Name and Mailing Address
PORT OF OAKLAND
530 WATER STREET, P.O. 2064, OAKLAND, CA 94604

4. Generator's Phone (510 272-1308 D. McAneny

A. State Manifest Document Number: 95208540

B. State Generator's ID:

5. Transporter 1 Company Name: H & H SHIP SERVICE COMPANY
6. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
C. State Transporter's ID: 600934
D. Transporter's Phone: (415) 543-4835

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
H & H SHIP SERVICE COMPANY
220 TERRY FRANCOIS/CHINA BASIN
SAN FRANCISCO, CA. 94107
10. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
G. State Facility's ID: C A D 0 0 4 7 7 1 1 6 8
H. Facility's Phone: (415) 543-4835

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Container No.	12. Container Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. RESIDUE DIESEL TANK NON-RCRA HAZARDOUS WASTE SOLID	0 0 1	T P	0 4 0 0 0	P	State 512 / EPA/Other
b. RESIDUE ASSOCIATED PIPING NON RCRA HAZARDOUS WASTE SOLID	0 0 1	B A	1 5 0	P	State 513 / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
EMPTY 4,000 gallon tank last containing diesel.
Tank inerted with dry ice for safe transport.

PROFILE #A4896

K. Handling Codes for Wastes Listed Above
a. 01 b. 01
c. d.

15. Special Handling Instructions and Additional Information
JOB #16009
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR

JOB SITE: PORT OF OAKLAND
Berth 63, 1395 Middle Harbor Road
Oakland, California

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day
Jay BONITTELO for Port of Oak		0 7	2 4

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day
ROBERT M. BREWSTER	Robert M. Brewster	0 7	2 4

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day
L. H. PARSONS		0 7	2 4

DO NOT WRITE BELOW THIS LINE.

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DTSC 8022A (9/94)
EPA 8700—22

Write. TSDF SENDS THIS COPY TO DTSC WITHIN

H&H SHIP SERVICE COMPANY
dba H&H Environmental Services

220 TERRY FRANCOIS/CHINA BASIN STREET, SAN FRANCISCO, CA 94107-2106 ☎ (415) 543-4835 FAX (415) 543-8265

CERTIFICATE OF DESTRUCTION

JULY 26, 1995

H & H Ship Service Company hereby certifies to PACIFIC RIM ENV. that:

1. The storage tank(s), size(s) ONE (1) 4,000 GALS. AND RESIDUE ASSOCIATED PIPING

   removed from the PORT OF OAKLAND

   facility at 1395 MIDDLE HARBOR ROAD, OAKLAND, CALIFORNIA

   were transported to H & H Ship Service Company, 220 Terry Francois/ China Basin Street, San Francisco, California 94107.

2. The following tank(s), H & H Job Number 16009 have been cleaned, rendered harmless, cut with approximately 2' x 2' holes and disposed of as scrap metal.

3. Disposal site: LEVIN METALS CORPORATION, RICHMOND, CALIFORNIA

4. The foregoing method of destruction/disposal is suitable for the materials involved, and fully complies with all applicable regulatory and permit requirements.

5. Should you require further information, please call (415) 543-4835 or (415) 905-5510.

Very truly yours,

S. H. Parsons
Operations Coordinator

State of California—Environmental Protection Agency
Form Approved OMB No. 2050–0039 (Expires 9-30-96)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: C A C 0 0 1 0 1 1 3 4 4
Manifest Document No.: 0 8 6 3 2
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address
PORT OF OAKLAND
530 Water Street, Oakland, CA. 94604
4. Generator's Phone (510) 272-1308 ATTN: D. MCANENY

A. State Manifest Document Number: 95208632
B. State Generator's ID

5. Transporter 1 Company Name: H & H SHIP SERVICE COMPANY
6. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
C. State Transporter's ID: 600952
D. Transporter's Phone: (415) 543-4835

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
PRC PATTERSON, INC.
13331 N. Highway 33
Patterson, CA. 95363
10. US EPA ID Number: C A D 0 8 3 1 6 6 7 2 8
G. State Facility's ID: C A D 0 8 3 1 6 6 7 2 8
H. Facility's Phone: (800) 874-4444

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	0 0 1	T T	02500	G	State / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

Petroleum Recycling Corporation certifies that the above mentioned waste(s), more specifically identified by reference to the waste manifest set forth above, Was were recycled in accordance with the provisions of 40CFR261.6 and 23.4 pursuant to 40CFR261.3(c)(2) hazardous waste generated from the recycling efforts was also recycled in accordance with the provision of 40CFR266 Subpart D.
PETROLEUM RECYCLING CORPORATION
BY [signature]

J. Additional Descriptions for Materials Listed Above: FUEL, OIL AND WATER
K. Handling Codes for Wastes Listed Above: a. 01

15. Special Handling Instructions and Additional Information
JOB #16078
24 Hr. Emergency Contact: H&H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.
JOB SITE: PORT OF OAKLAND/Berth 63
1395 Middleharbor Road
Oakland, California

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: JON BONIFIELD | Signature: [signature] | Month Day Year: 0 ? 1 ? 9 5

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ROBERT V. PETRUCCI | Signature: Robert V. Petrucci | Month 0? Day 1? Year 9 5

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space
Actual gallons per wt. tag. 1715

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: R M Arredondo | Signature: [signature] | Month Day Year: 08 21 95

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (9/94)
EPA 8700—22

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS.
(Generators who submit hazardous waste for transport out of state: producer completed copy of this copy and ... within 30 days.)

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

BFI

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785404

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: PORT OF OAKLAND

b. Generating Location: [illegible]

c. Address: [illegible] WATER ST. [illegible]
OAKLAND, CA 94607

d. Address: [illegible]

e. Phone No.: [illegible]

f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: DON [illegible]

h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA 405 090595 47609X

Containers: 2

j. Description of Waste: NON HAZARDOUS SOIL

k. Quantity: 00018 Units: Y^3 No.: 01 TYPE: T

TYPE	
DM	METAL DRUM
DP	PLASTIC DRUM
B	BAG
BA	6 MIL. PLASTIC BAG or WRAP
T	TRUCK
O	OTHER

UNITS	
P	POUNDS
Y	YARDS
M^3	CUBIC METERS
Y^3	CUBIC YARDS
O	OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

Generator Authorized Agent Name: DAVID McANENY
Signature: [signature]
Shipment Date: 09/1/95

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

TRANSPORTER I

a. Name: [illegible] TRANSPORTATION, INC

b. Address: 930 SHILOH RD #44
WINDSOR, CA 95492

c. Driver Name/Title: PRINT/TYPE

d. Phone No.: 707-[illegible]-1107

e. Truck No.: JK-1

f. Vehicle License No./State: JACATAC/CA

Acknowledgement of Receipt of Materials.

g. Driver Signature: [signature]
Shipment Date: 09/1/95

TRANSPORTER II

h. Name:

i. Address:

j. Driver Name/Title: PRINT/TYPE

k. Phone No.:

l. Truck No.:

m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature:
Shipment Date:

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: BFI, VASCO RD LANDFILL

b. Physical Address: 4001 N. VASCO RD
LIVERMORE, CA

c. Phone No.: [illegible]

d. Mailing Address:

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent | Signature | Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

a. Operator's* Name:

b. Operator's* Phone No.:

c. Operator's* Address:

d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: Print/Type | Operator's* Signature | Date

BFI NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785405

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: [illegible]
b. Generating Location: [illegible]
c. Address: [illegible]
[illegible]
d. Address: [illegible]
[illegible]
e. Phone No.: [illegible]
f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: [illegible]
h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA 405090595 97609X

Containers

j. Description of Waste: NON HAZARDOUS SOIL

k. Quantity: 00018 Units: Y3 No.: 01 TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

Generator Authorized Agent Name: [handwritten name]
Signature: [signature]
Shipment Date: 09/19/95

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

TRANSPORTER I

a. Name: [illegible]
b. Address: [illegible]
[illegible]
c. Driver Name/Title: DAVID Flory (PRINT/TYPE)
d. Phone No.: [illegible]
e. Truck No.: 094
f. Vehicle License No./State: SP33657 CA
Acknowledgement of Receipt of Materials.
g. Driver Signature: [signature]
Shipment Date: 09/19/95

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. Driver Signature:
Shipment Date:

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: [illegible]
b. Physical Address: [illegible]
[illegible]
c. Phone No.: [illegible]
d. Mailing Address:

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent / Signature / Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type)
Operator's* Signature
Date

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785406

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: [illegible] b. Generating Location: [illegible]

c. Address: [illegible] d. Address: [illegible]

e. Phone No.: [illegible] f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: [illegible] h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA | 705 | 0905595 | 27609 | Containers

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

j. Description of Waste: [illegible]

k. Quantity: 00018 | Units: T | No.: 01 | TYPE: T

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

[illegible] | [illegible] | 09/19/95

Generator Authorized Agent Name | Signature | Shipment Date

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

TRANSPORTER I

a. Name: [illegible]

b. Address: [illegible]

c. Driver Name/Title: [illegible] (PRINT/TYPE)

d. Phone No.: [illegible] e. Truck No.: 575

f. Vehicle License No./State: [illegible]

Acknowledgement of Receipt of Materials.

g. [illegible] | 09 | 12 | 95

Driver Signature | Shipment Date

TRANSPORTER II

h. Name: [illegible]

i. Address: [illegible]

j. Driver Name/Title: (PRINT/TYPE)

k. Phone No.: l. Truck No.:

m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature | Shipment Date

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: [illegible] c. Phone No.: [illegible]

b. Physical Address: [illegible] d. Mailing Address:

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent | Signature | Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

a. Operator's* Name: b. Operator's* Phone No.:

c. Operator's* Address:

d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classifie packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) | Operator's* Signature | Date

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

BFI

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785412

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: [illegible] b. Generating Location: [illegible]

c. Address: [illegible] d. Address: [illegible]

[illegible] [illegible]

e. Phone No.: [illegible] f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: [illegible] h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA 405 090555 47609X

j. Description of Waste: NON HAZARDOUS SOIL

k. Containers — Quantity: 00018 Units: Y No.: 01 TYPE: T

TYPE	
DM	METAL DRUM
DP	PLASTIC DRUM
B	BAG
BA	6 MIL. PLASTIC BAG or WRAP
T	TRUCK
O	OTHER

UNITS	
P	POUNDS
Y	YARDS
M^3	CUBIC METERS
Y^3	CUBIC YARDS
O	OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions,** I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

David McAvoy — Generator Authorized Agent Name
[signature] — Signature
09/19/95 — Shipment Date

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g, Transporter II complete h-n)

TRANSPORTER I

a. Name: [illegible]

b. Address: [illegible]

c. Driver Name/Title: [illegible] (PRINT/TYPE)

d. Phone No.: [illegible] e. Truck No.: [illegible]

f. Vehicle License No./State: [illegible]

Acknowledgement of Receipt of Materials.

g. [signature] — Driver Signature
09/1 — Shipment Date

TRANSPORTER II

h. Name:

i. Address:

j. Driver Name/Title: (PRINT/TYPE)

k. Phone No.: l. Truck No.:

m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature — Shipment Date

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: [illegible] c. Phone No.: [illegible]

b. Physical Address: [illegible] d. Mailing Address:

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

a. Operator's* Name: b. Operator's* Phone No.:

c. Operator's* Address:

d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785413

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: [illegible]
b. Generating Location: [illegible]
c. Address: [illegible] WATER ST. [illegible]
[illegible], CA [illegible]
d. Address: [illegible]
OAKLAND? [illegible]
e. Phone No.: [illegible]
f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: [illegible]
h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA | 405 | 090595 | 97609X

Containers

TYPE	
DM	METAL DRUM
DP	PLASTIC DRUM
B	BAG
BA	6 MIL. PLASTIC BAG or WRAP
T	TRUCK
O	OTHER

j. Description of Waste: NON HAZARDOUS [illegible]

k. Quantity: 00018 Units: Y3 No.: 01 TYPE: T

UNITS	
P	POUNDS
Y	YARDS
M³	CUBIC METERS
Y³	CUBIC YARDS
O	OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions**, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

David McAnany? | [signature] | 09/19/?

Generator Authorized Agent Name | Signature | Shipment Date

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

TRANSPORTER I

a. Name: [illegible] TRANSPORTATION, INC.
b. Address: [illegible]
c. Driver Name/Title: Glenn Colby? (PRINT/TYPE)
d. Phone No.: [illegible]
e. Truck No.: 109
f. Vehicle License No./State: 9H41306?
Acknowledgement of Receipt of Materials.
g. [signature] | 09/19/?
Driver Signature | Shipment Date

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. Driver Signature | Shipment Date

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: [illegible] LANDFILL
b. Physical Address: [illegible]
LIVERMORE CA
c. Phone No.: [illegible]
d. Mailing Address:
e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent | Signature | Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classifie packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) | Operator's* Signature | Date

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785414

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: _____ b. Generating Location: _____

c. Address: _____ d. Address: _____

e. Phone No.: _____ f. Phone No.: _____

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: _____ h. Owner's Phone No.: _____

i. BFI WASTE CODE: CA | 405 | 090595 | 17609X | Containers

Description of Waste: _____

k. Quantity: 00018 | Units: Y³ | No.: 01 | TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

DAVID A RUCCI _____ 09/1/95

Generator Authorized Agent Name | Signature | Shipment Date

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

TRANSPORTER I

a. Name: _____

b. Address: _____

c. Driver Name/Title: PETER MINETTI (PRINT/TYPE)

d. Phone No.: _____ e. Truck No.: M-10

f. Vehicle License No./State: SP36110

Acknowledgement of Receipt of Materials.

g. _____ 09/1/95

Driver Signature | Shipment Date

TRANSPORTER II

h. Name: _____

i. Address: _____

j. Driver Name/Title: _____ (PRINT/TYPE)

k. Phone No.: _____ l. Truck No.: _____

m. Vehicle License No./State: _____

Acknowledgement of Receipt of Materials.

n. _____ _____

Driver Signature | Shipment Date

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: _____ c. Phone No.: _____

b. Physical Address: _____ d. Mailing Address: _____

e. Discrepancy Indication Space: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. _____ _____ _____

Name of Authorized Agent | Signature | Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g; Operator* completes e.)

a. Operator's* Name: _____ b. Operator's* Phone No.: _____

c. Operator's* Address: _____

d. Special Handling Instructions and additional information: _____

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: _____ _____ _____

Print/Type | Operator's* Signature | Date

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

BFI

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785415

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: [illegible]
b. Generating Location: [illegible]

c. Address: [illegible]
[illegible]
d. Address: [illegible]
[illegible]

e. Phone No.: [illegible]
f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: [illegible]
h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA 405 090551 97609X

Containers

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

j. Description of Waste: [illegible]

k.

Quantity	Units	No.	TYPE
00018	Y	01	T

UNITS
P - POUNDS
Y - YARDS
M^3 - CUBIC METERS
Y^3 - CUBIC YARDS
O - OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

[illegible] — Generator Authorized Agent Name
[signature] — Signature
09/1/95 — Shipment Date

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

TRANSPORTER I

a. Name: [illegible]
b. Address: [illegible]
c. Driver Name/Title: Glenn Colburn (PRINT/TYPE)
d. Phone No.: [illegible]
e. Truck No.: 104
f. Vehicle License No./State: 9R41306
g. Acknowledgement of Receipt of Materials.
[signature] — Driver Signature
09/1/95 — Shipment Date

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. Driver Signature
Shipment Date

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: [illegible]
b. Physical Address: [illegible]
c. Phone No.: [illegible]
d. Mailing Address:

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

BFI

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 785416

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: [illegible]   b. Generating Location: [illegible]

c. Address: [illegible]   d. Address: [illegible]

[illegible]   [illegible]

e. Phone No.: [illegible]   f. Phone No.: [illegible]

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: [illegible]   h. Owner's Phone No.: [illegible]

i. BFI WASTE CODE: CA 405 09059 5 77609A   Containers

j. Description of Waste: [illegible]

k. Quantity: 00018   Units: YD   No.: 01   TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M^3 - CUBIC METERS
Y^3 - CUBIC YARDS
O - OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

David McCrary   [signature]   09/1/95
Generator Authorized Agent Name   Signature   Shipment Date

Section II TRANSPORTER (Generator complete a-d; Transporter I complete e-g, Transporter II complete h-n)

TRANSPORTER I	TRANSPORTER II
a. Name: [illegible]	h. Name:
b. Address: [illegible]	i. Address:
c. Driver Name/Title: Mike Imhof (PRINT/TYPE)	j. Driver Name/Title: (PRINT/TYPE)
d. Phone No.: [illegible] e. Truck No.: 23-6	k. Phone No.: l. Truck No.:
f. Vehicle License No./State: 5P00310	m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.	Acknowledgement of Receipt of Materials.
g. [signature] Driver Signature 09/1/95 Shipment Date	n. Driver Signature Shipment Date

Section III DESTINATION (Generator completes a-d, destination site completes e-f.)

a. Site Name: [illegible]   c. Phone No.: [illegible]

b. Physical Address: [illegible]   d. Mailing Address:

[illegible]

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent   Signature   Receipt Date

Section IV ASBESTOS (Generator complete a-d, f, g, Operator* completes e.)

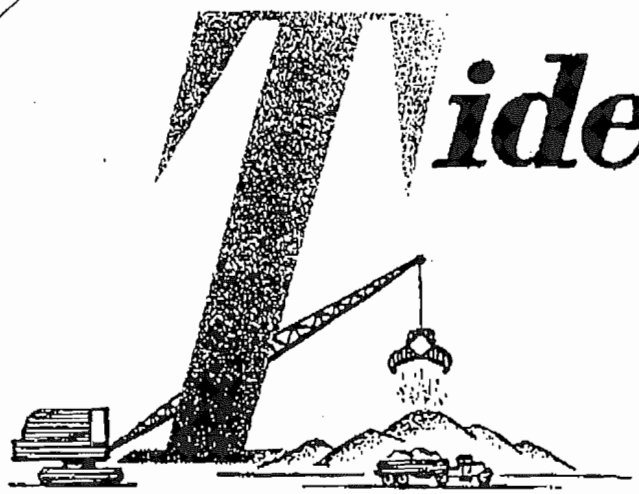
a. Operator's* Name: b. Operator's* Phone No.:

c. Operator's* Address:

d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classifie packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: Print/Type   Operator's* Signature   Date



Tidewater

Sand & Gravel, Inc.

4501 TIDEWATER AVENUE, OAKLAND, CA 94601

TELEPHONE: 510 261-8532 FAX: 510 534-7418

FAX NO. 510-534-7418

DATE: 7/10/95

FAX NO. 415-431-0334

TO: Pacific Rim Environmental Services

ATTENTION: Mark

REFERENCE: Sieve Analysis of Pea Gravel

NUMBER OF PAGES, INCLUDING COVER SHEET: _____

COMMENTS: The ½ x ¼ is the pea gravel we carry.

SENT BY: Ellen

Cum % Passing U. S. Sieve	1-1/2"x3/4" GRAVEL	1" x #4 GRAVEL	1/2" x 1/4" GRAVEL (Pea Gr.)
2-1/2"			
2"	100		
1-1/2"	95 +/- 3	100	
1"	44 +/- 15	99 +/- 1	
3/4"	11 +/- 6	85 +/- 9	100
1/2"		45 +/- 14	99
3/8"	2 +/- 1	21 +/- 9	82
#4		3 +/- 2	6
#8			1
#16			
#30			
#50			
#100			
#200			
Cr Part. Count	93%		
Sp. G	2.68	2.68	2.68
Absorption	1.0%	1.0%	1.0%
CV/SE	76 +/- 11	82 +/- 4	84
LAR/Dt	LAR = 27	LAR = 27	
Dry Loose/Rodded		95/103	98/103

APPENDIX C

FIELD PROCEDURES FOR SOIL SAMPLING

FIELD PROCEDURES FOR SOIL SAMPLING

Soil samples were collected from the excavations in a backhoe bucket. The samples were collected in brass tubes, and both ends were immediately covered with aluminum sheeting, polyurethane caps, and adhesive tape to inhibit volatilization of petroleum hydrocarbon constituents. The samples were labeled with the following information: Alisto's project number, sample number, depth, sampler's initials, and date of collection. The samples were immediately placed in plastic bags and stored in a cooler containing blue ice.

APPENDIX D

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION, LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

FIELD PROCEDURES
FOR
CHAIN OF CUSTODY DOCUMENTATION

The samples were handled in accordance with the California Department of Health Services guidelines. Each sample was labeled in the field and immediately stored in a cooler containing blue ice for transport to a state-certified laboratory for analysis.

The chain of custody record accompanied the samples, and included the site and sample identification, date and time of sample collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.

SOIL SAMPLES

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

July 28, 1995

Mr. Dale Swain
Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

RE: PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

Dear Mr. Swain:

Enclosed are the results of analyses for samples received on July 25, 1995. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stella Hanis

Stella V. Hanis
Project Manager

Enclosures

RECEIVED
AUG 03 1995

1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
TEL: 707-792-1865
FAX: 707-792-0342

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

DATE: 07/28/95
PAGE: 1

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

PACE Sample No: 70196092
Client Sample ID: S-1

Date Collected: 07/24/95
Date Received: 07/25/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	500	07/26/95	CA LUFT	ADS	71-43-2	
Toluene	ND	ug/kg	500	07/26/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	500	07/26/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	1000	07/26/95	CA LUFT	ADS	1330-20-7	1
a,a,a-Trifluorotoluene (S)	102	%		07/26/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	108	%		07/26/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	2600	mg/kg	100	07/28/95	TPH by EPA 8015M	DLA		
n-Pentacosane (S)	0	%		07/28/95	TPH by EPA 8015M	DLA	629-99-2	2
Date Extracted				07/26/95				

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

PACE Sample No: 70196100 Date Collected: 07/24/95
Client Sample ID: S-2 Date Received: 07/25/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	07/27/95	CA LUFT	ADS	71-43-2	
Toluene	ND	ug/kg	1	07/27/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	1	07/27/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	07/27/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	107	%		07/27/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	99	%		07/27/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	12	mg/kg	5	07/27/95	TPH by EPA 8015M	DLA		3
n-Pentacosane (S)	76	%		07/27/95	TPH by EPA 8015M	DLA	629-99-2	
Date Extracted				07/26/95				

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PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

PACE Sample No: 70196118 Date Collected: 07/24/95
Client Sample ID: S-3 Date Received: 07/25/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	11	ug/kg	1	07/27/95	CA LUFT	ADS	71-43-2	
Toluene	8.1	ug/kg	1	07/27/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	1	07/27/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	64	ug/kg	2	07/27/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	98	%		07/27/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	117	%		07/27/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	4600	mg/kg	500	07/27/95	TPH by EPA 8015M	DLA		
n-Pentacosane (S)	0	%		07/27/95	TPH by EPA 8015M	DLA	629-99-2	4
Date Extracted				07/27/95				

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

PACE Sample No: 70196126 Date Collected: 07/24/95
Client Sample ID: S-4 Date Received: 07/25/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	07/27/95	CA LUFT	ADS	71-43-2	
Toluene	1	ug/kg	1	07/27/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	1	07/27/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	07/27/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	108	%		07/27/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	96	%		07/27/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	17	mg/kg	5	07/27/95	TPH by EPA 8015M	DLA		5
n-Pentacosane (S)	0	%		07/27/95	TPH by EPA 8015M	DLA	629-99-2	6
Date Extracted				07/27/95				

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PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
RL	PACE Reporting Limit
(S)	Surrogate
[1]	Sample diluted due to high levels of hydrocarbons
[2]	The surrogate could not be quantitated due to sample dilution.
[3]	Diesel is present along with late hydrocarbons greater than C25.
[4]	The surrogate could not be quantitated due to sample dilution.
[5]	Late hydrocarbons greater than C25 are present. No diesel pattern is seen.
[6]	The surrogate could not be quantitated due to matrix interference.

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QUALITY CONTROL DATA

DATE: 07/28/95
PAGE: 6

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

Attn: Mr. Dale Swain
Phone: (510)295-1650

QC Batch ID: 5370 QC Batch Method: CA LUFT Date of Batch: 07/26/95
Associated PACE Samples: 70196092 70196100 70196118 70196126

METHOD BLANK: 70199294
Associated PACE Samples: 70196118 70196126

Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/kg	ND	5	
n-Pentacosane (S)	%	99		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70198510 70198528

Parameter	Units	70195383	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	ND	33	5.2	14	13	39	94	1
n-Pentacosane (S)					46		112		

LABORATORY CONTROL SAMPLE & LCSD: 70197074 70197082

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	33	15	44	19	56	24	
n-Pentacosane (S)				110		123		

QUALITY CONTROL DATA

DATE: 07/28/95
PAGE: 7

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

Attn: Mr. Dale Swain
Phone: (510)295-1650

QC Batch ID: 5378 QC Batch Method: CA LUFT Date of Batch: 07/26/95
Associated PACE Samples: 70196092 70196100 70196118 70196126

METHOD BLANK: 70197371
Associated PACE Samples:
70196092 70196100 70196118 70196126

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/kg	ND	200	
Benzene	ug/kg	ND	1	
Toluene	ug/kg	ND	1	
Ethyl Benzene	ug/kg	ND	1	
Xylene (Total)	ug/kg	ND	2	
a,a,a-Trifluorotoluene (S)	%	102		
4-Bromofluorobenzene (S)	%	99		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70198643 70198650

Parameter	Units	70195383	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/kg	ND	1000	950	95	890	89	7	

LABORATORY CONTROL SAMPLE & LCSD: 70197389 70197397

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/kg	1000	1000	102	1000	101	1	

PACE Project Number: 702395
Client Project ID: PORT OF OAKLAND

QUALITY CONTROL DATA PARAMETER FOOTNOTES

The Quality Control Sample Final Results listed above have been rounded to reflect an appropriate number of significant figures. Consistent with EPA guidelines unrounded concentrations have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	An accident occured during the extraction process and some of the final extract was lost. This resulted in low recoveries for the matrix spike and also a high RPD.

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FAX: 707-792-0342

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ALISTO ENGINEERING GROUP

CHAIN OF CUSTODY

2395

Consultant's Name: Alisto Engineering — Page 1 of 1

Address: 1575 Treat Boulevard #201, Walnut Creek CA 94598

Project Contact: Brady Nagle — Consultant Project #: 10-256-02 — Phone #: 295-1765 Fax #: 295-1823

Sampled by (print): Dale Swain — Sampler's Signature: Dale Swain

Shipment Method: Courier — Site Location #: — Site Location: Port of Oakland

TAT: ☐ 24 hr ☒ 48 hr ☐ 72 hr ☐ Standard (10 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	Oil & Grease SM 5520	HVOC 8010	Total Lead	RCI	BTEX	Hold					COMMENTS
S-1	7/24/95	Soil		1	196092		X					X						
S-2				1	196100		X					X						
S-3				1	196118		X					X						
S-4				1	196126		X					X						
SP-1				1	196134								X					
S-1A				1	196142								X					

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Dale Swain	7/24/95		Jose/355 Friend	7/25/95	1530
Jose/355	7/25/95	1300	D.J. Friend	7/25/95	1300
D.J.	7/25/95	1430	Weather Peters	7/25/95	1430

Additional Comments: SP-1 is a composite of 4 samples collected in the field.

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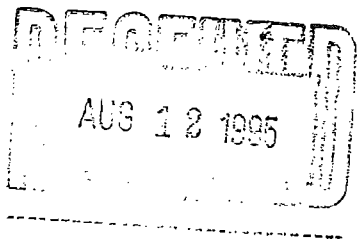
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS



August 09, 1995

Mr. Dale Swain
Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

RE: PACE Project Number: 702624
Client Project ID: 10-256-02

Dear Mr. Swain:

Enclosed are the results of analyses for samples received on August 8, 1995. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stella V. Hanis
Project Manager

Enclosures

1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
TEL: 707-792-1865
FAX: 707-792-0342

An Equal Opportunity Employer

ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

DATE: 08/09/95
PAGE: 1

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

PACE Project Number: 702624
Client Project ID: 10-256-02

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Sample No: 70221221 Date Collected: 08/07/95
Client Sample ID: S-5 Date Received: 08/08/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	08/08/95	CA LUFT	ADS	71-43-2	
Toluene	1.9	ug/kg	1	08/08/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	13	ug/kg	1	08/08/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	11	ug/kg	2	08/08/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	102	%		08/08/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	110	%		08/08/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	580	mg/kg	250	08/09/95	TPH by EPA 8015M	HJS		
n-Pentacosane (S)	0	%		08/09/95	TPH by EPA 8015M	HJS	629-99-2	1
Date Extracted				08/08/95				

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FAX: 707-792-0342

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

PACE Project Number: 702624
Client Project ID: 10-256-02

PACE Sample No: 70221247 Date Collected: 08/07/95
Client Sample ID: S-6 Date Received: 08/08/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	08/08/95	CA LUFT	ADS	71-43-2	
Toluene	1.8	ug/kg	1	08/08/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	30	ug/kg	1	08/08/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	20	ug/kg	2	08/08/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	94	%		08/08/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	123	%		08/08/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	5800	mg/kg	250	08/09/95	TPH by EPA 8015M	HJS		
n-Pentacosane (S)	0	%		08/09/95	TPH by EPA 8015M	HJS	629-99-2	2
Date Extracted				08/08/95				

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Petaluma, CA 94954
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FAX: 707-792-0342

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PACE Project Number: 702624
Client Project ID: 10-256-02

PACE Sample No: 70221254 Date Collected: 08/07/95
Client Sample ID: S-7 Date Received: 08/08/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	08/08/95	CA LUFT	ADS	71-43-2	
Toluene	ND	ug/kg	1	08/08/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	1	08/08/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	08/08/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	110	%		08/08/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	88	%		08/08/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	ND	mg/kg	10	08/09/95	TPH by EPA 8015M	HJS		
n-Pentacosane (S)	91	%		08/09/95	TPH by EPA 8015M	HJS	629-99-2	
Date Extracted				08/08/95				

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REPORT OF LABORATORY ANALYSIS

PACE Project Number: 702624
Client Project ID: 10-256-02

PACE Sample No: 70221262 Date Collected: 08/07/95
Client Sample ID: S-8 Date Received: 08/08/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	3.8	ug/kg	1	08/08/95	CA LUFT	ADS	71-43-2	
Toluene	13	ug/kg	1	08/08/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	1	08/08/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	16	ug/kg	2	08/08/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	110	%		08/08/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	99	%		08/08/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	1300	mg/kg	250	08/09/95	TPH by EPA 8015M	HJS		
n-Pentacosane (S)	0	%		08/09/95	TPH by EPA 8015M	HJS	629-99-2	3
Date Extracted				08/08/95				

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PACE Project Number: 702624
Client Project ID: 10-256-02

PARAMETER FOOTNOTES

ND	Not Detected
C	Not Calculable
RL	PACE Reporting Limit
(S)	Surrogate
[1]	Surrogate could not be quantitated due to sample dilution.
[2]	Surrogate could not be quantitated due to sample dilution.
[3]	Surrogate could not be quantitated due to sample dilution.

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

DATE: 08/09/95
PAGE: 6

listo Engineering
575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702624
Client Project ID: 10-256-02

C Batch ID: 5788 QC Batch Method: CA LUFT Date of Batch: 08/07/95
Associated PACE Samples: 70221221 70221247 70221254 70221262

ETHOD BLANK: 70220702
Associated PACE Samples:
70221221 70221247 70221254 70221262

Parameter	Units	Method Blank Result	PRL	Footnotes
Benzene	ug/kg	ND	1	
Toluene	ug/kg	ND	1	
Ethyl Benzene	ug/kg	ND	1	
Xylene (Total)	ug/kg	ND	2	
a,a,a-Trifluorotoluene (S)	%	101		
4-Bromofluorobenzene (S)	%	101		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70220686 70220694

Parameter	Units	70210042	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/kg	ND	100	110	107	110	106	1	
Toluene	ug/kg	ND	100	100	103	100	103	0	
Ethyl Benzene	ug/kg	ND	100	100	102	100	102	0	
Xylene (Total)	ug/kg	ND	300	310	102	310	102	0	
a,a,a-Trifluorotoluene (S)					105		101		
4-Bromofluorobenzene (S)					31		101		

LABORATORY CONTROL SAMPLE & LCSD: 70217575 70217583

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/kg	100	110	114	120	117	3	

QUALITY CONTROL DATA

DATE: 08/09/95
PAGE: 7

PACE Project Number: 702624
Client Project ID: 10-256-02

LABORATORY CONTROL SAMPLE & LCSD: 70217575 70217583

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Toluene	ug/kg	100	110	109	110	112	3	
Ethyl Benzene	ug/kg	100	110	108	110	110	2	
Xylene (Total)	ug/kg	300	330	109	330	111	2	
a,a,a-Trifluorotoluene (S)				100		100		
4-Bromofluorobenzene (S)				101		101		

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

DATE: 08/09/95
PAGE: 8

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

PACE Project Number: 702624
Client Project ID: 10-256-02

Attn: Mr. Dale Swain
Phone: (510)295-1650

QC Batch ID: 5876 QC Batch Method: CA LUFT Date of Batch: 08/08/95
Associated PACE Samples: 70221221 70221247 70221254 70221262

METHOD BLANK: 70222088
Associated PACE Samples:

	70221221	70221247	70221254	70221262
Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/kg	ND	5	
n-Pentacosane (S)	%	77		

LABORATORY CONTROL SAMPLE & LCSD: 70222096 70222104

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	33	23	70	23	69	1	
n-Pentacosane (S)				114		114		

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QUALITY CONTROL DATA PARAMETER FOOTNOTES

The Quality Control Sample Final Results listed above have been rounded to reflect an appropriate number of significant figures. Consistent with EPA guidelines unrounded concentrations have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

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ALISTO ENGINEERING GROUP

CHAIN OF CUSTODY

2624

Consultant's Name: A

Page ___ of

Address: 1575 Treat Boulevard #201 Walnut Creek CA 94598

Project Contact: Brady Nagle | Consultant Project #: 10-256-02 | Phone #: 295-1650 Fax #: 295-1823

Sampled by (print): Dale Swash | Sampler's Signature: Dale Swash

Shipment Method: Courier | Site Location #: | Site Location: Port of Oakland

TAT: ☒ 24 hr ☐ 48 hr ☐ 72 hr ☐ Standard (10 day)

Sample Condition as Received
Temperature ° C: ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	Sample #	TPH/GAS/BTEX EPA 3015/8020	TPH/Diesel EPA 3015	Oil & Grease SM 5520	HVOC 8010	BTEX								COMMENTS
S-5	8/7/95	Soil	—	1	221221		X			X								
S-6				1	221241		X			X								
S-7				1	221254		X			X								
S-8				1	221262		X			X								

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Dale Swash	8/7/95	16:42	Ay Powell/Prime	8/8/95	8:26 AM
Ay Powell/Prime	8/8/95	10:41	Karin Nebb	8/10/95	1045

Additional Comments:

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
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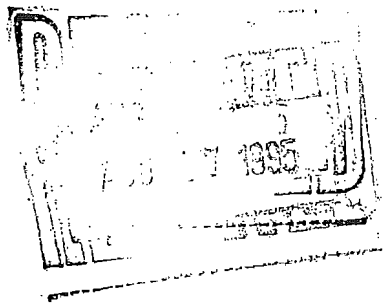

August 15, 1995

Mr. Brady Nagle
ALISTO ENGINEERING GROUP
1575 Treat Blvd., Suite 201
Walnut Creek, CA 94598

Client Ref.: 10-256-02
Clayton Project No.: 95081.55

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on August 14, 1995. Matrix spikes for EPA Method 8015/8020 showed high recovery for several compounds. The Laboratory Control Sample for this method showed results within quality control limits. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after September 14, 1995, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Michael Lynch For

Harriotte A. Hurley, CIH
Director, Laboratory Services
San Francisco Regional Office

HAH/caa

Attachments

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-256-02
Clayton Project No. 95081.55

Sample Identification:	S-9	Date Sampled:	08/14/95
Lab Number:	9508155-01A	Date Received:	08/14/95
Sample Matrix/Media:	SOIL	Date Prepared:	08/14/95
Preparation Method:	EPA 5030	Date Analyzed:	08/15/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	72	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-256-02
Clayton Project No. 95081.55

Sample Identification:	S-10	Date Sampled:	08/14/95
Lab Number:	9508155-02A	Date Received:	08/14/95
Sample Matrix/Media:	SOIL	Date Prepared:	08/14/95
Preparation Method:	EPA 5030	Date Analyzed:	08/15/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	64	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-256-02
Clayton Project No. 95081.55

Sample Identification:	S-11	Date Sampled:	08/14/95
Lab Number:	9508155-03A	Date Received:	08/14/95
Sample Matrix/Media:	SOIL	Date Prepared:	08/14/95
Preparation Method:	EPA 5030	Date Analyzed:	08/15/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	70	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-256-02
Clayton Project No. 95081.55

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9508155-04A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	08/14/95
Preparation Method:	EPA 5030	Date Analyzed:	08/15/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	91	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-256-02
Clayton Project No. 95081.55

Sample Identification: See Below
Lab Number: 9508155
Sample Matrix/Media: SOIL
Extraction Method: EPA 3550
Method Reference: EPA 8015 (Modified)

Date Received: 08/14/95
Date Extracted: 08/14/95
Date Analyzed: 08/15/95

Lab Number	Sample Identification	Date Sampled	TPH-D (mg/kg)	Method Detection Limit (mg/kg)
-01	S-9	08/14/95	25	1
-02	S-10	08/14/95	50	1
-03	S-11	08/14/95	ND	1
-04	METHOD BLANK	--	ND	1

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.
TPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-256-02
Clayton Project No. 95081.55

Sample Identification: See Below
Lab Number: 9508155
Sample Matrix/Media: SOIL
Extraction Method: EPA 3550
Method Reference: EPA 8015 (Modified)

Date Received: 08/14/95
Date Extracted: 08/14/95
Date Analyzed: 08/15/95

Lab Number	Sample Identification	Date Sampled	TPH-O (mg/kg)	Method Detection Limit (mg/kg)
-01	S-9	08/14/95	61	4
-02	S-10	08/14/95	50	4
-03	S-11	08/14/95	58	4
-04	METHOD BLANK	--	ND	4

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.
TPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.

Clayton
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CONSULTANTS

Quality Assurance Results Summary

Matrix Spike/Matrix Spike Duplicate Results

for

Clayton Project No. 95081.55

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95081.55

Clayton Lab Number:	9508155-03A	Analytical Method:	EPA 8015
Ext./Prep. Method:	EPA 3550	Instrument ID:	02893
Date:	08/14/95	Date:	08/15/95
Analyst:	MBN	Time:	06:51
Std. Source:	E950706-01W	Analyst:	GUD
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	20.0	22.0	110	21.2	106	108	51	147	3.8	30

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.

LCL = Lower Control Limit

UCL = Upper Control Limit

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95081.55

Clayton Lab Number:	9508124-08A	Analytical Method:	EPA8015_8020
Ext./Prep. Method:	EPA 5030	Instrument ID:	05587
Date:	08/14/95	Date:	08/14/95
Analyst:	WAS	Time:	19:42
Std. Source:	V950805-01W	Analyst:	WAS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	0.0300	0.0451	150*	0.0432	144*	147*	53	140	4.3	28
ETHYLBENZENE	(PID)	ND	0.0368	0.0500	136*	0.0536	146*	141*	56	134	6.9	25
GASOLINE	(FID)	ND	2.50	3.15	126	3.11	124	125	41	164	1.3	37
TOLUENE	(PID)	ND	0.230	0.271	118	0.274	119	118	60	139	1.1	22
TOTAL XYLENE	(PID)	ND	0.209	0.278	133*	0.270	129	131*	61	129	2.6	26

* Result is outside of control limits.

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.
LCL = Lower Control Limit
UCL = Upper Control Limit

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95081.55

Clayton Lab Number:	9508124-08A	Analytical Method:	EPA8015_8020
Ext./Prep. Method:	EPA 5030	Instrument ID:	05587
Date:	08/14/95	Date:	08/15/95
Analyst:	WAS	Time:	10:40
Std. Source:	V950805-01W	Analyst:	WAS
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	0.0370	0.0343	93	0.0373	101	97	53	140	8.4	28
ETHYLBENZENE	(PID)	ND	0.0368	0.0396	108	0.0420	114	111	56	134	5.9	25
GASOLINE	(FID)	ND	2.50	2.71	108	2.85	114	111	41	164	5.0	37
TOLUENE	(PID)	ND	0.230	0.219	95	0.230	100	98	60	139	4.9	22
TOTAL XYLENE	(PID)	ND	0.209	0.228	109	0.241	115	112	61	129	5.5	26

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.
LCL = Lower Control Limit
UCL = Upper Control Limit

ALISTO ENGINEERING GROUP

9508155

CHAIN OF CUSTODY

Consultant's Name: Alisto Engineering

Page 1 of 1

Address: 1575 Treat Boulevard #201 Walnut Creek, CA 94598

Project Contact: Brady Hayle

Consultant Project #: 10-256-02

Phone #: 295-1650 Fax #: 295-1820

Sampled by (print): Dale Swiadon

Sampler's Signature: Dale Swiadon

Shipment Method: Courier

Site Location #:

Site Location: Port of Oakland, APL

TAT: [X] 24 hr [ ] 48 hr [ ] 72 hr [ ] Standard (10 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	Oil & Grease SM 5520	HVOC 8010	BTEX								COMMENTS
S-9	8-14-95	Soil		1			X			X								01A 2x6 "SCC"
S-10	↓	↓		1			X			X								02 ↓
S-11	↓	↓		1			X			X								03 ↓

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
Dale Swiadon/Alisto	8/14/95	11:10	Tom Silva #634	8/14/95	1535	Shipped via AERO Delivery / Rec'd in good condition. / Preservation = 4°C.
Tom Silva #634	8/14/95	4:40PM	Donna Drew	8/14/95	4:40pm	

GRAB GROUNDWATER SAMPLE

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

RECEIVED
AUG 25 1995

August 21, 1995

Mr. Dale Swain
Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

RE: PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

Dear Mr. Swain:

Enclosed are the results of analyses for samples received on August 16, 1995. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stella V. Hanis
Project Manager

Enclosures

1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
TEL: 707-792-1865
FAX: 707-792-0342

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

DATE: 08/21/95
PAGE: 1

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

PACE Sample No: 70238795
Client Sample ID: TP-1

Date Collected: 08/16/95
Date Received: 08/16/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Water								
Benzene	ND	ug/L	0.5	08/17/95	CA LUFT	ADS	71-43-2	
Toluene	ND	ug/L	0.5	08/17/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/L	0.5	08/17/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	08/17/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	89	%		08/17/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	89	%		08/17/95	CA LUFT	ADS	460-00-4	
GC								
8015 Fuel Fingerprint in Water								
Diesel Fuel	5.8	mg/L	0.049	08/17/95	TPH by EPA 8015M	DLA		1
n-Pentacosane (S)	121	%		08/17/95	TPH by EPA 8015M	DLA	629-99-2	
Date Extracted				08/16/95				

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PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

PACE Sample No: 70238803 Date Collected: 08/16/95
Client Sample ID: TB-1 Date Received: 08/16/95

arameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX by CA LUFT, Water								
Benzene	ND	ug/L	0.5	08/17/95	CA LUFT	ADS	71-43-2	
Toluene	ND	ug/L	0.5	08/17/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/L	0.5	08/17/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	08/17/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	91	%		08/17/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	88	%		08/17/95	CA LUFT	ADS	460-00-4	

REPORT OF LABORATORY ANALYSIS

PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
(S)	Surrogate
[1]	Late hydrocarbons greater than C25 are present as well as diesel.

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QUALITY CONTROL DATA

DATE: 08/21/95
PAGE: 4

listo Engineering
1575 Treat Blvd.
Suite 201
alnut Creek, CA 94598

Attn: Mr. Dale Swain
hone: (510)295-1650

PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

C Batch ID: 6242 QC Batch Method: CA LUFT Date of Batch: 08/17/95
Associated PACE Samples: 70238795 70238803

ETHOD BLANK: 70238837
Associated PACE Samples:

		70238795	70238803 Method Blank		
arameter	Units		Result	PRL	Footnotes
Benzene	ug/L		ND	0.5	
oluene	ug/L		ND	0.5	
thyl Benzene	ug/L		ND	0.5	
Xylene (Total)	ug/L		ND	1	
a,a,a-Trifluorotoluene (S)	%		90		
-Bromofluorobenzene (S)	%		85		

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

Attn: Mr. Dale Swain
Phone: (510)295-1650

QC Batch ID: 6274
QC Batch Method: EPA 3510
Date of Batch: 08/17/95
Associated PACE Samples: 70238795

METHOD BLANK: 70239421
Associated PACE Samples:
70238795

Parameter	Units	Method Blank Result	PRL		Footnotes
Diesel Fuel	mg/L	ND	0.05	1	
n-Pentacosane (S)	%	92			

LABORATORY CONTROL SAMPLE & LCSD: 70239439 70239447

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/L	1	0.87	87	0.83	83	5	
n-Pentacosane (S)				98		96		

REPORT OF LABORATORY ANALYSIS

PACE Project Number: 702783
Client Project ID: PORT OF OAKLAND

QUALITY CONTROL DATA PARAMETER FOOTNOTES

The Quality Control Sample Final Results listed above have been rounded to reflect an appropriate number of significant figures. Consistent with EPA guidelines unrounded concentrations have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Below PRL.

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ALISTO ENGINEERING GROUP

CHAIN OF CUSTODY

702783

Consultant's Name: Alisto Engineering Page of

Address: 1575 Treat Boulevard #201, Walnut Creek, CA 94598

Project Contact: Brady Nagle Consultant Project #: 10-256-02 Phone #: 295-1650 Fax #: 295-1823

Sampled by (print): Deb Swan Sampler's Signature: Deb Swan

Shipment Method: Courier Site Location #: Site Location:

TAT: ☐ 24 hr ☐ 48 hr ☒ 72 hr ☐ Standard (10 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	Oil & Grease SM 5520	HVOC 8010	BTEX	Hold							COMMENTS
TP-1	8/16/95	H_2O	HCL	2L	23877		X											
TP-1			HNO_3	1							X							
TP-1			HCl	3 VOA						X								
TP-1				1L							X							
TB-1			HCL	2 VOA	23880					X								

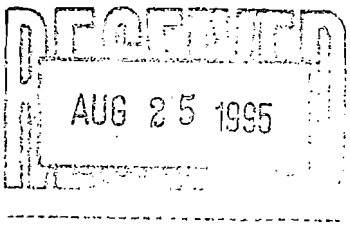
Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Deb Swan	8/16/95		[illegible]	8-16	3:00
[illegible]	8-16	16:20	[illegible]	8/16/95	1800

Additional Comments:

STOCKPILED SOIL SAMPLES

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS



August 23, 1995

Mr. Dale Swain
Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

RE: PACE Project Number: 702653
Client Project ID: Port of Oakland

Dear Mr. Swain:

Enclosed are the results of analyses for samples received on August 8, 1995. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stella Hanis

Stella V. Hanis
Project Manager

Enclosures

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Petaluma, CA 94954
TEL: 707-792-1865
FAX: 707-792-0342

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

DATE: 08/23/95
PAGE: 1

Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702653
Client Project ID: Port of Oakland

PACE Sample No: 70224175 Date Collected: 08/07/95
Client Sample ID: COMP SAMPLES SP-2,3,4,5 Date Received: 08/08/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	28.5	mg/kg	3.85	08/11/95	EPA 6010	BRW	7439-92-1	
Date Digested				08/11/95				
Wet Chemistry								
pH, Soil								
pH	8.13			08/10/95	EPA 9045	LDA		
Flash Point, Closed Cup								
Flash Point	ND	deg C	23	08/11/95	EPA 1010	LDA		1
Cyanide, Reactive, Soil								
Cyanide, Reactive	ND	mg/kg	0.495	08/15/95	SW846 7.3.3.2	ALK		
Sulfide, Reactive, Soil								
Sulfide, Reactive	19.9	mg/kg	9.91	08/14/95	SW846 7.3.4.2	ALK		
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	08/16/95	CA LUFT	ADS	71-43-2	
Toluene	1.6	ug/kg	1	08/16/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	1.5	ug/kg	1	08/16/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	7.1	ug/kg	2	08/16/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	93	%		08/16/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	136	%		08/16/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	430	mg/kg	25	08/20/95	TPH by EPA 8015M	DLA		2
n-Pentacosane (S)	0	%		08/20/95	TPH by EPA 8015M	DLA	629-99-2	3
Date Extracted				08/18/95				

PACE Project Number: 702653
Client Project ID: Port of Oakland

PACE Sample No: 70224191 Date Collected: 08/07/95
Client Sample ID: COMP SAMPLES SP-6,7,8,9 Date Received: 08/08/95

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	41.2	mg/kg	3.85	08/11/95	EPA 6010	BRW	7439-92-1	
Date Digested				08/11/95				
Wet Chemistry								
pH, Soil								
pH	7.83			08/10/95	EPA 9045	LDA		
Flash Point, Closed Cup								
Flash Point	ND	deg C	23	08/11/95	EPA 1010	LDA		4
Cyanide, Reactive, Soil								
Cyanide, Reactive	ND	mg/kg	0.5	08/15/95	SW846 7.3.3.2	ALK		
Sulfide, Reactive, Soil								
Sulfide, Reactive	31.9	mg/kg	10	08/14/95	SW846 7.3.4.2	ALK		
GC -- Volatiles								
GAS/BTEX by CA LUFT, Soil								
Benzene	ND	ug/kg	1	08/16/95	CA LUFT	ADS	71-43-2	
Toluene	1.4	ug/kg	1	08/16/95	CA LUFT	ADS	108-88-3	
Ethyl Benzene	ND	ug/kg	1	08/16/95	CA LUFT	ADS	100-41-4	
Xylene (Total)	17	ug/kg	2	08/16/95	CA LUFT	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	125	%		08/16/95	CA LUFT	ADS	2164-17-2	
4-Bromofluorobenzene (S)	52	%		08/16/95	CA LUFT	ADS	460-00-4	
GC								
TPH in Soil by 8015 Modified								
Diesel Fuel	4600	mg/kg	500	08/21/95	TPH by EPA 8015M	DLA		
n-Pentacosane (S)	0	%		08/21/95	TPH by EPA 8015M	DLA	629-99-2	5
Date Extracted				08/18/95				

Comments : COMP SAMPLES 224092,224118,224126,224134

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PACE Project Number: 702653
Client Project ID: Port of Oakland

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
(S)	Surrogate
[1]	No flashpoint observed up to 60 deg C
[2]	Late hydrocarbons are present as well as diesel.
[3]	The surrogate could not be quantitated due to sample dilution.
[4]	No flashpoint observed up to 60 deg C
[5]	The surrogate could not be quantitated due to sample dilution.

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QUALITY CONTROL DATA

DATE: 08/23/95
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Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702653
Client Project ID: Port of Oakland

QC Batch ID: 5972 QC Batch Method: EPA 3050 Date of Batch: 08/10/95
Associated PACE Samples: 70224175 70224191

METHOD BLANK: 70226261
Associated PACE Samples:
70224175 70224191

Parameter	Units	Method Blank Result	PRL	Footnotes
Lead	mg/kg	ND	5	

MATRIX SPIKE: 70226279

Parameter	Units	70222427	Spike Conc.	Matrix Spike Result	Spike % Rec	Footnotes
Lead	mg/kg	5.86	97.1	100	97	

LABORATORY CONTROL SAMPLE & LCSD: 70226295 70226303

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Lead	mg/kg	100	97.6	98	94.1	94	4	

SAMPLE DUPLICATE: 70226287

Parameter	Units	70222427	Dup. Result	RPD	Footnotes
Lead	mg/kg	5.86	6.69	13	

QUALITY CONTROL DATA

DATE: 08/23/95
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Alisto Engineering
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Suite 201
Walnut Creek, CA 94598

PACE Project Number: 702653
Client Project ID: Port of Oakland

Attn: Mr. Dale Swain
Phone: (510)295-1650

QC Batch ID: 5977
QC Batch Method: EPA 9045
Date of Batch: 08/10/95
Associated PACE Samples: 70224175 70224191

llisto Engineering
575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702653
Client Project ID: Port of Oakland

QC Batch ID: 6036
QC Batch Method: EPA 1010
Date of Batch: 08/11/95
Associated PACE Samples: 70224175 70224191

LABORATORY CONTROL SAMPLE & LCSD: 70229414 70229422

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Flash Point	deg C	25	25.5	102	24.5	98	4	

SAMPLE DUPLICATE: 70229430

Parameter	Units	70224191	Dup. Result	RPD	Footnotes
Flash Point	deg C	ND	ND	NC	1

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

DATE: 08/23/95
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Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702653
Client Project ID: Port of Oakland

QC Batch ID: 6126
QC Batch Method: SW846 7.3.4.2
Date of Batch: 08/15/95
Associated PACE Samples: 70224175 70224191

METHOD BLANK: 70232996
Associated PACE Samples:

Parameter	Units	70224175 / 70224191 Method Blank Result	PRL	Footnotes
Sulfide, Reactive	mg/kg	ND	10	

MATRIX SPIKE: 70233002

Parameter	Units	70224175	Spike Conc.	Matrix Spike Result	Spike % Rec	Footnotes
Sulfide, Reactive	mg/kg	19.9	94.5	66.1	49	

LABORATORY CONTROL SAMPLE & LCSD: 70233028 70233036

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Sulfide, Reactive	mg/kg	95.4	57.1	60	60.6	63	5	

SAMPLE DUPLICATE: 70233010

Parameter	Units	70224175	Dup. Result	RPD	Footnotes
Sulfide, Reactive	mg/kg	19.9	19.6	1	

QUALITY CONTROL DATA

DATE: 08/23/95
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PACE Project Number: 702653
Client Project ID: Port of Oakland

Attn: Mr. Dale Swain
Phone: (510)295-1650

QC Batch ID: 6165 QC Batch Method: SW846 7.3.3.2 Date of Batch: 08/15/95
Associated PACE Samples: 70224175 70224191

METHOD BLANK: 70235353
Associated PACE Samples:

		70224175	70224191 Method Blank		
Parameter	Units		Result	PRL	Footnotes
Cyanide, Reactive	mg/kg		ND	0.5	

MATRIX SPIKE: 70235387

			Spike	Matrix Spike	Spike	
Parameter	Units	70224175	Conc.	Result	% Rec	Footnotes
Cyanide, Reactive	mg/kg	ND	4.96	ND	74	

LABORATORY CONTROL SAMPLE & LCSD: 70235361 70235379

		Spike	LCS	Spike	LCSD	Spike Dup		
Parameter	Units	Conc.	Result	% Rec	Result	% Rec	RPD	Footnotes
Cyanide, Reactive	mg/kg	5	ND	73	ND	76	4	

SAMPLE DUPLICATE: 70235395

			Dup.		
Parameter	Units	70224175	Result	RPD	Footnotes
Cyanide, Reactive	mg/kg	ND	ND	NC	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

DATE: 08/23/95
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Alisto Engineering
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Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702653
Client Project ID: Port of Oakland

QC Batch ID: 6189
QC Batch Method: CA LUFT
Date of Batch: 08/16/95
Associated PACE Samples: 70224175 70224191

METHOD BLANK: 70236054
Associated PACE Samples:

Parameter	Units	70224175 70224191 Method Blank Result	PRL	Footnotes
Benzene	ug/kg	ND	1	
Toluene	ug/kg	ND	1	
Ethyl Benzene	ug/kg	ND	1	
Xylene (Total)	ug/kg	ND	2	
a,a,a-Trifluorotoluene (S)	%	102		
4-Bromofluorobenzene (S)	%	100		

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

DATE: 08/23/95
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Alisto Engineering
1575 Treat Blvd.
Suite 201
Walnut Creek, CA 94598

Attn: Mr. Dale Swain
Phone: (510)295-1650

PACE Project Number: 702653
Client Project ID: Port of Oakland

QC Batch ID: 6307 QC Batch Method: CA LUFT Date of Batch: 08/18/95
Associated PACE Samples: 70224175 70224191

METHOD BLANK: 70241336
Associated PACE Samples: 70224175 70224191

Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/kg	ND	5	
n-Pentacosane (S)	%	83		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70241344 70241351

Parameter	Units	70216189	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	2500	33	21	-7332	21	-7329	0	
n-Pentacosane (S)					66		63		

LABORATORY CONTROL SAMPLE & LCSD: 70241369 70241377

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	33	29	86	30	90	5	
n-Pentacosane (S)				84		89		

QUALITY CONTROL DATA PARAMETER FOOTNOTES

The Quality Control Sample Final Results listed above have been rounded to reflect an appropriate number of significant figures. Consistent with EPA guidelines unrounded concentrations have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	No flashpoint observed up to 60 deg C

ALISTO ENGINEERING GROUP

CHAIN OF CUSTODY 702653

Consultant's Name: Alisto Engineering — Page ___ of ___

Address: 1575 Treat Boulevard #201, Walnut Creek CA 94598

Project Contact: Brady Naze — Consultant Project #: 10-256-02 — Phone #: 295-1650 — Fax #: 295-1823

Sampled by (print): Dale Swain — Sampler's Signature: Dale Swain

Shipment Method: Courier — Site Location #: — Site Location: Port of Oakland

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ Standard (10 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	Oil & Grease SM 5520	HVOC 8010	Total Lead	BTEX	RCI	COMMENTS
SP-2	8/1/95	Soil	—	1	224050	224175	X			X	X	X	Composit SP-2 thru
SP-3					224068		X			X	X	X	SP-5 2X one for
SP-4					224076		X			X	X	X	analysis
SP-5					224084		X			X	X	X	
SP-6					224092	224911	X			X	X	X	Composit SP-6
SP-7					224118		X			X	X	X	thru SP-9 with
SP-8					224126		X			X	X	X	one for analysis
SP-9					224134		X			X	X	X	

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
Dale Swain	8/1/95	16:42	Roy Fowler/Prime	8/2/95	8:25	RA.
Roy Fowler/Prime	8/8/95	10:45	Aami Nielsen	8/8/95	1045	