Treadwell&Rollo

March 30, 2005
Project No. 4000.04

John R. Prall, R.G.
Associate Environmental Scientist
Environmental Health & Safety Compliance
Port of Oakland
530 Water Street
Oakland, California 94607

Subject: Redevelopment Planning Report
Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Oakland, California

Dear Mr. Prall:

Treadwell & Rollo, Inc. is pleased to submit the subject report of our subsurface environmental assessment in support of the Berths 60-63 Yard and Gate Redevelopment Project. The assessment was conducted in general accordance with our April 30, 2004 work plan to the Port of Oakland and as authorized by Technical Service Order No. 6 and subsequent amendments.

Thank you for the opportunity to be of service to the Port. Please contact me if you have any questions or requests.

Sincerely,
TREADWELL & ROLLO, INC.

Michael P. McGuire, P.E.
Principal Engineer

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REDEVELOPMENT PLANNING REPORT
Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Oakland, California

Prepared for
Port of Oakland
EH&SC Dept.
Oakland, California

30 March 2005
Project No. 4000.04

Treadwell&Rollo
Environmental and Geotechnical Consultants

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LIST OF ACRONYMS

ACDEH	Alameda County Department of Environmental Health
ASTs	above ground storage tanks
bgs	below ground surface
BTEX	benzene, toluene, ethyl benzene, and xylene
CAM	California Analytical Method
CDM	Camp Dresser & McKee
COPCs	Chemicals of Potential Concern
EPA	Environmental Protection Agency
ESLs	Environmental Screening Levels
Gregg	Gregg Drilling & Testing, Inc.
HSP	Health and Safety Plan
IDWs	investigation-derived wastes
LEL	Lower Explosive Limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mllw	mean lower low water
MTBE	methyl tert-butyl ether
ORP	oxidation-reduction potential
PAH	polynuclear aromatic hydrocarbon
% vol.	percent by volume
Port	Port of Oakland
Redevelopment Project	Berths 60-63 Yard and Gate Redevelopment Project
RWQCB	Regional Water Quality Control Board, San Francisco Bay Region
sf	square feet
Site	the Redevelopment Project area
SMP	Soil Management Plan
STLCs	Soluble Threshold Limit Concentrations
SVOCs	semivolatile organic compounds
T&R	Treadwell & Rollo, Inc.
the terminal	Berths 60-63 Terminal
TDS	total dissolved solid concentrations
TPH	total petroleum hydrocarbons
TPH-bc	total petroleum hydrocarbons as Bunker C oil
TPH-d	total petroleum hydrocarbons as diesel
TPH-g	total petroleum hydrocarbons as gasoline
TPH-ho	total petroleum hydrocarbons as hydraulic oil
TPH-mo	total petroleum hydrocarbons as motor oil
TTLCs	Total Threshold Limit Concentrations
UPRR	Union Pacific Railroad
USA	Underground Service Alert
UST	underground storage tank

LIST OF ACRONYMS
(Continued)

VOCs	volatile organic compounds
WET	California Waste Extraction Test

EXECUTIVE SUMMARY

Treadwell & Rollo, Inc. (T&R) prepared this subsurface environmental assessment report on behalf of the Port of Oakland (Port) for the Port's Berth 60-63 Yard and Gate Redevelopment Project ("Redevelopment Project"). The Redevelopment Project area (the Site) will encompass most of the current Berths 60-63 terminal at 1395 Middle Harbor Road and relatively minor portions of adjacent parcels. The assessment was conducted in general accordance with T&R's April 30, 2004 work plan to the Port.

The Site is currently used by a Port tenant for container cargo loading and handling operations. Historically, the Site has been used for industrial and shipping purposes for nearly 100 years. The Port plans to reconfigure the existing terminal for more efficient cargo operations. The current redevelopment plans include mass grading excavation in the central part of the Site (with the excavated soil to be placed as fill over other site areas) and trenching across the Site to install new utility lines. Pier foundations will also be installed for new lighting masts, several existing structures will be demolished, and two new buildings will be constructed.

Purpose and Approach

T&R's assessment was performed to identify chemicals of potential concern (COPCs) in underlying soil, soil gas, and groundwater that might affect implementation of the planned redevelopment project, as well as to confirm and supplement the results of prior investigations for reporting to the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). Part of T&R's assessment program was also directed toward meeting requirements of the Alameda County Department of Environmental Health (ACDEH) for potential case closure of several former underground fuel storage tanks (USTs) at the Site.

T&R's overall assessment approach included identifying redevelopment activities that may be affected by the presence of COPCs, based on assumptions consistent with the current redevelopment plans and typical construction practices. On that basis, the Site was divided into

three depth zones for assessment purposes: 1) shallow soil to a depth of 5 feet below current ground surface (bgs) within which the large majority of the soil excavation will be performed; 2) soils deeper than 5 feet bgs; and 3) groundwater, which was expected to be encountered at depths generally greater than 6 feet bgs and not to be disturbed by the currently planned redevelopment.

Screening criteria were then developed for the soil, soil gas, and groundwater media to define potentially significant chemical concentrations when evaluating site investigation results. The screening criteria consisted of:

- Soil and groundwater RWQCB Environmental Screening Levels (ESLs) for industrial land uses where groundwater is not a drinking water resource;
- Hazardous waste toxicity criteria for excavated soils;
- The presence of separate phase hydrocarbons or free product; and
- Methane concentrations in soil gas indicating potential explosion concerns during intrusive construction or from possible accumulation inside future buildings.

The results of previous investigations, most notably a planning-scale environmental site assessment conducted for the Port by Iris Consulting and a follow-up subsurface investigation by GAIA, were reviewed by T&R to identify specific areas or features of the Site presenting potential environmental concerns that might warrant further evaluation. These areas and/or issues of potential concern at the Site were informally designated as:

- The Municipal Debris Fill Area in the western portion of the Site. This area contains deposits of debris related to the operation of a former municipal garbage wharf in the vicinity in the 1920s and 1930s and is bounded on the east by a now-buried rock wall "training jetty." Also, dissolved-phase and free product were reported in soil and groundwater in this area and under the adjacent Berth 59.

- The Boring B20 Area in the southeastern part of the Site. This designation is from previous GAIA boring B20 where metals and PAH concentrations in soil above ESLs were detected, and lead was also detected in soil above hazardous waste criteria.
- The Former Underground Storage Tank Areas consisting of the following groupings of USTs formerly located at different areas of the Site:
  - *Tanks EF6-9* (a 10,000-gallon diesel, 5,000-gallon diesel, 1,000-gallon gasoline, and 550-gallon waste oil tank, respectively) in the eastern portion of the Site near Building E-221.
  - *Tanks EF11-13* (a 2,000-gallon gasoline, 10,000-gallon diesel, and 550-gallon waste oil tank, respectively) in the central portion of the Site near Building E-124.
  - *Tanks EF14* (a 10,000-gallon diesel tank) in the southwestern portion of the Site.
- The Diesel Spill/Railyard Area along the northern border of the Site on Middle Harbor Drive and downgradient of UPRR railyard operations farther to the north. This area also includes a reported railroad-related diesel fuel spill in 1995 in the railroad right-of-way immediately north of the Site.
- The General Area in the center of the Site and constituting most of the redevelopment project area. Although GAIA's broad grid-based field investigation in the General Area did not generally encounter significant concentrations of COPCs in soil or groundwater, the uppermost layer of fill material under the Site was not included in their sampling.
- The Asphalt Debris Areas identified by GAIA's investigation, consisting of two zones of asphalt debris in soil in the northwest and southeast areas of the Site and which appeared to also lie in areas of elevated Total Petroleum Hydrocarbons quantified as motor oil (TPH-mo) concentrations in soil. The extent and continuity of the asphalt observed by GAIA was not fully defined and the correlation of asphalt debris with significant TPH in surrounding soil was not confirmed.

- Potential methane concerns raised by GAIA's preliminary field screening results from open boreholes, which detected methane concentrations up to 25 percent of the Lower Explosive Limit (LEL). However, the soil gas was not sampled *in situ*, which may be more definitive, and future building locations were not specifically evaluated.

T&R's field investigation program to further evaluate or confirm the above concerns was implemented in May 2004, and included advancing 65 borings for soil, groundwater, and/or soil gas sampling; redeveloping and sampling three existing groundwater monitoring wells; collecting 114 soil samples and 46 groundwater samples for laboratory analysis; collecting nine soil gas samples for field measurements; and one soil gas sample for confirmatory laboratory analysis. All field work was conducted in accordance with standard protocols and a project-specific Health and Safety Plan, and in general conformance with T&R's work plan approved by the Port.

The data obtained from T&R's field investigation were combined with selected results and field observations from previous investigations to provide a dataset for the site assessment. The combined dataset included results from 219 and 92 groundwater samples, respectively, collected from 117 locations (primarily borings), which were evaluated against the screening criteria.

Assessment Findings and Conclusions

1. The subsurface soils at the Site consist of fill materials to a depth of approximately 10 to 15 feet bgs, underlain by Young Bay Mud. The fill includes generally sandy terrestrial fill materials from various upland sources and marine fill consisting of generally silty dredged sediments from the adjacent Inner Harbor channel. The Bay Mud consists of silts and sandy clays with variable zones of fine-grained sand and organic material, e.g., peat.

2. The terrestrial fill includes variable amounts of debris (brick, wood, glass, etc.), most notably in the Municipal Debris Fill Area and the Boring B20 Area. Asphalt debris is prevalent in shallow soil in the northwestern to north-central portions of the Site. A similar zone of asphalt

debris reported in the eastern part of the Site was not confirmed to be laterally persistent. The majority of other borings located elsewhere at the Site encountered little or no debris.

3. The top of groundwater was encountered in borings at depths ranging from as shallow as 3-1/2 to as deep as 13 feet bgs, but in most borings, groundwater was encountered at 7 to 8 feet bgs. The observed groundwater depth was most shallow in the vicinity of the Tanks EF6-9 Area, ranging from approximately 3.4 to 4.9 feet bgs. The possible causes for the variation in depth to groundwater across the Site were not evaluated.

4. Although the hydrogeologic regime at the Site was not a focus of T&R's assessment, groundwater under the Site appears to flow generally from the north to south, i.e., toward the Oakland Inner Harbor shipping channel. However, groundwater in the vicinity of Tanks EF6-9 Area, in addition to being particularly shallow, seems to form an east-west-oriented ridge resulting in groundwater flow to the north. Field conductivity measurements indicate that the groundwater is probably brackish and of relatively poor drinking quality.

5. ESL exceedances in shallow soil primarily included petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), and metals (arsenic, cobalt, chromium, lead, and zinc). The exceedances occurred primarily in the Municipal Debris Fill Area, the Tanks EF6-9 Area, and the Boring B20 Area and sporadically in the Diesel Spill/Railyard Area and in the General Area. Hazardous waste criteria were rarely exceeded and no free product was encountered at depths shallower than 5 feet bgs.

6. With the exception of arsenic and cobalt, the ESL exceedances in shallow soil were most commonly associated with terrestrial fill containing debris. The arsenic concentrations, and probably the cobalt, appear to reflect natural background levels in the East Bay soils imported as fill material.

7. Areas of deeper soil with exceedances of ESLs or other screening criteria include the Municipal Debris Fill Area, Diesel Spill/Railyard Area, the Tanks EF6-9 Area, the Tanks EF11-

13 Area, and the Boring B20 Area. Detected chemicals above ESLs included TPH, PAHs, the semi-volatile organic compound (SVOC) 2-methyl naphthalene, and metals (arsenic, cobalt, molybdenum, nickel, vanadium, and zinc). No chemicals tested exceeded hazardous waste criteria. Separate-phase hydrocarbons or free product were detected in deeper soils in the Municipal Debris Fill Area and at one boring in the east end of the Diesel Spill/Railyard Area near the former location of a rail yard roundhouse.

8. ESL exceedances in groundwater were concentrated along the periphery of the Site and consisted mainly of TPH, volatile organic compounds (VOCs), and PAHs. In the central areas of the Site, groundwater exceedances were much less frequent and included TPH, PAHs, and metals. Free product has been detected in pools or plumes within the Municipal Debris Fill Area, and separate phase hydrocarbons were detected in groundwater at one boring location at the east end of the Diesel Spill/Railyard Area. B-75

9. The groundwater exceedances appear to result from several sources:

- Historical debris dumping operations and previous fuel handling operations offsite to the west;
- Offsite sources for the broad swath of TPH and PAH exceedances along the north side of the Site;
- Possible multiple sources (i.e., in addition to the former USTs) for the elevated concentrations detected in the Tanks EF6-9 Area.

10. T&R's field investigation substantiated GAIA's finding of a zone of asphalt debris in the northwestern portion of the Site, although the reported zone by GAIA in the eastern portion of the Site was not confirmed. It should be noted that about half of the borings where visible asphalt debris was observed also contained detected ESL exceedances for TPH. Future excavation work could use the visible presence of asphalt debris as a moderately good predictor of ESL exceedances in the underlying soil.

11. The highest methane concentrations in soil gas were detected in areas of free product in the eastern and western portions of the Site. At all sampling locations except one, methane concentrations were below the more restrictive or 10% LEL "intrusive construction" criterion for areas where pavement may be removed or penetrated during construction. However, results from the limited number of laboratory confirmation samples suggest that the field-screening equipment may provide a low estimate of methane gas concentrations.

12. "Significant Impact Areas" were defined in this assessment as relatively large and contiguous areas where the investigation data identified shallow soils or soil gas exceeding one or more of the screening criteria. The identified significant impact areas are concentrated along the west and east sides of the redevelopment site and were designated as:

- The Municipal Debris Fill Significant Impact Area, comprising approximately 210,000 square feet (sf) west of the buried training jetty;
- The Boring B20 Significant Impact Area, estimated at approximately 150,000 sf, and with a somewhat different footprint than the preliminary Boring B20 Area used to develop T&R's field investigation program; and
- The Northeast Significant Impact Area, covering approximately 300,000 sf and comprised mostly of the Tanks EF6-9 Area and part of the eastern end of the Diesel Spill/Railyard Area used to develop T&R's field investigation.

13. Because mass grading excavation is expected to be performed only in the central part of the Site, the probability of significant concentrations of COPCs being encountered in soil at any given location is relatively lower than at other parts of the Site. However, the possibility of encountering some quantity of significantly impacted soil should not be discounted.

14. Because the planned trenching and pier drilling are distributed relatively uniformly across the Site, most of the anticipated trenching and drilling locations will lie outside the defined Significant Impact Areas. While there is some probability of encountering significantly

impacted soil at any location on the Site, the probability is higher and more definable within the Significant Impact Areas.

15. The proposed maintenance building lies within the Northeast Significant Impact Area and field screening detected methane above 10% LEL in one boring within the proposed building footprint.

16. Most of the excavated soil to be disposed offsite is likely to require disposal as Class II waste due to contaminant concentrations, particularly TPH, even if below the industrial ESLs used in this site assessment.

17. While relatively little excavated soil from the Site is expected to require Class I hazardous waste disposal, the probability of encountering hazardous waste conditions in both previously defined and undiscovered soil is greatest in the Municipal Debris Fill Significant Impact Area.

18 The possibility that excavations will encounter groundwater should be re-evaluated as redevelopment plans progress and final grade elevations are developed.

19. To minimize potential risks to future workers at the Site from chemicals in soil and soil gas during redevelopment and to ensure proper management and disposal of excavated soil, a Health and Safety Plan (HSP) and a Soil Management Plan (SMP) should be prepared for the Redevelopment Project in accordance with Port specifications.

20. All existing monitoring or remediation wells that will continue to be needed after the Redevelopment Project is completed should be adequately protected during the redevelopment construction. All wells that are no longer needed, or are damaged beyond repair during redevelopment construction, should be properly abandoned under Alameda County Public Works Agency permit.

21. In recognition of potential indoor air quality concerns due to VOC vapor intrusion from the subsurface, no replacement buildings should be sited in the current UST EF6-9 area without full consideration of soil and groundwater contaminant conditions (to T&R's knowledge no replacement buildings in this area are planned). Depending on building construction and use, mitigation measures may be necessary.

REDEVELOPMENT PLANNING REPORT
Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Oakland, California

1.0 INTRODUCTION

Treadwell & Rollo, Inc. (T&R) prepared this subsurface environmental assessment on behalf of the Port of Oakland for the Yard and Gate Redevelopment Project (Redevelopment Project) at the Berths 60-63 Terminal (the Terminal). The scope of the investigation was conducted in general accordance with T&R's workplan to the Port, dated 30 April 2004. The Redevelopment Project area (the Site) is located at 1395 Middle Harbor Road in Oakland, California (Figure 1). The outlines of the Site and the terminal are presented on Figure 2.

T&R's assessment was performed to:

- Identify and evaluate the presence of chemicals of potential concern (COPCs) below the Site that may affect the implementation of construction activities associated with the Redevelopment Project;
- Confirm and supplement the results of a preliminary 2003 subsurface investigation of the Site (GAIA 2003) in anticipation of requirements by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) upon its review of the previously unsubmitted results of that investigation, which are incorporated within this report; and
- Meet the requirements of the Alameda County Department of Environmental Health (ACDEH) for potential closure of several former underground fuel storage tank (UST) sites at the terminal; while the results of the UST-related investigation are included in this report, the complete assessment of the UST closure issues will be reported separately to the ACDEH.

1.1 Report Organization

This assessment report is organized as follows:

Section 2 presents background information, including current and previous site uses, previous environmental assessment and remediation activities, and details of the planned redevelopment.

Section 3 presents the technical approach for T&R's assessment, including identification of assumptions regarding the scope of the redevelopment construction, specific site areas and features of concern, and proposed threshold screening levels for evaluating subsurface chemical concentrations of potential concern.

Section 4 describes T&R's field investigation program to supplement the results of previous investigations.

Section 5 presents T&R's evaluation of the results of the field investigation combined with data from select previous investigations in comparison with screening criteria.

Section 6 presents T&R's assessment of potential effects of the detected COPCs on the planned redevelopment.

Section 7 presents a summary of T&R's conclusions.

Sections 8 and 9 present T&R's statement of limitations and the references used in this assessment, respectively.

Tables and figures are included, as well as a number of appendices with supporting information.

2.0 BACKGROUND

2.1 Current Setting

Most of the redevelopment site is currently occupied by the Berths 60-63 Terminal. The current terminal covers approximately 79 acres, including the wharf area (the size and configuration of the planned redevelopment site is presented in Section 2.3). The terminal is approximately 2,500 to 3,000 feet in length along the wharf and Middle Harbor Road, 800 to 1,200 feet in width (Figure 2), and lies at an elevation of 10 to 13 feet above mean sea level (msl). The terminal redevelopment site is located in a heavily industrial and commercial area and is bounded by Middle Harbor Road and the Union Pacific railyard to the north, Schnitzer Steel scrap metal operations to the east, the Oakland Inner Harbor to the south, and Berth 59 and a currently vacant area to the west. The Oakland Inner Harbor Channel is used for commercial shipping and is dredged periodically.

The terminal is actively used by a Port tenant for container cargo loading and handling operations and related support functions. The site is almost entirely paved with asphaltic concrete and includes eight buildings: five for maintenance activities; two for administration; and one guardhouse at the entrance to the terminal. Underground fuel and waste oil storage tanks related to maintenance operations were once present at four locations, but were removed between 1990 and 1995. Existing subsurface utilities consist of storm drains and sanitary sewers, and electrical, water, and telecommunications service lines.

2.2 Development History

The site has been used for industrial and shipping purposes for nearly 100 years and has been extensively built up over time with successive phases of fill placement. Past industrial uses included railyard operations, lumberyards, shipbuilding and repair, and a municipal garbage wharf. Figure 4 shows the location of some of the specific operations related to these prior uses. Union Pacific Railroad (UPRR) conducted railyard operations west, north, and northeast of the Site including a roundhouse and repair shops. Immediately east of the Site, the Sherex Chemical

Company formerly operated a manufacturing facility immediately east of the Site for a variety of soap products.

Historically, fill was placed at the Site to reclaim land from the adjacent harbor estuary and raise the site grade. Some of the fill consisted of dredged marine sediment (marine fill) from the adjacent estuary, and other material consisted of fill from imported upland sources (terrestrial fill). A now-buried rock wall or "Training Jetty" was constructed in the western portion of the Site before 1900, and various debris fill was dumped to the west of the jetty in association with operation of a former municipal garbage wharf. The last major phase of fill placement at the Site appears to have occurred in the late 1960s to early 1970s for conversion of the entire area to container cargo terminals.

2.3 Previous Environmental Assessments and Remedial Activities

A number of previous environmental assessments and remedial activities have been performed at and adjacent to the Site. The information presented in this section is not intended to be exhaustive.

Most notably as supporting work for T&R's assessment, a planning-scale environmental site assessment was conducted by Iris Consulting for the Port (Iris 2002) followed by a preliminary subsurface investigation by GAIA (GAIA 2003). The purpose of the Iris assessment was to identify potential environmental concerns for future terminal construction activities. Their assessment was based on a review of historical site uses, previous environmental investigations, and environmental databases. In their report, Iris located specific previous operations and previously reported impacts and ranked them as being of "low," "medium," or "high" potential environmental concern (see Figure 4, duplicated with modifications from the Iris report).

The purpose of GAIA's subsurface investigation was to further evaluate potential environmental concerns for future construction activities, particularly considering the results of the Iris

assessment. GAIA's subsurface investigation program included soil and groundwater sampling from 30 borings distributed broadly across the Site in an approximate grid pattern.

A number of UST-related activities have been completed at the Site as well, including investigation and removal of tanks, excavation of impacted soils, and groundwater quality monitoring. Most recently, ITSI prepared a workplan on behalf of the Port for additional assessment of the former UST sites to support their possible case closure (ITSI 2002). The workplan was prepared in response to ACDEH requirements and was subsequently approved. The workplan included a summary of the previous UST-related activities and sampling results, and proposed additional soil and groundwater sampling. The former USTs addressed by the ITSI workplan included:

- Tanks EF6-9 in the eastern portion of the Site near Building E-221. Impacted soil related to the USTs was left in place beneath the building following the tank removals, and groundwater conditions were monitored in the 1990s.
- Tanks EF11-13 in the central portion of the Site near Building E-124, which is planned for removal during the Redevelopment Project.
- Tank EF14 in the southwestern portion of the Site.

A fourth UST site, EF-10, was not addressed in the Work Plan because ACDEH previously issued a Remedial Action Completion Certificate (RACC) for the removal of the EF10 tank. The RACC was issued based on sampling results and field observations finding no evidence of tank leakage (ITSI, 2002).

A groundwater remediation pump and treat system (termed "the Trailer on Flat Car (or "TOFC") system" after the former railyard facility at that location) is currently in place at the adjacent Berth 59 (Figure 2) and a portion of Berth 60 to address free phase and dissolved diesel fuel constituents related to previous railroad operations (URS, 2002). The system, which is operational, includes three groundwater interception trenches, a treatment plant (including a free-product accumulator and activated-carbon system for treating groundwater), and associated

plumbing. Additional extraction wells were installed to control plume migration but are not currently operational. The extraction well vaults may need readjustment because of the proposed redevelopment.

2.4 Yard and Gate Redevelopment Project

The Port is planning to reconfigure and redevelop the terminal and adjacent areas for more efficient marine cargo transfer operations. The planned reconfiguration of the redeveloped terminal is shown on Figures 2 and 3. The reconfiguration will incorporate portions of the current terminal (indicated as "Long-Term Area A" on Figure 2) and adjacent areas (Long-Term Area B) and will temporarily include additional areas to the east and northeast (Short-Term Areas C and D). The long-term redeveloped areas will occupy approximately 80 acres, and the short-term areas will occupy 24 acres.

The Port has completed a "60%" design for the project (Moffat & Nichol Engineers, 2004; Port of Oakland, 2004) with construction scheduled to begin in mid-2005. The redevelopment will be constructed over several phases and will include, in part:

- Temporarily relocating containers and support facilities to Short-Term Areas C and D and Long-Term Area B;
- Demolishing Buildings E-123, E-124, E-126, and E-127 in the west-central portion of the Site and Buildings E-221, E-222, and E-224 on the eastern portion (Figure 2), including removal of the building foundations;
- Constructing a Maintenance Building in the northeastern portion of the Site and a smaller Marine Operations Building near the wharf in the central portion of the Site (Figure 3);
- Replacing most of the existing pavement;
- Mass grading to lower the ground surface in the central portion of the Site, with the excavated soil to be placed as fill over the existing pavement on the western and northeastern portions of the Site and then covered with new pavement;

- Trenching to install storm drain and sewer laterals and various other subsurface utility lines;
- Foundation pier drilling to install replacement lighting masts; and
- Preparing new foundation pads for electrical substations, as well as two proposed aboveground fuel storage tanks.

The wharf area will not be changed during the redevelopment. The existing Administration Building E-125 in the north-central area of the Site (Figures 2 and 3) will be retained. A more complete description by the Port of the current redevelopment plan is included in Appendix A.

3.0 ASSESSMENT APPROACH

T&R's overall assessment approach was to first identify specific redevelopment construction activities that may be affected by the presence of COPCs, based on assumptions consistent with the current redevelopment plans and typical construction practices. Proposed screening criteria were then developed for identifying potentially significant impacts in soil, groundwater, and soil gas. The results of previous investigations and the assumed redevelopment activities were then considered together to make a preliminary identification of specific areas or features of the Site of potential concern. Finally, a field investigation program was implemented to supplement the previous investigations and further evaluate or confirm the identified environmental concerns.

The assessment approach for the UST closure investigations was to implement the approved ITSI workplan, with revisions to conform to current regulatory criteria. In addition to meeting ACDEH requirements, the sampling results for the USTs would also be included in the data used for the redevelopment-driven assessment, where applicable.

3.1 Redevelopment Project Assumptions

T&R's assessment was based on several assumptions regarding the scope of the redevelopment activities, in conformance with the Port's current 60% engineering design and project description, and with typical construction practices. These assumptions included:

- Existing pavements may be replaced anywhere on the Site. Pavement replacement will include removal of the existing pavement and possible scarification and recompaction, but not excavation of the underlying aggregate base and subgrade soils.
- Mass grading will be performed only in the central portion of the Site and to a depth no greater than 5 feet below ground surface (bgs). Soils generated from the mass excavation will be placed as fill over the existing pavements in the northern part of the Site and then covered with new pavement.
- Trenching will be performed extensively across the Site to install new utilities to a depth no greater than 5 feet bgs, with relatively minor exceptions. The final utility locations will be the same as those indicated on the 60% plans.
- To the extent feasible, excavated soil from trenching will be returned to the trenches as backfill. However, the volume of the installed utility lines and other engineered material, e.g., bedding material, will result in approximately 50 percent of the excavated soil being excess spoils. Since project phasing will severely limit the ability to reuse the excess spoils as fill material elsewhere at the Site, it is assumed that spoils will be disposed offsite.
- Foundation piers for replacement lighting masts will be at the same locations indicated on the 60% plans and will extend approximately 6 feet bgs. Drilling spoils will be disposed offsite.
- The final locations and use of proposed buildings will be the same as those indicated on the 60% plans. The buildings will not include basements or other significant subgrade levels.

- Soil excavation for planned demolition of existing building foundations, and for foundation construction for proposed buildings will be limited to 5 feet bgs.
- Construction of foundation pads for proposed aboveground storage tanks, electrical substations, and other similar features will be limited to 2 feet bgs.

Accordingly, T&R divided the Site into three depth zones for assessment:

- Soils and soil gas to a depth of 5 feet bgs, which may be disturbed during Redevelopment Project activities or affect future terminal operations;
- Deeper soils, from 5 to approximately 10 feet bgs, which are assumed not to be disturbed during the redevelopment (with the possible exception of pier drilling for lighting masts), but may otherwise affect future terminal operations; and
- Groundwater, generally expected to be first encountered at a depth of approximately 6 to 10 feet bgs, is assumed not to be encountered during the redevelopment, but may otherwise affect future terminal operations. The expectation that groundwater will not be encountered by redevelopment construction is further discussed in Sections 5 and 6.

T&R's assessment assumed that the following did not need to be included:

- Short-term Areas C and D, because the use of these areas by the Port's tenant during redevelopment will be temporary and limited to placement of containers or equipment on the existing paved surface (i.e., presenting a low risk for disturbing any significantly impacted soil or groundwater);
- Current terminal leasehold areas that the Port's tenant will no longer occupy after redevelopment, because the past land use has involved only placement of containers and equipment on the paved ground surface; and
- Focused sampling for specific excavations because current redevelopment plans are only preliminary.

3.2 Screening Criteria

T&R proposed the following threshold standards for soil, soil gas, and groundwater to indicate potentially significant impacts:

- 2005 RWQCB Environmental Screening Levels (ESLs) for soil and groundwater[1], based on industrial site use, shallow depth to groundwater, and shallow groundwater not being considered a potential drinking water source.
- Applicable hazardous and designated waste criteria for excavated soil[2], including Total Threshold Limit Concentrations (TTLCs) and Soluble Threshold Limit Concentrations (STLCs) (California Code of Regulations, Title 22, Section 66261.24).
- The presence of separate phase hydrocarbons or free product[3].
- Two health and safety combustion criteria for methane in soil gas corresponding to the two types of redevelopment activities:[4]
  - Intrusive Construction and Underground Structures. The criterion for this scenario is 10 percent of the Lower Explosive Limit (10% Lower Explosive Limit [LEL]), or 0.5 percent by volume (% vol.) (Code of Federal Regulations, Title 29, Part 1915.12). This scenario involves redevelopment or maintenance activities where elevated methane concentrations may be encountered during pavement removal or penetration. It also involves the potential accumulation in temporary or permanent subsurface structures such as open trenches and utility vaults.
  - Below Buildings. The criterion for this scenario is 25% LEL, or 1.25% vol. (Code of Federal Regulations, Title 40, Part 258.23[a][1][2]). This scenario involves

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1 The criteria for Berths 55-58 Project soil and groundwater contained in RWQCB Order 99-055 were first considered but later dropped in favor of the more current ESLs.

2 California Health and Safety Code Section 25157.8, restricting disposal of non-hazardous wastes containing lead above 350 mg/kg (or specified concentrations of copper and nickel) to Class I hazardous waste or specially-permitted Class 2 disposal facilities, was also considered as a screening criteria. However, this regulation was not used because soils containing total lead concentrations greater than 350 mg/kg often contain soluble concentrations above STLCs requiring management as a hazardous waste, and this regulation may not be applicable to on-site redeposition of excavated soil.

3 Section 5.1 of ESL guidance (RWQCB, 2003) stating that ceiling-level ESLs for TPH to address potential odors and sheens are based on petroleum solubility limits. Therefore, the visible presence of separate phase hydrocarbons or free product indicates TPH concentrations exceeding solubility limits and ceiling-level ESLs

4 A standard measure of explosion potential is the Lower Explosive Limit (LEL), which is the compound-specific lowest concentration of a flammable gas in which explosion can occur if an ignition source is present. The methane LEL is 5.53 percent by volume (% vol.) in air.

occupancy of a building where elevated methane may migrate upward through the building slab and accumulate in indoor air.

3.3 Preliminary Areas of Concern

Based on previous environmental assessments, and current redevelopment plans and assumptions, T&R made a preliminary identification of particular areas and features of the Site of potential environmental concern. The previous environmental documents used by T&R to identify these concerns included:

- Camp Dresser & McKee (CDM), 1998, Data Summary Report, Union Pacific Intermodal Railyard, Site Characterization, Port of Oakland, Oakland, California, October;
- Iris, 2002, Planning Scale Environmental Site Assessment, American President Lines Terminal, Port of Oakland, Oakland, California, 10 June;
- GAIA Consulting, Inc., 2003, Subsurface Site Investigation Report, American President Lines Terminal, Oakland, California, 4 April;
- ITSI, 2002, Additional Limited Site Characterization Workplan for Site Closure, former APL Underground Storage Tank Sites, 1395 Middle Harbor Road, Oakland, California, November;
- URS, 2002, Ground Water Extraction System Description, Vision 2000 Program, Port of Oakland, Oakland, California, 4 June; and
- URS, 2003, Historic Archaeological Resources Recovered at Berth 59, Port of Oakland, Oakland, California, April.

T&R then proposed a field investigation task to further evaluate or confirm these concerns. These concerns are individually described below along with T&R's general approach for the supplemental field investigation. Specific T&R field investigation activities are discussed in more detail in Section 4. The outlines of the preliminary areas of concern are indicated on Figure 5, along with the sampling locations of previous investigations used to identify those areas. T&R's subsequent sampling locations are shown as well.

3.3.1 Municipal Debris Fill Area

The Municipal Debris Fill Area in the western portion of the Site includes the largest area of "high" concern identified in the Iris assessment. This area of concern is bounded on the east by the now-buried rock wall "Training Jetty" (Figure 4). Redevelopment in this area is expected or assumed to include pavement replacement, utility trenching, and pier drilling, but not mass grading excavation (it may receive mass grading fill).

In addition to municipal debris in shallow soil[5], dissolved and free product have been reported in soil and groundwater in this area and in the adjacent Berth 59 (see Figure 4). Numerous on- and off-site borings were installed during previous investigations of hydrocarbon plumes, one in the north and one in the south, present or intruding under this area. These previous investigations included installing three on-site monitoring wells (APL/UP-W1, APL/UP-W2, and OKUS-W6).

The northern hydrocarbon plume in the Municipal Debris Area was identified by Iris as a "Bunker Oil Plume" approximately 300 feet long and 80 feet wide at its greatest extent. The southern plume is associated with a large area of free phase and dissolved petroleum hydrocarbons from a former fueling facility and a UST site plus an unknown source including "Bunker C" fuel. The COPCs at Berth 59 include total petroleum hydrocarbons as gasoline, diesel, and Bunker C oil (TPH-g, TPH-d, and TPH-bc), in addition to benzene, toluene, ethyl benzene, and xylene (BTEX). Free-phase hydrocarbons have been identified in three areas at Berth 59 along the redevelopment site's western boundary.

Construction activities in the Municipal Debris Area related to the Port's Vision 2000 program encountered localized areas containing pieces of coal tar and asbestos, which were subsequently removed by hand under appropriate health and safety controls (John Prall, personal communication). The presence of additional coal tar and asbestos material is expected. Also,

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5 The debris as depicted on the figures in the Berth 59 area outside the Site was removed during the Vision 2000 construction project and properly disposed of offsite.

GAIA borings B29 and B30 encountered elevated lead and polynuclear aromatic hydrocarbon (PAH) concentrations above ESLs. The specific sources of these exceedances detected by GAIA were not identified, but are considered to be related to the debris in the fill material.

Preliminary environmental concerns for this area include the extent of elevated petroleum hydrocarbons in soil and groundwater and the presence of free product, both from historical dumping practices near the former municipal garbage wharf and possible migration from under Berth 59. Concerns also include the elevated lead and PAHs in soil detected in two of the GAIA borings, possibly also related to past dumping practices. To evaluate these concerns, T&R proposed additional borings for soil and/or groundwater sampling to further define the extent of impacts detected at previous locations.

3.3.2 Boring B20 Area

The Boring B20 Area is located in the southeastern part of the Site, and is designated from previous GAIA boring B20 where elevated metals and PAH concentrations in soil above ESLs were detected, and lead was also detected in soil above TTLC hazardous waste criteria. Redevelopment construction in this area is expected to include pavement replacement, utility trenching, and foundation piers. T&R proposed additional borings, primarily for soil sampling to define the lateral extent of the exceedances detected at B20.

3.3.3 Former Underground Storage Tank Areas

The Former UST Areas include clusters of borings in three separate areas:

- *Tanks EF6-9* (a 10,000-gallon diesel, 5,000-gallon diesel, 1,000-gallon gasoline, and 550-gallon waste oil tank, respectively) in the eastern portion of the Site near Building E-221, which will be removed during the Redevelopment Project. Impacted soil related to the USTs was known to have been left in place beneath the building following the tank removals, and groundwater conditions were monitored in the 1990s. The eastern portion

of the EF6-9 area is bounded by former off-site operations of UPRR and Sherex Chemical and was considered to be of "medium concern" by Iris (Figure 4).

- *Tanks EF11-13* (a 2,000-gallon gasoline, 10,000-gallon diesel, and 550-gallon waste oil tank, respectively) in the central portion of the Site near Building E-124, which is planned to be removed during the Redevelopment Project.
- *Tanks EF14* (a 10,000-gallon diesel tank) in the southwestern portion of the Site.

The site of another former UST located in the southeast area of the Site, EF10, does not require additional investigation for case closure, and thus no sampling is proposed. T&R's investigation of the UST areas would be in accordance with the approved ITSI workplan.

3.3.4 Diesel Spill/Railyard Area

The Diesel Spill/Railyard Area is located along the northern border of the Site on Middle Harbor Drive along the UPRR right-of-way and downgradient of UPRR railyard operations to the north. Redevelopment will include constructing a proposed maintenance building in the eastern portion of this area, as well as installing two above ground storage tanks (ASTs). Pavement replacement, fill placement from mass grading excavations, and utility trenching are expected to take place here.

This area includes the location of a reported railroad-related diesel fuel spill in 1995, identified by Iris as a "high" concern, but the current extent of the impact is not known. Three monitoring wells that were installed by UPRR to investigate the spill were believed to have subsequently been covered over by others.

Other concerns include possible impacts to soil and groundwater from previous operations at a nearby railroad roundhouse formerly located just beyond the northeast corner of the Site as well as possible migration from known railroad-related sources of groundwater impacts upgradient to the north across Middle Harbor Drive. Four previous borings by GAIA near the frontage road

with Middle Harbor Drive (B8, B13, B14, and B15) detected TPH elevated concentrations in groundwater above ESLs.

To evaluate these concerns, T&R proposed to locate and sample, if possible, the wells installed near the 1995 diesel spill, and drill additional borings for soil and groundwater sampling around the diesel spill area, along the frontage with Middle Harbor Drive, and in the former roundhouse area.

3.3.5 General Area

The General Area located in the central portion of the Site constitutes most of the Site and will likely be subjected to the greatest volume and variety of intrusive redevelopment construction, including mass grading excavations. Also, a proposed, relatively small building will be constructed in the south-central portion of this area near the wharf (Figure 3). As shown on Figure 4, most previous operations or conditions identified by Iris within the General Area were of "medium" to "low" concern and were widely scattered. GAIA's broad grid-based field investigation in the General Area did not generally encounter soil or groundwater impacts of significant concern. Although this large area has the potential to contain relatively localized, but difficult to predict impacts, T&R did not propose more closely-spaced supplemental sampling locations because the necessary number of borings to significantly increase detection confidence would be excessive[6].

Historical information and review of GAIA's boring logs indicates that a separate layer of fill material was placed over the Site for the most recent terminal redevelopment in the late 1960s to early 1970s. This uppermost fill material appears to extend to a depth of approximately 2 to 3 feet below the existing pavement surface and at several locations was underlain by a layer of

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6 For example, probabilistic "grid based" sampling methods (Gilbert, 1987) designed to produce an 80% probability of detecting random "hot spots" at least 200 feet in diameter would have required approximately 55 points in the General Area alone. This assumes a square sampling grid, circular hot spots, and the size of the General Area to be roughly 2,000 feet by 800 feet. By the same method, GAIA's rough sampling grid would have had about an 80% probability of detecting hot spots approximately 400 feet in diameter.

asphalt, which may be a previous asphalt pavement surface. GAIA discovered this upper fill layer but did not sample it. Because this upper fill layer will probably constitute the bulk of the soil excavated for the Redevelopment Project, this fill material should be characterized similar to the deeper soil at 4 feet bgs to identify appropriate soil management requirements.

T&R proposed to evaluate this upper fill layer by shallow soil sampling within the General Area co-located adjacent to GAIA's previous boring locations. T&R also proposed to supplement the evaluation of the upper fill layer by collecting additional samples of the upper fill layer from borings already proposed for other purposes across the Site.

3.4 Asphalt Debris

GAIA's investigation identified two zones of asphalt debris in soil located in the northwest and southeast areas of the Site and which appear to also lie in areas of elevated TPH-mo concentrations. The extent and continuity of the asphalt observed by GAIA was not fully defined and was not determined to be a cause of TPH in soil that may require special management during redevelopment excavation. Also, GAIA's analyses of soil for TPH-mo did not include a silica gel cleanup procedure during sample preparation for extractable hydrocarbon testing, which if used, may have reduced reportable concentrations by screening out possible interferences due to naturally-occurring polar biogenic material, including unrefined (and non-regulated) petroleum components.

T&R proposed additional borings for soil sampling near select previous GAIA borings (B2, B9, and B24) where both elevated TPH-mo and asphalt were reported to further define their extent and to evaluate the possible effect of silica gel sample cleanup on TPH analytical results.

3.5 Methane in Soil Gas

Methane gas may be present beneath pavements in areas with elevated TPH in soil or groundwater, particularly if free product is present. GAIA's preliminary field screening method for methane from open boreholes, though hampered by equipment problems, did detect methane

at a concentration exceeding 25 percent of the LEL. The possible presence of methane is a particular concern beneath future buildings and subsurface structures, such as utility vaults, and where pavements may be breached during mass grading or other excavation.

However, soil gas was not sampled *in situ*, which might have been more definitive than sampling soil gas emanating from open boreholes, and future building locations were not specifically evaluated. T&R proposed supplemental *in situ* methane sampling at currently proposed building locations and over areas of reported free product.

4.0 T&R FIELD INVESTIGATION

T&R's field investigation program, implemented in May 2004, included advancing 65 borings (T&R borings B31 through B96) for soil, groundwater, and/or soil gas sampling; redeveloping and sampling three existing groundwater monitoring wells (MW-2, "SPILL AREA," and APL/UP-W2); collecting 114 soil samples and 46 groundwater samples for laboratory analysis; collecting nine soil gas samples for field measurements (B69 and B89 through B96); and one soil gas sample for confirmatory laboratory analysis. Specific field investigation activities conducted at the individual site areas of preliminary concern identified in Section 3 are presented in the subsections below. The borings and sampled monitoring wells for the field investigation are shown on Figure 5.

T&R's field activities were conducted in accordance with standard T&R protocols and a project-specific Health and Safety Plan (HSP). The HSP and other field-related documents are included in Appendix B. Some final boring locations were adjusted slightly from planned locations based on field conditions, and additional step-out borings were installed based on conditions observed and/or preliminary analytical results at the originally planned borings.

Preparations for the field investigation included contacting Underground Service Alert (USA Ticket No. 169302) to notify subscribing utility companies of the planned borings so they would mark their nearby utility lines and contracting with two private utility locating services

(California Underground Surveys of San Ramon, California, and Precision Locating LLC of Brentwood, California) to clear the boring locations of detectable obstructions. A boring permit (No. WO4-0406) was obtained from the Alameda County Public Works Agency (copies included in Appendix B).

From May 11 through 28, 2004, Gregg Drilling & Testing, Inc. (Gregg) of Martinez, California, (C-57 drilling contractor license # 485165), advanced 65 soil borings and collected soil and soil gas samples using a Geoprobe™ direct push drill rig, under the observation of a T&R field geologist. Gregg subcontracted core drilling of some locations to Del Secco Diamond Core & Saw, Inc. of Hayward, California, to penetrate near surface concrete pavement and/or steel rebar.

The T&R field geologist logged conditions observed in the borings, including field classification of soils in accordance with United Soil Classification System and field screening measurements of soil samples with an organic vapor meter. Field screening methods conducted at select borings for methane are discussed in Section 4.7. Boring logs are presented in Appendix B[7]. Relatively undisturbed soil samples were retrieved from the direct-push borings in 2-inch-diameter, 4-foot-long butyrate tubes. Six-inch-long sections selected by the T&R field geologist for laboratory analysis were cut, capped with Teflon™ sheeting and plastic caps, labeled, and placed in a chilled, secure container.

In borings where groundwater grab samples were to be collected, 0.75-inch, dedicated PVC temporary wells were inserted in the completed borings. Sufficient groundwater was then allowed to recharge into the well casing to allow sample collection which, due to slow groundwater recharge, required collecting the groundwater sample the next day at some locations. Groundwater samples were collected from the temporary wells with dedicated disposable bailers and decanted into appropriate containers supplied by the analytical laboratory. All groundwater samples for laboratory analysis were sealed, labeled, and placed in chilled, secure containers.

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7 Boring logs were not prepared for the soil gas sampling locations.

On May 26, 2004 Gregg redeveloped three existing groundwater monitoring wells at the Site (wells MW-2, "SPILL AREA," and APL/UP-W2) for subsequent sampling. The wells were redeveloped with a truck-mounted development rig, by a combination of surging, bailing, and pumping until a minimum of 10 casing volumes of groundwater were extracted and groundwater quality parameters were relatively stable. Well redevelopment logs are included in Appendix B.

On June 8, 2004, T&R purged and sampled the wells. In accordance with standard T&R protocols, each well was purged by bailing at least three casing volumes and until groundwater quality parameters stabilized. The water quality parameters measured in the field include pH, conductivity, oxidation-reduction potential (ORP), temperature, and turbidity. Groundwater samples were then collected with dedicated disposable bailers for VOC analyses and with peristaltic pumps for other analyses and poured into appropriate containers supplied by the analytical laboratory. All groundwater samples for laboratory analysis were sealed, labeled, and placed in chilled, secure containers. Well sampling logs are presented in Appendix B.

All down-hole drilling equipment was decontaminated by steam-cleaning between each boring, and all purging and sampling equipment was either decontaminated by hand washing or replaced between each sampling event.

Completion of the field investigation activities included grouting all borings in accordance with permit requirements. Drill cuttings, rinsate, and other investigation-derived wastes (IDWs) were drummed, labeled, and stored near the Berths 60-63 guard station at the Port's direction pending disposal by other Port contractors. On June 10, 2004, all boring locations were surveyed by a California licensed surveyor, Virgil Chavez Land Surveyors of Vallejo, California, (PLS 6323) to the Port of Oakland datum (a copy of the survey report is provided in Appendix B).

All samples for laboratory analysis were handled under standard chain-of-custody protocols and method preservation requirements. All soil and groundwater samples for analysis were transported in ice-chilled containers via courier to the Port's contractor laboratory Curtis & Tompkins, Ltd., NELAP # 01107CA, a California-certified analytical laboratory in Berkeley,

California, for laboratory analysis. Soil gas samples for laboratory analysis were transported via overnight express in unchilled containers to Air Toxics, Ltd. In Rancho Cordova, California, (NELAP #02110CA). A sample of a free-phase hydrocarbon emulsion from Boring B75 was submitted to Saybolt LP, a division of Core Laboratories, in Carson, California (ISO Certification NEN-EN-ISO-9001:2000).

The laboratory analytical methods used included the following:

- Total Petroleum Hydrocarbons (TPH) – Environmental Protection Agency (EPA) Method 8015 modified for gasoline, diesel, motor oil, bunker C, and hydraulic oil (TPH-ho). Samples for TPH-diesel or heavier range analysis were prepared using EPA 3550 extraction and silica gel cleanup EPA method 3630C.
- PAHs/ Semivolatile Organic Compounds (SVOCs) – EPA Method 8310 except for samples from UST areas and 8270 for UST areas as required by the ACDEH. All samples were prepared using gel permeation cleanup EPA Method 3640.
- Metals – EPA Method 6010/7000 series for total and dissolved metals. Prior to analysis, the laboratory filtered the groundwater samples using a 0.45-micrometer filter. Soluble metals were analyzed by the California Waste Extraction Test (WET).
- Volatile Organic Compounds (VOCs) – EPA Method 8021 for BTEX and methyl tert-butyl ether (MTBE) and Method 8260B for VOCs.
- Methane gas – Modified ASTM 1946 for methane gas.
- Petroleum Distillation Fractions for Free Product Emulsion Sample – ASTM D-2887 Simulated Distillation Profile using heating, fractionation, and gas chromatographic analyses.
- Asbestos – EPA Method 600/R-93-116, Visual Area Estimation using polarized light microscopy by Forensic Analytical in Hayward, California. This analysis was performed at the Port's request on one soil sample from B60 at 2 feet bgs collected in the Municipal Debris Fill Area.

Laboratory analytical reports are contained in Appendix C.

4.1 Municipal Debris Fill Area

Soil, groundwater, and soil gas samples were collected from 11 borings in the Municipal Debris Fill Area to assess the extent of Bunker C oil, diesel, gasoline, and methane under the western portion of the Site (Figure 5). Two types of borings were drilled:

- Soil and Groundwater – These borings included B53 through B59, which were drilled to a depth of 10 feet bgs. T&R collected soil and groundwater samples for analyses of TPH, VOCs, PAHs, and/or metals.
- Soil gas - Soil gas samples were collected at borings B93 and B94 for field analysis for methane.

Step-out borings B79 and B80 were advanced based on field observation of free product at boring B56. The step-out borings were located approximately 200 and 300 feet east of B56, respectively.

Soil and groundwater samples to be analyzed for TPH-d, TPH-mo, and TPH-bc were prepared using the EPA silica gel cleanup method. Analyses for two samples from boring B54 were conducted both with and without silica gel cleanup to assess the comparability of T&R's results with the "non-silica gel" results obtained by GAIA and to evaluate whether the silica gel method significantly reduced non-refined or biogenic interferences, particularly due to asphalt. Selected samples were also analyzed for TPH-g. Groundwater samples were also analyzed for BTEX and MTBE.

Selected soil samples were also analyzed for total lead. Based on total lead concentrations, three samples were re-analyzed for soluble lead.

4.2 Boring B20 Area

To address elevated concentrations of lead and benzo(a)pyrene detected in soil at GAIA boring B20, T&R advanced borings B40 through B44 to approximately 10 feet bgs. Soil samples were collected at 2, 4, and 6 feet bgs, and groundwater samples were collected at three borings. No step-out borings were conducted in this area. The soil samples were analyzed for total lead and PAHs. Soil samples for PAH analysis were prepared using the EPA gel permeation cleanup method. Three samples were analyzed for soluble lead based on the total lead concentrations.

4.3 Former Underground Storage Tank Areas

T&R conducted soil and groundwater sampling to a minimum depth of 15 feet bgs at the three tank areas (EF6-9, EF11-13, and EF14). Selected samples from each tank area were analyzed for a specific suite of chemicals, including TPH-g, TPH-d, TPH-mo, VOCs, SVOCs, metals, and PAHs. In the Tanks EF6-9 and EF11-13 areas, three and two samples, respectively, were analyzed for soluble lead based on review of the total metals results.

The borings at each area included the following:

- EF6-9 - primary borings B31 through B37 and step-out borings B38, B39, B50, B51, B52, and B85
- EF11-13 - primary borings B45 through B48 and step-out boring B49
- EF14 - primary borings B62 through B66

4.4 Diesel Spill/Railyard Area

Soil, groundwater, and soil gas samples were collected in 13 borings in this area. The borings included:

- Near the Diesel Spill – borings B67 through B71 to test for potential impacts to soil and groundwater; boring B69 also included testing for methane in soil gas.

- Along the UPRR Right-of-Way – borings B72 through B75 to evaluate the potential soil and groundwater impacts from the railyard releases to the north.
- In the Footprint of a Building to be Constructed – borings B90 through B92 to test for the presence of methane.
- Near Building E-224 – boring B-88 to test the uppermost fill layer.

Near the site of the 1995 diesel spill, T&R discovered three unlabeled and covered-over wells (Figure 4), two of which appeared to have been improperly abandoned. The surface seals at these wells were checked and appeared to be generally intact. The remaining well, designated as "SPILL AREA" by T&R and likely the same as well DSMW-1, was redeveloped and sampled.

A sample of emulsified free product from B75 was analyzed for TPH and distillation characteristics. Because of the presence of petroleum odors and free product at B75, step-out boring B91 was advanced approximately 260 feet farther to the south.

Soil and groundwater samples were analyzed for TPH, PAHs, and some metals. Soil samples were also analyzed for copper, lead, and zinc. Five soil samples in this area were subsequently analyzed for soluble lead based on the total metals results.

4.5 General Area

To test the uppermost and previously unevaluated fill layer from the 1970-era redevelopment, T&R conducted sampling at a depth of 2 feet bgs in the General Area (B80 through B87) and from select multi-purpose borings at other locations across the Site. At B83, the boring was deepened to 16 feet bgs as a step-out test for TPH detected at the Tanks EF11-13 Area. At B85, the boring was deepened to 12 feet bgs as a step-out test for TPH encountered at the Tanks EF6-9 Area. Soil samples were analyzed for TPH-g, TPH-d, TPH-mo, and California Analytical Method (CAM) 17 metals. Two samples from B80 and B81 were analyzed for soluble lead based on the total lead results.

4.6 Asphalt Debris

GAIA detected elevated TPH-mo concentrations in borings B2, B9, and B24, but also noted the presence of asphalt debris in these areas (GAIA 2003). T&R collected soil samples close to the three GAIA borings at depths between 2 and 6 feet bgs at B55, B67, and B78, respectively, to evaluate whether asphalt contributed to the TPH-mo detections (Figure 5). Soil samples were prepared using the silica gel cleanup method and analyzed for TPH-mo. Field personnel also visually inspected soil samples for asphalt debris.

4.7 Methane Gas Screening

Methane gas screening was conducted to evaluate methane in soil gas below the planned buildings and areas of free product in the Municipal Debris Fill Area. The sampling and analyses were conducted in general accordance with recent soil gas sampling protocols (Department of Toxic Substances Control and Regional Water Quality Control Board, Los Angeles Region 2003).

Soil gas samples were screened in the field for methane and hydrogen sulfide (the methane screening instrument also measured hydrogen sulfide) at borings B69 and B89 through B96. The soil gas samples were obtained using direct-push probes at depths of 3.5 to 5 feet bgs. For sampling, the drill rods were sealed from the atmosphere by applying a hydrated bentonite seal around the drill rods at the ground surface. Soil gases in the probe were purged[8] and allowed to equilibrate for at least 20 minutes prior to obtaining a sample.[9] Soil gas was collected in syringes and measured in the field using an Innova LS field instrument. Duplicate samples were collected at boring B92 for laboratory analyses to check the field analytical results. The duplicate soil gas samples were collected using the same procedure as the samples for field analyses, except that

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8 Three casing volumes of soil gas were purged at an approximate rate of 150 milliliters per minute. A step purge test of one, three, and seven casing volumes was performed at the first sampling location (B89) using a photoionization detector (PID). The highest PID reading occurred with the third casing volume, which was then used as the purging volume at subsequent sampling locations.

9 Soil gas was sampled at an approximate rate of 150 milliliters per minute. A leak test was performed by placing a cloth soaked with 90% isopropyl alcohol at the ground surface bentonite seal while a sample was collected, and then analyzing the soil gas using a PID. Due to equipment problems, pressure readings of the sampling tube system were not obtained.

the soil gases were collected in Summa canisters for shipment rather than in syringes. The samples were transferred under chain-of-custody protocols and analyzed at Air Toxics Ltd., a California-certified laboratory in Rancho Cordova, California.

5.0 SUMMARY OF ASSESSMENT DATA

The data obtained during T&R's field investigation were combined with selected results from previous investigations to provide a dataset for the site assessment. The combined dataset consisted of laboratory analytical results from 219 soil and 92 groundwater samples, respectively, collected from 117 locations (primarily borings). Sample locations are shown on Figure 5. The analytical results used are summarized in comparison with applicable ESLs, including TTLCs for total metals in soil (Tables 1 through 10)10. Soluble metals in soil are compared with STLCs in Table 11. The assessment of methane in soil gas is based on T&R's sampling results (Table 12). Soil classifications used in the assessment were based on the GAIA and T&R boring logs.

In addition to the T&R data, the combined chemical dataset includes data from the following previous reports:

- ETIC Engineering (2004) – 2003 groundwater monitoring results from monitoring wells APL/UP-W1 and –W2, MW6 through MW8, and extraction well EW5, located within the southwestern corner of the Site;
- GAIA Consulting, Inc. (2003) – from borings B1 through B30, distributed widely across the Site;
- Blymyer Engineers, Inc. (1999) – from borings B1 and B2 near Tanks EF11-13;

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10 Detection limits for some of the PAH, SVOC, and metals analyses exceeded ESLs, particularly for data from the previous investigations.

- Camp Dresser & McKee (1999) – from boring OKUS-B13 and monitoring wells OKUS-W1 through -W6 and APL/UP-W1 through -W5 near the western border of the Site;
- Camp Dresser & McKee (1998) – from borings IB-43 to IB-49 along the northwestern and northern portions of the Site; and
- USPCI Consulting Services (1993) – from borings OKUS-B1 to B4, B7; and monitoring wells OKUS-W1 to W-5 near the western border of the Site.

Note that the dataset includes extractable TPH (TPH-d, -mo, etc.) results that included silica gel cleanup and those that did not, e.g., GAIA's investigation results. Based on a review of the results, including two T&R soil samples analyzed both with and without silica gel cleanup, T&R concludes there is sufficient cause to consider the two sets of extractable TPH results comparable.

T&R's assessment of the data is presented below. Geologic and hydrogeologic conditions are discussed first, followed by an evaluation of the chemical dataset. The chemical results are evaluated with respect to the depth zones, preliminary areas and issues of concern, and screening criteria presented in Section 3.

5.1 Shallow Geology and Hydrogeology

5.1.1 Soil

The subsurface soils at the Site are composed of terrestrial and marine-derived fill materials under the existing asphalt or concrete pavements and supporting aggregate base materials to a depth of approximately 10 to 15 feet bgs. The terrestrial fill is derived from various materials imported from upland sources, consisting generally of silty to gravelly, poorly-graded sands with variable amounts of debris (brick, asphalt, wood, etc.). In some areas of the Site, particular types of debris either from imported sources or entrained material from previous site occupations, appear to be more generally present than at others. The marine fill consists of sediments dredged from the adjacent Inner Harbor channel, composed of generally brown to gray, poorly-graded

sands and silty sands, with little or no debris except shells and shell fragments. The marine fill is everywhere overlain by some thickness of terrestrial fill.

Underlying the fill material is naturally occurring Young Bay Mud, consisting of gray, thinly-bedded to massive silty clay to silty sands with locally abundant shells and other organic matter.

The thickness of the terrestrial fill, the depth to the Young Bay Mud, and presence of debris noted in the GAIA boring logs and from T&R's field investigation are summarized on Figure 6. The thickness of the marine fill is indicated by the difference in depth to the base of the terrestrial fill and the top of the Young Bay Mud.

The thickness and debris content of the fill under the separate areas of concern varies as follows:

Municipal Debris Fill Area. A thick section of terrestrial fill laden with debris extending down to 6 to 10 feet bgs. The terrestrial fill appears to overlie a thin sequence of marine fill (1- to 3-feet thick) and may directly overlie Young Bay Mud in some places. The former Training Jetty on the east appears to bound this debris-rich area of fill.

Boring B20 Area. Terrestrial fill extending down to depths ranging from 5 to 9 feet with abundant wood debris.

UST Areas – Tanks EF6-9 Area. Terrestrial fill down to 4 to 11 feet bgs, with debris noted in only some borings. Marine fill 2 to 6 feet thick extending to Young Bay Mud.

Diesel Spill/Railyard Area. Terrestrial fill with sporadic debris generally to 7 to 10 or more feet bgs. The marine fill is either thin or absent in this area. In the western part of the Diesel Spill/Railyard Area, T&R borings confirmed the area of asphaltic debris at 2 to 4 feet bgs previously noted by GAIA.

General Area. Terrestrial fill ranging in thickness from 1 to 10 feet, with generally little or no debris noted overlying marine fill to 9 to 15 feet bgs.

5.1.2 Hydrogeology

The top of groundwater is generally encountered in borings at depths ranging from approximately 4 to 13 feet bgs. The groundwater occurs in silty to gravelly sands and is unconfined to semi-confined.

The depths to groundwater are shallowest in the vicinity of the Tanks EF6-9 Area including borings B31 through B37, B50 through B52, B76 and B77, and well MW-2. The measured depths to the top of groundwater range from 3.4 to 4.9 feet in these locations. Elsewhere, groundwater occurs below 7 to 8 feet bgs except along the northern portion of the Diesel Spill/Railyard Area. At the "SPILL AREA" well and boring B73, the depths are shallow at 5.45 and 5.7 feet bgs, respectively. At borings B74 and B75, the depths are unusually deep at 8.8 and 9.0 feet bgs. The possible causes for the variation in depth to groundwater across the Site were not evaluated.

Groundwater appears to generally flow from the north to south, i.e., toward the Oakland Inner Harbor shipping channel. The groundwater elevations collected during T&R's field investigation are shown below:

Well	Location	Depth to Water	Top of Casing Elevation	Groundwater Elevation
		Feet bgs	feet Port Datum	feet Port Datum
MW-2	UST EF6-9 Area	3.41	10.19	6.78
APL/UP-W-2	Southern portion of Municipal Debris Fill Area	9.62	13.19	3.57
SPILL AREA	Northwestern portion of Diesel Spill/ Railyard Area	5.45	11.66	6.21

Notes on data sources of casing elevations:

- MW-2. Casing elevation 10.03 feet mean lower level water (mllw) (Geomatrix, 1992) or 10.19 feet, Port datum. Port datum is approximately 0.167 feet above mllw.
- APL/UP-W2. Casing elevation 13.19 feet Port datum. Port datum is3.2 feet below msl (ETIC, 2004).

- SPILL AREA. Known as DSMW-1, with top of casing elevation of 11.66 feet Port datum msl (CDM, 1998).

At the time these data were collected, groundwater flow direction across the Site appears to be to the south-southwest toward the channel. Groundwater in the vicinity of Tanks EF6-9 Area, in addition to being particularly shallow, appears to form a slight east-west-oriented ridge with northern flow toward B74 and B75 as well as toward the south. Groundwater monitoring conducted at the Tanks EF6-9 Area also indicates that groundwater flows northwest rather than southwest and southeast (Uribe & Associates, 1997). The nature and possible causes of the groundwater ridge in the Tanks EF6-9 Area and the related northern groundwater flow, contrary to the generally southern flow across the Site, were not further evaluated in T&R's assessment.

The groundwater contains elevated dissolved solids. The total dissolved solid concentrations (TDS) detected during this investigation exceeded 500 milligrams per liter (mg/L). The TDS concentrations ranged from 800 to 5,580 mg/L and generally indicate brackish water. Groundwater at well MW-2 had an elevated salinity value of 5.7 grams per kilogram or parts per thousand.

5.2 Chemicals in Shallow Soil to 5 Feet Below Ground Surface

The chemical data for shallow soils (i.e., within 5 feet bgs) under the Site from 88 borings were assessed with respect to the screening criteria. Chemicals exceeding ESLs were detected in soil at 38 borings, including TPH-g, TPH-d, TPH-mo, TPH-bc, arsenic, cobalt, chromium, lead, zinc, benzo(a)pyrene, and/or other PAHs. A summary of results for shallow soils is presented in Tables 1 through 5. The locations of the chemical ESL exceedances are shown on Figure 7. Hazardous waste criteria (TTLC, STLC) were exceeded for lead in two shallow samples. No free product was encountered in soil shallower than 5 feet bgs.

Field screening detected methane soil gas levels above the 10% LEL "intrusive construction" standard at boring B91 under the proposed location of building in the northeast area of the Site and boring B93 overlying an area of free product in the northwest area of the Site. The detected

methane level at B93 also exceeded the 25% LEL "below buildings" standard, and the laboratory analytical result for the confirmation sample from this same location was significantly higher than the field screening result.

Detected ESL exceedances in shallow soil primarily included petroleum hydrocarbons, polynuclear aromatic hydrocarbons, and metals and occurred primarily in the Municipal Debris Fill Area, the Tanks EF6-9 Area, and the Boring B20 Area (Figure 7). The ESL exceedances were most commonly associated with terrestrial fill containing some amount of debris. Petroleum hydrocarbons and polynuclear aromatic hydrocarbons above ESLs were found sporadically in the Diesel Spill/Railyard Area and in the General Area. COPC concentrations in the uppermost fill layer (approximately upper 2 to 3 feet) did not appear to differ significantly from the fill material results at 4 feet bgs.

Arsenic was the most common metal with ESL exceedances, followed by cobalt; however the detected concentrations were relatively modest and were scattered widely across the Site with no apparent pattern. The arsenic concentrations probably reflect natural background levels in the imported fill materials; the rocks and soils in the East Bay commonly contain appreciable arsenic concentrations, particularly the Leona Rhyolite in the Oakland Hills (Lawrence Berkeley National Laboratory 2002; Oakland Urban Land Redevelopment Program; Robinson 1953), and are commercially quarried for aggregate and fill soil. The lack of an apparent pattern in the cobalt exceedances suggests that it is present at background concentrations, as well.

The assessment results for shallow soil at the individual areas of concern are described below.

5.2.1 Shallow Soil – Municipal Debris Fill Area

In the Municipal Debris Fill Area, chemicals exceeding ESLs were detected in 10 of 11 borings in this area. Chemicals exceeding ESLs included:

- TPH-d, TPH-mo (most frequently), and/or TPH-bc in seven borings;
- Up to four PAH compounds in three borings; and

- Arsenic in three borings and cobalt in one.

The soluble lead concentration in a sample from boring B56 exceeded the hazardous waste STLC (Table 11). In addition, samples from two borings located a short distance offsite, but within the historical debris fill area, contained a broader range of metals exceeding ESLs (i.e., arsenic, barium, cadmium, lead, copper, and/or zinc). The lead concentration in one sample from these nearby borings (980 milligrams per kilogram [mg/kg] at B29) was also close to the hazardous waste TTLC.

The eastern limit of the chemical exceedances in the Municipal Debris Fill Area is relatively well defined by the buried Training Jetty, impounding the debris and related COPCs in soil. The ESL exceedances for TPH and PAHs are probably associated with the previously identified free product plumes within and to the west of the Municipal Debris Fill Area. The ESL exceedances for metals are more likely associated with the debris entrained in the fill material, or in the case of arsenic, due to background levels in the fill material.

To evaluate the effect of using silica gel cleanup on soil samples analyzed for TPH-d, TPH-mo, and TPH-bc, samples B54-2 and B54-4 were split and analyzed for these constituents both with and without silica gel cleanup. As shown in Table 1, the analytical results with and without this preparation method are virtually identical. The comparative evaluation of silica gel cleanup on extractable TPH results is discussed in more detail in Section 5.5.

As requested by the Port, a soil sample was obtained for asbestos analysis from B60 at 2 feet bgs in the area where asbestos debris was reportedly encountered in localized areas during a previous construction project and subsequently removed (as discussed in Section 3.3.1). The asbestos result was non-detect at a 1% quantification limit.

Methane was detected above the free product plume in the northern part of the area (B93) exceeding the threshold standards. The methane concentrations exceeded both the Intrusive

Construction (i.e., excavation) and Below Building screening criteria. The methane results are discussed in more detail in Section 5.6.

5.2.2 Shallow Soil – Boring B20 Area

Relatively frequent ESL exceedances were detected in five of eight borings at the Boring B20 Area including:

- TPH-d, TPH-mo, and TPH-ho in one boring;
- Up to three PAH compounds in four borings;
- Arsenic, chromium, copper, lead, and zinc in one of borings (boring B20); and
- Arsenic in one other boring.

In boring B20, the lead concentration also exceeded the hazardous waste TTLC. Such a broad range of metals exceedances as detected at boring B20 was only detected elsewhere at the Site in the Municipal Debris Fill Area.

The ESL exceedances occurred primarily in the southwest quadrant of the Boring B20 Area and appear to be associated with the relatively abundant debris noted in the terrestrial fill material or, in the case of arsenic, to background levels in the fill material itself). The boundaries of this area of exceedances appear to be relatively well defined except to the west.

5.2.3 Shallow Soil – Former Underground Storage Tank Areas

At the location of the former USTs, nearly all of the ESL exceedances were found in the Tanks EF6-9 Area, where 9 of 17 borings had exceedances, including:

- TPH-g in borings B32 and B38, both within 50 feet of the former tank locations;
- TPH-mo in three other borings located over 200 feet north and southeast of the former tanks;

- The VOCs, xylene and naphthalene, in boring B32 near the former tank locations;
- The SVOCs/PAHs, benzo(a)pyrene, in four borings; and benzo(a)pyrene and dibenzo(a,h)anthracene in one of the borings, mostly northeast of the former USTs; and
- Arsenic and zinc in one boring and cobalt in another.

Methylbenzene compounds (which are VOCs associated with gasoline) were also detected at boring B20, but with no ESLs for comparison.

T&R boring B78 was located adjacent to GAIA boring B24, where asphalt debris was noted in the soil, to further evaluate the potential relationship between the presence of asphalt debris and TPH concentrations. However, no visible asphalt debris was encountered in B78. Samples from both borings did detect TPH-mo above ESLs.

The sampling results suggest that the while former EF6-9 gasoline tanks may be associated with shallow soil ESL exceedances in the nearest borings B32 and B38, the other exceedances for organic compounds may be due to other causes, including contact with COPCs in shallow groundwater from other sources (see Section 5.4 for further discussion). The arsenic exceedance is probably related to background levels in the fill material.

In contrast, the only exceedances detected in shallow soil at the other former UST areas were arsenic and cobalt in one boring each at the Tanks EF11-13 Area, which probably reflect background levels.

5.2.4 Shallow Soil – Diesel Spill/Railyard Area

Only four of the 16 borings in the Diesel Spill/Railyard Area had chemical exceedances above ESLs, including:

- TPH-mo at two borings ; and
- Arsenic in one boring and cobalt in another.

Additional arsenic exceedances were also detected in three offsite borings to the north along the frontage road and railway along Middle Harbor Drive. At one of the offsite borings, the exceedances also included copper and lead. The arsenic and cobalt exceedances are probably due to background levels in the fill. For the other metals exceedances, it is noted that the sampling location was adjacent to a heavily traveled industrial transport route.

5.2.5 Shallow Soil – General Area

Eight out of 21 borings in the General Area had chemical exceedances above ESLs including:

- TPH-mo in two borings;
- Up to two PAH compounds in three borings;
- Arsenic in four borings (as well as chromium in one of the four); and
- Cobalt in two borings.

The arsenic and cobalt exceedances are probably related to background levels in the fill material. No obvious source is apparent for the other exceedances.

The results indicate a lack of predictable or systematic distribution in the exceedances, which appeared to be random and relatively infrequent, or possibly related to impacted areas too small to be detected by the distribution of sampling points. In either case, definitive boundaries of the impacts in the General Area cannot be delineated by the results of this assessment.

5.3 Chemicals in Deeper Soil

Samples of deeper soils (i.e., deeper than 5 feet bgs, the assumed maximum excavation depth for most redevelopment work) considered in this assessment were collected from 56 on-site and 12 off-site borings. They were generally advanced to a maximum depth of approximately 8 to 10 feet bgs to also encounter groundwater. Areas of deeper soil onsite that have been impacted by chemicals exceeding ESLs or other screening criteria include the Municipal Debris Fill Area,

Diesel Spill/Railyard Area, the Tanks EF6-9 Area, the Tanks EF11-13 Area, and the Boring B20 Area. Figure 8 shows the locations of the detected exceedances. Detected chemicals above ESLs occurred in 19 of the 56 on-site borings and included TPH-d, TPH-mo, PAHs, SVOCs (naphthalene and 2-methyl naphthalene), and metals (cobalt, arsenic, molybdenum, nickel, vanadium, and zinc) (Tables 1 through 5).

No chemicals tested exceeded hazardous waste criteria. Separate-phase hydrocarbons or free product were detected in deeper soils in the Municipal Debris Fill Area and at one location within the Diesel Spill/Railyard Area near the former location of a roundhouse. Methane gas was not tested in the deeper soil because potential methane explosion concerns would be limited to the more shallow soil where excavation and building foundations would be placed.

The assessment results for deeper soils at the individual areas of concern are described below.

5.3.1 Deeper Soil – Municipal Debris Fill Area

ESL exceedances were detected in only two out of the six on-site soil borings within the Municipal Debris Fill Area, specifically for arsenic and cobalt. However, a number of other borings located a short distance to the west of the Site, but within the limits of historical municipal debris placement, did detect the following exceedances:

- TPH-d, and/or TPH-mo in three borings;
- Several PAHs in one boring; and
- One or more of the metals (arsenic, cadmium, lead, and zinc) in four borings.

Lead concentrations also exceeded the hazardous waste TTLC in two of these nominally off-site borings within the debris fill.

The detected soil TPH exceedances immediately outside the Site limits are probably related to the central "Diesel & Bunker Oil Plume" indicated on Figure 4. The metals exceedances, other than the background arsenic and cobalt, are probably related to debris within the fill material.

5.3.2 Deeper Soil – Boring B20 Area

ESL exceedances in the Boring B20 Area were limited to PAHs in two of eight borings. The PAH exceedances may be related to the debris found in the fill material in this area.

5.3.3 Deeper Soil – Former Underground Storage Tank Areas

ESL exceedances were detected in 5 of 14 soil borings in the Tanks EF6-9 Area:

- TPH-d, TPH-mo, and/or TPH–ho in borings B31 and B32 close to the former tanks;
- PAHs and SVOCs in four borings, including naphthalene and 2-methyl naphthalene in boring B31; and
- Arsenic in four borings, including three borings which also contained cobalt above ESLs. Nickel and vanadium also exceeded ESLs in boring B39.

In the Tanks EF11-13 Area, ESLs were exceeded in three of six borings:

- TPH-d, TPH-mo, and/or TPH–ho in two borings; and
- Arsenic in three borings, including cobalt and copper exceedances in one of the three (B49).

The TPH exceedances are probably related to the former tanks since the exceedances were located downgradient and within 100 feet of the tanks.

No chemical exceedances were found in the six borings near Tank EF14.

5.3.4 Deeper Soil – Diesel Spill/Railyard Area

ESL exceedances in the Diesel Spill/Railroad Yard Area were limited to arsenic in two of six borings. Free-phase hydrocarbons were observed on the water table, located within the deeper soil, at boring B75 in the northeast corner of the area.

5.3.5 Deeper Soil – General Area

Of the nine borings in the General Area, ESL exceedances were relatively few and included:

- The PAH, benzo(a)pyrene, in boring B11; and
- Arsenic in three borings.

5.4 Chemicals in Groundwater

Data were reviewed from 57 groundwater samples collected on site and 12 groundwater samples collected off site (Tables 6 through 10) to evaluate the presence of dissolved chemicals and free product in groundwater. ESL exceedances in groundwater were generally concentrated along the periphery of the Site (see Figure 9) consisting mainly of:

- TPH and VOCs at the Municipal Debris Fill Area;
- TPH and PAHs at the Diesel Spill/Railyard Area;
- TPH, PAHs/SVOCs, and occasional VOCs in the Tanks EF6-9 Area; and
- TPH in the southeast corner of the Boring B20 Area.

In the central areas of the Site, groundwater exceedances were much less frequent and included TPH, PAHs, and metals.

The groundwater exceedances appear to result from several sources. The TPH and VOCs detected in the Municipal Debris Fill Area at the west side of the Site appear to be related to previously-identified free product within the historical debris fill area (located both onsite and immediately offsite), and to historical fuel handling operations offsite to the west.

The reported southward groundwater flow across most of the Site indicates that the TPH and PAH exceedances in groundwater detected in the Diesel Spill/Railyard Area on the north side of the Site may originate from offsite sources farther to the north.

While exceedances detected close to the former USTs in the Tanks EF6-9 Area are readily ascribed to those tanks, the reported northward groundwater flow direction and extraordinarily shallow groundwater depth in this area (both contrary to the rest of the Site) makes identifying the source of numerous other PAHs/SVOCs detections in this area with the available data less certain.

The source of the TPH detections in the Boring B20 Area may be related to former manufacturing operations located offsite to the east.

The detected TPH exceedances in the central areas were primarily near and downgradient of identified impacts in the more peripheral areas, suggesting that they were related to the same sources. The groundwater results from temporary grab groundwater wells, constituting the majority of the sampling locations considered, are subject to confirmation using groundwater monitoring wells.

Most of the metals exceedances were for arsenic and barium, which were probably due to natural background levels. The other metals exceedances, located in the Former Tanks EF6-9 Area and the Tanks EF11-13 Area, are probably related to former waste oil USTs.

Free product in the Municipal Debris Area was reported by previous investigations and was also observed in T&R boring B56. Free product was also observed in T&R Boring B75 at the far northeastern corner of the Site in the Diesel Spill/Railyard Area.

The assessment results for groundwater at the individual areas of concern are described below.

5.4.1 Groundwater – Municipal Debris Fill Area

ESL exceedances were detected in eight of ten sampling locations within the Municipal Debris Fill Area and at seven other locations slightly off-site to the west but still within the historical debris fill limits. The following exceedances were detected and include the nominally off-site results:

- TPH-g at six locations within the central part of the Municipal Debris Fill Area;
- TPH-d, TPH-mo, and/or TPH-bc at 13 locations across the area;
- Benzene (and in some instances other VOCs) in eight locations;
- Numerous PAHs at boring IB-43[11]; and
- Arsenic at four locations, including one location with arsenic and lead (B28).

Previous investigators have delineated the presence of two plumes or pools of free product in the historical limits of the municipal debris fill within the Site and another located immediately outside the southwest corner of the Site (see Figure 4 for the identification of these free product plumes and Figure 9 for their footprint and location relative to the Site boundaries). Free product was also observed at T&R boring B56 within one of the reported product plumes.

The hydrocarbon-related exceedances in the northern part of the Municipal Debris Fill Area, e.g., OKUS-W6, do not appear to be associated with an off-site source. However, the exceedances in the central and southern part of the area are contiguous with the previously reported groundwater impacts in the adjacent Berth 59.

5.4.2 Groundwater – Boring B20 Area

ESL exceedances were detected at two of five sampling locations within the Boring B20 Area. TPH-mo was detected in boring B25 in the far southeastern corner of the Site and does not appear related to conditions in the rest of the Boring B20 Area. PAHs were detected at boring B42.

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11 While previous sampling results at wells OKUS-W1, -W2, -W3, and –W5 reported concentrations of the SVOC bis (2-ethyl-hexyl) phthalate above ESLs (see Table 9), T&R concludes that these exceedances were probably due to laboratory-induced contamination. Consequently, the exceedances are not considered representative of site conditions and are not evaluated further.

5.4.3 Groundwater – Former Underground Storage Tank Areas

In the areas of former USTs, the majority of the ESL exceedances were detected in the Tanks EF6-9 Area, where nearly all of the 17 sampling locations had exceedances including:

- TPH-g at borings B32, B35, and B38;
- TPH-d, TPH-mo, TPH-bc, and/or TPH-ho at borings B21, B31, and B32;
- Benzene at B32 (including naphthalene and xylenes) and B38;
- SVOCs and PAHs (mostly benzo(a)pyrene) at 13 locations; and
- Lead, nickel, and zinc at B38.

ESLs exceedances were detected at both groundwater sampling locations within the Tanks EF11-13 Area including the SVOC/PAH (benzo(a)pyrene) at boring B47 and nickel and lead at B46. These detections, close to and downgradient of the former USTs including a waste oil tank, probably represent local impacts from those USTs.

ESLs exceedances were detected for mercury in one of two groundwater samples collected in the Tank EF14 Area. The mercury detection was slightly above the laboratory reporting limit and was the only detection for mercury at the Site. Since the detection was a distance from and cross-gradient of the former UST, it appears unlikely to be related to that tank.

5.4.4 Groundwater – Diesel Spill/Railyard Area

ESL exceedances were detected at 15 of the 20 sampling locations within or immediately upgradient of the Diesel Spill/Railyard Area and included:

- TPH-g at boring B75;
- TPH-d and/or TPH-mo at five locations;
- PAHs at 11 locations; and
- Barium at B22 and arsenic at B91.

Separate phase hydrocarbons on groundwater were also observed at boring B75 and subsequently sampled for TPH and forensic analysis (see sample B75R, Table 6 for TPH results). As reported by the laboratory, the hydrocarbon chromatogram and distillation curves from the forensic analysis indicate residues from aged diesel fuel.

As illustrated on Figure 9, the groundwater results indicate a broad area or "swath" of PAH exceedances near the northern site boundary, adjacent to a similar swath of TPH-d and/or TPH-mo exceedances to the south, including TPH exceedances in nearby borings B3 and B15 in the General Area. Given the generally southward groundwater flow at the Site, the TPH and PAH exceedances appear to originate off-site to the north, with the possible exception of the ESL exceedances detected at the east end of this area near the location of a former roundhouse. There is conflicting or incomplete groundwater flow information in the northeast area of the Site (see the discussion of the Tanks EF6-9 Area in Section 5.4.3)

A sample obtained by T&R from a groundwater monitoring well near the former 1995 diesel spill did not contain any ESL exceedances[12].

5.4.5 Groundwater – General Area

ESLs exceedances were detected at four of ten sampling locations within the General Area. TPH-d and/or TPH-mo were detected at B3, B15, and B18. Arsenic was detected at B4 and barium at B18. As noted earlier, the TPH exceedances appear to be extensions of the TPH impacts upgradient of the Diesel Spill/Railyard Area and Tanks EF6-9 Area.

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12 This sample was designated "Spill Area" and was obtained from what was probably well DSMW-1 from an earlier investigation.

5.5 Asphalt Debris

T&R's field investigation substantiated GAIA's finding of a zone of asphalt debris located in the northwestern portion of the Site (Figure 6), although the apparent zone reported by GAIA in the eastern portion of the Site was not confirmed.

Where encountered, the asphalt debris in the subsurface occurs in zones of disintegrated asphalt in layers as thick as 1 foot and generally at depths of 2 to 4.5 feet bgs. Distinct sections of intact pavement were not observed.

T&R's field investigation included a limited evaluation of possible contributions of the asphalt debris to TPH concentrations in underlying soil, and whether these contributions to reportable TPH concentrations could be significantly reduced by using silica gel cleanup of samples to remove non-regulated polar compounds. Two soil samples were obtained at boring B54 at 2 and 4 feet bgs where a layer of disintegrated asphalt (probably asphalt grindings placed as aggregate base material) was observed beneath the existing pavement. Both samples were split and analyzed for TPH-d, TPH-mo, and TPH-bc, with and without silica gel cleanup. The results with and without silica gel cleanup were virtually identical (see Table 1), indicating that polar compounds were not a significant contributor to the detected TPH concentrations.

The conclusion that polar compounds are not significant contributors is further supported by comparing the TPH results from GAIA boring B24 and adjacent T&R boring B78 (see Table 1). Extractable TPH analysis conducted on soil samples from B24, where asphalt debris was observed, did not include silica gel cleanup, but did for the samples from B78. The significantly higher concentrations reported for B78 indicate that polar compounds were probably not prevalent and that investigation results with and without silica gel cleanup at this site appear comparable.

In addition, TPH exceedances above ESLs in shallow soil were subsequently detected in 7 of the 14 borings where asphalt debris was noted (see Figure 6). Therefore, the visible presence of

asphalt debris in the subsurface appears to be a moderately strong predictor (and contributor) of impacts above ESLs in underlying soil.

5.6 Methane in Soil Gas

The highest methane concentrations in soil gas were detected in areas of free product in the eastern and western portions of the Site (Figure 10). T&R used field-screening techniques to provide an initial estimate of potential concerns, followed by a single confirmation sampling for methane[13]. The methane and hydrogen sulfide gas results are shown in Table 12 and described below.

Methane gas was detected in seven of the nine samples (Table 12). The maximum methane field reading of 3% vol. was found at B93, in the northwest portion of the Site, above a free-product plume (Figure 10). Hydrogen sulfide was detected where the highest methane concentrations were found (Table 12). The laboratory results for the single confirmation sample from B93 located over a reported free product plume in the Municipal Debris Fill Area were 13% to 14% vol. for methane, or four to five times the field screening results. This limited comparison suggests that the field-screening equipment may provide a low estimate of methane gas concentrations.

The methane concentrations in the areas of future buildings were under the 1.25% vol. (or 25% LEL) "below buildings" criterion. As shown on Figure 10, these results include B90 through B92 in the northeastern portion of the Site, and B95 in the south-central portion of the Site near the wharf. The maximum concentration was 1% vol. at B91.

At all locations except B93, methane concentrations were below the more restrictive 0.5% vol. (or 10% LEL) "intrusive construction" criterion for areas where pavement may be removed or penetrated during construction. The next highest value was 0.4% vol. at B94 near another

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[13] Hydrogen sulfide was recorded as a secondary parameter of concern during the field screening since it was measurable by the same methane detection instrument. Subsequent laboratory confirmation analyses were limited to methane

reported free-product plume in the Municipal Debris Fill Area; methane was either not detected or was 0.1% to 0.2% vol. at most of the other locations.

6.0 POTENTIAL IMPACTS ON SITE REDEVELOPMENT

This section discusses the potential effects of the detected COPCs in soil, soil gas, and groundwater on redevelopment planning and construction activities. In this section, "significant impact areas" are defined, recommended construction risk-control planning documents are identified, and planned intrusive construction activities relative to the identified impacted areas of the Site are evaluated. Potential soil disposal requirements are evaluated, followed by a discussion of groundwater depth relative to planned or assumed excavation activities. Overlays of the identified significant impact areas over select redevelopment project design drawings are presented on Figures 12 through 15.

6.1 Significant Impact Areas

"Significant Impact Areas" are defined in this assessment as relatively large and contiguous areas where the investigation data identified shallow soils or soil gas exceeding one or more of the screening criteria. The significant impact areas are shown on Figure 11 with the sampling locations used to define these areas and on Figure 12 in relation to the planned redevelopment layout. The identified significant impact areas are concentrated along the west and east sides of the redevelopment site and together comprise a minority of the total site area.

The Municipal Debris Fill Significant Impact Area comprises approximately 210,000 square feet (sf) west of the buried training jetty. In addition to areas containing soils that frequently exceeded ESLs for TPH and PAHs, free phase hydrocarbons (free product) were also detected. A significant percentage of soil samples from this area also contained metals concentrations exceeding ESLs and, in the case of lead, close to or exceeding hazardous waste criteria. Methane levels of concern were also detected in soil gas overlying one of the identified areas of free product.

With the probable exception of arsenic and cobalt as background constituents in the terrestrial fill material, the elevated metals concentrations appear to be associated with the presence of buried debris in the shallow soils. Previous construction projects in this area reportedly encountered asbestos-containing materials and pieces of coal tar in the debris. The eastern limit of this area is well defined by the buried training jetty, which appears to bound the historical debris and related soil impacts.

The Boring B20 Significant Impact Area is estimated at approximately 150,000 sf, with a somewhat different footprint than the Boring B20 Area of Potential Concern used to guide the assessment program. At least one chemical exceeding ESLs was detected at all borings within the Boring 20 Significant Impact Area. Within this significant impact area, chemicals exceeding ESLs included TPH in one of five borings (i.e., 20% of the borings), PAHs in four of five borings (80%), and metals (arsenic in one boring and a broad range of metals in another) in two of five borings (40%). Hazardous waste concentrations of lead were detected in one of the borings, but the data do not suggest that these concentrations are laterally extensive.

While the arsenic exceedances probably reflect background levels in the fill soil, the other chemicals appear to be related to the presence of debris entrained in the fill. Assuming the boundary (as drawn) of this area lies mid-way between borings with exceedances and those without, the limits of the Boring B20 Significant Impact Area are moderately defined except to the west, where there is a significantly greater uncertainty due to the greater distance between borings.

The Northeast Significant Impact Area covers approximately 300,000 sf, comprised mostly of the Tanks EF6-9 Area of Potential Concern and part of the eastern end of the Diesel Spill/Railyard Area of Potential Concern. Within this area, detected ESL exceedances in shallow

soil included TPH, VOCs, and PAHs[14]. Methane was also detected in soil gas at this area, including one location above the 10% LEL criteria for intrusive construction.

Although most of the detected soil exceedances were located close to the former USTs, the limits of this impact area have been drawn more broadly to reflect the possibility that impacts to shallow soil may also result from physical contact with the groundwater, which is also impacted and is particularly shallow in this region of the Site (as little as 3-1/2 feet bgs). For this reason, the extent of shallow soil impacts would also be influenced by the flow direction of groundwater containing dissolved chemicals or floating free product. The limits of the Northeast Area shown on Figure 11 reflect the presence of detected screening criteria exceedances in shallow soil and/or groundwater (borings with groundwater exceedances are indicated with underlines) and groundwater flow direction[15]. The limits of this impact area are relatively uncertain due to related uncertainties in the actual groundwater flow regime, confirmed concentrations in groundwater (particularly for PAHs), and potential sources (including the former USTs and the former roundhouse near the northeast corner of the Site).

Even though the frequency and distribution of detected ESL exceedances were too scattered to define the "Zone of Asphalt Debris" indicated on Figure 11 as a well-defined and contiguous area of significant impact, it should be noted that about half of the borings where visible asphalt debris was observed also contained detected ESL exceedances for TPH.

In addition, a recent release of jet fuel from an offsite (located north of the Site) pipeline owned by Kinder Morgan Energy Partners, LP has reportedly impacted the 42-inch, north-south running storm drain (see Figure 13) and other shallow laterals within the Site, portions of which run through the Diesel Spill/Railyard Area, the Tanks 11-13 Area, and the General Area (see

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14 The detected ESL exceedances for arsenic and cobalt were not included since they appear to reflect background levels.

15 Groundwater reportedly flows northward and southward from an east-west groundwater "ridge" in the area of the former USTs.

Figure 5). Soil and groundwater quality sampling in the vicinity of the storm drain has not been conducted since this release. However, the storm drains and laterals affected by the release have reportedly been cleaned. Notwithstanding this cleaning, diesel-like odors or residual fuels may still be encountered in the vicinity of the storm drain and laterals.

6.2 Construction Risk-Control Documents

To minimize potential risks to future workers at the Site from chemicals in soil and soil gas during redevelopment and to ensure proper management and disposal of excavated soil, certain institutional and engineering controls may be specified for the construction work. These procedures should be defined and described in two types of construction-specific plans: an HSP and a Soil Management Plan (SMP)[16].

Depending on contracting requirements, the SMP (or its functional equivalent) may be developed by the Port or prepared by the contractor in accordance with Port requirements. The SMP should define procedures to be followed during all activities that disturb or expose any soil at the Site, such as excavation and mass grading, as well as activities that expose or extract groundwater, such as construction dewatering or deep excavations. Particular requirements should be specified in areas where significant impacts have already been detected, with provisions to identify and respond to previously undiscovered conditions. The SMP should also address the management, classification, and appropriate on-site and off-site disposal or re-use of excavated soils. Topics to be addressed in the SMP should include (but not be limited to):

- Monitoring for, and identification of chemical conditions of concern during or arising from intrusive construction activities;
- Notification and response procedures for discovery of suspect impacted soil and/or related physical structures, e.g., USTs;

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16 If final redevelopment plans will include management of groundwater, e.g., excavation dewatering, a Soil and Groundwater Management Plan (SGMP) should be developed.

- Statutory, regulatory, and appropriate industry practices for on-site handling of known or suspect chemically-impacted soil;
- Sampling protocols and analytical methods for profiling excavated soil for appropriate reuse or disposal;
- Construction-phase dust, vapor, and odor control measures and related action criteria for intrusive construction and soil handling activities;
- Monitoring and response plans for persons, operations, and environmental receptors (e.g., the Inner Harbor channel) outside of construction zones that may inadvertently be affected by construction activities; and
- Documentation of procedures that were ultimately implemented, exceptions to plan requirements and their resolution, and disposition of excavated soils.

The HSP should be prepared by the construction contractor in accordance with Port specifications. The HSP should define project-specific criteria and procedures to protect the health and safety of construction personnel. The HSP should identify potential chemical hazards, and specify (but not be limited to):

- Safety training requirements for personnel;
- Monitoring and documentation procedures;
- Hygiene and decontamination practices;
- Personal protective equipment and their criteria for use; and
- Specific engineering controls for construction activities, e.g., ventilation for certain excavations.

6.3 Mass Grading

According to preliminary plans, mass grading is expected to include excavation in the central part of the Site and deposition of the excavated soil as fill over areas in the west and northeast

parts of the Site. The grading is expected to produce a net balance of cut and fill with no need to dispose excess soil offsite unless dictated by environmental concerns. Because this type of excavation activity is expected to be performed only in the central part of the Site (i.e., the General Area) where extensive or systematic exceedances of screening criteria have not been detected, the probability of significant soil impacts being encountered at any given location is relatively lower than at other parts of the Site. However, the relatively sparse number of assessment soil borings in this area, the diverse range of historical industrial operations and fill placements at the Site, and the extensive footprint of the planned mass grading excavation indicate that the possibility of encountering some quantity of significantly impacted soil should not be discounted.

6.4 Utility Trench Excavation and Pier Drilling

Trench excavations in shallow soil are planned for a wide variety of utility lines, as well as pier drilling (to approximately 6 feet bgs) to install foundations for new lighting masts. Preliminary redevelopment layout drawings (with overlays of the significant impact areas identified in Section 6.1) for storm drains, electrical service lines, and natural gas and water supply lines are presented on Figures 13, 14, and 15, respectively. In addition to the general redevelopment layout, Figure 12 also includes the locations of the planned lighting masts.

As indicated by the drawings, utility trenching will occur throughout the entire redevelopment site, as well as pier drilling for lighting masts. Although there is some probability of encountering soil containing elevated concentrations of COPCs at any location on the Site, the probability is higher and more definable within the significant impact areas. Because the planned trenching and pier drilling are distributed relatively uniformly across the Site, most of the anticipated trenching and drilling locations will lie outside the defined significant impact areas.

6.5 Other Excavation Work

The redevelopment plans includes additional types of excavation work, among them excavations to construct shallow foundations at the following locations:

- A new maintenance building in the northeastern corner of the Site;
- Electrical substations in the central and eastern parts of the Site and near the wharf ; and
- A proposed office building near the wharf.

These activities are expected to require excavation of soil to 3 to 4 feet bgs to level building pads and install shallow foundations. The proposed maintenance building lies within the Northeast Significant Impact Area and soil gas field screening detected methane above 10% LEL in one location (B91) under the proposed building footprint.

Seven existing buildings will be demolished for the redevelopment, including:

- Buildings E-123 and E-127 in the south-central part of the Site;
- E-221 partially within the Northeast Significant Impact Area;
- E-126 (an extension of the larger E-125);
- E-224 and E-240 (partially within the Northeast Significant Impact Area) in the north; and
- E-222 in the southeastern part of the Site within the Boring B20 Significant Impact Area.

Assuming all of these buildings were constructed on shallow footing foundations, some shallow soil may be excavated during removal of the existing building foundations.

Two ASTs will be constructed near the main site entrance in the north off Middle Harbor Drive. Foundation preparation for these will include grading and scarification of soil, and is expected to result in a balanced cut and fill for pad leveling. No excess soil is expected to be generated in this work.

6.6 Soil Disposal

At least some quantity of excavated soil from the redevelopment is expected to be disposed offsite, apart from environmental concerns, due to construction phasing and other logistical constraints its reuse as backfill onsite .

Excavated soil to be disposed offsite will need to be directed to appropriate facilities for disposal or reuse. Since the ESLs used in the assessment screening process were based on industrial land use underlain by non-potable groundwater, the possible reuse of excavated soil at offsite properties should be evaluated depending on the land use and other characteristics of the proposed receiving property.

Most of the excavated soil to be disposed offsite is likely to require disposal as Class II waste due to COPC concentrations, particularly TPH, even if below the industrial ESLs. The visible presence of asphalt debris in the excavated soil appears to be a moderate indicator that some of the soil contains relatively high TPH concentrations (i.e., even above industrial ESLs). Although relatively little excavated soil from the Site is expected to require Class I hazardous waste disposal, the probability of encountering hazardous waste conditions in both previously defined and undiscovered soil is greatest in the Municipal Debris Fill Significant Impact Area.

6.7 Groundwater

Under most of the Site, the depth to groundwater is greater than 5 feet below the existing grade, with the exception of the Northeast Significant Impact Area. Near the former Tanks EF6-9 Area, the measured depth to groundwater in well MW-2 was approximately 3.4 feet bgs and the depth to groundwater noted in nearby borings was also less than 5 feet. Since current grading plans indicate that additional fill will be placed in this area, raising the site grade above the groundwater level to more than 5 feet bgs, subsequent utility trenching is not expected to encounter groundwater. However, the possibility that excavations will encounter groundwater should be re-evaluated as redevelopment plans progress.

If groundwater is expected to be encountered in excavations, potential environmental concerns will need to be re-considered since the screening criteria used in the current assessment does not address construction worker exposure pathways from groundwater or management of impacted groundwater exposed in excavations. It is noted that groundwater in the immediate vicinity of the former Tanks EF6-9, the area with the most shallow groundwater, is relatively impacted with TPH and VOCs. This current assessment assumes that regulatory-driven groundwater remediation, if required, will not necessarily be completed prior to redevelopment construction.

6.8 Protection and Abandonment of Groundwater Wells

To avoid possible conduits for COPCs at the ground surface to enter groundwater, all groundwater monitoring or remediation wells at the Site that are or will no longer be used, e.g., the three "Diesel Spill" wells installed by Union Pacific Railroad, should be properly abandoned prior to redevelopment construction. The abandonment work should be performed under permit by the Alameda County Public Works Agency. Measures should also be taken during the redevelopment construction to protect all existing monitoring or remediation wells that will be needed afterwards, e.g., the TOFC extraction wells. If certain wells cannot be preserved, or are damaged beyond repair during the redevelopment construction, they should be properly abandoned and replaced under permit.

7.0 CONCLUSIONS

Based on the results of this site assessment, T&R reaches the following conclusions.

1. The subsurface soils at the Site consist of fill materials to a depth of approximately 10 to 15 feet bgs, underlain by Young Bay Mud. The fill includes generally sandy terrestrial fill materials from various upland sources and marine fill consisting of generally silty sediments dredged from the adjacent Inner Harbor ship channel. The Bay Mud consists of silts and sandy clays with variable zones of fine-grained sand and organic material, e.g., peat.

2. The terrestrial fill includes variable amounts of debris (brick, wood, glass, etc.), most notably in the Municipal Debris Fill Area and the Boring B20 Area. Asphalt debris is prevalent in shallow soil in the northwestern to north-central portions of the Site. A similar zone of asphalt debris reported in the eastern part of the Site was not confirmed to be laterally persistent. The majority of other borings located elsewhere at the Site encountered little or no debris.

3. The top of groundwater was encountered in borings at depths ranging from as shallow as 3-1/2 to as deep as 13 feet bgs, but in most areas of the Site, groundwater was encountered at 7 to 8 feet bgs. The observed groundwater depth was most shallow in the vicinity of the Tanks EF6-9 Area, ranging from approximately 3.4 to 4.9 feet bgs. The possible causes for the variation in depth to groundwater across the Site were not evaluated.

4. Although the hydrogeologic regime at the Site was not a focus of T&R's assessment, groundwater under the Site appears to flow generally from the north to south, i.e., toward the Oakland Inner Harbor shipping channel. However, groundwater in the vicinity of Tanks EF6-9 Area, in addition to being particularly shallow, seems to form an east-west-oriented ridge resulting in groundwater flow to the north. Field conductivity measurements indicate that the groundwater is brackish and of relatively poor drinking quality.

5. ESL exceedances in shallow soil primarily included petroleum hydrocarbons, PAHs, and metals (arsenic, cobalt, chromium, lead, and zinc). The exceedances occurred primarily in the Municipal Debris Fill Area, the Tanks EF6-9 Area, and the Boring B20 Area and sporadically in the Diesel Spill/Railyard Area and in the General Area. Hazardous waste criteria were rarely exceeded and no free product was encountered at depths shallower than 5 feet bgs.

6. With the exception of arsenic and cobalt, the ESL exceedances in shallow soil were most commonly associated with terrestrial fill containing debris. The arsenic concentrations, and probably the cobalt, appear to reflect natural background levels in the East Bay soils imported as fill material.

7. Areas of deeper soil with exceedances of ESLs or other screening criteria include the Municipal Debris Fill Area, Diesel Spill/Railyard Area, the Tanks EF6-9 Area, the Tanks EF11-13 Area, and the Boring B20 Area. Detected chemicals above ESLs included TPH, PAHs, SVOCs (naphthalene and 2-methyl naphthalene), and metals (arsenic, cobalt, molybdenum, nickel, vanadium, and zinc). No chemicals tested exceeded hazardous waste criteria. Separate-phase hydrocarbons or free product were detected in deeper soils in the Municipal Debris Fill Area and at one boring in the east end of the Diesel Spill/Railyard Area near the former location of a rail yard roundhouse.

8. ESL exceedances in groundwater were concentrated along the periphery of the Site and consisted mainly of TPH, VOCs, and PAHs. In the central areas of the Site, groundwater exceedances were much less frequent and included TPH, PAHs, and metals. Free product has been detected in pools or plumes within the Municipal Debris Fill Area, and separate phase hydrocarbons were detected in groundwater at one boring location at the east end of the Diesel Spill/Railyard Area.

9. The groundwater exceedances appear to result from several sources:

- Historical debris dumping operations and previous fuel handling operations offsite to the west;
- Offsite sources for the broad swath of TPH and PAH exceedances along the north side of the Site;
- Possible multiple sources (i.e., in addition to the former USTs) for the elevated concentrations detected in the Tanks EF6-9 Area.

10. T&R's field investigation substantiated GAIA's finding of a zone of asphalt debris in the northwestern portion of the Site, although the reported zone by GAIA in the eastern portion of the Site was not confirmed. It should be noted that about half of the borings where visible asphalt debris was observed also contained detected ESL exceedances for TPH. Future

excavation work could use the visible presence of asphalt debris as a moderately good predictor of ESL exceedances in the underlying soil.

11. The highest methane concentrations in soil gas were detected in areas of free product in the eastern and western portions of the Site. At all sampling locations except one, methane concentrations were below the more restrictive or 10% LEL "intrusive construction" criterion for areas where pavement may be removed or penetrated during construction. However, results from the limited number of laboratory confirmation samples suggest that the field-screening equipment may provide a low estimate of methane gas concentrations.

12. "Significant Impact Areas" were defined in this assessment as relatively large and contiguous areas where the investigation data identified shallow soils or soil gas exceeding one or more of the screening criteria. The identified significant impact areas are concentrated along the west and east sides of the redevelopment site and were designated as:

- The Municipal Debris Fill Significant Impact Area, comprising approximately 210,000 sf west of the buried training jetty;
- The Boring B20 Significant Impact Area, estimated at approximately 150,000 sf, and with a somewhat different footprint than the preliminary Boring B20 Area used to develop T&R's field investigation program; and
- The Northeast Significant Impact Area, covering approximately 300,000 sf and comprised mostly of the Tanks EF6-9 Area and part of the eastern end of the Diesel Spill/Railyard Area used to develop T&R's field investigation.

13. Because mass grading excavation is expected to be performed only in the central part of the Site, the probability of significant soil impacts being encountered at any given location is relatively lower than at other parts of the Site. However, the possibility of encountering some quantity of significantly impacted soil should not be discounted.

14. Because the planned trenching and pier drilling are distributed relatively uniformly across the Site, most of the anticipated trenching and drilling locations will lie outside the defined Significant Impact Areas. While there is some probability of encountering soil containing significant concentrations of COPCs at any location on the Site, the probability is higher and more definable within the Significant Impact Areas.

15. The proposed maintenance building lies within the Northeast Significant Impact Area and field screening detected methane above 10% LEL in one boring within the proposed building footprint.

16. Most of the excavated soil to be disposed offsite is likely to require disposal as Class II waste due to chemical concentrations, particularly TPH, even if below the industrial ESLs used in this site assessment.

17. Although relatively little excavated soil from the Site is expected to require Class I hazardous waste disposal, the probability of encountering hazardous waste conditions in soil is greatest in the Municipal Debris Fill Significant Impact Area.

18 The possibility that excavations will encounter groundwater should be re-evaluated as redevelopment plans progress and final grade elevations are developed.

19. To minimize potential risks to future workers at the Site from chemicals in soil and soil gas during redevelopment and to ensure proper management and disposal of excavated soil, an HSP and a SMP should be prepared for the Redevelopment Project in accordance with Port specifications.

20. All existing monitoring or remediation wells that are needed after the Redevelopment Project is completed should be adequately protected during the redevelopment construction. All wells that are no longer needed, or are damaged beyond repair during redevelopment

construction, should be properly abandoned under Alameda County Public Works Agency permit.

21. In recognition of potential indoor air quality concerns due to VOC vapor intrusion from the subsurface, no replacement buildings should be sited in the current UST EF6-9 area without full consideration of COPCs in soil and groundwater (to T&R's knowledge no replacement buildings are planned). Depending on building construction and use, mitigation measures may be necessary.

8.0 LIMITATIONS

Activities undertaken as part of this report were conducted solely on behalf of the Port of Oakland to assess and address the presence of recognized releases of certain constituents at the Site in accordance with our approved proposal. This report provides a summary of these conditions.

Reasonable effort has been made to check that the information obtained is factual and from reliable sources, but no responsibility is assumed for its accuracy or completeness. If no hazardous substances or conditions are reported to be on the Site, it should not be interpreted as a guarantee that they do not exist. T&R assumes no responsibility or liability for errors in the information used or statements from sources other than those of T&R. Unless otherwise referenced, conclusions and recommendations in this report concerning the subject property are those professional opinions of the T&R personnel involved with the project, and this report should not be considered a legal interpretation of existing environmental regulations. Opinions and recommendations presented herein apply to site conditions existing at the time of T&R's assessment and do not necessarily apply to site changes or conditions of which T&R is not aware and has not had the opportunity to evaluate.

For this assessment, one test for the presence of asbestos-containing material was performed. Testing was not performed for lead paint, PCBs in transformers or other electrical equipment, or naturally occurring environmental hazards (e.g., radon).

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Table 1
Total Petroleum Hydrocarbons in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (mg/kg)	TPH- Diesel (Silica Gel Cleanup) (mg/kg)	TPH- Diesel (No Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (No Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (No Silica Gel Cleanup) (mg/kg)	TPH-Hydraulic Oil (Silica Gel Cleanup) (mg/kg)
Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 0 - 5 feet										
B1	4	12/14/2002	< 1	--	1.8 G	--	820	--	--	--
B2	4	12/14/2002	2.3 b	--	**800 G**	--	**1,900**	--	--	--
B3	4	12/14/2002	2.5 b	--	340 G	--	**3,100**	--	--	--
B4	4	12/14/2002	< 1	--	< 1	--	< 5	--	--	--
B5	4	12/15/2002	< 1	--	< 1	--	< 5	--	--	--
B6	4	12/14/2002	< 1	--	21	--	14	--	--	--
B7	4	12/14/2002	< 1	--	1.5 G	--	8.6	--	--	--
B8	4	12/14/2002	< 1	--	25 G	--	120	--	--	--
B9	4	12/21/2002	1.4 A	--	370 G	--	**3,100**	--	--	--
B11	4	12/15/2002	< 1	--	83 G	--	390	--	--	--
B12	4	12/21/2002	< 1	--	3.6 G	--	28	--	--	--
B13	4	12/21/2002	< 1	--	15 G	--	43	--	--	--
B14	4	12/15/2002	< 1	--	1.4 BG	--	< 5	--	--	--
B15	4	12/21/2002	< 1	--	1.6 G	--	8.2	--	--	--
B16	4	12/15/2002	2.8 g	--	72 BG	--	150	--	--	--
B17	4	12/21/2002	< 1	--	3.4 G	--	54	--	--	--
B18	4	12/15/2002	< 1	--	6.2 GB	--	20	--	--	--
B19	4	12/21/2002	< 1	--	16 GB	--	100	--	--	--
B20	4	12/15/2002	2.3 Fb	--	82 G	--	160	--	--	--
B21	4	12/21/2002	< 1	--	250 G	--	**1,200**	--	--	--
B22	4	12/21/2002	< 1	--	10 G	--	71	--	--	--
B23	4	12/15/2002	< 1	--	83 GB	--	780	--	--	--
B24	2	12/15/2002	< 1	--	140 G	--	**1,200**	--	--	--
B24	4	12/15/2002	< 1	--	79 BG	--	**1,100**	--	--	--
B25	4	12/15/2002	< 1	--	160 G	--	650	--	--	--
B26	4	12/14/2002	< 1	--	32 G	--	160	--	--	--
B27	2	12/14/2002	1.5 b	--	240 G	--	**1,400**	--	--	--
B27	4	12/14/2002	1.3 b	--	450 GB	--	610	--	--	--
B28	4	12/21/2002	1.8 A	--	320 G	--	**1,300**	--	--	--

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Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 0 - 5 feet (cont.)										
B29	4	12/21/2002	13 gA	--	35 BG	--	24	--	--	--
B30	4	12/21/2002	2.3 A	--	140 BG	--	270	--	--	--
B31	4	5/11/2004	< 0.92	20 HY	--	63 Y	--	--	--	65
B32	2	5/11/2004	--	1.1 HY	--	< 5	--	--	--	< 5
B32	4	5/11/2004	**910 H**	3.1 Y	--	< 5	--	--	--	5.4 Y
B33	4	5/11/2004	< 1.1	64 HY	--	160 Y	--	--	--	180
B34	4	5/11/2004	< 1.1	< 0.99	--	< 5	--	--	--	< 5
B35	4	5/12/2004	< 1	1.9 HY	--	--	--	--	--	--
B36	4	5/12/2004	< 1	< 0.99	--	--	--	--	--	--
B37	4	5/12/2004	< 0.92	22 HY	--	--	--	--	--	--
B38	4	5/12/2004	**500 Y**	2.9 HY	--	--	--	--	--	--
B39	4	5/13/2004	< 1	22 HY	--	64 Y	--	--	--	83
B40	2	5/13/2004	--	6.4 HY	--	44 Y	--	--	--	47
B40	4	5/13/2004	--	150 HY	--	400 Y	--	--	--	490
B41	2	5/13/2004	--	6 HY	--	30 Y	--	--	--	33
B42	2	5/13/2004	--	140 HY	--	730 Y	--	--	--	730
B42	5	5/13/2004	--	160 HY	--	760 Y	--	--	--	830
B43	2	5/13/2004	--	7.3 HY	--	27 Y	--	--	--	33
B43	3.5	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**
B45	4	5/14/2004	< 1	3.1 HY	--	14 Y	--	--	--	15
B46	4	5/14/2004	< 0.97	110 HY	--	360 Y	--	--	--	430
B47	2	5/14/2004	--	8 HY	--	28 Y	--	--	--	31
B47	4	5/14/2004	< 0.95	41 HY	--	160 Y	--	--	--	180
B48	4	5/14/2004	< 1.1	< 1	--	< 5	--	--	--	< 5
B49	4	5/14/2004	< 1.1	2.9 HY	--	12 Y	--	--	--	13
B50	4	5/17/2004	< 0.91	4.6 HY	--	--	--	--	--	--
B51	4	5/17/2004	< 0.99	< 1	--	--	--	--	--	--
B52	4	5/17/2004	< 1	5.6 HY	--	--	--	--	--	--

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Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 0 - 5 feet (cont.)										
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	--	--	--	--	--	--
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	--	--
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	--	--
B62	4	5/19/2004	< 1.1	3.1 HY	--	--	--	--	--	--
B63	4	5/19/2004	< 1	1.3 HY	--	--	--	--	--	--
B64	2	5/19/2004	< 1.1	1 Y	--	< 5	--	--	--	--
B64	4	5/19/2004	< 1	2.4 HY	--	--	--	--	--	--
B65	4	5/19/2004	< 1.1	< 0.99	--	--	--	--	--	--
B66	4	5/19/2004	< 1.1	< 1	--	--	--	--	--	--
B67	2	5/19/2004	--	15 HY	--	160	--	--	--	--
B67	4	5/19/2004	--	< 1	--	6.9	--	--	--	--
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	--	--	--	--

Table 1
Total Petroleum Hydrocarbons in Soil
Subsurface Environmental Assessment
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Port of Oakland, California

Location ID	Depth	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (mg/kg)	TPH- Diesel (Silica Gel Cleanup) (mg/kg)	TPH- Diesel (No Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (No Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (No Silica Gel Cleanup) (mg/kg)	TPH-Hydraulic Oil (Silica Gel Cleanup) (mg/kg)
Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 0 - 5 feet (cont.)										
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	--	--	--	--
B76	2	5/24/2004	--	390 HY	--	290 L	--	--	--	--
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**	--	--	--	--
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	--	--	--	--	--	--
B86	2	5/25/2004	--	48 HY	--	210 H	--	--	--	--
B87	2	5/25/2004	--	7.2 HY	--	80	--	--	--	--
B88	2	5/25/2004	--	< 1	--	5.2	--	--	--	--
B-1	3.5	3/12/1999	< 1	49 g	--	--	--	--	--	--
B-2	3.5	3/12/1999	< 1	9.2 g	--	--	--	--	--	--
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

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Location ID	Depth	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (mg/kg)	TPH- Diesel (Silica Gel Cleanup) (mg/kg)	TPH- Diesel (No Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (No Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (No Silica Gel Cleanup) (mg/kg)	TPH-Hydraulic Oil (Silica Gel Cleanup) (mg/kg)
Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 0 - 5 feet (cont.)										
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-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
OKUS-B2	4	1/15/1993	< 0.05	< 0.5	--	--	--	--	--	--
OKUS-B13	3	7/13/1993	2.49	< 0.5	--	--	--	--	--	--
OKUS-W2	2	1/14/1993	< 0.05	< 0.5	--	--	--	--	--	--
APL/UP-W2	3	7/16/1993	0.11	86.5	--	--	--	--	--	--
Sample Depth 5 - 10 feet										
B1	8	12/14/2002	< 1	--	3.3 G	--	13	--	--	--
B2	8	12/14/2002	< 1	--	16 G	--	38	--	--	--
B3	8	12/14/2002	< 1	--	4 G	--	9.9	--	--	--
B4	8	12/14/2002	< 1	--	< 1	--	< 5	--	--	--
B5	8	12/15/2002	< 1	--	2.7 B	--	< 5	--	--	--
B6	8	12/14/2002	< 1	--	< 1	--	< 5	--	--	--
B7	8	12/14/2002	< 1	--	1.3 G	--	< 5	--	--	--
B8	8	12/14/2002	< 1	--	2.7 G	--	10	--	--	--
B9	8	12/21/2002	< 1	--	10 G	--	26	--	--	--
B11	8	12/15/2002	< 1	--	2 BG	--	< 5	--	--	--
B13	8	12/21/2002	< 1	--	1.7 G	--	< 5	--	--	--
B14	8	12/15/2002	< 1	--	2.4 BG	--	5.1	--	--	--
B15	8	12/21/2002	< 1	--	< 1	--	< 5	--	--	--
B16	6	12/15/2002	3.6 b	--	47 G	--	310	--	--	--
B16	8	12/15/2002	< 1	--	19 BG	--	73	--	--	--
B17	8	12/21/2002	< 1	--	2.2 B	--	< 5	--	--	--
B18	8	12/15/2002	< 1	--	21 G	--	71	--	--	--

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Location ID	Depth	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (mg/kg)	TPH- Diesel (Silica Gel Cleanup) (mg/kg)	TPH- Diesel (No Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (No Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (No Silica Gel Cleanup) (mg/kg)	TPH-Hydraulic Oil (Silica Gel Cleanup) (mg/kg)
Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 5 - 10 feet (cont.)										
B19	8	12/21/2002	< 1	--	2.2 G	--	9.9	--	--	--
B20	8	12/15/2002	< 1	--	5.1 G	--	13	--	--	--
B21	8	12/21/2002	< 1	--	17 G	--	220	--	--	--
B22	8	12/21/2002	< 1	--	1 G	--	6.4	--	--	--
B23	8	12/15/2002	< 1	--	< 1	--	< 5	--	--	--
B24	6	12/15/2002	< 1	--	4.6 G	--	8.9	--	--	--
B24	8	12/15/2002	< 1	--	6.2 G	--	8.6	--	--	--
B25	8	12/15/2002	< 1	--	5.1 G	--	21	--	--	--
B26	7	12/14/2002	< 1	--	8.4 GB	--	31	--	--	--
B27	8	12/14/2002	< 1	--	7.1 B	--	< 25	--	--	--
B28	8	12/21/2002	< 1	--	35 BG	--	47	--	--	--
B29	6	12/21/2002	19 gA	--	120 BG	--	160	--	--	--
B29	8	12/21/2002	69 gA	--	**7,000 BG**	--	**8,300**	--	--	--
B30	12	12/21/2002	< 1	--	5.3 G	--	12	--	--	--
B31	6	5/11/2004	< 0.91	**530 HY**	--	**2,800 Y**	--	--	--	**3,000**
B32	6	5/11/2004	5	200 HY	--	**1,800 Y**	--	--	--	**1,700**
B33	6	5/11/2004	< 1.1	17 HY	--	51 Y	--	--	--	54
B34	6	5/11/2004	< 0.95	23 HY	--	95 Y	--	--	--	94
B35	6	5/12/2004	< 0.99	68 HY	--	--	--	--	--	--
B36	6	5/12/2004	< 1.1	6.4 HY	--	--	--	--	--	--
B37	6	5/12/2004	< 0.99	6.3 HY	--	--	--	--	--	--
B38	6	5/12/2004	< 0.98	15 HLY	--	--	--	--	--	--
B39	6	5/13/2004	< 1.1	180 HY	--	330 Y	--	--	--	470
B40	6	5/13/2004	--	40 HY	--	87 Y	--	--	--	120
B41	6	5/13/2004	--	36 HY	--	92 H	--	--	--	110 L
B42	6	5/13/2004	--	< 1	--	< 5	--	--	--	< 5
B43	6	5/13/2004	--	< 1	--	< 5	--	--	--	< 5
B44	6	5/13/2004	--	2 HY	--	11 Y	--	--	--	13
B45	6	5/14/2004	2.2	**1,200 HY**	--	320 LY	--	--	--	**1,400 L**
B46	6	5/14/2004	< 1.1	50 HY	--	46 Y	--	--	--	85 Y

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Location ID	Depth	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (mg/kg)	TPH- Diesel (Silica Gel Cleanup) (mg/kg)	TPH- Diesel (No Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (No Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (No Silica Gel Cleanup) (mg/kg)	TPH-Hydraulic Oil (Silica Gel Cleanup) (mg/kg)
Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 5 - 10 feet (cont.)										
B47	6	5/14/2004	< 1.1	< 1	--	< 5	--	--	--	< 5
B49	6	5/14/2004	< 1	150 HY	--	**1,200 Y**	--	--	--	**1,200**
B50	6	5/17/2004	< 1.1	4.7 HY	--	--	--	--	--	--
B51	6	5/17/2004	< 1	< 1	--	--	--	--	--	--
B52	7	5/17/2004	< 0.98	43 HY	--	--	--	--	--	--
B55	6	5/18/2004	--	65 HY	--	--	--	--	--	--
B62	6	5/19/2004	< 0.94	2.2 Y	--	--	--	--	--	--
B63	6	5/19/2004	< 0.98	< 1	--	--	--	--	--	--
B64	6	5/19/2004	< 1	1.2 Y	--	--	--	--	--	--
B65	6	5/19/2004	< 1.1	< 1	--	--	--	--	--	--
B66	6	5/19/2004	< 1	< 1	--	--	--	--	--	--
B67	6	5/19/2004	--	< 1	--	< 5	--	--	--	--
B78	6	5/24/2004	--	< 1	--	< 5	--	--	--	--
B85	6	5/25/2004	< 1	28 H	--	--	--	--	--	--
B-2	7	3/12/1999	< 1	1.4 g	--	--	--	--	--	--
IB-46	6	4/1/1998	< 1	14 YH	--	165 YH	--	--	--	130 H
OKUS-B1	8	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	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	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	--	--	--	--	--	--

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Location ID	Depth	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (mg/kg)	TPH- Diesel (Silica Gel Cleanup) (mg/kg)	TPH- Diesel (No Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (Silica Gel Cleanup) (mg/kg)	TPH-Motor Oil (No Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (Silica Gel Cleanup) (mg/kg)	TPH-Bunker C (No Silica Gel Cleanup) (mg/kg)	TPH-Hydraulic Oil (Silica Gel Cleanup) (mg/kg)
Soil ESL Criteria			**400**	**500**	**500**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Sample Depth 5 - 10 feet (cont.)										
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	--	--	--	--	--	--
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	11	7/16/1993	0.1	76.4	--	--	--	--	--	--
APL/UP-W2	11	7/16/1993	0.13	< 100	--	--	--	--	--	--

Notes
mg/kg - miligrams per kilogram
"--" - Not Analyzed
< 1 Analyte not detected; reporting limit below the ESL Criteria.
154 Analyte detected; result value below the ESL Criteria.
47,000 Analyte detected; result value above the ESL Criteria.
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
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.
TPH - total petroleum hydrocarbons
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
1/1993 - USPCI, 1993
3/1999 - Blymer, 1999
7/1993 - CDM, 1999
12/2002 - GAIA, 2003
4/1998 - CDM, 1998
5/2004 - T&R, 2004

Table 2
Total Metals in Soil
Subsurface Environmental Assessment
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Port of Oakland, California

Location ID	Depth	Sample Date [1]	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Soil ESL Criteria			**40**	**5.5**	**1,500**	**8**	**7.4**	**58**	**10**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
TTLC Criteria			**500**	**500**	**10,000**	**75**	**100**	**2,500**	**8,000**	**2,500**	**1,000**	**20**	**3,500**	**2,000**	**100**	**500**	**700**	**2,400**	**5,000**
STLC Criteria (mg/L)			**15**	**5**	**100**	**0.75**	**1**	**560**	**80**	**25**	**5**	**0.2**	**350**	**20**	**1**	**5**	**7**	**24**	**250**
Sample Depth 0 - 5 feet																			
B1	4	12/14/2002	< 2.5	< 2.5	270	< 0.5	< 0.5	44	**17**	27	4.6	< 0.06	< 2	54	< 2.5	< 1	< 2.5	64	45
B2	4	12/14/2002	< 2.5	< 2.5	180	< 0.5	< 0.5	15	7.2	25	7.5	< 0.06	< 2	30	< 2.5	< 1	< 2.5	17	31
B3	4	12/14/2002	< 2.5	4.1	27	< 0.5	< 0.5	21	4.9	8	8.8	< 0.06	< 2	26	< 2.5	< 1	< 2.5	14	38
B4	4	12/14/2002	< 2.5	4.7	6.6	< 0.5	< 0.5	20	4.4	3.1	9.8	< 0.06	< 2	23	< 2.5	< 1	< 2.5	15	16
B5	4	12/15/2002	< 2.5	5.2	6.2	< 0.5	< 0.5	19	5.2	3.2	3	< 0.06	< 2	26	< 2.5	< 1	< 2.5	15	17
B6	4	12/14/2002	< 2.5	**6.4**	6.4	< 0.5	< 0.5	20	4.8	2.7	< 3	< 0.06	< 2	52	< 2.5	< 1	< 2.5	13	15
B7	4	12/14/2002	< 2.5	4.8	92	< 0.5	< 0.5	19	6.9	18	9.8	0.071	< 2	23	< 2.5	< 1	< 2.5	21	32
B8	4	12/14/2002	< 2.5	2.9	350	< 0.5	< 0.5	15	8.8	50	18	0.38	< 2	25	< 2.5	< 1	< 2.5	25	45
B9	4	12/21/2002	< 2.5	2.9	93	< 0.5	< 0.5	10	4.9	11	4.2	< 0.06	< 2	20	< 2.5	< 1	< 2.5	25	38
B11	4	12/15/2002	< 2.5	3.3	54	< 0.5	< 0.5	15	5.1	14	6	< 0.06	< 2	23	< 2.5	< 1	< 2.5	18	41
B12	4	12/21/2002	< 2.5	< 2.5	140	< 0.5	< 0.5	16	6.3	12	15	0.16	< 2	19	< 2.5	< 1	< 2.5	21	40
B13	4	12/21/2002	3.1	**24**	110	< 0.5	< 0.5	31	< 2	34	11	0.17	< 2	41	< 2.5	< 1	< 2.5	38	130
B14	4	12/15/2002	< 2.5	4	48	< 0.5	< 0.5	31	5.8	14	53	0.075	< 2	31	< 2.5	< 1	< 2.5	24	59
B15	4	12/21/2002	< 2.5	< 2.5	480	< 0.5	< 0.5	20	**15**	54	11	< 0.06	< 2	26	< 2.5	< 1	< 2.5	35	41
B16	4	12/15/2002	< 2.5	4.1	46	< 0.5	< 0.5	24	5.1	15	30	0.073	< 2	25	< 2.5	< 1	< 2.5	19	63
B17	4	12/21/2002	< 2.5	**9.7**	100	< 0.5	< 0.5	**58**	**12**	32	8.8	0.19	< 2	26	< 2.5	< 1	< 2.5	57	120
B18	4	12/15/2002	< 2.5	3.7	90	< 0.5	< 0.5	23	5.4	21	50	0.097	< 2	38	< 2.5	< 1	< 2.5	20	49
B19	4	12/21/2002	< 2.5	3.3	270	< 0.5	< 0.5	17	5.7	37	30	0.065	< 2	18	< 2.5	< 1	< 2.5	23	62
B20	4	12/15/2002	19	**16**	320	< 0.5	3.3	**63**	9.4	**360**	**1,300**	5.1	4	70	< 2.5	< 1	< 2.5	140	**1,500**
B21	4	12/21/2002	< 2.5	2.8	60	< 0.5	< 0.5	19	5	16	7.4	< 0.06	< 2	29	< 2.5	< 1	< 2.5	21	44
B22	4	12/21/2002	< 2.5	4.2	140	< 0.5	< 0.5	11	**11**	26	7.2	< 0.06	< 2	13	< 2.5	< 1	< 2.5	41	140
B23	4	12/15/2002	< 2.5	4.7	81	< 0.5	< 0.5	11	6.7	22	6.3	0.069	< 2	14	< 2.5	< 1	< 2.5	33	94
B24	2	12/15/2002	< 2.5	3	68	< 0.5	< 0.5	23	5.7	18	11	0.37	< 2	39	< 2.5	< 1	< 2.5	19	41
B24	4	12/15/2002	< 2.5	**10**	170	< 0.5	< 0.5	24	**13**	57	220	3.1	< 2	38	< 2.5	< 1	< 2.5	23	**650**
B25	4	12/15/2002	< 2.5	< 2.5	95	< 0.5	< 0.5	8.8	7.3	15	5.3	0.2	< 2	11	< 2.5	< 1	< 2.5	22	60
B26	4	12/14/2002	< 2.5	**8.9**	110	< 0.5	< 0.5	23	6.1	31	44	0.4	< 2	31	< 2.5	< 1	< 2.5	26	86
B27	2	12/14/2002	< 2.5	**5.8**	210	< 0.5	1.3	72	10	91	150	1.4	< 2	87	< 2.5	< 1	< 2.5	32	420
B27	4	12/14/2002	8.9	**8**	68	< 0.5	< 0.5	54	5.9	110	58	0.74	7.6	38	< 2.5	< 1	< 2.5	18	110
B28	4	12/21/2002	< 2.5	5.3	130	< 0.5	< 0.5	38	6.1	21	35	0.073	< 2	46	< 2.5	< 1	< 2.5	31	120
B29	4	12/21/2002	3.7	4.4	**1,900**	< 0.5	**8.3**	37	6.4	45	**980**	0.49	< 2	36	< 2.5	< 1	< 2.5	17	**2,800**
B30	4	12/21/2002	< 2.5	**37**	150	< 0.5	0.55	55	5.9	**690**	680	5.6	< 2	19	< 2.5	< 1	< 2.5	26	560
B31	4	5/11/2004	< 3	2.3	68	0.31	0.36	27	7	30	32	0.4	< 1	43	0.58	< 0.25	< 0.25	30	68
B32	2	5/11/2004	< 3	2.2	87	0.54	< 0.25	13	4.6	8	7	0.089	< 1	14	< 0.25	< 0.25	< 0.25	20	29
B32	4	5/11/2004	< 2.3	1.8	74	0.48	< 0.19	10	4.1	7.5	5.9	0.1	< 0.75	13	< 0.19	< 0.19	< 0.19	18	25
B33	4	5/11/2004	< 2.2	3.1	45	0.2	< 0.18	31	3.6	29	41	0.75	< 0.72	26	0.47	< 0.18	< 0.18	23	38
B34	4	5/11/2004	< 2.9	1.5	66	0.26	< 0.24	20	7.1	11	2.7	0.2	< 0.95	9.7	0.8	< 0.24	< 0.24	45	65
B35	4	5/12/2004	< 2.9	1.8	20	< 0.098	< 0.25	24	3.3	17	20	0.71	< 0.98	14	0.35	< 0.25	< 0.25	15	35
B36	4	5/12/2004	< 2.7	1.7	70	0.49	0.24	13	4.7	7.6	6.7	0.08	< 0.88	12	< 0.22	< 0.22	< 0.22	21	25
B37	4	5/12/2004	< 2.7	1.8	40	< 0.09	< 0.23	25	2.2	5.5	5	0.033	< 0.9	15	< 0.23	< 0.23	< 0.23	18	130

Table 2
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Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Soil ESL Criteria			**40**	**5.5**	**1,500**	**8**	**7.4**	**58**	**10**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
TTLC Criteria			**500**	**500**	**10,000**	**75**	**100**	**2,500**	**8,000**	**2,500**	**1,000**	**20**	**3,500**	**2,000**	**100**	**500**	**700**	**2,400**	**5,000**
STLC Criteria (mg/L)			**15**	**5**	**100**	**0.75**	**1**	**560**	**80**	**25**	**5**	**0.2**	**350**	**20**	**1**	**5**	**7**	**24**	**250**
Sample Depth 0 - 5 feet (cont.)																			
B38	4	5/12/2004	< 2.7	2.3	73	0.58	0.28	13	5.3	10	7.5	0.086	< 0.89	14	< 0.22	< 0.22	< 0.22	24	31
B39	4	5/13/2004	< 2.7	4.4	49	0.31	0.23	23	**43**	24	12	0.55	1.2	18	1.6	5.3	< 0.23	18	53
B40	2	5/13/2004	--	--	--	--	--	--	--	57	15	--	--	--	--	--	--	--	100
B40	4	5/13/2004	--	--	--	--	--	--	--	37	53	--	--	--	--	--	--	--	91
B41	2	5/13/2004	< 2.5	**6.5**	86	0.31	0.4	12	8	19	5	0.67	< 0.83	12	1.1	< 0.21	< 0.21	33	75
B42	2	5/13/2004	--	--	--	--	--	--	--	6.7	5.1	--	--	--	--	--	--	--	69
B42	5	5/13/2004	--	--	--	--	--	--	--	6.4	9.6	--	--	--	--	--	--	--	71
B43	2	5/13/2004	--	--	--	--	--	--	--	26	6.8	--	--	--	--	--	--	--	79
B43	3.5	5/13/2004	--	--	--	--	--	--	--	4.6	1.6	--	--	--	--	--	--	--	18
B44	2	5/13/2004	--	--	--	--	--	--	--	23	5.2	--	--	--	--	--	--	--	63
B44	4	5/13/2004	--	--	--	--	--	--	--	110	390	--	--	--	--	--	--	--	430
B45	4	5/14/2004	< 2.9	5.3	160	0.77	0.38	15	**14**	19	9.7	0.12	< 0.98	18	0.95	< 0.25	< 0.25	27	43
B46	4	5/14/2004	< 3	5	41	0.18	0.35	40	6.1	13	16	0.024	1.7	30	0.43	< 0.25	< 0.25	23	59
B47	2	5/14/2004	< 2.7	5.3	14	0.14	0.26	24	5.3	5.2	9.1	0.086	< 0.91	26	0.67	< 0.23	< 0.23	20	23
B47	4	5/14/2004	< 2.9	4.7	28	0.24	0.3	27	5.6	10	51	0.046	1	26	0.35	< 0.24	< 0.24	21	31
B48	4	5/14/2004	< 2.2	5.1	9.7	0.15	0.22	24	5.2	2.9	3.7	< 0.017	< 0.74	25	0.35	< 0.18	< 0.18	19	20
B49	4	5/14/2004	< 3.2	**5.5**	160	0.77	0.31	15	7.6	17	10	0.093	< 1.1	19	0.76	< 0.27	< 0.27	27	44
B50	4	5/17/2004	< 3	2.1	66	0.21	< 0.25	54	6.3	6.8	6.2	0.028	< 0.99	35	0.72	< 0.25	< 0.25	28	19
B51	4	5/17/2004	< 3	5.2	21	0.11	< 0.25	21	3.1	2.8	1.1	< 0.019	< 1	14	< 0.25	< 0.25	< 0.25	12	7.4
B52	4	5/17/2004	< 3.3	1.9	44	0.2	0.29	22	5.8	20	16	0.4	< 1.1	19	0.66	< 0.28	< 0.28	29	53
B55	2	5/18/2004	< 2.9	2.2	100	0.31	< 0.24	39	5.8	12	23	0.084	< 0.95	38	0.78	< 0.24	< 0.24	27	39
B56	2	5/18/2004	2.8	**27**	370	0.23	0.33	26	4.7	48	320	0.77	< 0.83	29	1.5	0.23	< 0.21	35	420
B56	4	5/18/2004	--	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	28
B59	2	5/18/2004	< 2.1	7.7	120	0.26	< 0.18	41	6.8	64	130	0.2	< 0.71	31	0.66	< 0.18	< 0.18	31	150
B59	4	5/18/2004	--	--	--	--	--	--	--	--	71	--	--	--	--	--	--	--	38
B60	2	5/18/2004	--	--	--	--	--	--	--	8.6	9.2	--	--	--	--	--	--	--	28
B60	4	5/18/2004	--	--	--	--	--	--	--	3.3	3.4	--	--	--	--	--	--	--	18
B62	4	5/19/2004	< 2.6	4.9	16	0.15	0.25	25	4.6	4.1	3.2	0.077	< 0.85	22	< 0.21	< 0.21	< 0.21	19	17
B63	4	5/19/2004	< 2.2	4.4	25	0.21	0.26	21	5	4	3.1	0.019	< 0.73	20	0.21	< 0.18	< 0.18	20	18
B64	2	5/19/2004	< 2.3	1.9	100	0.55	0.24	8.4	4.2	6.5	5.8	0.065	< 0.76	14	< 0.19	< 0.19	< 0.19	17	26
B64	4	5/19/2004	< 2.7	4.6	24	0.2	0.27	27	5.3	5.1	3.8	0.027	< 0.88	25	< 0.22	< 0.22	< 0.22	22	22
B65	4	5/19/2004	< 2.3	4.5	8.8	0.15	< 0.19	27	4.4	2.8	3.1	< 0.018	< 0.75	23	0.31	< 0.19	< 0.19	17	16
B66	4	5/19/2004	< 2	4.9	6.8	0.16	0.19	22	4.3	2.5	2.3	< 0.017	< 0.68	24	< 0.17	< 0.17	< 0.17	17	15
B67	2	5/19/2004	--	--	--	--	--	--	--	19	39	--	--	--	--	--	--	--	98
B67	4	5/19/2004	--	--	--	--	--	--	--	6.1	6.1	--	--	--	--	--	--	--	22
B68	2	5/20/2004	--	--	--	--	--	--	--	24	26	--	--	--	--	--	--	--	34
B68	4	5/20/2004	--	--	--	--	--	--	--	37	19	--	--	--	--	--	--	--	67
B69	2	5/20/2004	--	--	--	--	--	--	--	43	150	--	--	--	--	--	--	--	170
B69	4	5/20/2004	--	--	--	--	--	--	--	15	51	--	--	--	--	--	--	--	51

Table 2
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Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Soil ESL Criteria			**40**	**5.5**	**1,500**	**8**	**7.4**	**58**	**10**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
TTLC Criteria			**500**	**500**	**10,000**	**75**	**100**	**2,500**	**8,000**	**2,500**	**1,000**	**20**	**3,500**	**2,000**	**100**	**500**	**700**	**2,400**	**5,000**
STLC Criteria (mg/L)			**15**	**5**	**100**	**0.75**	**1**	**560**	**80**	**25**	**5**	**0.2**	**350**	**20**	**1**	**5**	**7**	**24**	**250**
Sample Depth 0 - 5 feet (cont.)																			
B70	2	5/20/2004	--	--	--	--	--	--	--	41	37	--	--	--	--	--	--	--	52
B70	4	5/20/2004	--	--	--	--	--	--	--	130	62	--	--	--	--	--	--	--	88
B71	2	5/20/2004	--	--	--	--	--	--	--	16	36	--	--	--	--	--	--	--	81
B71	4	5/20/2004	--	--	--	--	--	--	--	4.5	3.8	--	--	--	--	--	--	--	13
B72	2	5/20/2004	--	--	--	--	--	--	--	63	84	--	--	--	--	--	--	--	130
B73	2	5/21/2004	--	--	--	--	--	--	--	6.5	17	--	--	--	--	--	--	--	110
B74	2	5/21/2004	--	--	--	--	--	--	--	39	73	--	--	--	--	--	--	--	170
B75	2	5/21/2004	--	--	--	--	--	--	--	17	34	--	--	--	--	--	--	--	97
B79	2	5/24/2004	--	--	--	--	--	--	--	11	9.6	--	--	--	--	--	--	--	34
B79	4	5/24/2004	--	--	--	--	--	--	--	3.7	4	--	--	--	--	--	--	--	19
B80	2	5/24/2004	--	--	--	--	--	--	--	3.8	3.1	--	--	--	--	--	--	--	18
B80	4	5/24/2004	--	--	--	--	--	--	--	4.1	3.1	--	--	--	--	--	--	--	16
B81	2	5/24/2004	< 3	**8.9**	150	0.23	0.8	57	**11**	72	130	0.47	2.9	53	1.9	< 0.25	< 0.25	35	140
B82	2	5/24/2004	< 2.5	0.95	48	0.17	0.35	**66**	**12**	46	2.1	0.075	1.3	36	0.64	< 0.2	< 0.2	67	35
B83	2	5/25/2004	< 2.4	4.6	15	0.1	< 0.2	24	4.8	6.9	14	0.031	0.84	27	0.94	< 0.2	< 0.2	18	23
B84	2	5/25/2004	< 2.8	**8**	120	0.29	0.32	24	7	23	29	0.19	< 0.93	36	1.4	< 0.23	< 0.23	35	63
B86	2	5/25/2004	< 3.2	3	84	0.12	< 0.27	21	8.8	41	2.6	0.11	< 1.1	32	1.6	< 0.27	< 0.27	45	34
B87	2	5/25/2004	< 2.6	1.9	760	0.29	< 0.21	18	1.7	45	4.4	0.039	< 0.85	8.6	1.8	< 0.21	< 0.21	53	10
B88	2	5/25/2004	< 2.5	5	92	0.65	< 0.21	14	7.8	14	11	0.066	< 0.83	18	1.2	< 0.21	< 0.21	24	32
B-1	3.5	3/12/1999	--	--	--	--	< 0.5	26	--	--	29	--	--	32	--	--	--	--	140
B-2	3.5	3/12/1999	--	--	--	--	< 0.5	36	--	--	18	--	--	51	--	--	--	--	82
IB-45	1.5	4/1/1998	< 2	2	826	1.01	< 0.1	40	**25**	56	2	< 0.05	< 1	51	< 0.5	< 0.5	11	84	59
IB-45	5	4/1/1998	< 2	2	26	0.21	< 0.1	27	5	3	2	< 0.05	< 1	22	< 0.5	< 0.5	5	19	16
IB-46	2	4/1/1998	< 2	2	20	0.16	< 0.1	28	5	5	2	< 0.05	< 1	27	< 0.5	< 0.5	< 0.2	18	16
IB-46	3.5	4/1/1998	< 2	3	28	0.25	< 0.1	33	9	11	4	< 0.05	< 1	37	< 0.5	< 0.5	< 0.2	26	27
IB-46	4.5	4/1/1998	< 2	2	34	0.14	< 0.1	26	4	4	2	< 0.05	< 1	19	< 0.5	< 0.5	< 0.2	17	13
IB-47	2.5	4/1/1998	< 2	**24**	450	0.39	< 0.1	29	**16**	42	33	0.44	2	22	0.85	< 0.5	12	73	90
IB-47	5	4/1/1998	< 2	3	38	0.15	< 0.1	28	4	2	2	< 0.05	< 1	22	< 0.5	< 0.5	3	19	15
IB-48	3.25	4/1/1998	5	**61**	188	0.31	< 0.1	30	8	**350**	**853**	< 0.05	< 1	43	0.58	0.53	9	26	136
IB-48	5	4/1/1998	< 2	**10**	17	0.19	< 0.1	25	5	4	2	< 0.05	< 1	22	< 0.5	< 0.5	5	19	21
IB-49	1	4/1/1998	< 2	**11**	70	0.31	< 0.1	39	7	35	46	< 0.05	< 1	38	0.89	< 0.5	7	33	54
IB-49	5	4/1/1998	< 2	2	27	< 0.1	< 0.1	15	2	1	1	< 0.05	< 1	9	< 0.5	< 0.5	2	10	7
OKUS-B13	3	7/13/1993	--	**58**	--	--	--	--	--	--	389	--	--	--	--	--	--	--	--
Sample Depth 5 - 10 feet																			
B1	8	12/14/2002	< 2.5	2.9	250	< 0.5	< 0.5	34	6.3	14	5.6	< 0.06	< 2	28	< 2.5	< 1	< 2.5	26	32
B2	8	12/14/2002	< 2.5	3.9	56	< 0.5	< 0.5	52	**12**	24	14	0.15	< 2	64	< 2.5	< 1	< 2.5	41	57
B3	8	12/14/2002	< 2.5	3.9	35	< 0.5	< 0.5	25	5.9	5.9	16	< 0.06	< 2	30	< 2.5	< 1	< 2.5	17	51
B4	8	12/14/2002	< 2.5	4.8	7.5	< 0.5	< 0.5	18	4.4	2.9	3	< 0.06	< 2	22	< 2.5	< 1	< 2.5	13	15
B5	8	12/15/2002	< 2.5	4.4	6.2	< 0.5	< 0.5	17	4.6	3.1	5.3	< 0.06	< 2	23	< 2.5	< 1	< 2.5	12	18

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Location ID	Depth	Sample Date [1]	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Soil ESL Criteria			**40**	**5.5**	**1,500**	**8**	**7.4**	**58**	**10**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
TTLC Criteria			**500**	**500**	**10,000**	**75**	**100**	**2,500**	**8,000**	**2,500**	**1,000**	**20**	**3,500**	**2,000**	**100**	**500**	**700**	**2,400**	**5,000**
STLC Criteria (mg/L)			**15**	**5**	**100**	**0.75**	**1**	**560**	**80**	**25**	**5**	**0.2**	**350**	**20**	**1**	**5**	**7**	**24**	**250**
Sample Depth 5 - 10 feet (cont.)																			
B6	8	12/14/2002	< 2.5	5.2	7.1	< 0.5	< 0.5	23	5.1	3.4	< 3	< 0.06	< 2	24	< 2.5	< 1	< 2.5	17	18
B7	8	12/14/2002	< 2.5	**6.4**	38	< 0.5	< 0.5	39	6.9	19	10	< 0.06	< 2	44	< 2.5	< 1	< 2.5	33	46
B8	8	12/14/2002	< 2.5	**38**	180	< 0.5	< 0.5	32	8.7	30	41	0.14	< 2	47	< 2.5	< 1	< 2.5	27	50
B9	8	12/21/2002	< 2.5	< 2.5	36	< 0.5	< 0.5	29	4.9	9.2	7	< 0.06	< 2	26	< 2.5	< 1	< 2.5	22	26
B11	8	12/15/2002	< 2.5	**5.6**	6.6	< 0.5	< 0.5	23	4.2	3.6	< 3	< 0.06	< 2	24	< 2.5	< 1	< 2.5	15	17
B13	8	12/21/2002	< 2.5	2.6	36	< 0.5	< 0.5	18	2.1	9.4	11	< 0.06	< 2	12	< 2.5	< 1	< 2.5	16	19
B14	8	12/15/2002	< 2.5	3	27	< 0.5	< 0.5	14	2.9	3.8	< 3	< 0.06	< 2	13	< 2.5	< 1	< 2.5	10	10
B15	8	12/21/2002	< 2.5	< 2.5	32	< 0.5	< 0.5	11	< 2	< 2	< 3	< 0.06	< 2	7.2	< 2.5	< 1	< 2.5	5.9	5
B16	6	12/15/2002	< 2.5	**6.8**	59	< 0.5	< 0.5	20	5.8	17	30	< 0.06	< 2	25	< 2.5	< 1	< 2.5	17	42
B16	8	12/15/2002	< 2.5	3.3	29	< 0.5	< 0.5	8.5	2.4	190	190	0.13	< 2	7.5	< 2.5	< 1	< 2.5	6.5	120
B17	8	12/21/2002	< 2.5	< 2.5	23	< 0.5	< 0.5	15	3.6	12	40	< 0.06	< 2	11	< 2.5	< 1	< 2.5	9.2	31
B18	8	12/15/2002	16	**7.6**	53	< 0.5	< 0.5	48	6.4	130	9.4	< 0.06	< 2	81	< 2.5	< 1	< 2.5	21	29
B19	8	12/21/2002	< 2.5	< 2.5	44	< 0.5	< 0.5	27	5.5	13	8.7	< 0.06	< 2	27	< 2.5	< 1	< 2.5	21	26
B20	8	12/15/2002	< 2.5	< 2.5	73	< 0.5	< 0.5	23	4.6	7.9	5.5	< 0.06	< 2	21	< 2.5	< 1	< 2.5	17	22
B21	8	12/21/2002	< 2.5	2.8	52	< 0.5	< 0.5	18	4.3	10	13	0.087	< 2	16	< 2.5	< 1	< 2.5	22	30
B22	8	12/21/2002	< 2.5	**16**	64	< 0.5	< 0.5	46	9	18	7.1	< 0.06	< 2	83	< 2.5	< 1	< 2.5	20	50
B23	8	12/15/2002	< 2.5	< 2.5	32	< 0.5	< 0.5	12	3.3	4.7	3	< 0.06	< 2	12	< 2.5	< 1	< 2.5	8.2	14
B24	6	12/15/2002	< 2.5	3.1	98	< 0.5	< 0.5	41	3.9	15	16	0.092	< 2	28	< 2.5	< 1	< 2.5	30	90
B24	8	12/15/2002	< 2.5	**7.5**	23	< 0.5	< 0.5	27	9.9	18	8.5	< 0.06	< 2	31	< 2.5	< 1	< 2.5	24	27
B25	8	12/15/2002	< 2.5	< 2.5	16	< 0.5	< 0.5	5.7	< 2	7.2	28	0.0082	< 2	7	< 2.5	< 1	< 2.5	4.7	170
B26	7	12/14/2002	< 2.5	**6**	60	< 0.5	< 0.5	38	6.9	34	23	0.4	< 2	43	< 2.5	< 1	< 2.5	30	63
B27	8	12/14/2002	< 2.5	**8.4**	17	< 0.5	< 0.5	27	6.8	17	7	0.067	< 2	34	< 2.5	< 1	< 2.5	25	34
B28	8	12/21/2002	< 2.5	3.1	38	< 0.5	< 0.5	22	3.7	12	14	< 0.06	< 2	19	< 2.5	< 1	< 2.5	15	27
B29	6	12/21/2002	2.8	**37**	590	< 0.5	3.8	43	8.7	150	530	0.4	< 2	43	< 2.5	< 1	< 2.5	28	**740**
B29	8	12/21/2002	< 2.5	5.4	93	< 0.5	< 0.5	29	4.3	10	34	0.095	< 2	27	< 2.5	< 1	< 2.5	19	62
B31	6	5/11/2004	< 2.4	2.7	87	0.39	0.24	25	5.3	15	5.7	0.056	0.92	32	0.5	< 0.2	< 0.2	31	31
B32	6	5/11/2004	< 3.1	2.9	98	0.49	0.82	25	5.5	14	12	0.097	1.3	28	0.27	< 0.26	< 0.26	31	130
B33	6	5/11/2004	< 3.1	2.8	32	0.25	< 0.26	34	5.7	16	17	0.058	< 1	30	0.73	< 0.26	< 0.26	27	52
B34	6	5/11/2004	< 2.6	3.6	75	0.27	< 0.22	14	5.5	16	5.8	0.82	1.6	12	1.1	< 0.22	< 0.22	33	61
B35	6	5/12/2004	< 2.8	**13**	120	0.3	1.3	40	**12**	52	22	0.28	< 0.94	53	1	< 0.24	< 0.24	31	410
B36	6	5/12/2004	< 2.9	2.5	100	0.51	0.31	22	5.8	9.8	6.9	0.074	1	17	< 0.24	< 0.24	< 0.24	26	26
B37	6	5/12/2004	< 3.1	3.3	23	0.17	0.3	47	4.3	22	12	0.046	< 1	25	0.67	< 0.26	< 0.26	36	35
B38	6	5/12/2004	< 3.3	2.5	85	0.52	< 0.27	13	5.3	11	7.5	0.12	< 1.1	13	< 0.27	< 0.27	< 0.27	21	33
B39	6	5/13/2004	< 2.8	**9.5**	110	< 0.092	1.5	51	**17**	160	150	6.7	**2.8**	**280**	1.7	2	< 0.23	**450**	330
B40	6	5/13/2004	--	--	--	--	--	--	--	23	68	--	--	--	--	--	--	--	150
B41	6	5/13/2004	--	--	--	--	--	--	--	21	22	--	--	--	--	--	--	--	62
B42	6	5/13/2004	--	--	--	--	--	--	--	4.9	2.9	--	--	--	--	--	--	--	20
B43	6	5/13/2004	--	--	--	--	--	--	--	5.5	1.9	--	--	--	--	--	--	--	21
B44	6	5/13/2004	--	--	--	--	--	--	--	4.1	1.6	--	--	--	--	--	--	--	19

Table 2
Total Metals in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Soil ESL Criteria			**40**	**5.5**	**1,500**	**8**	**7.4**	**58**	**10**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
TTLC Criteria			**500**	**500**	**10,000**	**75**	**100**	**2,500**	**8,000**	**2,500**	**1,000**	**20**	**3,500**	**2,000**	**100**	**500**	**700**	**2,400**	**5,000**
STLC Criteria (mg/L)			**15**	**5**	**100**	**0.75**	**1**	**560**	**80**	**25**	**5**	**0.2**	**350**	**20**	**1**	**5**	**7**	**24**	**250**
Sample Depth 5 - 10 feet (cont.)																			
B45	6	5/14/2004	< 3.2	**9.4**	140	0.36	0.67	18	6.1	61	31	0.15	1.4	13	1.9	< 0.26	< 0.26	63	380
B46	6	5/14/2004	< 2.8	2.3	55	0.19	< 0.23	37	5.7	28	31	0.03	< 0.92	31	0.27	< 0.23	< 0.23	25	36
B47	6	5/14/2004	< 2.5	1	24	0.12	< 0.21	21	3.1	3.8	3.9	0.02	< 0.83	17	0.39	< 0.21	< 0.21	15	16
B49	6	5/14/2004	< 2.6	**9.6**	91	0.42	1.1	20	**12**	**750**	110	0.14	1.7	22	1.3	< 0.22	< 0.22	76	200
B50	6	5/17/2004	< 2.6	1.3	67	0.15	< 0.22	25	4.3	6.5	2.7	0.091	< 0.87	22	0.37	< 0.22	< 0.22	19	15
B51	6	5/17/2004	< 3.2	3.4	24	0.11	< 0.26	20	3.2	3	1.2	< 0.018	< 1.1	13	0.27	< 0.26	< 0.26	12	8.3
B52	7	5/17/2004	< 2.9	**6.4**	76	0.29	0.49	48	6.7	74	59	2.8	< 0.96	39	1.2	< 0.24	< 0.24	42	100
B62	6	5/19/2004	< 2.8	5	22	0.15	< 0.23	24	4.9	3.2	4.7	< 0.018	< 0.93	22	< 0.23	< 0.23	< 0.23	19	18
B63	6	5/19/2004	< 2.5	2.1	34	0.12	< 0.21	27	3.7	3.6	0.94	< 0.02	< 0.85	22	< 0.21	< 0.21	< 0.21	22	15
B64	6	5/19/2004	< 2.2	4.3	14	0.15	0.27	24	5.7	3.8	4.6	< 0.02	< 0.75	28	< 0.19	< 0.19	< 0.19	19	30
B65	6	5/19/2004	< 2.6	4.9	11	0.17	< 0.21	22	4.5	3.2	3.2	< 0.018	< 0.85	25	0.32	< 0.21	< 0.21	18	17
B66	6	5/19/2004	< 2.8	4.5	20	0.094	< 0.23	21	4.4	2.8	3.7	< 0.019	< 0.92	20	< 0.23	< 0.23	< 0.23	17	18
B-2	7	3/12/1999	--	--	--	--	< 0.5	23	--	--	3.9	--	--	23	--	--	--	--	16
IB-46	6	4/1/1998	< 2	1	26	0.1	< 0.1	16	2	3	1	< 0.05	< 1	12	< 0.5	< 0.5	< 0.2	11	8
OKUS-B4	8	1/15/1993	--	--	--	--	7.15	27.4	--	--	600	--	--	--	--	--	--	--	**1,440**
OKUS-B7	8	1/15/1993	--	--	--	--	**17.2**	1.55	--	--	**1,300**	--	--	--	--	--	--	--	373
OKUS-B13	10	7/13/1993	--	**9**	--	--	--	--	--	--	149	--	--	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	--	--	--	--	1.7	16.7	--	--	580	--	--	--	--	--	--	--	381
OKUS-W2	10	1/14/1993	--	--	--	--	< 1	29	--	--	23	--	--	--	--	--	--	--	39.9
OKUS-W3	10	1/14/1993	--	--	--	--	< 1	21	--	--	38	--	--	--	--	--	--	--	21.8
OKUS-W5	8	1/15/1993	--	--	--	--	1.55	41.2	--	--	**1,200**	--	--	--	--	--	--	--	**1,090**
OKUS-W6	10	7/12/1993	--	< 0.2	--	--	--	--	--	--	122	--	--	--	--	--	--	--	--
Sample Depth Greater than 10 feet																			
B30	12	12/21/2002	< 2.5	< 2.5	28	< 0.5	< 0.5	19	3.2	5.3	10	< 0.06	< 2	16	< 2.5	< 1	< 2.5	11	22

Notes
mg/kg - miligrams per kilogram
mg/L - miligrams per liter
"--" - Not Analyzed
< 0.5 Analyte not detected; reporting limit below the ESL and TTLC Criteria.
21 Analyte detected; result value below the ESL and TTLC Criteria.
1,200 Analyte detected; result value above the ESL or TTLC Criteria.
ESL - Environmental Screening Level, RWQCB 2005
TTLC - Total Threshold Limit Concentration, California Code of Regulations Title 22, Section 66261
STLC - Soluble Threshold Limit Concentration, California Code of Regulations Title 22, Section 66261
[1]Sampling dates and related data references:
1/1993 - USPCI, 1993
3/1999 - Blymer, 1999
7/1993 - CDM, 1999
12/2002 - GAIA, 2003
4/1998 - CDM, 1998
5/2004 - T&R, 2004

Table 3
Polyaromatic Hydrocarbons in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1-Methyl-naphthalene *	2-Methyl-naphthalene *	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) Anthracene	Benzo(a)Pyrene	Benzo(b) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Chrysene	Dibenz(a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
			(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)
Soil ESL Criteria			**250**	**250**	**19,000**	**13,000**	**2,800**	**1,300**	**130**	**1,300**	**27,000**	**1,300**	**13,000**	**380**	**40,000**	**8,900**	**1,300**	**1,500**	**11,000**	**85,000**
Sample Depth 0 - 5 feet																				
B1	4	12/14/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B2	4	12/14/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B3	4	12/14/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B4	4	12/14/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B5	4	12/15/2002	< 5	< 5	< 5	< 5	< 5	< 5	**5.5**	< 5	< 5	< 5	< 5	< 5	12	< 5	< 5	< 5	**7.1**	**9.5**
B6	4	12/14/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 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	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B8	4	12/14/2002	**< 1,000**	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
B9	4	12/21/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B11	4	12/15/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B12	4	12/21/2002	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
B13	4	12/21/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
B14	4	12/15/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 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	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B16	4	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	420	< 120	< 120	< 120	160	250
B17	4	12/21/2002	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
B18	4	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120
B19	4	12/21/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
B20	4	12/15/2002	**< 1,200**	**< 1,200**	< 1,200	< 1,200	< 1,200	**2,100**	**1,300**	2,400	< 1,200	< 1,300	**< 1,200**	**3,400**	< 1,200	**1,900**	< 1,200	1,600	**4,900**	
B21	4	12/21/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B22	4	12/21/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
B23	4	12/15/2002	**< 1,000**	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
B24	2	12/15/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B24	4	12/15/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B25	4	12/15/2002	**< 1,000**	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
B26	4	12/14/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	< 500	< 500
B27	2	12/14/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	**< 2,500**	**< 2,500**	< 2,500	**< 2,500**	< 2,500	**< 2,500**	< 2,500	< 2,500	**< 2,500**	**< 2,500**	< 2,500	< 2,500
B27	4	12/14/2002	**< 500**	**1,700**	710	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	880	< 500	< 500	1,600	< 500
B28	4	12/21/2002	**< 1,000**	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	**< 1,000**	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
B29	4	12/21/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
B30	4	12/21/2002	**< 2,500**	**< 2,500**	< 2,500	< 2,500	< 2,500	**< 2,500**	< 0	**4,800**	**8,800**	**< 2,500**	**2,600**	**< 2,500**	**8,200**	< 2,500	**7,800**	**< 2,500**	< 2,500	**13,000**
B40	2	5/13/2004	--	--	< 33	< 66	< 3.3	< 3.3	< 3.3	9.6	< 6.6	< 3.3	8.9	25	< 6.6	< 6.6	< 3.3	< 33	8.7	< 3.3
B40	4	5/13/2004	--	--	< 670	< 1,300	90	450	**390**	540	410	240	520	**2,600**	770	< 130	280	< 670	250	980
B41	2	5/13/2004	--	--	< 34	< 67	< 3.4	5	4.2	13	< 6.7	< 3.4	12	< 6.7	8.3	< 6.7	< 3.4	< 34	16	< 3.4
B42	2	5/13/2004	--	--	< 33	< 67	< 3.3	< 3.3	< 3.3	< 6.7	12	< 3.3	< 3.3	< 6.7	< 6.7	< 6.7	< 3.3	< 33	< 3.3	< 3.3
B42	5	5/13/2004	--	--	< 160	< 330	< 16	240	**150**	270	180	110	480	**820**	130	< 33	81	< 160	280	120
B43	2	5/13/2004	--	--	< 33	< 66	< 3.3	< 3.3	3.5	8.9	11	< 3.3	< 3.3	55	< 6.6	< 6.6	< 3.3	< 33	< 3.3	< 3.3
B43	3.5	5/13/2004	--	--	< 33	< 66	< 3.3	< 3.3	< 3.3	< 6.6	< 6.6	< 3.3	< 3.3	< 6.6	< 6.6	< 6.6	< 3.3	< 33	< 3.3	< 3.3
B44	2	5/13/2004	--	--	< 33	< 66	< 3.3	< 3.3	< 3.3	6.9	< 6.6	< 3.3	8.1	< 6.6	< 6.6	< 6.6	< 3.3	< 33	< 3.3	< 3.3

Table 3
Polyaromatic Hydrocarbons in Soil
Subsurface Environmental Assessment
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Port of Oakland, California

Location ID	Depth	Sample Date [1]	1-Methyl-naphthalene *	2-Methyl-naphthalene *	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) Anthracene	Benzo(a)Pyrene	Benzo(b) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Chrysene	Dibenz(a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
			(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)
Soil ESL Criteria			**250**	**250**	**19,000**	**13,000**	**2,800**	**1,300**	**130**	**1,300**	**27,000**	**1,300**	**13,000**	**380**	**40,000**	**8,900**	**1,300**	**1,500**	**11,000**	**85,000**
Sample Depth 0 - 5 feet (cont.)																				
B44	4	5/13/2004	--	--	< 33	< 66	< 3.3	36	36	84	270	25	71	**550**	86	< 6.6	< 3.3	< 33	140	60
B55	2	5/18/2004	--	--	< 130	< 270	160	1,200	**2,600**	**2,400**	1,700	840	1,300	**2,900**	3,800	< 27	**2,400**	150	1,700	4,700
B56	2	5/18/2004	--	--	< 160	< 330	< 16	530	**660**	830	540	310	470	**770**	790	< 33	410	< 160	420	890
B56	4	5/18/2004	--	--	< 66	< 130	39	180	**340**	370	260	150	200	270	290	< 13	210	< 66	230	340
B59	2	5/18/2004	--	--	< 140	< 270	130	750	**1,800**	**1,700**	1,200	590	920	**1,800**	2,500	< 27	**1,900**	170	1,300	3,400
B59	4	5/18/2004	--	--	< 130	< 270	**88**	140	74	120	160	45	140	74	860	110	42	170	1,300	550
B60	2	5/18/2004	--	--	< 33	< 66	< 3.3	< 3.3	< 3.3	< 6.6	< 6.6	< 3.3	4.5	< 6.6	< 6.6	< 6.6	< 3.3	< 33	10	< 3.3
B60	4	5/18/2004	--	--	< 34	< 67	5.3	20	28	26	56	10	22	19	33	< 6.7	21	< 34	22	48
B67	2	5/19/2004	--	--	< 130	< 260	31	51	110	130	650	52	390	360	60	< 26	240	< 130	< 13	93
B67	4	5/19/2004	--	--	< 34	< 67	< 3.4	< 3.4	5.4	< 6.7	< 6.7	< 3.4	4.9	< 6.7	< 6.7	< 6.7	6	< 34	6.5	6.1
B68	2	5/20/2004	--	--	< 33	< 66	5.3	15	17	21	25	8.4	22	62	37	< 6.6	12	< 33	27	37
B68	4	5/20/2004	--	--	< 33	< 67	< 3.3	< 3.3	11	82	61	< 3.3	< 3.3	< 6.7	16	< 6.7	19	< 33	26	6.9
B69	2	5/20/2004	--	--	< 33	< 67	< 3.3	28	27	56	40	13	32	230	70	< 6.7	18	< 33	160	49
B69	4	5/20/2004	--	--	< 33	< 67	16	120	94	110	68	46	140	75	180	< 6.7	36	54	130	190
B70	2	5/20/2004	--	--	< 33	< 66	< 3.3	19	31	69	18	30	40	< 6.6	44	< 6.6	25	< 33	8.1	55
B70	4	5/20/2004	--	--	< 170	< 330	< 17	36	26	87	< 33	30	120	< 33	130	< 33	< 17	< 170	670	36
B71	2	5/20/2004	--	--	< 170	< 330	< 17	< 17	26	95	< 33	18	< 17	< 33	37	< 33	< 17	< 170	< 17	< 17
B71	4	5/20/2004	--	--	< 33	< 67	< 3.3	31	93	90	110	27	41	120	110	< 6.7	100	< 33	13	140
B72	2	5/20/2004	--	--	< 330	< 660	< 33	110	88	150	430	110	150	< 66	810	< 66	< 33	< 330	1,900	74
B73	2	5/21/2004	--	--	< 33	< 67	< 3.3	< 3.3	< 3.3	< 6.7	< 6.7	< 3.3	< 3.3	< 6.7	< 6.7	< 6.7	< 3.3	< 33	< 3.3	< 3.3
B74	2	5/21/2004	--	--	< 33	< 66	< 3.3	8.6	26	26	22	11	8	22	< 6.6	< 6.6	< 3.3	< 33	15	16
B75	2	5/21/2004	--	--	< 33	< 66	< 3.3	< 3.3	20	52	65	< 3.3	23	< 6.6	94	< 6.6	19	< 33	140	15
B76	2	5/24/2004	--	--	3,200	< 67	< 3.3	< 3.3	13	28	21	9.6	< 3.3	89	140	< 6.7	11	< 33	530	65
B77	2	5/24/2004	--	--	< 170	< 330	< 17	180	**420**	460	410	140	230	**380**	430	< 33	590	< 170	85	530
B79	2	5/24/2004	--	--	< 33	< 67	< 3.3	< 3.3	< 3.3	< 6.7	< 6.7	< 3.3	3.8	< 6.7	< 6.7	< 6.7	< 3.3	< 33	9.9	3.5
B79	4	5/24/2004	--	--	< 33	< 66	20	70	76	66	51	27	73	68	150	< 6.6	48	< 33	170	190
B80	2	5/24/2004	--	--	< 33	< 67	24	90	73	73	39	30	110	59	150	25	40	< 33	200	200
B80	4	5/24/2004	--	--	< 33	< 67	3.8	6.2	6.1	6.8	< 6.7	< 3.3	9.2	11	7.3	< 6.7	< 3.3	< 33	13	9.6
B81	2	5/24/2004	--	--	< 33	< 66	< 3.3	32	**140**	220	33	81	66	80	64	7.2	34	< 33	27	84
B82	2	5/24/2004	--	--	< 170	< 330	< 17	< 17	69	210	230	53	120	**1,700**	430	< 33	< 17	810	1,700	190
B83	2	5/25/2004	--	--	< 34	< 67	< 3.4	7.4	8.8	11	12	5.5	9.6	< 6.7	12	< 6.7	16	< 34	7.2	14
B84	2	5/25/2004	--	--	< 99	< 200	230	< 9.9	**280**	**1,300**	140	< 9.9	400	330	240	280	95	< 99	210	390
B86	2	5/25/2004	--	--	< 130	< 270	< 13	41	31	60	< 27	< 13	100	< 27	83	< 27	< 13	< 130	46	120
B87	2	5/25/2004	--	--	< 34	< 67	< 3.4	< 3.4	< 3.4	< 6.7	< 6.7	< 3.4	< 3.4	< 6.7	< 6.7	< 6.7	< 3.4	< 34	< 3.4	< 3.4
B88	2	5/25/2004	--	--	< 33	< 66	< 3.3	< 3.3	< 3.3	< 6.6	< 6.6	< 3.3	4.6	< 6.6	< 6.6	< 6.6	< 3.3	< 33	8.5	< 3.3
IB-43	1.25	4/1/1998	--	**< 500**	< 100	56	< 50	59	86	--	61	--	76	< 50	214	< 50	< 50	343	257	223
IB-43	2.5	4/1/1998	--	**< 500**	< 100	< 50	< 50	896	**2150**	--	1075	--	1523	**502**	1433	< 50	1254	< 50	690	2150
IB-45	1.5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	55
IB-45	5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50

Table 3
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Port of Oakland, California

Location ID	Depth	Sample Date [1]	1-Methyl-naphthalene *	2-Methyl-naphthalene *	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) Anthracene	Benzo(a)Pyrene	Benzo(b) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Chrysene	Dibenz(a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
			(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)
Soil ESL Criteria			**250**	**250**	**19,000**	**13,000**	**2,800**	**1,300**	**130**	**1,300**	**27,000**	**1,300**	**13,000**	**380**	**40,000**	**8,900**	**1,300**	**1,500**	**11,000**	**85,000**
Sample Depth 0 - 5 feet (cont.)																				
IB-46	2	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-46	3.5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-46	4.5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-47	2.5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-47	5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-48	3.25	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-48	5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
IB-49	1	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	170	< 50	< 50	< 50	< 50	< 50	116	< 50
IB-49	5	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Sample Depth 5 - 10 feet																				
B1	8	12/14/2002	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	56
B2	8	12/14/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	1,100	< 500	< 500	< 500	1,700
B3	8	12/14/2002	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	110
B4	8	12/14/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B5	8	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	180	< 120	< 120	< 120	230	220
B6	8	12/14/2002	< 5	< 5	< 5	< 5	6.3	< 5	6.3	< 5	< 5	< 5	6.1	< 5	14	< 5	< 5	< 5	11	11
B7	8	12/14/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120
B8	8	12/14/2002	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
B9	8	12/21/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	510	< 500	< 500	**< 500**	600	< 500	< 500	< 500	< 500	1,200
B11	8	12/15/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	540	< 500	< 500	< 500	500	**< 500**	1,300	< 500	< 500	< 500	< 500	1,100
B13	8	12/21/2002	< 10	< 10	25	73	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
B14	8	12/15/2002	< 50	< 50	< 50	< 50	< 50	< 50	53	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
B15	8	12/21/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B16	6	12/15/2002	**< 1,200**	**< 1,200**	< 1,200	< 1,200	< 1,200	< 1,200	**< 1,200**	< 1,200	< 1,200	< 1,200	< 1,200	**< 1,200**	< 1,200	< 1,200	< 1,200	< 1,200	< 1,200	< 1,200
B16	8	12/15/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	350	< 250	< 250	< 250	< 250	280
B17	8	12/21/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	7.6	< 5	< 5	< 5	< 5	< 5	< 5	17	5.5	6.7
B18	8	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 120	< 120	< 120
B19	8	12/21/2002	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	27
B20	8	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120
B21	8	12/21/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
B22	8	12/21/2002	< 5	< 5	< 5	< 5	< 5	< 5	7	5.8	10	< 5	< 5	< 5	< 5	< 5	5.5	< 5	< 5	6.7
B23	8	12/15/2002	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 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	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B24	8	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	180
B25	8	12/15/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 120	< 120	140
B26	7	12/14/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	**< 500**	510	< 500	< 500	< 500	< 500	660
B27	8	12/14/2002	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 130	< 120	< 120	< 120	< 120	< 120	< 120	230
B28	8	12/21/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	< 500	1,300
B29	6	12/21/2002	**< 500**	**< 500**	< 500	< 500	< 500	< 500	**< 500**	< 500	< 500	< 500	< 500	**< 500**	1,400	< 500	< 500	< 500	550	1,700

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Location ID	Depth	Sample Date [1]	1-Methyl-naphthalene *	2-Methyl-naphthalene *	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) Anthracene	Benzo(a)Pyrene	Benzo(b) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Chrysene	Dibenz(a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
			(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)
Soil ESL Criteria			**250**	**250**	**19,000**	**13,000**	**2,800**	**1,300**	**130**	**1,300**	**27,000**	**1,300**	**13,000**	**380**	**40,000**	**8,900**	**1,300**	**1,500**	**11,000**	**85,000**
Sample Depth 5 - 10 feet (cont.)																				
B29	8	12/21/2002	**15,000**	**< 10,000**	< 10,000	< 10,000	**< 10,000**	**< 10,000**	**< 10,000**	**< 10,000**	< 10,000	**< 10,000**	< 10,000	**< 10,000**	< 10,000	**< 10,000**	**< 10,000**	**< 10,000**	< 10,000	< 10,000
B40	6	5/13/2004	--	--	< 660	< 1,300	270	1,100	**420**	680	350	340	1,300	**2,400**	1,400	520	220	< 660	2,200	1,600
B41	6	5/13/2004	--	--	< 33	< 67	4.4	30	56	75	68	28	42	**1,100**	64	< 6.7	91	< 33	26	82
B42	6	5/13/2004	--	--	< 33	< 67	< 3.3	< 3.3	< 3.3	< 6.7	< 6.7	< 3.3	< 3.3	< 6.7	< 6.7	< 6.7	< 3.3	< 33	< 3.3	< 3.3
B43	6	5/13/2004	--	--	< 33	< 66	< 3.3	< 3.3	< 3.3	< 6.6	< 6.6	< 3.3	< 3.3	< 6.6	< 6.6	< 6.6	< 3.3	< 33	< 3.3	< 3.3
B44	6	5/13/2004	--	--	< 33	< 67	4	< 3.3	< 3.3	< 6.7	< 6.7	< 3.3	< 3.3	< 6.7	< 6.7	< 6.7	< 3.3	< 33	7.6	< 3.3
IB-46	6	4/1/1998	--	**< 500**	< 100	< 50	< 50	< 50	76	--	50	--	810	< 50	156	< 50	< 50	< 50	113	165
Sample Depth Greater than 10 feet																				
B30	12	12/21/2002	**< 250**	**< 250**	< 250	< 250	< 250	< 250	**< 250**	< 250	< 250	< 250	< 250	< 250	470	< 250	< 250	< 250	350	520

Notes
* Values were compared to ESL Criteria for total 1- and 2-Methylnaphthalene.
µg/kg - micrograms per kilogram
"--" - Not Analyzed
< 66 Analyte not detected; reporting limit below the ESL Criteria.
< 500 Analyte not detected; reporting limit above the ESL Criteria.
270 Analyte detected; result value below the ESL Criteria.
15,000 Analyte detected; result value above the ESL Criteria.
Note that Samples B40 -44, B55, B56, B59, B60, B67-77, B79-84, B86-88, IB-43, IB-45-49 were prepared using silica gel permeation cleanup
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
4/1998 - CDM, 1998
12/2002 - GAIA, 2003
5/2004 - T&R, 2004

Table 4
Semivolatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1,2,4-Trichlorobenzene (µg/kg)	1,2-Dichlorobenzene (µg/kg)	1,3-Dichlorobenzene (µg/kg)	1,4-Dichlorobenzene (µg/kg)	2,4,5-Trichlorophenol (µg/kg)	2,4,6-Trichlorophenol (µg/kg)	2,4-Dichlorophenol (µg/kg)	2,4-Dimethylphenol (µg/kg)	2,4-Dinitrophenol (µg/kg)	2,4-Dinitrotoluene (µg/kg)	2,6-Dinitrotoluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chlorophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methylphenol (µg/kg)	2-Nitroaniline (µg/kg)	2-Nitrophenol (µg/kg)	3,3'-Dichloro-benzidine (µg/kg)	3,5,5-Trimethyl-2-Cyclohexene-1-One (µg/kg)	3-Nitroaniline (µg/kg)	4,6-Dinitro-2-Methylphenol (µg/kg)	4-Bromophenyl Phenyl Ether (µg/kg)	4-Chloro-3-Methylphenol (µg/kg)
Soil ESL Criteria			**1,000**	**1,600**	**7,400**	**130**	**180**	**10,000**	**3,000**	**740**	**210**	**860**	--	--	**120**	**250**	--	--	--	**1,400**	--	--	--	--	--
Sample Depth 0 - 5 feet																									
B31	4	5/11/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B32	2	5/11/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B32	4	5/11/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	110	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B33	4	5/11/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B34	4	5/11/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,600	< 330	< 330
B35	4	5/12/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B36	4	5/12/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B37	4	5/12/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B38	4	5/12/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B39	4	5/13/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B45	4	5/14/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B46	4	5/14/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B47	2	5/14/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,600	< 330	< 330
B47	4	5/14/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B48	4	5/14/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B49	4	5/14/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B50	4	5/17/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	97	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B51	4	5/17/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B52	4	5/17/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B85	4	5/25/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B-1	3.5	3/12/1999	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 1,600	< 1,600	< 660	< 330	< 1,600	< 1,600	< 330	< 330
B-2	3.5	3/12/1999	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 1,600	< 1,600	< 660	< 330	< 1,600	< 1,600	< 330	< 330
Sample Depth 5 - 10 feet																									
B31	6	5/11/2004	**< 3,300**	**< 3,300**	< 3,300	**< 3,300**	**< 3,300**	< 3,300	**< 3,300**	**< 3,300**	**< 17,000**	**< 3,300**	< 3,300	< 3,300	**< 3,300**	**1,000**	< 3,300	< 6,700	< 6,700	**< 6,700**	< 3,300	< 6,700	< 17,000	< 3,300	< 3,300
B32	6	5/11/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	150	< 330	< 660	< 660	< 660	< 330	< 660	< 1,600	< 330	< 330
B33	6	5/11/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B34	6	5/11/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	95	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B35	6	5/12/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 68	< 340	< 680	< 680	< 680	< 340	< 680	< 1,700	< 340	< 340
B36	6	5/12/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B37	6	5/12/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B38	6	5/12/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	220	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B39	6	5/13/2004	< 830	< 830	< 830	**< 830**	**< 830**	< 830	< 830	**< 830**	**< 4,100**	< 830	< 830	< 830	**< 830**	< 170	< 830	< 1,700	< 1,700	**< 1,700**	< 830	< 1,700	< 4,100	< 830	< 830
B45	6	5/14/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B46	6	5/14/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,600	< 330	< 330
B47	6	5/14/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B49	6	5/14/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340
B50	6	5/17/2004	< 340	< 340	< 340	**< 340**	**< 340**	< 340	< 340	< 340	**< 1,700**	< 340	< 340	< 340	**< 340**	< 67	< 340	< 670	< 670	< 670	< 340	< 670	< 1,700	< 340	< 340

Table 4
Semivolatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	4-Chlorophenyl Phenyl Ether	4-Methylphenol	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Azobenzene	Benzo(a) Anthracene	Benzo(a)Pyrene	Benzo(b) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Benzoic Acid	Benzyl Alcohol	Benzyl Butyl Phthalate	Bis(2-Chloro-ethoxy)Methane	Bis(2-Chloro-ethyl)Ether	Bis(2-Chloro-isopropyl)Ether	Bis(2-Ethyl-hexyl)Phthalate	Chrysene	Dibenz(a,h) Anthracene	Dibenzofuran	Diethyl Phthalate	Dimethyl Phthalate	Di-n-Butyl-phthalate	Di-n-Octyl-phthalate
			(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)	(µg/kg)	(µg/kg)
Soil ESL Criteria			--	--	--	**19,000**	**13,000**	**2,800**	--	**1,300**	**130**	**1,300**	**27,000**	**1,300**	--	--	--	--	**12**	**660**	**530,000**	**13,000**	**380**	--	**35**	**35**	--	--
Sample Depth 0 - 5 feet																												
B31	4	5/11/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	110	110	91	84	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	120	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B32	2	5/11/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	< 66	< 66	< 66	< 66	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B32	4	5/11/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	< 67	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	< 67	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B33	4	5/11/2004	< 340	< 340	< 670	180	< 67	210	< 340	540	**1,000**	1,200	680	580	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	980	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B34	4	5/11/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	< 66	< 66	< 66	< 66	< 1,600	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B35	4	5/12/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	46	140	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	68	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B36	4	5/12/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	< 67	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	< 67	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B37	4	5/12/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	51	120	< 66	< 66	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B38	4	5/12/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	< 67	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 67	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B39	4	5/13/2004	< 330	< 330	< 660	96	< 66	100	< 330	250	**500**	540	590	350	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	440	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B45	4	5/14/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	< 67	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	< 67	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B46	4	5/14/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	< 67	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 67	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B47	2	5/14/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	15	100	< 66	< 66	< 1,600	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B47	4	5/14/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	120	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	69	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B48	4	5/14/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	< 67	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 67	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B49	4	5/14/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	< 67	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	< 67	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B50	4	5/17/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	< 66	< 66	< 66	< 66	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	100	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B51	4	5/17/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	< 67	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 67	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B52	4	5/17/2004	< 340	< 340	< 670	< 67	< 67	79	< 340	140	**340**	410	220	230	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	230	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B85	4	5/25/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	18	100	< 66	< 66	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B-1	3.5	3/12/1999	< 330	< 330	< 1,600	< 330	< 330	< 330	--	< 330	**< 330**	< 330	< 330	< 330	< 1,600	< 660	< 330	< 330	**< 330**	< 330	< 330	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330
B-2	3.5	3/12/1999	< 330	< 330	< 1,600	< 330	< 330	< 330	--	< 330	**< 330**	< 330	< 330	< 330	< 1,600	< 660	< 330	< 330	**< 330**	< 330	< 330	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330
Sample Depth 5 - 10 feet																												
B31	6	5/11/2004	< 3,300	< 3,300	< 6,700	740	< 670	860	< 3,300	< 670	**< 670**	< 670	< 670	690	< 17,000	< 3,300	< 3,300	< 3,300	**< 3,300**	**< 3,300**	< 3,300	1,300	**< 670**	< 3,300	**< 3,300**	**< 3,300**	< 3,300	< 3,300
B32	6	5/11/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	< 66	< 66	< 66	< 66	< 1,600	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B33	6	5/11/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	24	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	110	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B34	6	5/11/2004	< 330	< 330	< 670	79	120	100	< 330	130	100	170	< 67	100	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	170	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B35	6	5/12/2004	< 340	< 340	< 680	< 68	< 68	< 68	< 340	< 68	< 68	98	< 68	< 68	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	< 68	< 68	< 340	**< 340**	**< 340**	< 340	< 340
B36	6	5/12/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	99	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	< 67	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B37	6	5/12/2004	< 340	< 340	< 670	< 67	< 67	74	< 340	**84**	**190**	270	140	77	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	140	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B38	6	5/12/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	< 67	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 67	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B39	6	5/13/2004	< 830	< 830	< 1,700	< 170	< 170	370	< 830	**2,100**	**3,200**	**4,500**	3,200	**3,000**	< 4,100	< 830	< 830	< 830	**< 830**	**< 830**	< 830	3,800	< 170	< 830	**< 830**	**< 830**	< 830	< 830
B45	6	5/14/2004	< 330	< 330	< 670	< 67	< 67	< 67	< 330	< 67	< 67	< 67	< 67	< 67	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	81	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B46	6	5/14/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	13	< 66	< 66	< 66	< 1,600	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B47	6	5/14/2004	< 340	< 340	< 670	73	< 67	< 67	< 340	< 67	< 67	< 67	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	590	98	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B49	6	5/14/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	< 67	110	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	97	< 67	< 340	**< 340**	**< 340**	< 340	< 340
B50	6	5/17/2004	< 340	< 340	< 670	< 67	< 67	< 67	< 340	< 67	28	< 67	< 67	< 67	< 1,700	< 340	< 340	< 340	**< 340**	< 340	< 340	100	< 67	< 340	**< 340**	**< 340**	< 340	< 340

Table 4
Semivolatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Fluoranthene	Fluorene	Hexachloro-benzene	Hexachloro-butadiene	Hexachloro-cyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd) Pyrene	Methanamine, n-Methyl-n-Nitroso	Naphthalene	Nitrobenzene	n-Nitroso-Di-n-Propylamine	n-Nitroso-diphenylamine	p-Chloroaniline	Pentachloro-phenol	Phenanthrene	Phenol	p-Nitroaniline	Pyrene
			(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)
Soil ESL Criteria			**40,000**	**8,900**	**960**	**22,000**	--	**41,000**	**1,300**	--	**1,500**	--	--	--	**53**	**5,000**	**11,000**	**19,000**	--	**85,000**
Sample Depth 0 - 5 feet																				
B31	4	5/11/2004	120	< 66	< 330	< 330	< 1,700	< 330	86	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	67	< 330	< 660	170
B32	2	5/11/2004	< 66	< 66	< 330	< 330	< 1,700	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	< 66
B32	4	5/11/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	160	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B33	4	5/11/2004	1,800	150	< 340	< 340	< 1,700	< 340	760	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	270	< 340	< 670	2,700
B34	4	5/11/2004	< 66	< 66	< 330	< 330	< 1,600	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	< 66
B35	4	5/12/2004	76	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B36	4	5/12/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B37	4	5/12/2004	68	< 66	< 330	< 330	< 1,700	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	160
B38	4	5/12/2004	< 67	< 67	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	< 67	< 330	< 670	< 67
B39	4	5/13/2004	740	95	< 330	< 330	< 1,700	< 330	440	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	180	< 330	< 660	1,000
B45	4	5/14/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B46	4	5/14/2004	< 67	< 67	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	< 67	< 330	< 670	< 67
B47	2	5/14/2004	< 66	< 66	< 330	< 330	< 1,600	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	< 66
B47	4	5/14/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	80
B48	4	5/14/2004	< 67	< 67	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	< 67	< 330	< 670	< 67
B49	4	5/14/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B50	4	5/17/2004	< 66	< 66	< 330	< 330	< 1,700	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	69
B51	4	5/17/2004	< 67	< 67	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	< 67	< 330	< 670	< 67
B52	4	5/17/2004	360	< 67	< 340	< 340	< 1,700	< 340	240	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	580
B85	4	5/25/2004	< 66	< 66	< 330	< 330	< 1,700	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	< 66
B-1	3.5	3/12/1999	< 330	< 330	< 330	< 330	< 1,600	< 330	< 330	< 330	< 330	< 330	< 330	< 330	**< 660**	< 330	< 330	< 330	< 1,600	< 330
B-2	3.5	3/12/1999	< 330	< 330	< 330	< 330	< 1,600	< 330	< 330	< 330	< 330	< 330	< 330	< 330	**< 660**	< 330	< 330	< 330	< 1,600	< 330
Sample Depth 5 - 10 feet																				
B31	6	5/11/2004	680	710	**< 3,300**	< 3,300	< 17,000	< 3,300	< 670	< 3,300	**1,600**	< 3,300	< 3,300	< 3,300	**< 3,300**	**< 6,700**	1,100	< 3,300	< 6,700	1,000
B32	6	5/11/2004	78	< 66	< 330	< 330	< 1,600	< 330	< 66	< 330	88	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	< 66
B33	6	5/11/2004	< 67	< 67	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	< 67	< 330	< 670	84
B34	6	5/11/2004	250	73	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	180	< 330	< 670	250
B35	6	5/12/2004	< 68	< 68	< 340	< 340	< 1,700	< 340	< 68	< 340	< 68	< 340	< 340	< 340	**< 340**	< 680	< 68	< 340	< 680	< 68
B36	6	5/12/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B37	6	5/12/2004	220	< 67	< 340	< 340	< 1,700	< 340	120	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	330
B38	6	5/12/2004	< 67	67	< 330	< 330	< 1,700	< 330	< 67	< 330	170	< 330	< 330	< 330	**< 330**	< 670	< 67	< 330	< 670	< 67
B39	6	5/13/2004	5,200	< 170	< 830	< 830	< 4,100	< 830	**3,000**	< 830	< 170	< 830	< 830	< 830	**< 830**	< 1,700	350	< 830	< 1,700	9,200
B45	6	5/14/2004	< 67	< 67	< 330	< 330	< 1,700	< 330	< 67	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	77	< 330	< 670	< 67
B46	6	5/14/2004	< 66	< 66	< 330	< 330	< 1,600	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	73
B47	6	5/14/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B49	6	5/14/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	< 67
B50	6	5/17/2004	< 67	< 67	< 340	< 340	< 1,700	< 340	< 67	< 340	< 67	< 340	< 340	< 340	**< 340**	< 670	< 67	< 340	< 670	150

Table 4
Semivolatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1,2,4-Trichlorobenzene (µg/kg)	1,2-Dichlorobenzene (µg/kg)	1,3-Dichlorobenzene (µg/kg)	1,4-Dichlorobenzene (µg/kg)	2,4,5-Trichlorophenol (µg/kg)	2,4,6-Trichlorophenol (µg/kg)	2,4-Dichlorophenol (µg/kg)	2,4-Dimethylphenol (µg/kg)	2,4-Dinitrophenol (µg/kg)	2,4-Dinitrotoluene (µg/kg)	2,6-Dinitrotoluene (µg/kg)	2-Chloro-naphthalene (µg/kg)	2-Chlorophenol (µg/kg)	2-Methyl-naphthalene (µg/kg)	2-Methylphenol (µg/kg)	2-Nitroaniline (µg/kg)	2-Nitrophenol (µg/kg)	3,3'-Dichloro-benzidine (µg/kg)	3,5,5-Trimethyl-2-Cyclohexene-1-One (µg/kg)	3-Nitroaniline (µg/kg)	4,6-Dinitro-2-Methylphenol (µg/kg)	4-Bromophenyl Phenyl Ether (µg/kg)	4-Chloro-3-Methylphenol (µg/kg)
Soil ESL Criteria			**1,000**	**1,600**	**7,400**	**130**	**180**	**10,000**	**3,000**	**740**	**210**	**860**	--	--	**120**	**250**	--	--	--	**1,400**	--	--	--	--	--
Sample Depth 5 - 10 feet (cont.)																									
B51	6	5/17/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,700	< 330	< 330
B52	7	5/17/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,700**	< 330	< 330	< 330	**< 330**	< 67	< 330	< 670	< 670	< 670	< 330	< 670	< 1,700	< 330	< 330
B85	6	5/25/2004	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	< 66	< 330	< 660	< 660	< 660	< 330	< 660	< 1,600	< 330	< 330
B-2	7	3/12/1999	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330	< 330	**< 1,600**	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 1,600	< 1,600	< 660	< 330	< 1,600	< 1,600	< 330	< 330
IB-46	6	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	10	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	10	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4
Semivolatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	4-Chlorophenyl Phenyl Ether (µg/kg)	4-Methylphenol (µg/kg)	4-Nitrophenol (µg/kg)	Acenaphthene (µg/kg)	Acenaphthylene (µg/kg)	Anthracene (µg/kg)	Azobenzene (µg/kg)	Benzo(a) Anthracene (µg/kg)	Benzo(a)Pyrene (µg/kg)	Benzo(b) Fluoranthene (µg/kg)	Benzo(g,h,i) Perylene (µg/kg)	Benzo(k) Fluoranthene (µg/kg)	Benzoic Acid (µg/kg)	Benzyl Alcohol (µg/kg)	Benzyl Butyl Phthalate (µg/kg)	Bis(2-Chloro-ethoxy)Methane (µg/kg)	Bis(2-Chloro-ethyl)Ether (µg/kg)	Bis(2-Chloro-isopropyl)Ether (µg/kg)	Bis(2-Ethyl-hexyl)Phthalate (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) Anthracene (µg/kg)	Dibenzofuran (µg/kg)	Diethyl Phthalate (µg/kg)	Dimethyl Phthalate (µg/kg)	Di-n-Butyl-phthalate (µg/kg)	Di-n-Octyl-phthalate (µg/kg)
Soil ESL Criteria			--	--	--	**19,000**	**13,000**	**2,800**	--	**1,300**	**130**	**1,300**	**27,000**	**1,300**	--	--	--	--	**12**	**660**	**530,000**	**13,000**	**380**	--	**35**	**35**	--	--
Sample Depth 5 - 10 feet (cont.)																												
B51	6	5/17/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	< 66	< 66	< 66	< 66	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B52	7	5/17/2004	< 330	< 330	< 670	< 67	< 67	84	< 330	160	**450**	520	290	260	< 1,700	< 330	< 330	< 330	**< 330**	< 330	< 330	280	< 67	< 330	**< 330**	**< 330**	< 330	< 330
B85	6	5/25/2004	< 330	< 330	< 660	< 66	< 66	< 66	< 330	< 66	46	< 66	< 66	< 66	< 1,600	< 330	< 330	< 330	**< 330**	< 330	< 330	< 66	< 66	< 330	**< 330**	**< 330**	< 330	< 330
B-2	7	3/12/1999	< 330	< 330	< 1,600	< 330	< 330	< 330	--	< 330	**< 330**	< 330	< 330	< 330	< 1,600	< 660	< 330	< 330	**< 330**	< 330	< 330	< 330	< 330	< 330	**< 330**	**< 330**	< 330	< 330
IB-46	6	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	399	--	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	--	--	--	--	1,900	--	--	**4,000**	**4,100**	**3,800**	5,600	--	--	--	--	--	--	--	--	4,600	--	--	--	--	--	--
OKUS-W2	10	1/14/1993	--	--	--	--	< 5	--	--	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--
OKUS-W3	10	1/14/1993	--	--	--	--	< 5	--	--	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--

Table 4
Semivolatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Hexachloro-benzene (µg/kg)	Hexachloro-butadiene (µg/kg)	Hexachloro-cyclopentadiene (µg/kg)	Hexachloroethane (µg/kg)	Indeno(1,2,3-cd) Pyrene (µg/kg)	Methanamine, n-Methyl-n-Nitroso (µg/kg)	Naphthalene (µg/kg)	Nitrobenzene (µg/kg)	n-Nitroso-Di-n-Propylamine (µg/kg)	n-Nitroso-diphenylamine (µg/kg)	p-Chloroaniline (µg/kg)	Pentachloro-phenol (µg/kg)	Phenanthrene (µg/kg)	Phenol (µg/kg)	p-Nitroaniline (µg/kg)	Pyrene (µg/kg)
Soil ESL Criteria			**40,000**	**8,900**	**960**	**22,000**	--	**41,000**	**1,300**	--	**1,500**	--	--	--	**53**	**5,000**	**11,000**	**19,000**	--	**85,000**
Sample Depth 5 - 10 feet (cont.)																				
B51	6	5/17/2004	< 66	< 66	< 330	< 330	< 1,700	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	< 66
B52	7	5/17/2004	440	< 67	< 330	< 330	< 1,700	< 330	330	< 330	< 67	< 330	< 330	< 330	**< 330**	< 670	81	< 330	< 670	740
B85	6	5/25/2004	< 66	< 66	< 330	< 330	< 1,600	< 330	< 66	< 330	< 66	< 330	< 330	< 330	**< 330**	< 660	< 66	< 330	< 660	230
B-2	7	3/12/1999	< 330	< 330	< 330	< 330	< 1,600	< 330	< 330	< 330	< 330	< 330	< 330	< 330	**< 660**	< 330	< 330	< 330	< 1,600	< 330
IB-46	6	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	--	--	--	--	--	--	**4,200**	--	**1,800**	--	--	--	--	--	**11,000**	--	--	18,000
OKUS-W2	10	1/14/1993	--	--	--	--	--	--	< 5	--	< 5	--	--	--	--	--	< 5	--	--	480
OKUS-W3	10	1/14/1993	--	--	--	--	--	--	< 5	--	< 5	--	--	--	--	--	< 5	--	--	< 5

Notes
µg/kg - micrograms per kilogram
"--" - Not Analyzed
< 66 Analyte not detected; reporting limit below the ESL Criteria.
< 1,700 Analyte not detected; reporting limit above the ESL Criteria.
220 Analyte detected; result value below the ESL Criteria.
1,000 Analyte detected; result value above the ESL Criteria.
Note the samples B31-39, B45-52, B85 and IB-46 were prepared using silica gel permeation cleanup method.
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
1/1993 - USPCI, 1993
4/1998 - CDM, 1998
3/1999 - Blymer, 1999
5/2004 - T&R, 2004

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1,1,1,2-Tetrachloroethane (µg/kg)	1,1,1-Trichloroethane (µg/kg)	1,1,2,2-Tetrachloroethane (µg/kg)	1,1,2-Trichloroethane (µg/kg)	1,1-Dichloroethane (µg/kg)	1,1-Dichloroethene (µg/kg)	1,1-Dichloropropene (µg/kg)	1,2,3-Trichlorobenzene (µg/kg)	1,2,3-Trichloropropane (µg/kg)	1,2,4-Trichlorobenzene (µg/kg)	1,2,4-Trimethylbenzene (µg/kg)	1,2-Dibromo-3-Chloropropane (µg/kg)	1,2-Dibromoethane (µg/kg)	1,2-Dichlorobenzene (µg/kg)	1,2-Dichloroethane (µg/kg)	1,2-Dichloropropane (µg/kg)	1,3,5-Trimethylbenzene (µg/kg)	1,3-Dichlorobenzene (µg/kg)	1,3-Dichloropropane (µg/kg)	1,4-Dichlorobenzene (µg/kg)	2,2-Dichloropropane (µg/kg)	2-Chloroethyl Vinyl Ether (µg/kg)	2-Chlorotoluene (µg/kg)	2-Phenylbutane (µg/kg)	4-Chlorotoluene (µg/kg)
Soil ESL Criteria			**6,900**	**7,800**	**25**	**89**	**890**	**4,300**	--	--	--	**1,000**	--	**4.5**	**20**	**1,600**	**70**	**140**	--	**7,400**	--	**130**	--	--	--	--	--
Sample Depth 0 - 5 feet																												
B1	4	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B2	4	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B3	4	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	--	--	--
B5	4	12/15/2002	--	< 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	--	--	--
B7	4	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B8	4	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B9	4	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B11	4	12/15/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B12	4	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B13	4	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	--	--	--
B15	4	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	--	< 5	--	< 5	--	< 5	--	--	--
B17	4	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	--	--	--
B19	4	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B20	4	12/15/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B21	4	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	--	--	--
B23	4	12/15/2002	--	< 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	--	--	--
B25	4	12/15/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B26	4	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B27	2	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B27	4	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B28	4	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B29	4	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B30	4	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B31	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	< 4.7	< 4.7
B32	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	--	< 500	1200	< 500
B33	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	< 4.7	< 4.7
B34	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	< 4.9	< 4.9
B35	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	< 4.9	< 4.9
B36	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	< 4.6	< 4.6
B37	4	5/12/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B38	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	--	< 23	550	< 23

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	CFC-11	CFC-12	Chlorobenzene	Chlorobromomethane	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene	Dibromomethane	Diisopropyl Ether	ETBE	Ethylbenzene	Freon 113	Hexachlorobutadiene
			(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)	(µg/kg)
Soil ESL Criteria			**500**	**380**	**--**	**39**	**69,000**	**510**	**--**	**34**	**--**	**--**	**1,500**	**--**	**--**	**850**	**1,900**	**200**	**3,600**	**--**	**--**	**--**	**--**	**--**	**32,000**	**--**	**22,000**
Sample Depth 0 - 5 feet																											
B1	4	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B2	4	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	9.6	--	--
B3	4	12/14/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B5	4	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B7	4	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B8	4	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B9	4	12/21/2002	--	5.7	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	20	--	--
B11	4	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B13	4	12/21/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B15	4	12/21/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B16	4	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B18	4	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B20	4	12/15/2002	--	180	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	53	--	--
B21	4	12/21/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B23	4	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B24	4	12/15/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B25	4	12/15/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B26	4	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B27	2	12/14/2002	--	8.3	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B27	4	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B28	4	12/21/2002	--	11	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	6.5	--	--
B29	4	12/21/2002	--	28	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	13	--	--
B30	4	12/21/2002	--	120	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	47	--	--
B31	4	5/11/2004	< 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	< 4.7	< 4.7
B32	4	5/11/2004	**< 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	< 500	< 500
B33	4	5/11/2004	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	< 4.7	< 4.7
B34	4	5/11/2004	< 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	< 4.9	< 4.9
B35	4	5/12/2004	< 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	< 4.9	< 4.9
B36	4	5/12/2004	< 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	< 4.6	< 4.6
B37	4	5/12/2004	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B38	4	5/12/2004	< 91	< 23	< 23	< 23	< 23	< 45	< 23	< 23	< 23	< 45	44	< 23	< 23	< 45	< 23	< 45	< 23	< 23	38	< 23	< 23	< 23	< 23	< 23	< 23

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	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)
Soil ESL Criteria			--	**13,000**	**3,900**	--	--	**1,500**	**5,600**	**1,500**	--	**240**	--	**15,000**	**110,000**	--	**9,300**	**7,300**	--	**730**	--	**19**	**1,100**
Sample Depth 0 - 5 feet																							
B1	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	18	< 5	< 5	< 5	--	< 5	6.3
B2	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	550	< 5	< 5	< 5	--	< 5	50
B3	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	17	< 5	< 5	< 5	--	< 5	5.3
B4	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B5	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	14	< 5	< 5	< 5	--	< 5	< 5
B6	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B7	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B8	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B9	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	120	< 5	< 5	< 5	--	< 5	130
B11	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	17	< 5	< 5	< 5	--	< 5	6.6
B12	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B13	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B14	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B15	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B16	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	17	< 5	< 5	< 5	--	< 5	< 5
B17	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B18	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B19	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B20	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	55	< 5	< 5	< 5	--	< 5	77
B21	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	32	< 5	< 5	< 5	--	< 5	12
B22	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B23	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B24	2	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B24	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B25	4	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	19	< 5	< 5	< 5	--	< 5	< 5
B26	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	5.3
B27	2	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	16	< 5	< 5	< 5	--	< 5	18
B27	4	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	11	< 5	< 5	< 5	--	< 5	8.5
B28	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	22	< 5	< 5	< 5	--	< 5	42
B29	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	46	< 5	< 5	< 5	--	< 5	59
B30	4	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	76	< 5	< 5	< 5	--	< 5	88
B31	4	5/11/2004	< 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
B32	4	5/11/2004	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**
B33	4	5/11/2004	< 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
B34	4	5/11/2004	< 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
B35	4	5/12/2004	< 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
B36	4	5/12/2004	< 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
B37	4	5/12/2004	< 5	< 10	< 10	< 10	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B38	4	5/12/2004	350	< 45	< 45	< 45	< 23	< 91	< 23	< 23	1,300	< 23	930	< 23	< 450	240	< 23	< 23	< 23	< 23	< 230	**< 45**	< 23

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1,1,1,2-Tetrachloroethane (µg/kg)	1,1,1-Trichloroethane (µg/kg)	1,1,2,2-Tetrachloroethane (µg/kg)	1,1,2-Trichloroethane (µg/kg)	1,1-Dichloroethane (µg/kg)	1,1-Dichloroethene (µg/kg)	1,1-Dichloropropene (µg/kg)	1,2,3-Trichlorobenzene (µg/kg)	1,2,3-Trichloropropane (µg/kg)	1,2,4-Trichlorobenzene (µg/kg)	1,2,4-Trimethylbenzene (µg/kg)	1,2-Dibromo-3-Chloropropane (µg/kg)	1,2-Dibromoethane (µg/kg)	1,2-Dichlorobenzene (µg/kg)	1,2-Dichloroethane (µg/kg)	1,2-Dichloropropane (µg/kg)	1,3,5-Trimethylbenzene (µg/kg)	1,3-Dichlorobenzene (µg/kg)	1,3-Dichloropropane (µg/kg)	1,4-Dichlorobenzene (µg/kg)	2,2-Dichloropropane (µg/kg)	2-Chloroethyl Vinyl Ether (µg/kg)	2-Chlorotoluene (µg/kg)	2-Phenylbutane (µg/kg)	4-Chlorotoluene (µg/kg)
Soil ESL Criteria			**6,900**	**7,800**	**25**	**89**	**890**	**4,300**	–	–	–	**1,000**	–	**4.5**	**20**	**1,600**	**70**	**140**	–	**7,400**	–	**130**	–	–	–	–	–
Sample Depth 0 - 5 feet (cont.)																											
B39	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	< 4.7	< 4.7
B45	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	< 4.8	< 4.8
B46	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	< 4.7	< 4.7
B47	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	< 4.7	< 4.7
B48	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	< 4.8	< 4.8
B49	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	< 4.8	< 4.8
B50	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	< 4.8	< 4.8
B51	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	< 4.6	< 4.6
B52	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	< 4.7	< 4.7
B53	2	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	< 4.6	< 4.6
B53	4	5/17/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B54	4	5/17/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	8.8	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B56	2	5/18/2004	< 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	< 4.8	< 4.8
B56	4	5/18/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B57	2	5/18/2004	< 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	< 4.8	< 4.8
B57	4	5/18/2004	< 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	< 4.9	< 4.9
B58	2	5/18/2004	< 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	< 4.5	< 4.5
B58	4	5/18/2004	< 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	< 4.8	< 4.8
B59	2	5/18/2004	< 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	< 4.9	< 4.9
B59	4	5/18/2004	< 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	< 4.7	< 4.7
B60	2	5/18/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B60	4	5/18/2004	< 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	< 4.8	< 4.8
B61	2	5/18/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B61	4	5/18/2004	< 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	< 4.8	< 4.8
B79	2	5/24/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B79	4	5/24/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B80	2	5/24/2004	< 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	< 4.7	< 4.7
B80	4	5/24/2004	< 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	< 4.8	< 4.8
B85	4	5/25/2004	< 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	< 4.7	< 4.7
B-1	3.5	3/12/1999	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--	--
B-2	3.5	3/12/1999	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--	--
IB-43	1.25	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
IB-43	2.5	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
IB-45	1.5	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
IB-45	5	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
IB-46	2	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
IB-46	3.5	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
IB-46	4.5	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
OKUS-B2	4	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-B13	3	7/13/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	2	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	CFC-11	CFC-12	Chlorobenzene	Chlorobromomethane	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene	Dibromomethane	Diisopropyl Ether	ETBE	Ethylbenzene	Freon 113	Hexachlorobutadiene
			(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)	(µg/kg)
Soil ESL Criteria			**500**	**380**	**--**	**39**	**69,000**	**510**	**--**	**34**	**--**	**--**	**1,500**	**--**	**--**	**850**	**1,900**	**200**	**3,600**	**--**	**--**	**--**	**--**	**--**	**32,000**	**--**	**22,000**
Sample Depth 0 - 5 feet (cont.)																											
B39	4	5/13/2004	< 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	< 4.7	< 4.7
B45	4	5/14/2004	< 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	< 4.8	< 4.8
B46	4	5/14/2004	< 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	< 4.7	< 4.7
B47	4	5/14/2004	< 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	< 4.7	< 4.7
B48	4	5/14/2004	< 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	< 4.8	< 4.8
B49	4	5/14/2004	< 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	< 4.8	< 4.8
B50	4	5/17/2004	< 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	< 4.8	< 4.8
B51	4	5/17/2004	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	< 4.6	< 4.6
B52	4	5/17/2004	< 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	< 4.7	< 4.7
B53	2	5/17/2004	< 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	< 4.6	< 4.6
B53	4	5/17/2004	39	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B54	4	5/17/2004	44	21	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	64	< 5	< 5
B56	2	5/18/2004	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	< 4.8	< 4.8
B56	4	5/18/2004	28	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B57	2	5/18/2004	< 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	< 4.8	< 4.8
B57	4	5/18/2004	< 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	< 4.9	< 4.9
B58	2	5/18/2004	< 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	< 4.5	< 4.5
B58	4	5/18/2004	60	5	< 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	< 4.8	< 4.8
B59	2	5/18/2004	29	< 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	< 4.9	< 4.9
B59	4	5/18/2004	< 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	< 4.7	< 4.7
B60	2	5/18/2004	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B60	4	5/18/2004	< 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	< 4.8	< 4.8
B61	2	5/18/2004	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B61	4	5/18/2004	< 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	< 4.8	< 4.8
B79	2	5/24/2004	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B79	4	5/24/2004	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B80	2	5/24/2004	< 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	< 4.7	< 4.7
B80	4	5/24/2004	< 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	< 4.8	< 4.8
B85	4	5/25/2004	< 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	< 4.7	< 4.7
B-1	3.5	3/12/1999	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	< 5	--	--	--	--	< 5	--	--
B-2	3.5	3/12/1999	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	< 5	--	--	--	--	< 5	--	--
IB-43	1.25	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
IB-43	2.5	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	< 5	--	--
IB-45	1.5	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
IB-45	5	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
IB-46	2	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
IB-46	3.5	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
IB-46	4.5	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
OKUS-B2	4	1/15/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-B13	3	7/13/1993	--	27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	81	--	--
OKUS-W2	2	1/14/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date[1]	Isopropylbenzene (µg/kg)	Methyl Ethyl Ketone (µg/kg)	Methyl Isobutyl Ketone (µg/kg)	Methyl n-Butyl Ketone (µg/kg)	Methyl Tert-Amyl Ether (TAME) (µg/kg)	Methylene Chloride (µg/kg)	MTBE (µg/kg)	Naphthalene (µg/kg)	n-Butylbenzene (µg/kg)	PCE (µg/kg)	Propylbenzene (µg/kg)	Styrene (µg/kg)	Tert-Butyl Alcohol (µg/kg)	Tert-Butylbenzene (µg/kg)	Toluene (µg/kg)	trans-1,2-Dichloroethene (µg/kg)	trans-1,3-Dichloropropene (µg/kg)	TCE (µg/kg)	Vinyl Acetate (µg/kg)	Vinyl Chloride (µg/kg)	Xylenes (total) (µg/kg)
Soil ESL Criteria			--	**13,000**	**3,900**	--	--	**1,500**	**5,600**	**1,500**	--	**240**	--	**15,000**	**110,000**	--	**9,300**	**7,300**	--	**730**	--	**19**	**1,100**
Sample Depth 0 - 5 feet (cont.)																							
B39	4	5/13/2004	< 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
B45	4	5/14/2004	< 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
B46	4	5/14/2004	< 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
B47	4	5/14/2004	< 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
B48	4	5/14/2004	< 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	5/14/2004	< 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	4	5/17/2004	< 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
B51	4	5/17/2004	< 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	5/17/2004	< 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
B53	2	5/17/2004	< 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
B53	4	5/17/2004	< 5	< 10	< 10	< 10	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B54	4	5/17/2004	< 5	11	< 10	< 10	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	37	< 5	< 5	< 5	< 50	< 10	142
B56	2	5/18/2004	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	140	< 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
B56	4	5/18/2004	< 5	< 10	< 10	< 10	< 5	120	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B57	2	5/18/2004	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	310	< 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
B57	4	5/18/2004	< 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
B58	2	5/18/2004	< 4.5	< 9.1	< 9.1	< 9.1	< 4.5	220	< 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
B58	4	5/18/2004	< 4.8	14	< 9.6	< 9.6	< 4.8	520	< 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
B59	2	5/18/2004	< 4.9	< 9.8	< 9.8	< 9.8	< 4.9	180	< 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
B59	4	5/18/2004	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	25	< 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
B60	2	5/18/2004	< 5	< 10	< 10	< 10	< 5	91	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B60	4	5/18/2004	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	21	< 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
B61	2	5/18/2004	< 5	< 10	< 10	< 10	< 5	110	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B61	4	5/18/2004	< 4.8	< 9.6	< 9.6	< 9.6	< 4.8	25	< 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
B79	2	5/24/2004	< 5	< 10	< 10	< 10	< 5	35	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B79	4	5/24/2004	< 5	< 10	< 10	< 10	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5
B80	2	5/24/2004	< 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
B80	4	5/24/2004	< 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
B85	4	5/25/2004	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	76	< 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
B-1	3.5	3/12/1999	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	14	< 5	< 5	< 5	--	< 5	15
B-2	3.5	3/12/1999	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
IB-43	1.25	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
IB-43	2.5	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
IB-45	1.5	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	8
IB-45	5	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
IB-46	2	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
IB-46	3.5	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
IB-46	4.5	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
OKUS-B2	4	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-B13	3	7/13/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	84	--	--	--	--	--	257
OKUS-W2	2	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	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-Chloroethyl Vinyl Ether	2-Chlorotoluene	2-Phenylbutane	4-Chlorotoluene
			(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)	(µg/kg)
Soil ESL Criteria			**6,900**	**7,800**	**25**	**89**	**890**	**4,300**	--	--	--	**1,000**	--	**4.5**	**20**	**1,600**	**70**	**140**	--	**7,400**	--	**130**	--	--	--	--	--
Sample Depth 5 - 10 feet																											
B1	8	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B2	8	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B3	8	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	--	--	--
B5	8	12/15/2002	--	< 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	--	--	--
B7	8	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	8	12/21/2002	--	< 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	--	--	--
B13	8	12/21/2002	--	< 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	--	--	--
B15	8	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B16	6	12/15/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B16	8	12/15/2002	--	< 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	8	12/15/2002	--	< 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	--	--	--
B20	8	12/15/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B21	8	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	--	--	--
B23	8	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	--	--	--
B25	8	12/15/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B26	7	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B27	8	12/14/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B28	8	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B29	6	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--
B29	8	12/21/2002	--	< 20	< 20	< 20	< 20	< 20	--	--	--	--	--	--	--	< 20	< 20	< 20	--	< 20	--	< 20	--	< 20	--	--	--
B31	6	5/11/2004	< 5	8.7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5
B32	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	< 25
B33	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	< 4.8
B34	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	< 4.8
B35	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	< 4.7
B36	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	< 4.7
B37	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	< 4.9
B38	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	< 4.6
B39	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	< 4.9
B45	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	< 4.8
B46	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	< 4.9

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	CFC-11	CFC-12	Chlorobenzene	Chlorobromomethane	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene	Dibromomethane	Diisopropyl Ether	ETBE	Ethylbenzene	Freon 113	Hexachlorobutadiene
			(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)	(µg/kg)
Soil ESL Criteria			**500**	**380**	**--**	**39**	**69,000**	**510**	**--**	**34**	**--**	**--**	**1,500**	**--**	**--**	**850**	**1,900**	**200**	**3,600**	**--**	**--**	**--**	**--**	**--**	**32,000**	**--**	**22,000**
Sample Depth 5 - 10 feet																											
B1	8	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B2	8	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B3	8	12/14/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B5	8	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B7	8	12/14/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B9	8	12/21/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B13	8	12/21/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B15	8	12/21/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B16	6	12/15/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B16	8	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B18	8	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B20	8	12/15/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B21	8	12/21/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B23	8	12/15/2002	--	< 5	--	< 5	< 5	< 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	< 5	< 5	--	--	--	--	--	< 5	--	--
B24	8	12/15/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B25	8	12/15/2002	--	10	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B26	7	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B27	8	12/14/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B28	8	12/21/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
B29	6	12/21/2002	--	88	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	10	--	--	--	--	--	47	--	--
B29	8	12/21/2002	--	130	--	< 20	< 20	< 20	--	< 20	< 20	< 20	< 20	--	< 20	< 20	< 20	< 20	< 20	--	--	--	--	--	70	--	--
B31	6	5/11/2004	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
B32	6	5/11/2004	< 100	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25	< 50	< 25	< 25	< 25	< 50	< 25	< 50	< 25	< 25	< 25	< 25	< 25	< 25	70	< 25	< 25
B33	6	5/11/2004	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	< 4.8	< 4.8	< 4.8
B34	6	5/11/2004	< 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	< 4.8	< 4.8	< 4.8
B35	6	5/12/2004	< 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	< 4.7	< 4.7	< 4.7
B36	6	5/12/2004	< 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	< 4.7	< 4.7	< 4.7
B37	6	5/12/2004	< 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	< 4.9	< 4.9	< 4.9
B38	6	5/12/2004	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	< 4.6	< 4.6
B39	6	5/13/2004	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	< 4.9	< 4.9	< 4.9
B45	6	5/14/2004	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	< 4.8	< 4.8	< 4.8
B46	6	5/14/2004	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	< 4.9	< 4.9	< 4.9

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	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)
Soil ESL Criteria			--	**13,000**	**3,900**	--	--	**1,500**	**5,600**	**1,500**	--	**240**	--	**15,000**	**110,000**	--	**9,300**	**7,300**	--	**730**	--	**19**	**1,100**
Sample Depth 5 - 10 feet																							
B1	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B2	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B3	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B4	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B5	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B6	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B7	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	11	< 5	< 5	< 5	--	< 5	5.1
B8	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B9	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B11	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B13	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B14	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B15	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B16	6	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	34	< 5	< 5	< 5	--	< 5	6.1
B16	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B17	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B18	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B19	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B20	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B21	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B22	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B23	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B24	6	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B24	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B25	8	12/15/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	13	< 5	< 5	< 5	--	< 5	6.4
B26	7	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B27	8	12/14/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B28	8	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
B29	6	12/21/2002	--	--	--	--	--	< 5	< 200	--	--	< 5	--	--	--	--	76	< 5	< 5	< 5	--	< 5	120
B29	8	12/21/2002	--	--	--	--	--	< 20	< 200	--	--	< 20	--	--	--	--	120	< 20	< 20	< 20	--	**< 20**	700
B31	6	5/11/2004	< 5	< 10	< 10	< 10	< 5	67	< 5	< 5	< 5	110	< 5	< 5	< 100	< 5	< 5	< 5	< 5	13	< 50	< 10	< 5
B32	6	5/11/2004	< 25	< 50	< 50	< 50	< 25	< 100	< 25	260	79	< 25	63	< 25	< 500	< 25	< 25	< 25	< 25	< 25	< 250	**< 50**	186
B33	6	5/11/2004	< 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	6	5/11/2004	< 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	6	5/12/2004	< 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	6	5/12/2004	< 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	6	5/12/2004	< 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	6	5/12/2004	< 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	6	5/13/2004	< 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
B45	6	5/14/2004	< 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	6	5/14/2004	< 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

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	1,1,1,2-Tetrachloroethane (µg/kg)	1,1,1-Trichloroethane (µg/kg)	1,1,2,2-Tetrachloroethane (µg/kg)	1,1,2-Trichloroethane (µg/kg)	1,1-Dichloroethane (µg/kg)	1,1-Dichloroethene (µg/kg)	1,1-Dichloropropene (µg/kg)	1,2,3-Trichlorobenzene (µg/kg)	1,2,3-Trichloropropane (µg/kg)	1,2,4-Trichlorobenzene (µg/kg)	1,2,4-Trimethylbenzene (µg/kg)	1,2-Dibromo-3-Chloropropane (µg/kg)	1,2-Dibromoethane (µg/kg)	1,2-Dichlorobenzene (µg/kg)	1,2-Dichloroethane (µg/kg)	1,2-Dichloropropane (µg/kg)	1,3,5-Trimethylbenzene (µg/kg)	1,3-Dichlorobenzene (µg/kg)	1,3-Dichloropropane (µg/kg)	1,4-Dichlorobenzene (µg/kg)	2,2-Dichloropropane (µg/kg)	2-Chloroethyl Vinyl Ether (µg/kg)	2-Chlorotoluene (µg/kg)	2-Phenylbutane (µg/kg)	4-Chlorotoluene (µg/kg)
Soil ESL Criteria			**6,900**	**7,800**	**25**	**89**	**890**	**4,300**	**--**	**--**	**--**	**1,000**	**--**	**4.5**	**20**	**1,600**	**70**	**140**	**--**	**7,400**	**--**	**130**	**--**	**--**	**--**	**--**	**--**
Sample Depth 5 - 10 feet (cont.)																												
B47	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	< 4.9	< 4.9
B49	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	< 4.6	< 4.6
B50	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	< 4.5	< 4.5
B51	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	< 4.6	< 4.6
B52	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	< 4.7	< 4.7
B85	6	5/25/2004	< 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	< 4.7	< 4.7
B-2	7	3/12/1999	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--	--
IB-46	6	4/1/1998	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--
OKUS-B1	8	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-B2	7	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-B3	8	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-B7	6	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-B13	10	7/13/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	6	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	8	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	10	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	6	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	10	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W5	7	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W6	10	7/12/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Depth Greater than 10 feet																												
B30	12	12/21/2002	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	--	--	< 5	< 5	< 5	--	< 5	--	< 5	--	< 5	--	--	--	--
OKUS-W2	14	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	18	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	CFC-11	CFC-12	Chlorobenzene	Chlorobromomethane	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene	Dibromomethane	Diisopropyl Ether	ETBE	Ethylbenzene	Freon 113	Hexachlorobutadiene
			(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)	(µg/kg)
Soil ESL Criteria			**500**	**380**	**--**	**39**	**69,000**	**510**	**--**	**34**	**--**	**--**	**1,500**	**--**	**--**	**850**	**1,900**	**200**	**3,600**	**--**	**--**	**--**	**--**	**--**	**32,000**	**--**	**22,000**
Sample Depth 5 - 10 feet (cont.)																											
B47	6	5/14/2004	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	< 4.9	< 4.9
B49	6	5/14/2004	< 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	< 4.6	< 4.6
B50	6	5/17/2004	< 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	< 4.5	< 4.5
B51	6	5/17/2004	< 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	< 4.6	< 4.6
B52	7	5/17/2004	< 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	< 4.7	< 4.7
B85	6	5/25/2004	< 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	< 4.7	< 4.7
B-2	7	3/12/1999	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	< 5	--	--	--	--	< 5	--	--
IB-46	6	4/1/1998	< 5	< 5	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 5	--	--
OKUS-B1	8	1/15/1993	--	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32	--	--
OKUS-B2	7	1/15/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-B3	8	1/15/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	--	--
OKUS-B7	6	1/15/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-B13	10	7/13/1993	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50	--	--
OKUS-W1	6	1/14/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-W1	8	1/14/1993	--	< 0.5	--	--	--	--	--	--	--	--	< 0.5	--	--	--	< 0.5	--	--	< 0.5	--	--	--	--	< 0.5	--	--
OKUS-W2	10	1/14/1993	--	< 0.5	--	--	--	--	--	--	--	--	110	--	--	--	410	--	--	28	--	--	--	--	100	--	--
OKUS-W3	6	1/14/1993	--	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-W3	10	1/14/1993	--	7	--	--	--	--	--	--	--	--	< 0.5	--	--	--	< 0.5	--	--	< 0.5	--	--	--	--	22	--	--
OKUS-W5	7	1/15/1993	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-W6	10	7/12/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
Sample Depth Greater than 10 feet																											
B30	12	12/21/2002	--	< 5	--	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	--	--	--	--	--	< 5	--	--
OKUS-W2	14	1/14/1993	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	--	--
OKUS-W3	18	1/14/1993	--	59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	670	--	--

Table 5
Volatile Organic Compounds in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Depth	Sample Date [1]	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)
Soil ESL Criteria			**--**	**13,000**	**3,900**	**--**	**--**	**1,500**	**5,600**	**1,500**	**--**	**240**	**--**	**15,000**	**110,000**	**--**	**9,300**	**7,300**	**--**	**730**	**--**	**19**	**1,100**
Sample Depth 5 - 10 feet (cont.)																							
B47	6	5/14/2004	< 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
B49	6	5/14/2004	< 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
B50	6	5/17/2004	< 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	6	5/17/2004	< 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	7	5/17/2004	< 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
B85	6	5/25/2004	< 4.7	< 9.4	< 9.4	< 9.4	< 4.7	57	< 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
B-2	7	3/12/1999	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
IB-46	6	4/1/1998	--	< 5	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	< 5	--	--	--	--	--	< 5
OKUS-B1	8	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-B2	7	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	16
OKUS-B3	8	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-B7	6	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-B13	10	7/13/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	--	--	--	--	--	127
OKUS-W1	6	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W1	8	1/14/1993	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W2	10	1/14/1993	--	--	--	--	--	--	--	--	--	28	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W3	6	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W3	10	1/14/1993	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W5	7	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9	--	--	--	--	--	36
OKUS-W6	10	7/12/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	--	--	--	--	< 0.5
Sample Depth Greater than 10 feet																							
B30	12	12/21/2002	--	--	--	--	--	< 5	< 50	--	--	< 5	--	--	--	--	< 5	< 5	< 5	< 5	--	< 5	< 5
OKUS-W2	14	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W3	18	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	--	--	--	--	--	< 0.5

Notes
µg/kg - micrograms per kilogram
"--" - Not Analyzed
< 0.5 Analyte not detected; reporting limit below the ESL Criteria.
< 20 Analyte not detected; reporting limit above the ESL Criteria.
127 Analyte detected; result value below the ESL Criteria.
8,900 Analyte detected; result value above the ESL Criteria.
ESL - Environmental Screening Level, RWQCB 2005
[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

Table 6
Total Petroleum Hydrocarbons in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	TPH-Gasoline (No Silica Gel Cleanup) (µg/L)	TPH-Diesel (Silica Gel Cleanup) (µg/L)	TPH-Diesel (No Silica Gel Cleanup) (µg/L)	TPH-Motor Oil (Silica Gel Cleanup) (µg/L)	TPH-Motor Oil (No Silica Gel Cleanup) (µg/L)	TPH-Bunker C (µg/L)	TPH-Hydraulic Oil (µg/L)
Groundwater ESL Criteria		**500**	**640**		**640**		**640**	**640**
B1	12/14/2002	< 50 I		**2,300 GBI**		**9,200**	--	--
B2	12/14/2002	< 50 I		**1,100 GI**		**3,000**	--	--
B3	12/14/2002	< 50 I		440 BGI		**790**	--	--
B4	12/14/2002	< 50 I		< 50		< 250	--	--
B5	12/15/2002	< 50 I		160 BGI		300	--	--
B6	12/14/2002	< 50 I		500 BGI		590	--	--
B8	12/14/2002	< 50 I		**1,100 GBI**		**2,400**	--	--
B9	12/21/2002	110 bI		600 bGI		560	--	--
B11	12/15/2002	< 50 I		150 GBI		420	--	--
B13	12/21/2002	380 AI		**2,100 DI**		**< 2,500**	--	--
B14	12/15/2002	< 50 I		230 GI		**2,000**	--	--
B15	12/21/2002	< 50 I		**1,900 A/MI**		**1,400**	--	--
B16	12/15/2002	< 50 I		410 BGI		510	--	--
B17	12/21/2002	< 50 I		200 BI		< 250	--	--
B18	12/15/2002	< 50 I		300 GI		**750**	--	--
B19	12/21/2002	< 50 I		280 AI		< 250	--	--
B20	12/15/2002	< 50 I		290 BGI		300	--	--
B21	12/21/2002	< 50 I		230 BGI		**720**	--	--
B22	12/21/2002	< 50 I		320 AD		< 250	--	--
B23	12/15/2002	< 50 I		94 BGI		330	--	--
B24	12/15/2002	< 50 I		91 BGI		270	--	--
B25	12/15/2002	< 50 I		380 GI		**2,100**	--	--
B26	12/14/2002	< 50 I		170 BGI		410	--	--
B27	12/14/2002	< 50 I		**920 BGI**		**860**	--	--
B28	12/21/2002	< 50 I		**4,300 BG**		**4,400**	--	--
B29	12/21/2002	430 A		**5,900 BG**		**5,800**	--	--
B30	12/21/2002	< 50 I		280 GI		**1,400**	--	--
B31	5/11/2004	230	**9,200 H**		**8,700 Y**		--	**17,000**
B32	5/11/2004	**12,000**	**66,000 HLY**		**95,000 Y**		--	**140,000**
B33	5/11/2004	< 50	< 50		< 300		--	< 300
B34	5/11/2004	< 50	< 50		< 300		--	< 300
B35	5/12/2004	**570**	130 LY		--		--	--
B36	5/12/2004	51	< 50		--		--	--
B37	5/12/2004	< 50	< 50		--		--	--
B38	5/12/2004	**1,900**	260 LY		--		--	--
B39	5/13/2004	< 50	< 50		< 300		--	< 300
B42	5/13/2004	--	< 50		< 300		--	< 300
B45	5/14/2004	< 50	< 50		< 300		--	< 300
B46	5/14/2004	< 50	< 50		< 300		--	< 300
B47	5/14/2004	< 50	< 50		< 300		--	< 300
B49	5/14/2004	< 50	< 50		< 300		--	< 300

Table 6
Total Petroleum Hydrocarbons in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	TPH-Gasoline	TPH-Diesel		TPH-Motor Oil		TPH-Bunker C	TPH-Hydraulic Oil
		(No Silica Gel Cleanup)	(Silica Gel Cleanup)	(No Silica Gel Cleanup)	(Silica Gel Cleanup)	(No Silica Gel Cleanup)		
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**500**	**640**		**640**		**640**	**640**
B50	5/17/2004	72	< 50		--		--	--
B51	5/17/2004	< 50	< 50		--		--	--
B52	5/17/2004	< 50	< 50		--		--	--
B55	5/18/2004	< 50	150 Y		< 300		310 Y	--
B56	5/18/2004	**500**	**2,600 Y**		**910 LY**		**6,500**	--
B60	5/18/2004	< 50	< 50		< 300		< 300	--
B62	5/19/2004	< 50	< 50		--		--	--
B63	5/19/2004	< 50	< 50		--		--	--
B64	5/19/2004	< 50	**54 HY**		--		--	--
B65	5/19/2004	< 50	< 50		--		--	--
B66	5/19/2004	< 50	< 50		--		--	--
B67	5/19/2004	< 50	100 Y		< 300		--	--
B68	5/20/2004	< 50	< 50		< 300		--	--
B69	5/20/2004	< 50	75 Y		< 300		--	--
B70	5/20/2004	< 50	< 50		< 300		--	--
B71	5/20/2004	< 50	**61 Y**		< 300		--	--
B72	5/20/2004	--	< 50		< 300		--	--
B73	5/21/2004	--	< 50		< 300		--	--
B74	5/21/2004	--	< 50		< 300		--	--
B75	5/21/2004	--	**14,000**		**890 LY**		--	--
B75R	5/28/2004	**1,500 HY**	**240,000**		**12,000 JLY**		--	--
B75R (Hydropunch)	5/28/2004	180 HY	--		--		--	--
B76	5/24/2004	--	< 50		< 300		< 300	--
B77	5/24/2004	--	< 50		< 300		< 300	--
B79	5/24/2004	< 50	< 50		< 300		< 300	--
B80	5/24/2004	< 50	< 50		< 300		< 300	--
B83	5/25/2004	< 50	< 50		--		--	--
B85	5/25/2004	< 50	< 50		--		--	--
B91	5/27/2004	< 50	380 HY		**890**		--	--
B92	5/27/2004	< 50	76 HY		350		--	--
IB-43	4/1/1998	< 5	52		< 50		--	< 300
IB-46	4/1/1998	< 5	< 50		< 50		--	< 300
IB-47	4/1/1998	--	< 50		< 50		--	< 300
OKUS-W1	1/14/1993	410		< 50		**1,400**	--	--
OKUS-W1	5/12/1993	< 10		120		--	--	--
OKUS-W1	8/25/1993	< 10		100		--	--	--
OKUS-W2	1/14/1993	--		**5,400**		--	--	--
OKUS-W2	5/12/1993	**8,800**		**2,800**		--	--	--
OKUS-W2	8/25/1993	**22,000**		**6,500**		--	--	--
OKUS-W2	1/14/1993	**14,000**		--		--	--	--

Table 6
Total Petroleum Hydrocarbons in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	TPH-Gasoline	TPH-Diesel		TPH-Motor Oil		TPH-Bunker C	TPH-Hydraulic Oil
		(No Silica Gel Cleanup)	(Silica Gel Cleanup)	(No Silica Gel Cleanup)	(Silica Gel Cleanup)	(No Silica Gel Cleanup)		
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**500**	**640**		**640**		**640**	**640**
OKUS-W3	1/14/1993	**4,900**		**4,400**	--		--	--
OKUS-W3	5/12/1993	**4,600**		**4,400**	--		--	--
OKUS-W3	8/25/1993	**9,400**		**2,700**	--		--	--
OKUS-W5	1/15/1993	**550**		**2,900**	--		--	--
OKUS-W5	5/12/1993	**550**		**2,100**	--		--	--
OKUS-W6	1/15/1993	**610**		**2,800**	--		--	--
OKUS-W6	5/12/1993	< 10		140	--		--	--
OKUS-W6	8/25/1993	< 10		590	--		--	--
APLUP-W1	10/4/2003	420	100		--		--	--
APLUP-W1	12/8/2003	480	150		--		--	--
APLUP-W2	10/4/2003	150	56		--		--	--
APLUP-W2	12/8/2003	290	120		--		--	--
EW5	10/4/2003	**3,000**	**690**		--		--	--
MW6	10/4/2003	460	160		--		--	--
MW6	12/8/2003	**580**	180		--		--	--
MW7	10/4/2003	**570**	**650**		--		--	--
MW7	12/8/2003	**770**	**600,000**		--		--	--
MW8	10/4/2003	<50	56		--		--	--
MW8	12/8/2003	<50	61		--		--	--
MW2	6/8/2004	< 50	< 50		< 300		--	--
"SPILL AREA" [2]	6/8/2004	--	280 LY		--		--	--

Notes
µg/L - micrograms per liter
"--" - Not Analyzed

< 10	Analyte not detected; reporting limit below the ESL Criteria.
< 2500	Analyte not detected; reporting limit above the ESL Criteria.
510	Analyte detected; result value below the ESL Criteria.
9,400	Analyte detected; result value above the ESL Criteria.

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
I = liquid sample that contains greater than 2 vol. % sediment
M = fuel oil
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
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
[2]"Spill Area" well is probably the same well as "DSMW-1" from USPCI, 1996.
1, 5, 8/1993 - CDM, 1999
4/1998 - CDM, 1998
12/2002 - GAIA, 2003
10, 12/2003 - ETIC, 2004
5, 6/2004 - T&R, 2004

Table 7
Metals in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		(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)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**30**	**36**	**1000**	**2.7**	**1.1**	**180**	**3**	**3.1**	**2.5**	**0.012**	**240**	**8.2**	**5**	**0.19**	**20**	**19**	**81**
B1	12/14/2002	< 6	< 5	150	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B2	12/14/2002	< 6	9.5	170	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B3	12/14/2002	< 6	< 5	130	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B4	12/14/2002	< 6	74	< 50	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B5	12/15/2002	< 6	< 5	< 50	< 4	< 5	< 20	< 50	< 50	< 5	0.87	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B6	12/14/2002	< 6	22	68	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B7	12/14/2002	< 6	< 5	< 50	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B8	12/14/2002	< 6	28	62	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B9	12/21/2002	< 6	< 5	260	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B11	12/15/2002	< 6	< 5	< 50	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B13	12/21/2002	< 6	9.2	260	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B14	12/15/2002	< 6	< 5	350	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B15	12/21/2002	< 6	< 5	580	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B16	12/15/2002	< 6	< 5	76	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B17	12/21/2002	< 6	< 5	58	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B18	12/15/2002	< 6	16.8	1000	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B19	12/21/2002	< 6	< 5	730	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B20	12/15/2002	< 6	< 5	270	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B21	12/21/2002	< 6	7.7	670	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B22	12/21/2002	< 6	< 5	1100	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B23	12/15/2002	< 6	< 50	190	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	110	< 50	< 10	< 10	< 5	< 50	< 50
B24	12/15/2002	< 6	< 5	300	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B25	12/15/2002	< 6	< 5	310	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B26	12/14/2002	< 6	< 5	60	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B27	12/14/2002	< 6	23.1	57	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B28	12/21/2002	< 6	69	280	< 4	< 5	< 20	< 50	< 50	7	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	59
B29	12/21/2002	< 6	18	310	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	< 50
B30	12/21/2002	< 6	5.6	240	< 4	< 5	< 20	< 50	< 50	< 5	< 0.8	< 50	< 50	< 5	< 10	< 5	< 50	55
B31	5/11/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20

Table 7
Metals in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
Groundwater ESL Criteria		**30**	**36**	**1000**	**2.7**	**1.1**	**180**	**3**	**3.1**	**2.5**	**0.012**	**240**	**8.2**	**5**	**0.19**	**20**	**19**	**81**
B32	5/11/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B33	5/11/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B34	5/11/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B35	5/12/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	50
B36	5/12/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B37	5/12/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B38	5/12/2004	--	--	--	--	< 5	29	--	--	10	--	--	49	--	--	--	--	180
B39	5/13/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B42	5/13/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B45	5/14/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B46	5/14/2004	--	--	--	--	< 5	< 10	--	--	4.8	--	--	50	--	--	--	--	65
B47	5/14/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	27
B49	5/14/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B50	5/17/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B51	5/17/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B52	5/17/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B62	5/19/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B63	5/19/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B64	5/19/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	21
B65	5/19/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B66	5/19/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B67	5/19/2004	--	--	--	--	< 5	< 10	--	--	< 3	--	--	< 20	--	--	--	--	< 20
B68	5/20/2004	--	--	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	< 20
B69	5/20/2004	--	--	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	< 20
B70	5/20/2004	--	--	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	< 20
B71	5/20/2004	--	--	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	< 20
B72	5/20/2004	--	< 5	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	< 20
B73	5/21/2004	--	< 5	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	30
B74	5/21/2004	--	5.7	--	--	--	--	--	< 10	< 3	--	--	--	--	--	--	--	63

Table 7
Metals in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
Groundwater ESL Criteria		**30**	**36**	**1000**	**2.7**	**1.1**	**180**	**3**	**3.1**	**2.5**	**0.012**	**240**	**8.2**	**5**	**0.19**	**20**	**19**	**81**
B75	5/21/2004	--	11	--	--	--	--	--	**< 10**	**< 3**	--	--	--	--	--	--	--	< 20
B76	5/24/2004	--	--	--	--	--	--	--	**< 10**	**< 3**	--	--	--	--	--	--	--	< 20
B77	5/24/2004	--	--	--	--	--	--	--	**< 10**	**< 3**	--	--	--	--	--	--	--	< 20
B83	5/25/2004	--	--	--	--	**< 5**	< 10	--	--	**< 3**	--	--	**< 20**	--	--	--	--	< 20
B85	5/25/2004	--	--	--	--	**< 5**	< 10	--	--	**< 3**	--	--	**< 20**	--	--	--	--	< 20
B91	5/27/2004	--	**140**	--	--	--	--	--	**< 10**	**< 3**	--	--	--	--	--	--	--	28
IB-46	4/1/1998	< 5	< 5	170	**< 5**	**< 5**	13	**< 5**	**< 5**	**< 5**	**< 0.5**	< 5	< 5	**< 5**	**< 5**	< 5	14	24
IB-47	4/1/1998	< 5	7	150	**< 5**	**< 5**	14	**< 5**	**< 5**	**< 5**	**< 0.5**	< 5	< 5	**< 5**	**< 5**	< 5	12	< 5
OKUS-W1	2/18/1993	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10
OKUS-W1	5/12/1993	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	2/18/1993	--	**36**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10
OKUS-W2	5/12/1993	--	**93**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	2/18/1993	--	**92**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10
OKUS-W3	5/12/1993	--	**140**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W5	2/18/1993	--	**470**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10
OKUS-W5	5/12/1993	--	**560**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W6	5/12/1993	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	6/8/2004	--	--	--	--	**< 5**	< 10	--	--	**< 3**	--	--	**< 20**	--	--	--	--	25
"SPILL AREA" [2]	6/8/2004	--	--	--	--	--	--	--	**< 10**	**< 3**	--	--	--	--	--	--	--	< 20

Notes

µg/L - micrograms per liter

"--" - Not Analyzed

< 5	Analyte not detected; reporting limit below the ESL Criteria.
< 20	Analyte not detected; reporting limit above the ESL Criteria.
28	Analyte detected; result value below the ESL Criteria.
560	Analyte detected; result value above the ESL Criteria.

ESL - Environmental Screening Level, RWQCB 2005

Samples were filtered in laboratory prior to analysis for the 5, 6/2004 sampling.
Filtration status of other samples not identified in assembling this table.

[1] Sampling dates and related data references:
2, 5/1993 - CDM, 1999
4/1998 - CDM, 1998
12/2002 - GAIA, 2003
5, 6/2004 - T&R, 2004

[2] "Spill Area" well is probably the same well as "DSMW-1" from USPCI, 1996.

Table 8
Polyaromatic Hydrocarbons in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) Anthracene	Benzo(a) Pyrene	Benzo(b) Fluoranthene	Benzo(b,k) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Chrysene	Dibenz(a,h) Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
		(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)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**23**	**30**	**0.73**	**0.027**	**0.014**	**0.029**	--	**0.1**	**0.4**	**0.35**	**0.25**	**8**	**3.9**	**0.029**	**24**	**4.6**	**2**
B42	5/13/2004	< 1.1	< 2.2	< 0.11	**< 0.11**	**0.2**	**< 0.22**	--	**0.26**	< 0.11	0.11	< 0.22	0.44	< 0.22	**0.26**	< 1.1	0.19	0.91
B67	5/19/2004	9.6	< 1.9	**1.2**	**1.4**	**3.4**	**3.3**	--	**3.6**	**0.85**	**1.1**	< 0.19	6.4	1.6	**4.4**	1.1	4	**13**
B68	5/20/2004	< 0.94	< 1.9	< 0.09	**< 0.09**	**< 0.09**	**< 0.19**	--	**< 0.19**	< 0.09	< 0.09	< 0.19	< 0.19	< 0.19	**< 0.09**	< 0.94	< 0.09	**4.2**
B69	5/20/2004	14	< 1.9	0.59	**0.21**	**0.45**	**0.35**	--	**0.55**	0.12	0.2	**0.42**	1.5	< 0.19	**0.4**	1.3	3.9	**4.5**
B70	5/20/2004	< 0.95	< 1.9	< 0.1	**< 0.1**	**< 0.1**	**< 0.19**	--	**< 0.19**	< 0.1	< 0.1	< 0.19	< 0.19	< 0.19	**< 0.1**	< 0.95	0.18	< 0.1
B71	5/20/2004	< 0.95	< 1.9	**1.1**	**0.28**	**0.16**	**< 0.19**	--	**0.3**	< 0.1	0.24	< 0.19	3.1	0.83	**0.17**	2.4	2.3	**2.2**
B72	5/20/2004	2.2	< 1.9	0.17	**0.17**	**0.16**	**< 0.19**	--	**0.24**	< 0.09	0.18	< 0.19	2	< 0.19	**0.16**	< 0.94	0.36	**3.2**
B73	5/21/2004	< 0.94	< 1.9	< 0.09	**< 0.09**	**0.15**	**0.19**	--	**0.33**	< 0.09	0.16	**0.4**	< 0.19	< 0.19	**0.15**	< 0.94	0.24	0.16
B74	5/21/2004	< 0.97	< 1.9	0.2	**0.57**	**1**	**1**	--	**1.1**	0.37	**0.75**	< 0.19	0.93	< 0.19	**1.6**	< 0.97	0.68	1.4
B75	5/21/2004	< 4.8	< 9.5	**19**	**< 0.48**	**2.2**	**3.1**	--	**3.8**	**1.1**	**< 0.48**	**11**	**63**	**220**	**< 0.48**	**27**	**370**	**14**
B76	5/24/2004	< 0.95	< 1.9	< 0.1	**0.17**	**0.28**	**0.21**	--	**0.44**	0.1	0.21	**0.34**	0.21	< 0.19	**0.3**	< 0.95	0.27	0.59
B77	5/24/2004	< 0.95	< 1.9	0.37	**0.48**	**1.3**	**1.2**	--	**1.6**	**0.4**	**0.52**	**1.3**	1.8	< 0.19	**1.3**	< 0.95	1.1	**4.9**
B91	5/27/2004	--	--	0.24	--	--	--	--	**3.5**	--	--	**4.4**	--	--	--	--	1.4	--
B91	5/27/2004	< 1	< 2.1	--	**1.6**	**2.4**	**3.6**	--	--	**1.1**	**2.6**	--	1.9	< 0.21	**2.1**	< 1	--	**2.8**
IB-43	4/1/1998	< 0.5	--	< 0.5	**1.8**	**3**	**1.8**	--	**1.4**	**0.8**	**1.9**	**< 0.5**	**9.3**	< 0.5	**2.8**	--	**15**	**11**
IB-46	4/1/1998	**92**	--	**1.2**	**2.4**	**2.1**	**1.4**	1.4	**0.73**	**0.86**	**1.3**	**< 0.5**	5.8	2.4	**2.9**	--	**7.7**	**8.8**
IB-47	4/1/1998	18	--	**0.81**	**0.24**	**0.3**	**0.22**	0.22	**< 0.5**	0.11	0.24	**< 0.5**	1.9	< 0.5	**< 0.5**	--	3.2	**2.8**
OKUS-W1	2/18/1993	< 0.3	--	< 0.3	**< 0.3**	**< 0.3**	**< 0.3**	--	**< 0.3**	< 0.3	< 0.3	--	< 0.3	< 0.3	**< 0.3**	< 0.3	< 0.3	< 0.3
OKUS-W2	2/18/1993	< 0.3	--	< 0.3	**< 0.3**	**< 0.3**	**< 0.3**	--	**< 0.3**	< 0.3	< 0.3	--	< 0.3	< 0.3	**< 0.3**	10	< 0.3	< 0.3
OKUS-W3	2/18/1993	< 0.3	--	< 0.3	**< 0.3**	**< 0.3**	**< 0.3**	--	**< 0.3**	< 0.3	< 0.3	--	< 0.3	< 0.3	**< 0.3**	10	< 0.3	< 0.3
OKUS-W5	2/18/1993	< 0.3	--	< 0.3	**< 0.3**	**< 0.3**	**< 0.3**	--	**< 0.3**	< 0.3	< 0.3	--	< 0.3	< 0.3	**< 0.3**	< 0.3	< 0.3	< 0.3

Notes
µg/L - micrograms per liter
"--" - Not Analyzed
< 0.09 Analyte not detected; reporting limit below the ESL Criteria.
< 0.48 Analyte not detected; reporting limit above the ESL Criteria.
0.17 Analyte detected; result value below the ESL Criteria.
19 Analyte detected; result value above the ESL Criteria.
Note that samples B42, B67,-77, B91, IB-45, IB46, and IB47 were prepared using silica gel permeation cleanup.
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
2/1993 - CDM, 1999
4/1998 - CDM, 1998
5/2004 - T&R, 2004

Table 9
Semivolatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	1,2,4-Trichlorobenzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	2,4,5-Trichlorophenol (µg/L)	2,4,6-Trichlorophenol (µg/L)	2,4-Dichlorophenol (µg/L)	2,4-Dimethylphenol (µg/L)	2,4-Dinitrophenol (µg/L)	2,4-Dinitrotoluene (µg/L)	2,6-Dinitrotoluene (µg/L)	2-Chloronaphthalene (µg/L)	2-Chlorophenol (µg/L)	2-Methylnaphthalene (µg/L)	2-Methylphenol (µg/L)	2-Nitroaniline (µg/L)	2-Nitrophenol (µg/L)	3,3'-Dichlorobenzidine (µg/L)	3,5,5-Trimethyl-2-Cyclohexene-1-One (µg/L)	3-Nitroaniline (µg/L)	4,6-Dinitro-2-Methylphenol (µg/L)	4-Bromophenyl Phenyl Ether (µg/L)	4-Chloro-3-Methylphenol (µg/L)
Groundwater ESL Criteria		**25**	**14**	**65**	**15**	**11**	**490**	**3**	**110**	**75**	**120**	--	--	**1.8**	--	--	--	--	**250**	--	--	--	--	--
B31	5/11/2004	< 11	< 11	< 11	< 11	**< 11**	< 11	**< 11**	< 11	< 56	< 11	< 11	< 11	**< 11**	< 11	< 11	< 22	< 22	< 22	< 11	< 22	< 56	< 11	< 11
B32	5/11/2004	**< 63**	**< 63**	< 63	**< 63**	**< 63**	< 63	**< 63**	< 63	**< 310**	< 63	< 63	< 63	**< 63**	120	< 63	< 130	< 130	< 130	< 63	< 130	< 310	< 63	< 63
B33	5/11/2004	< 11	< 11	< 11	< 11	**< 11**	< 11	**< 11**	< 11	< 53	< 11	< 11	< 11	**< 11**	< 11	< 11	< 21	< 21	< 21	< 11	< 21	< 53	< 11	< 11
B34	5/11/2004	< 11	< 11	< 11	< 11	**< 11**	< 11	**< 11**	< 11	< 56	< 11	< 11	< 11	**< 11**	< 11	< 11	< 22	< 22	< 22	< 11	< 22	< 56	< 11	< 11
B35	5/12/2004	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	< 10	< 50	< 10	< 10	< 10	**< 10**	< 10	< 10	< 20	< 20	< 20	< 10	< 20	< 50	< 10	< 10
B36	5/12/2004	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	< 10	< 50	< 10	< 10	< 10	**< 10**	< 10	< 10	< 20	< 20	< 20	< 10	< 20	< 50	< 10	< 10
B37	5/12/2004	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	< 10	< 50	< 10	< 10	< 10	**< 10**	< 10	< 10	< 20	< 20	< 20	< 10	< 20	< 50	< 10	< 10
B38	5/12/2004	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 47	< 9.4	< 9.4	< 9.4	**< 9.4**	19	< 9.4	< 19	< 19	< 19	< 9.4	< 19	< 47	< 9.4	< 9.4
B39	5/13/2004	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	**< 9.1**	< 9.1	< 45	< 9.1	< 9.1	< 9.1	**< 9.1**	< 9.1	< 9.1	< 18	< 18	< 18	< 9.1	< 18	< 45	< 9.1	< 9.1
B45	5/14/2004	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 47	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 9.5	< 19	< 19	< 19	< 9.5	< 19	< 47	< 9.5	< 9.5
B46	5/14/2004	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	< 10	< 50	< 10	< 10	< 10	**< 10**	< 10	< 10	< 20	< 20	< 20	< 10	< 20	< 50	< 10	< 10
B47	5/14/2004	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	< 10	< 50	< 10	< 10	< 10	**< 10**	< 10	< 10	< 20	< 20	< 20	< 10	< 20	< 50	< 10	< 10
B49	5/14/2004	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 47	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 9.4	< 19	< 19	< 19	< 9.4	< 19	< 47	< 9.4	< 9.4
B50	5/17/2004	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 47	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 9.5	< 19	< 19	< 19	< 9.5	< 19	< 47	< 9.5	< 9.5
B51	5/17/2004	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 47	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 9.4	< 19	< 19	< 19	< 9.4	< 19	< 47	< 9.4	< 9.4
B52	5/17/2004	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 47	< 9.4	< 9.4	< 9.4	**< 9.4**	< 9.4	< 9.4	< 19	< 19	< 19	< 9.4	< 19	< 47	< 9.4	< 9.4
B83	5/25/2004	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 48	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 9.5	< 19	< 19	< 19	< 9.5	< 19	< 48	< 9.5	< 9.5
B85	5/25/2004	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 48	< 9.5	< 9.5	< 9.5	**< 9.5**	< 9.5	< 9.5	< 19	< 19	< 19	< 9.5	< 19	< 48	< 9.5	< 9.5
IB-43	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IB-46	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IB-47	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	--	--	--	--	--	--	--	--	--
OKUS-W2	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	--	--	--	--	--	--	--	--	--
OKUS-W3	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	--	--	--	--	--	--	--	--	--
OKUS-W5	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	--	--	--	--	--	--	--	--	--
MW-2	6/8/2004	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	**< 9.6**	< 9.6	< 48	< 9.6	< 9.6	< 9.6	**< 9.6**	< 9.6	< 9.6	< 19	< 19	< 19	< 9.6	< 19	< 48	< 9.6	< 9.6

Table 9
Semivolatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date	4-Chlorophenyl Phenyl Ether	4-Methylphenol	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Azobenzene	Benzo(a) Anthracene	Benzo(a)Pyrene	Benzo(b) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(k) Fluoranthene	Benzoic Acid	Benzyl Alcohol	Benzyl Butyl Phthalate	Bis(2-Chloro-ethoxy)Methane	Bis(2-Chloro-ethyl)Ether	Bis(2-Chloro-isopropyl)Ether	Bis(2-Ethyl-hexyl)Phthalate	Chrysene	Dibenz(a,h) Anthracene	Dibenzofuran
		(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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		--	--	--	**23**	**30**	**0.73**	--	**0.027**	**0.014**	**0.029**	**0.1**	**0.4**	--	--	--	--	**61**	**61**	**32**	**0.35**	**0.25**	--
B31	5/11/2004	< 11	< 11	< 22	< 11	< 11	**< 11**	< 11	**< 11**	**1.4 J**	**< 11**	**< 11**	**< 11**	< 56	< 11	< 11	< 11	< 11	< 11	< 11	**< 11**	**< 11**	< 11
B32	5/11/2004	< 63	< 63	< 130	**< 63**	**< 63**	**< 63**	< 63	**< 63**	**< 63**	**< 63**	**< 63**	**< 63**	< 310	< 63	< 63	< 63	**< 63**	**< 63**	**< 63**	**< 63**	**< 63**	< 63
B33	5/11/2004	< 11	< 11	< 21	< 11	< 11	**< 11**	< 11	**< 11**	**1.6 J**	**< 11**	**< 11**	**< 11**	< 53	< 11	< 11	< 11	< 11	< 11	< 11	**< 11**	**< 11**	< 11
B34	5/11/2004	< 11	< 11	< 22	< 11	< 11	**< 11**	< 11	**< 11**	**4.2 J**	**< 11**	**< 11**	**< 11**	< 56	< 11	< 11	< 11	< 11	< 11	< 11	**< 11**	**< 11**	< 11
B35	5/12/2004	< 10	< 10	< 20	< 10	< 10	**< 10**	< 10	**< 10**	**1.3 J**	**< 10**	**< 10**	**< 10**	< 50	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 10**	< 10
B36	5/12/2004	< 10	< 10	< 20	< 10	< 10	**< 10**	< 10	**< 10**	**2.5 J**	**< 10**	**< 10**	**< 10**	< 50	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 10**	< 10
B37	5/12/2004	< 10	< 10	< 20	< 10	< 10	**< 10**	< 10	**< 10**	**2.7 J**	**< 10**	**< 10**	**< 10**	< 50	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 10**	< 10
B38	5/12/2004	< 9.4	< 9.4	< 19	< 9.4	< 9.4	**< 9.4**	< 9.4	**< 9.4**	**0.88 J**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 9.4**	< 9.4
B39	5/13/2004	< 9.1	< 9.1	< 18	< 9.1	< 9.1	**< 9.1**	< 9.1	**< 9.1**	**3 J**	**< 9.1**	**< 9.1**	**< 9.1**	< 45	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	**< 9.1**	**< 9.1**	< 9.1
B45	5/14/2004	< 9.5	< 9.5	< 19	< 9.5	< 9.5	**< 9.5**	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 47	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 9.5**	< 9.5
B46	5/14/2004	< 10	< 10	< 20	< 10	< 10	**< 10**	< 10	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	< 50	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 10**	< 10
B47	5/14/2004	< 10	< 10	< 20	< 10	< 10	**< 10**	< 10	**< 10**	**2.1 J**	**< 10**	**< 10**	**< 10**	< 50	< 10	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 10**	< 10
B49	5/14/2004	< 9.4	< 9.4	< 19	< 9.4	< 9.4	**< 9.4**	< 9.4	**< 9.4**	**< 9.4**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 9.4**	< 9.4
B50	5/17/2004	< 9.5	< 9.5	< 19	< 9.5	< 9.5	**< 9.5**	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 47	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 9.5**	< 9.5
B51	5/17/2004	< 9.4	< 9.4	< 19	< 9.4	< 9.4	**< 9.4**	< 9.4	**< 9.4**	**1.6 J**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	26	**< 9.4**	**< 9.4**	< 9.4
B52	5/17/2004	< 9.4	< 9.4	< 19	< 9.4	< 9.4	**< 9.4**	< 9.4	**< 9.4**	**4.4 J**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 9.4**	< 9.4
B83	5/25/2004	< 9.5	< 9.5	< 19	< 9.5	< 9.5	**< 9.5**	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 48	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 9.5**	< 9.5
B85	5/25/2004	< 9.5	< 9.5	< 19	< 9.5	< 9.5	**< 9.5**	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 48	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 9.5**	< 9.5
IB-43	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IB-46	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IB-47	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**57**	--	--	--
OKUS-W2	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**130**	--	--	--
OKUS-W3	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**190**	--	--	--
OKUS-W5	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**150**	--	--	--
MW-2	6/8/2004	< 9.6	< 9.6	< 19	< 9.6	< 9.6	**< 9.6**	< 9.6	**< 9.6**	**< 9.6**	**< 9.6**	**< 9.6**	**< 9.6**	< 48	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	**< 9.6**	**< 9.6**	< 9.6

Table 9
Semivolatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date	Diethyl Phthalate (µg/L)	Dimethyl Phthalate (µg/L)	Di-n-Butyl-phthalate (µg/L)	Di-n-Octyl-phthalate (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Hexachloro-benzene (µg/L)	Hexachloro-butadiene (µg/L)	Hexachloro-cyclopentadiene (µg/L)	Hexachloro-ethane (µg/L)	Indeno(1,2,3-cd) Pyrene (µg/L)	Methanamine, n-Methyl-n-Nitroso (µg/L)	Naphthalene (µg/L)	Nitrobenzene (µg/L)	n-Nitroso-Di-n-Propylamine (µg/L)	n-Nitroso-diphenylamine (µg/L)	p-Chloroaniline (µg/L)	Pentachloro-phenol (µg/L)	Phenanthrene (µg/L)	Phenol (µg/L)	p-Nitroaniline (µg/L)	Pyrene (µg/L)
Groundwater ESL Criteria		**1.5**	**1.5**	--	--	**8**	**3.9**	**3.7**	**4.7**	**--**	**12**	**0.029**	--	**24**	--	--	--	**5**	**7.9**	**4.6**	**1,300**	--	**2**
B31	5/11/2004	**< 11**	**< 11**	< 11	< 11	**< 11**	**< 11**	**< 11**	**< 11**	< 56	< 11	**< 11**	< 11	< 11	< 11	< 11	< 11	**< 11**	**< 22**	**< 11**	< 11	< 22	**< 11**
B32	5/11/2004	**< 63**	**< 63**	< 63	< 63	**< 63**	**< 63**	**< 63**	**< 63**	< 310	**< 63**	**< 63**	< 63	**170**	< 63	< 63	< 63	**< 63**	**< 130**	**< 63**	< 63	< 130	**< 63**
B33	5/11/2004	**< 11**	**< 11**	< 11	< 11	**< 11**	**< 11**	**< 11**	**< 11**	< 53	< 11	**< 11**	< 11	< 11	< 11	< 11	< 11	**< 11**	**< 21**	**< 11**	< 11	< 21	**< 11**
B34	5/11/2004	**< 11**	**< 11**	< 11	< 11	**< 11**	**< 11**	**< 11**	**< 11**	< 56	< 11	**< 11**	< 11	< 11	< 11	< 11	< 11	**< 11**	**< 22**	**< 11**	< 11	< 22	**12**
B35	5/12/2004	**< 10**	**< 10**	< 10	< 10	**< 10**	**< 10**	**< 10**	**< 10**	< 50	< 10	**< 10**	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 20**	**< 10**	< 10	< 20	**< 10**
B36	5/12/2004	**< 10**	**< 10**	< 10	< 10	**< 10**	**< 10**	**< 10**	**< 10**	< 50	< 10	**< 10**	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 20**	**< 10**	< 10	< 20	**< 10**
B37	5/12/2004	**< 10**	**< 10**	< 10	< 10	**< 10**	**< 10**	**< 10**	**< 10**	< 50	< 10	**< 10**	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 20**	**< 10**	< 10	< 20	**< 10**
B38	5/12/2004	**< 9.4**	**< 9.4**	< 9.4	< 9.4	**< 9.4**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	**< 9.4**	< 9.4	10	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 19**	**< 9.4**	< 9.4	< 19	**< 9.4**
B39	5/13/2004	**< 9.1**	**< 9.1**	< 9.1	< 9.1	**< 9.1**	**< 9.1**	**< 9.1**	**< 9.1**	< 45	< 9.1	**< 9.1**	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	**< 9.1**	**< 18**	**< 9.1**	< 9.1	< 18	**< 9.1**
B45	5/14/2004	**< 9.5**	**< 9.5**	< 9.5	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 47	< 9.5	**< 9.5**	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 19**	**< 9.5**	< 9.5	< 19	**< 9.5**
B46	5/14/2004	**< 10**	**< 10**	< 10	< 10	**< 10**	**< 10**	**< 10**	**< 10**	< 50	< 10	**< 10**	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 20**	**< 10**	< 10	< 20	**< 10**
B47	5/14/2004	**< 10**	**< 10**	< 10	< 10	**< 10**	**< 10**	**< 10**	**< 10**	< 50	< 10	**< 10**	< 10	< 10	< 10	< 10	< 10	**< 10**	**< 20**	**< 10**	< 10	< 20	**< 10**
B49	5/14/2004	**< 9.4**	**< 9.4**	< 9.4	< 9.4	**< 9.4**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	**< 9.4**	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 19**	**< 9.4**	< 9.4	< 19	**< 9.4**
B50	5/17/2004	**< 9.5**	**< 9.5**	< 9.5	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 47	< 9.5	**< 9.5**	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 19**	**< 9.5**	< 9.5	< 19	**< 9.5**
B51	5/17/2004	**< 9.4**	**< 9.4**	< 9.4	< 9.4	**< 9.4**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	**< 9.4**	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 19**	**< 9.4**	< 9.4	< 19	**< 9.4**
B52	5/17/2004	**< 9.4**	**< 9.4**	< 9.4	< 9.4	**< 9.4**	**< 9.4**	**< 9.4**	**< 9.4**	< 47	< 9.4	**< 9.4**	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	**< 9.4**	**< 19**	**< 9.4**	< 9.4	< 19	**< 9.4**
B83	5/25/2004	**< 9.5**	**< 9.5**	< 9.5	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 48	< 9.5	**< 9.5**	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 19**	**< 9.5**	< 9.5	< 19	**< 9.5**
B85	5/25/2004	**< 9.5**	**< 9.5**	< 9.5	< 9.5	**< 9.5**	**< 9.5**	**< 9.5**	**< 9.5**	< 48	< 9.5	**< 9.5**	< 9.5	< 9.5	< 9.5	< 9.5	< 9.5	**< 9.5**	**< 19**	**< 9.5**	< 9.5	< 19	**< 9.5**
IB-43	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
IB-46	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
IB-47	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	--	--
OKUS-W1	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W5	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	6/8/2004	**< 9.6**	**< 9.6**	< 9.6	< 9.6	**< 9.6**	**< 9.6**	**< 9.6**	**< 9.6**	< 48	< 9.6	**< 9.6**	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	**< 9.6**	**< 19**	**< 9.6**	< 9.6	< 19	**< 9.6**

Notes
µg/L - micrograms per liter
"--" - Not Analyzed
< 10 Analyte not detected; reporting limit below the ESL Criteria.
< 63 Analyte not detected; reporting limit above the ESL Criteria.
26 Analyte detected; result value below the ESL Criteria.
170 Analyte detected; result value above the ESL Criteria.
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
2/1993 - CDM, 1999
4/1998 - CDM, 1998
5, 6/2004 - T&R, 2004

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

Location ID	Sample Date [1]	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-Dichloropropene	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Chloroethyl Vinyl Ether	2-Chlorotoluene	2-Phenylbutane
		(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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**930**	**62**	**190**	**350**	**47**	**25**	--	--	--	**25**	--	**0.2**	**150**	**14**	**200**	**100**	--	**65**	**53**	**15**	--	--	--	--
B1	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B2	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B3	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B4	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B5	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B6	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B8	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B9	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B11	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B13	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B14	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B15	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B16	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B17	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B18	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B19	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B20	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B21	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B22	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B23	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B24	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B25	12/15/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B26	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B27	12/14/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B28	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B29	12/21/2002	--	< 1	< 1	< 1	< 1	< 1	--	--	--	--	--	--	--	< 1	< 1	< 1	--	< 1	--	< 1	--	< 1	--	--
B30	12/21/2002	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--	--	--	--	< 0.5	< 0.5	< 0.5	--	< 0.5	--	< 0.5	--	< 0.5	--	--
B31	5/11/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9.9	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B32	5/11/2004	< 63	**< 63**	< 63	< 63	**< 63**	**< 63**	< 63	< 63	< 63	**< 63**	1,100	**< 63**	< 6.3	**< 63**	< 6.3	< 63	290	< 63	**< 63**	**< 63**	< 63	--	< 63	< 63
B33	5/11/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B34	5/11/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B35	5/12/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B36	5/12/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B37	5/12/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	4-Chlorotoluene	Acetone	Benzene	Bromobenzene	Bromo-dichloro-methane	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	Cymene	Dibromomethane	Diisopropyl Ether	ETBE
		(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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		--	**1,500**	**46**	--	**170**	**3,200**	**160**	--	**9.3**	--	--	**25**	--	--	**12**	**330**	**41**	**590**	--	--	--	--	--
B1	12/14/2002	--	--	< 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	--	--	--	--
B2	12/14/2002	--	--	< 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	--	--	--	--
B3	12/14/2002	--	--	< 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	--	--	--	--
B4	12/14/2002	--	--	< 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	--	--	--	--
B5	12/15/2002	--	--	< 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	--	--	--	--
B6	12/14/2002	--	--	< 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	--	--	--	--
B8	12/14/2002	--	--	< 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	--	--	--	--
B9	12/21/2002	--	--	< 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	--	--	--	--
B11	12/15/2002	--	--	< 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	--	--	--	--
B13	12/21/2002	--	--	1.6	--	< 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	--	--	--	--
B14	12/15/2002	--	--	< 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	--	--	--	--
B15	12/21/2002	--	--	< 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	--	--	--	--
B16	12/15/2002	--	--	< 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	--	--	--	--
B17	12/21/2002	--	--	< 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	--	--	--	--
B18	12/15/2002	--	--	< 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	--	--	--	--
B19	12/21/2002	--	--	< 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	--	--	--	--
B20	12/15/2002	--	--	< 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	--	--	--	--
B21	12/21/2002	--	--	< 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	--	--	--	--
B22	12/21/2002	--	--	< 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	--	--	--	--
B23	12/15/2002	--	--	< 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	--	--	--	--
B24	12/15/2002	--	--	< 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	--	--	--	--
B25	12/15/2002	--	--	< 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	--	--	--	--
B26	12/14/2002	--	--	< 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	--	--	--	--
B27	12/14/2002	--	--	< 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	--	--	--	--
B28	12/21/2002	--	--	< 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	--	--	--	--
B29	12/21/2002	--	--	**280**	--	< 1	< 1	< 1	--	< 1	< 1	< 1	< 1	--	< 1	< 1	2	< 1	1.2	< 1	--	--	--	--
B30	12/21/2002	--	--	0.66	--	< 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	--	--	--	--
B31	5/11/2004	< 5	< 20	15	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B32	5/11/2004	< 63	< 250	**73**	< 63	< 63	< 63	< 130	< 63	**< 63**	< 63	< 130	**< 63**	< 130	< 63	**< 130**	< 63	**< 130**	< 63	< 63	< 63	< 63	< 6.3	< 6.3
B33	5/11/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B34	5/11/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B35	5/12/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B36	5/12/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B37	5/12/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Ethylbenzene	Freon 113	Hexachloro-butadiene	Isopropyl-benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methyl n-Butyl Ketone	Methyl Tert-Amyl Ether	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/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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**290**	--	**4.7**	--	**14,000**	**170**	--	--	**2,200**	**1,800**	**24**	--	**120**	--	**100**	**18,000**	--	**130**	**590**	--	**360**	--	**3.8**	**100**
B1	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B2	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	0.8	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B3	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	0.91	< 0.5	< 0.5	< 0.5	--	< 0.5	0.93
B4	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B5	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B6	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B8	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	0.6	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B9	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	0.99
B11	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	0.86	< 0.5	< 0.5	< 0.5	--	< 0.5	0.92
B13	12/21/2002	6.7	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	8.2	< 0.5	< 0.5	< 0.5	--	< 0.5	4.4
B14	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B15	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B16	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	0.58	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B17	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B18	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B19	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B20	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B21	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B22	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B23	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	1.6	< 0.5	< 0.5	< 0.5	--	< 0.5	0.66
B24	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B25	12/15/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B26	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B27	12/14/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	1.4	< 0.5	< 0.5	< 0.5	--	< 0.5	0.7
B28	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	< 0.5	< 0.5
B29	12/21/2002	2.2	--	--	--	--	--	--	--	< 1	< 5	--	--	< 1	--	--	--	--	3.7	< 1	< 1	< 1	--	< 1	12
B30	12/21/2002	< 0.5	--	--	--	--	--	--	--	< 0.5	< 5	--	--	< 0.5	--	--	--	--	< 5	< 0.5	< 0.5	< 0.5	--	< 0.5	0.57
B31	5/11/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	9.7
B32	5/11/2004	140	< 63	**< 63**	< 63	< 130	< 130	< 130	< 6.3	< 250	< 6.3	**210**	< 63	< 63	140	< 63	< 130	< 63	< 63	< 63	< 63	< 63	< 630	**< 130**	**1,690**
B33	5/11/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B34	5/11/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B35	5/12/2004	14	< 5	**< 5**	17	< 10	< 10	< 10	< 0.5	< 20	8.1	< 5	< 5	< 5	15	< 5	< 10	6.8	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B36	5/12/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B37	5/12/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	1,1,1,2-Tetrachloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethylene (µg/L)	1,1-Dichloropropene (µg/L)	1,2,3-Trichlorobenzene (µg/L)	1,2,3-Trichloropropane (µg/L)	1,2,4-Trichlorobenzene (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,2-Dibromo-3-Chloropropane (µg/L)	1,2-Dibromoethane (µg/L)	1,2-Dichlorobenzene (µg/L)	1,2-Dichloroethane (µg/L)	1,2-Dichloropropane (µg/L)	1,3,5-Trimethylbenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,3-Dichloropropene (µg/L)	1,4-Dichlorobenzene (µg/L)	2,2-Dichloropropane (µg/L)	2-Chloroethyl Vinyl Ether (µg/L)	2-Chlorotoluene (µg/L)	2-Phenylbutane (µg/L)
Groundwater ESL Criteria		**930**	**62**	**190**	**350**	**47**	**25**	--	--	--	**25**	--	**0.2**	**150**	**14**	**200**	**100**	--	**65**	**53**	**15**	--	--	--	--
B38	5/12/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6.6	**< 5**	< 0.5	< 5	1.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	5.9
B39	5/13/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B45	5/14/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B46	5/14/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B47	5/14/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B49	5/14/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B50	5/17/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B51	5/17/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B52	5/17/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B55	5/18/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B56	5/18/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	8.1	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B60	5/18/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B79	5/24/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B80	5/24/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B83	5/25/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B85	5/25/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B91	5/27/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
B92	5/27/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**< 5**	< 0.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
IB-43	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IB-46	4/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	2/18/1993	--	5	18	--	< 5	< 5	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	15	--	--
OKUS-W2	5/12/1993	--	< 5	< 5	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--
OKUS-W2	8/25/1993	--	< 5	20	--	< 5	21	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	20	--	--
OKUS-W3	1/14/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	2/18/1993	--	< 5	11	--	< 5	< 5	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	< 5	--	--
OKUS-W3	5/12/1993	--	< 5	< 5	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--
OKUS-W3	8/25/1993	--	< 5	10	--	< 5	3.2	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	5.4	--	--
OKUS-W5	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W5	2/18/1993	--	< 5	4.2	--	< 5	< 5	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	< 5	--	--
OKUS-W5	5/12/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	4-Chlorotoluene	Acetone	Benzene	Bromobenzene	Bromo-dichloro-methane	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	Cymene	Dibromomethane	Diisopropyl Ether	ETBE
		(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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		--	**1,500**	**46**	--	**170**	**3,200**	**160**	--	**9.3**	--	--	**25**	--	--	**12**	**330**	**41**	**590**	--	--	--	--	--
B38	5/12/2004	< 5	< 20	**65**	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B39	5/13/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B45	5/14/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B46	5/14/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B47	5/14/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B49	5/14/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B50	5/17/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B51	5/17/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B52	5/17/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B55	5/18/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B56	5/18/2004	< 5	< 20	30	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	4.4	< 0.5
B60	5/18/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B79	5/24/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B80	5/24/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B83	5/25/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B85	5/25/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B91	5/27/2004	< 5	< 20	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
B92	5/27/2004	< 5	33	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	< 0.5	< 0.5
IB-43	4/1/1998	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IB-46	4/1/1998	--	--	< 0.5	--	--	--	--	< 0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W1	1/14/1993	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	1/14/1993	--	--	**480**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	2/18/1993	--	--	--	--	--	< 5	--	--	--	52	--	14	--	16	--	290	--	--	9	--	--	--	--
OKUS-W2	5/12/1993	--	--	**220**	--	--	< 5	--	--	--	--	--	**26**	--	< 5	--	< 5	--	< 5	< 5	--	--	--	--
OKUS-W2	8/25/1993	--	--	**420**	--	--	< 5	--	--	--	< 5	--	**78**	--	**18**	--	< 5	--	< 5	10	--	--	--	--
OKUS-W3	1/14/1993	--	--	**230**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	2/18/1993	--	--	--	--	--	< 5	--	--	--	24	--	15	--	< 5	--	140	--	--	< 5	--	--	--	--
OKUS-W3	5/12/1993	--	--	**290**	--	--	< 5	--	--	--	--	--	16	--	< 5	--	< 5	--	< 5	< 5	--	--	--	--
OKUS-W3	8/25/1993	--	--	**280**	--	--	< 5	--	--	--	< 5	--	22	--	3	--	< 5	--	< 5	3.3	--	--	--	--
OKUS-W5	1/15/1993	--	--	**53**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W5	2/18/1993	--	--	--	--	--	5.9	--	--	--	13	--	< 5	--	< 5	--	5.9	--	--	0.7	--	--	--	--
OKUS-W5	5/12/1993	--	--	**81**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Ethylbenzene	Freon 113	Hexachloro-butadiene	Isopropyl-benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methyl n-Butyl Ketone	Methyl Tert-Amyl Ether	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/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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**290**	--	**4.7**	--	**14,000**	**170**	--	--	**2,200**	**1,800**	**24**	--	**120**	--	**100**	**18,000**	--	**130**	**590**	--	**360**	--	**3.8**	**100**
B38	5/12/2004	13	< 5	**< 5**	40	< 10	< 10	< 10	< 0.5	< 20	< 0.5	6.9	7	< 5	91	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	6.1
B39	5/13/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B45	5/14/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B46	5/14/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	5.2	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B47	5/14/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B49	5/14/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B50	5/17/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B51	5/17/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B52	5/17/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B55	5/18/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B56	5/18/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	17	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	18.1
B60	5/18/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B79	5/24/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B80	5/24/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B83	5/25/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B85	5/25/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B91	5/27/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	< 0.5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
B92	5/27/2004	< 5	< 5	**< 5**	< 5	< 10	< 10	< 10	< 0.5	< 20	3.3	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 50	**< 10**	< 5
IB-43	4/1/1998	< 0.5	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
IB-46	4/1/1998	< 0.5	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	< 0.5	--	--	--	--	--	< 0.5
OKUS-W1	1/14/1993	220	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6	--	--	--	--	--	< 5
OKUS-W2	1/14/1993	**8,500**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92	--	--	--	--	--	< 5
OKUS-W2	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W2	5/12/1993	**4,600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	47	--	--	--	--	--	100
OKUS-W2	8/25/1993	**10,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92	--	--	--	--	--	**210**
OKUS-W3	1/14/1993	**2,600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42	--	--	--	--	--	44
OKUS-W3	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W3	5/12/1993	**3,500**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	60	--	--	--	--	--	72
OKUS-W3	8/25/1993	**4,300**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	55	--	--	--	--	--	41
OKUS-W5	1/15/1993	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	--	--	--	--	--	20
OKUS-W5	2/18/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W5	5/12/1993	250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	--	--	--	--	--	37

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	1,1,1,2-Tetrachloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethylene (µg/L)	1,1-Dichloropropene (µg/L)	1,2,3-Trichlorobenzene (µg/L)	1,2,3-Trichloropropane (µg/L)	1,2,4-Trichlorobenzene (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,2-Dibromo-3-Chloropropane (µg/L)	1,2-Dibromoethane (µg/L)	1,2-Dichlorobenzene (µg/L)	1,2-Dichloroethane (µg/L)	1,2-Dichloropropane (µg/L)	1,3,5-Trimethylbenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,3-Dichloropropene (µg/L)	1,4-Dichlorobenzene (µg/L)	2,2-Dichloropropane (µg/L)	2-Chloroethyl Vinyl Ether (µg/L)	2-Chlorotoluene (µg/L)	2-Phenylbutane (µg/L)
Groundwater ESL Criteria		**930**	**62**	**190**	**350**	**47**	**25**	--	--	--	**25**	--	**0.2**	**150**	**14**	**200**	**100**	--	**65**	**53**	**15**	--	--	--	--
OKUS-W6	1/15/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W6	7/16/1993	--	< 5	< 5	--	< 5	< 5	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--
OKUS-W6	8/25/1993	--	< 5	< 5	--	< 5	< 5	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	< 5	--	--
APLUP-W1	10/4/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APLUP-W1	12/8/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APLUP-W2	10/4/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APLUP-W2	12/8/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EW5	10/4/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	10/4/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	12/8/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	10/4/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/8/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW8	10/4/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW8	12/8/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	6/8/2004	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	4-Chlorotoluene	Acetone	Benzene	Bromobenzene	Bromo-dichloro-methane	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	Cymene	Dibromomethane	Diisopropyl Ether	ETBE
		(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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		--	**1,500**	**46**	--	**170**	**3,200**	**160**	--	**9.3**	--	--	**25**	--	--	**12**	**330**	**41**	**590**	--	--	--	--	--
OKUS-W6	1/15/1993	--	--	**50**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OKUS-W6	7/16/1993	--	--	2.5	--	--	< 5	--	--	--	--	--	< 5	--	< 5	--	< 5	--	--	< 5	--	--	--	--
OKUS-W6	8/25/1993	--	--	2.6	--	--	< 5	--	--	--	< 5	--	< 5	--	< 5	--	< 5	--	< 5	< 5	--	--	--	--
APLUP-W1	10/4/2003	--	--	33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APLUP-W1	12/8/2003	--	--	34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APLUP-W2	10/4/2003	--	--	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APLUP-W2	12/8/2003	--	--	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EW5	10/4/2003	--	--	**110**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	10/4/2003	--	--	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	12/8/2003	--	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	10/4/2003	--	--	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/8/2003	--	--	**58**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW8	10/4/2003	--	--	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW8	12/8/2003	--	--	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	6/8/2004	< 5	< 20	**< 5**	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 10	< 5	< 5	< 5	< 5	--	--

Table 10
Volatile Organic Compounds in Groundwater
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

Location ID	Sample Date [1]	Ethylbenzene	Freon 113	Hexachloro-butadiene	Isopropyl-benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methyl n-Butyl Ketone	Methyl Tert-Amyl Ether	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/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)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Groundwater ESL Criteria		**290**	--	**4.7**	--	**14,000**	**170**	--	--	**2,200**	**1,800**	**24**	--	**120**	--	**100**	**18,000**	--	**130**	**590**	--	**360**	--	**3.8**	**100**
OKUS-W6	1/15/1993	170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	--	--	--	--	--	19
OKUS-W6	7/16/1993	< 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	< 5
OKUS-W6	8/25/1993	4.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 5	--	--	--	--	--	1.3
APLUP-W1	10/4/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	1.1	--	--	--	--	--	6.1
APLUP-W1	12/8/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	0.9	--	--	--	--	--	3.3
APLUP-W2	10/4/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	3.0
APLUP-W2	12/8/2003	--	--	--	--	--	--	--	--	--	0.5	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	1.9
EW5	10/4/2003	--	--	--	--	--	--	--	--	--	<1.7	--	--	--	--	--	--	--	20	--	--	--	--	--	20.9
MW6	10/4/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	26.1
MW6	12/8/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	0.7	--	--	--	--	--	32.1
MW7	10/4/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	4.8	--	--	--	--	--	14.1
MW7	12/8/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	2.4	--	--	--	--	--	17
MW8	10/4/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	<0.50
MW8	12/8/2003	--	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	0.6
MW2	6/8/2004	< 5	< 5	< 5	< 5	< 10	< 10	< 10	--	< 20	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5

Notes
µg/L - micrograms per liter
"--" - Not Analyzed
< 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.
ESL - Environmental Screening Level, RWQCB 2005
[1]Sampling dates and related data references:
1, 2, 5, 7, 8/1993 - CDM, 1999
4/1998 - CDM, 1998
12/2002 - GAIA, 2003
10, 12/2003 - ETIC, 2004
5, 6/2004 - T&R, 2004

Table 11
Soluble Metals in Soil
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

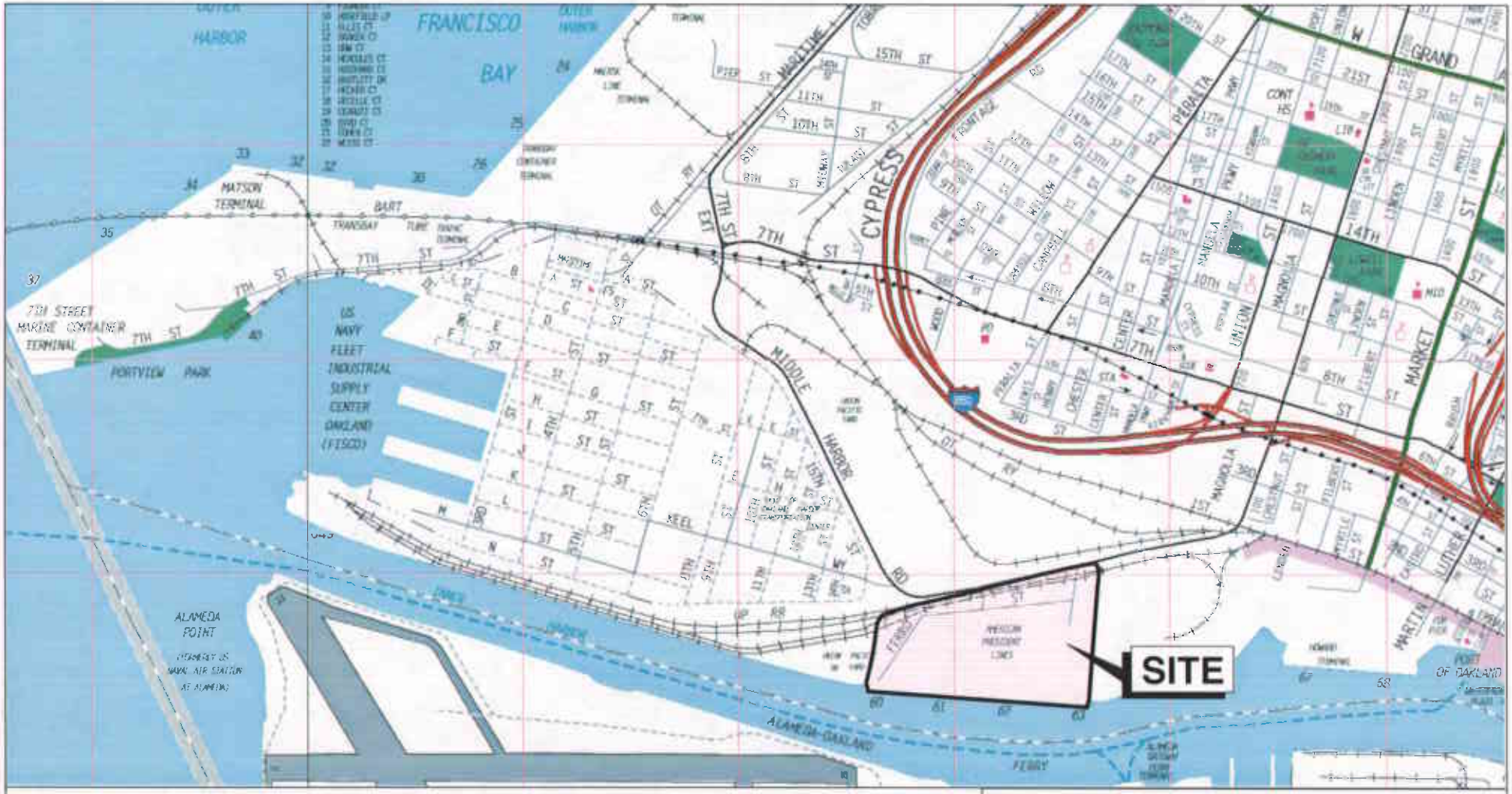
Location ID	Depth	Sample Date [1]	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Nickel (mg/L)	Vanadium (mg/L)
STLC Criteria			5	25	5	20	24
B39	6	5/13/2004	--	--	2.8	<1	16
B40	4	5/13/2004	--	--	2.1	--	--
B40	6	5/13/2004	--	--	3.1	--	--
B44	4	5/13/2004	--	--	0.23	--	--
B47	4	5/14/2004	--	--	0.82	--	--
B49	6	5/14/2004	--	1.7	1.4	--	--
B50	4	5/17/2004	0.96	--	--	--	--
B52	7	5/17/2004	--	--	0.45	--	--
B56	2	5/18/2004	--	--	**32**	--	--
B59	2	5/18/2004	--	--	1.1	--	--
B59	4	5/18/2004	--	--	0.58	--	--
B69	2	5/20/2004	--	--	2.2	--	--
B69	4	5/20/2004	--	--	2.8	--	--
B70	4	5/20/2004	--	--	2.2	--	--
B72	2	5/20/2004	--	--	<0.15	--	--
B74	2	5/21/2004	--	--	2.6	--	--
B81	2	5/24/2004	<0.5	--	0.52	--	--
B82	2	5/24/2004	<0.5	--	--	--	--

Notes
mg/L - miligrams per liter, analyses performed using California Waste Extraction Test
"--" - Not Analyzed
< 500 Analyte not detected; reporting limit below the STLC Criteria.
450 Analyte detected; result value below the STLC Criteria.
32,000 Analyte detected; result value above the STLC Criteria.
STLC - Soluble Threshold Limit Concentration, California Code of Regulations Title 22, Section 66261
[1]Sampling dates and related data references:
5/2004 - T&R, 2004

Table 12
Methane and Hydrogen Sulfide in Soil Gas
Subsurface Environmental Assessment
Berths 60-63 Yard and Gate Redevelopment Project
Port of Oakland, California

		Methane		Hydrogen Sulfide
Method		Field	D-1946	Field
Units		% vol.	% vol.	ppm
H&S Criterion		0.5	0.5	--
Sample ID	**Date Sampled** [1]			
B69 (SG)	5/28/04	0	--	0
B89 (SG)	5/27/04	0.2	--	0
B90 (SG)	5/27/04	0.1	--	0
B91 (SG)	5/27/04	1	--	1
B92 (SG)	5/27/04	0.1	--	--
B93 (SG)	5/27/04	3	--	1
B93 (SG) - Dup	5/28/04	--	14	--
B93 (SG) - Dup2	5/28/04	--	13	--
B94 (SG)	5/27/04	0.4	--	0
B95 (SG)	5/28/04	0.0	--	0
B96 (SG)	5/28/04	0.1	--	0

Notes
-- not analyzed
ppm - parts per million
H&S Criterion for Intrusive Construction = 10 % of the Lower Explosive Limit or 0.5% by volume
[1]Sampling dates and related data references:
5/2004 - T&R, 2004



Base map: The Thomas Guide
Alameda County
1999

0 1/4 1/2 Mile

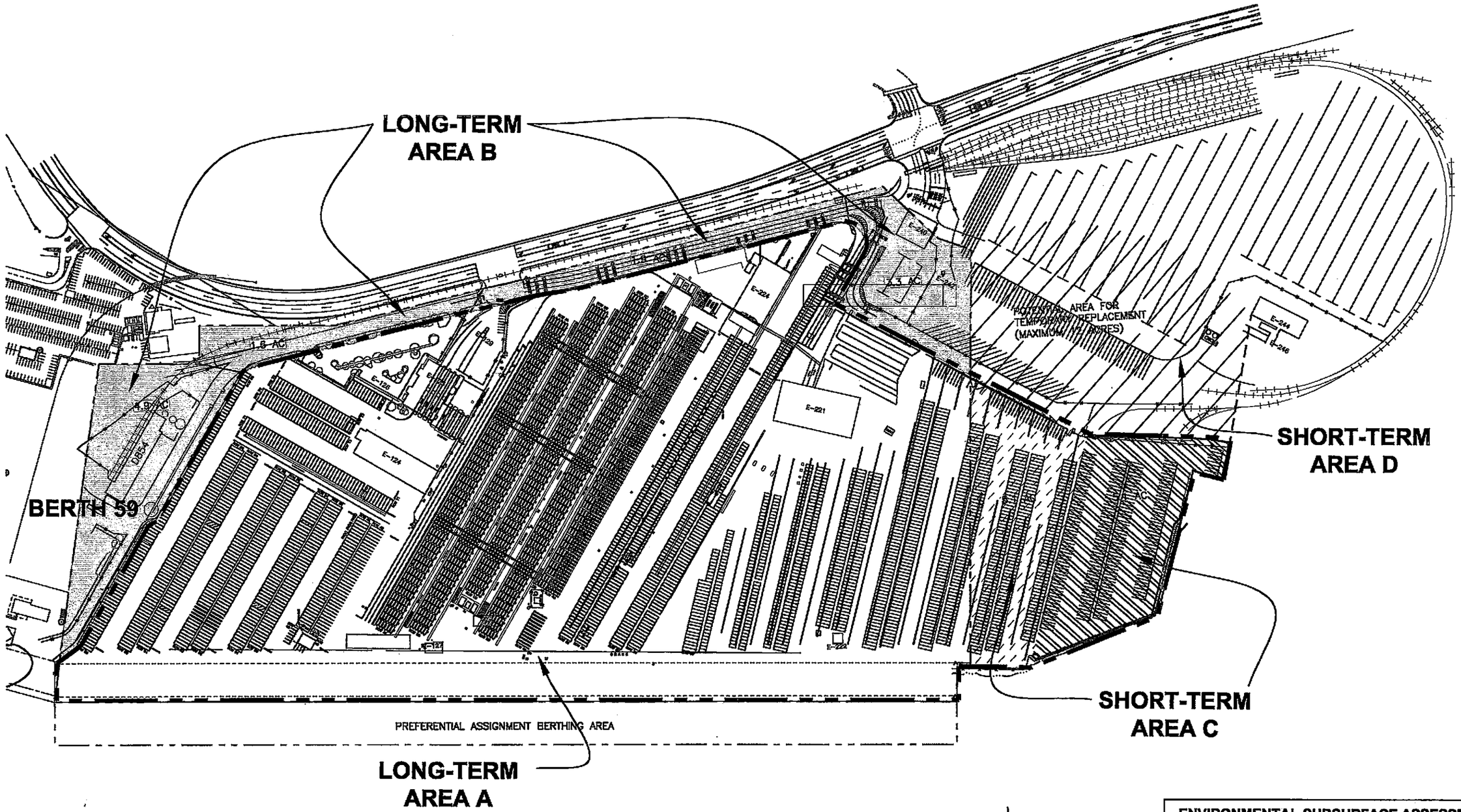
Approximate scale

ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SITE LOCATION MAP

Date 03/30/05	Project No. 4000.04	Figure 1

Treadwell&Rollo



EXPLANATION

Short-Term Area to be Used by APL Only During Construction of the Redevelopment Project

Long-Term Area to be Used by APL During and After Construction of the Redevelopment Project

Outline of Redevelopement Project Area (Site)

Outline of Current Berths 60-63 Terminal

N

0 300 Feet

Approximate scale

4004.04/Ex-Layout.dwg

ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

REDEVELOPMENT AREAS

Date 03/30/05	Project No. 4000.04	Figure 2

Treadwell&Rollo

NOTE:
THE DEVELOPMENT PLAN SHOWN ON THIS DRAWING IS TO SHOW THE ARRANGEMENT OF THE DIFFERENT FEATURES IN THE CONTAINER YARD (GATES, BUILDINGS, PARKING AREA, CONTAINER STORAGE AREA, ELECTRICAL SUBSTATIONS, ETC.) AND IS FOR THE CONTRACTORS INFORMATION ONLY.

LIMIT OF HEAVY PAVEMENT

KEY NOTES

1. RECEIVING GATE AND TRUCK SCALES
2. DELIVERY GATE
3. RECEIVING QUEUE
4. GUARD HOUSE
5. TROUBLE TRUCK PARKING
6. AUTO PARKING
7. UTR AND YARD VEHICLES PARKING
8. REEFER WASH FACILITY
9. MAINTENANCE & REPAIR BUILDING
10. CHASSIS PARKING
11. EMPTY CONTAINER STACKING AREA
12. MARINE OPERATIONS BUILDING
13. HATCH COVER AREA
14. REEFER RACKS
15. ADMINISTRATION BUILDING (EXISTING)
16. OPTICAL CHARACTER RECOGNITION (OCR) PORTAL
17. RTG REPAIR PAD
18. FUELING AREA
19. PRE-TRIP RACK
20. GEN-SET REPAIR
21. PRE-MOUNTS

N

200 0 200 Feet

P:\5083 Berth 60-63\Dwgs\G5.dwg
1=1 09-17-2004
Source: Moffat & Nichol, 2004.

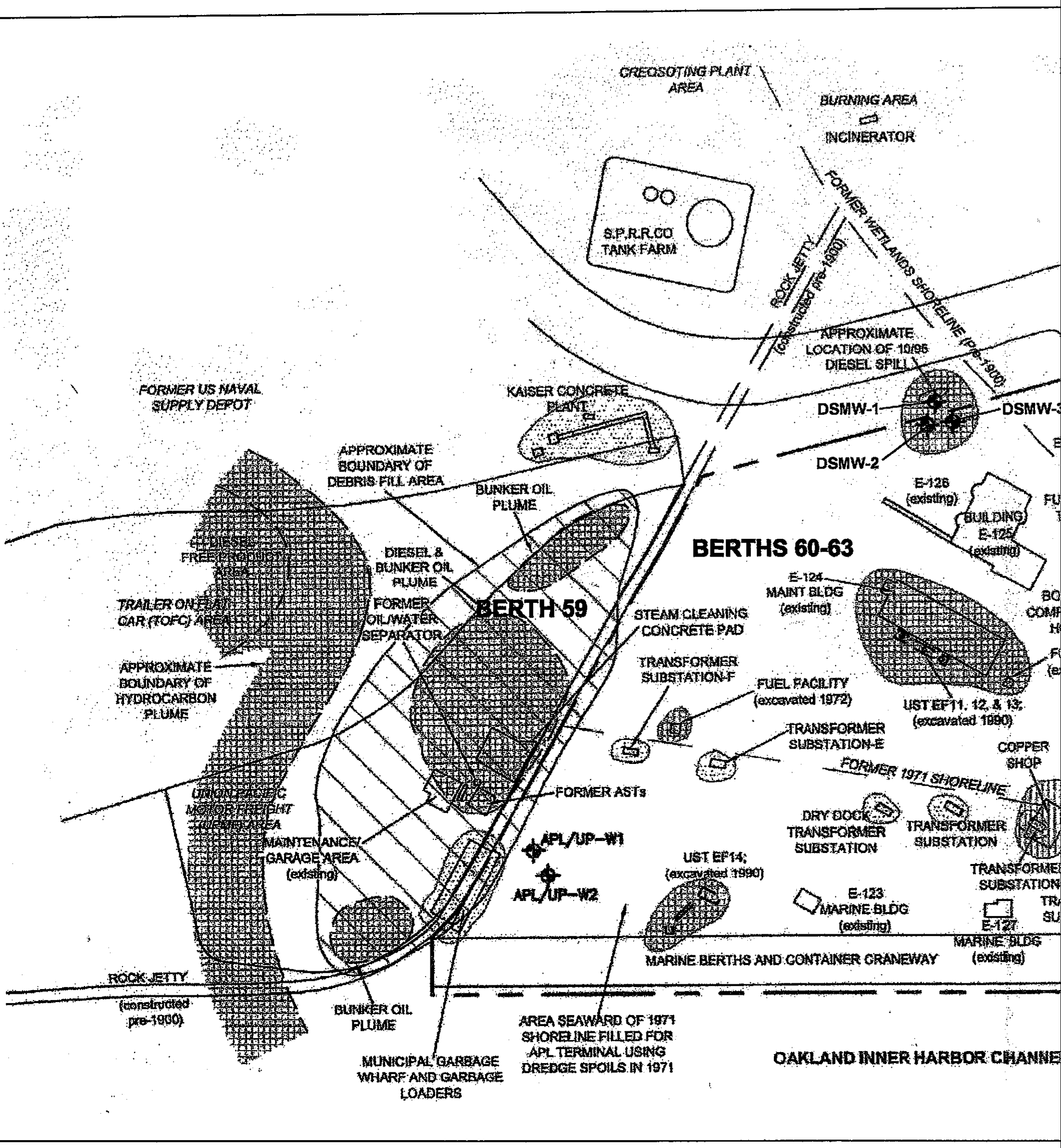
4000004_PLANNEDSITEUSEAFTERREDEVELOPMENT.DWG

ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

GENERAL REDEVELOPMENT PLAN

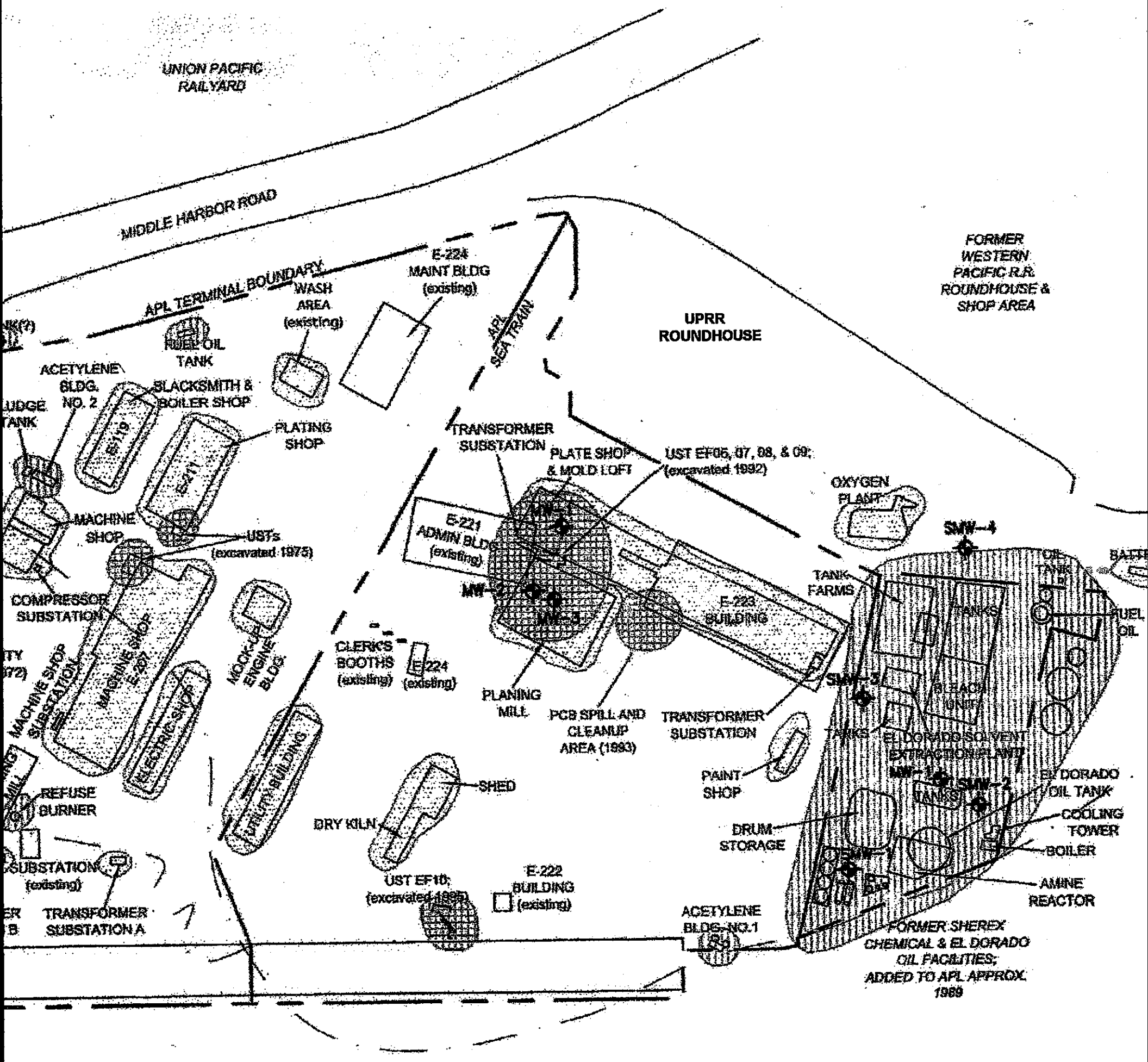
Date 03/30/05	Project No. 4000.04	Figure 3

Treadwell&Rollo



Reference: IRIS, 2002 "Planning Scale Environmental Site Assessment," Figure 3 (DSMW wells and "UPRR Roundhouse" added by Treadwell & Rollo, Inc.).

400004_HISTORICSITE.DWG



ENVIRONMENTAL SUBSURFACE ASSES
Berths 60-63 Yard and Gate Redevelop
Port of Oakland

HISTORICAL SITE USES

Date 03/30/05	Project No. 4000.04	Figu

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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/ OSMW-1*

APL/UP-W1**

APL/UP-W2**

MW-2*

MW-6

MW-7

MW-8

EW-5

OKUS-B1

OKUS-B2

OKUS-B3

OKUS-B4

OKUS-B7

OKUS-W1

OKUS-W2

OKUS-W3

OKUS-W4

OKUS-W5

OKUS-W6

OKUS-B13

IB-43

IB-44

IB-45

IB-46

IB-47

IB-48

IB-49

E-123

E-124

E-125

E-126

E-127

E-221

E-222

E-224

E-240

EF10

EF11

EF12

EF13

EF14

EF6-9

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.

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

N

200 0 200 Feet

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

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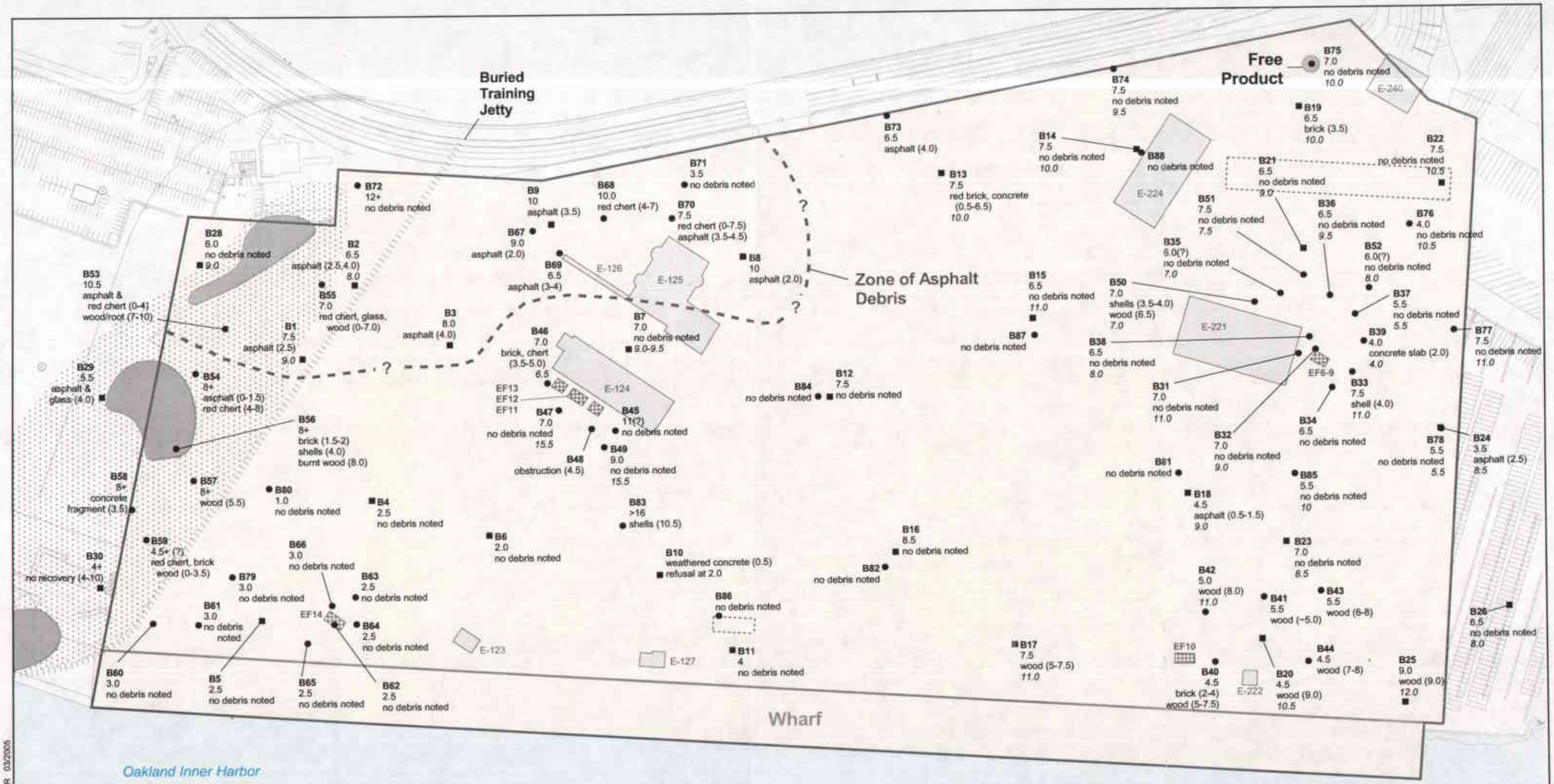

LEGEND

- ● B31 T&R
- ■ B1 GAIA, 2003
- ● B24 — Soil Boring ID
  3.5 — Depth to Base of Terrestrial Fill
  asphalt (2.5) — Debris (depth)
  8.5 — Depth to Bay Mud
- EF12 Former Underground Storage Tanks (UST)
- Extent of Free Product (HLA, 2000 defined by closely spaced borings and IRIS, 2002. Free Product observed during drilling by T&R at B56 and B75)
- Approximate extent of Municipal Debris (IRIS, 2002 with modifications)
- Zone of Asphalt Debris (2-4 feet bgs)
- Redevelopment Site Outline
- Proposed Building
- E-124 Existing Building (only building E-125 will remain after redevelopment)

N

200 0 200 Feet

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

FILL CHARACTERISTICS

Date 3/30/05	Project No. 4000.04	Figure 6

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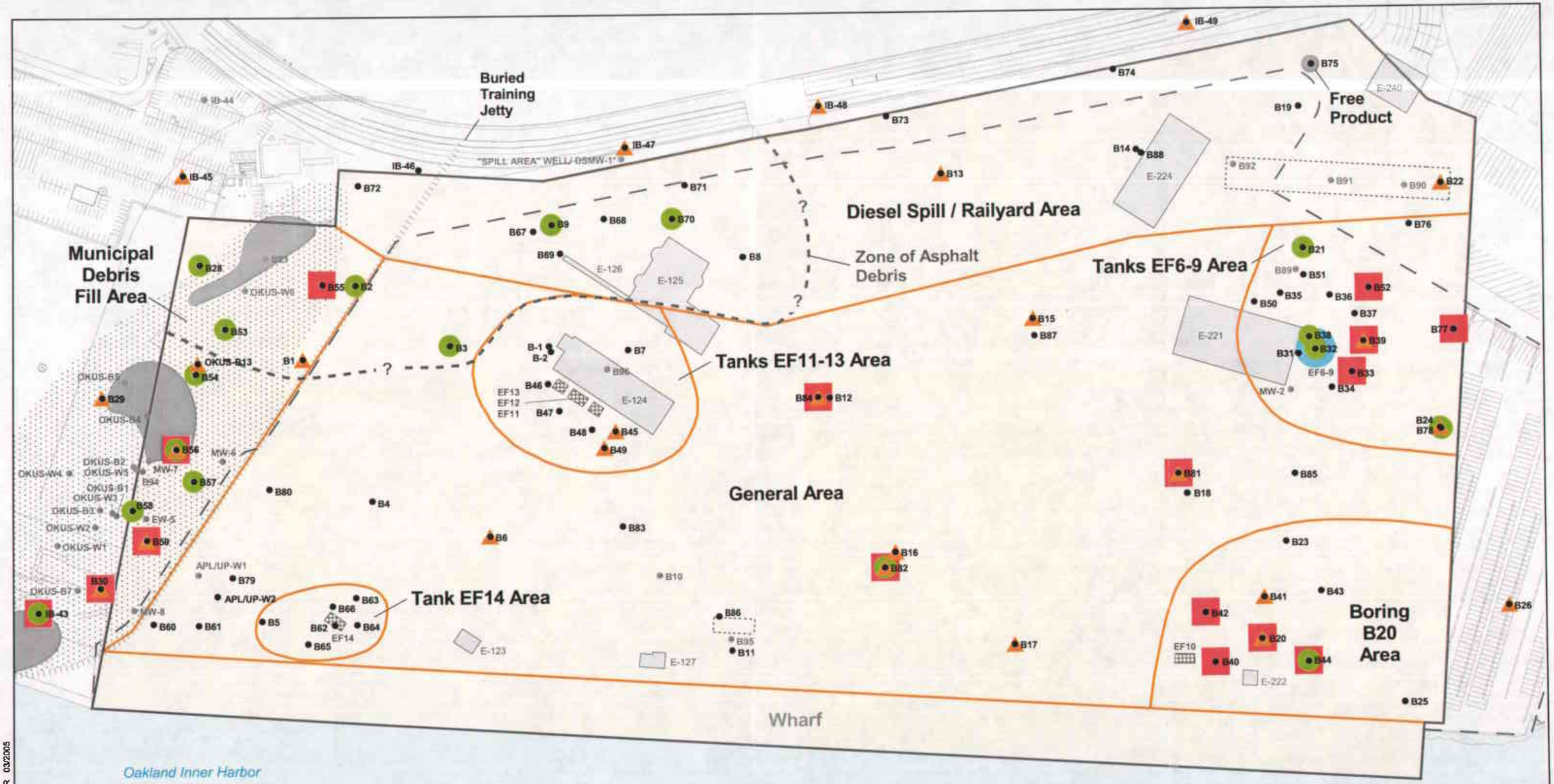

LEGEND

- B64 Soil Boring with Data
- B63 Soil Boring with No Data
- METALS Exceeding Screening Criteria
- TPH Exceeding Screening Criteria
- PAH or SVOC Exceeding Screening Criteria
- VOC Exceeding Screening Criteria
- Preliminary Areas of Concern
- Zone of Asphalt Debris (2-4 feet bgs)
- Redevelopment Site Outline
- Proposed Building
- E-124 Existing Building (only building E-125 will remain after redevelopment)
- EF12 Former Underground Storage Tanks (UST)
- Extent of Free Product (HLA, 2000 defined by closely spaced borings and IRIS, 2002. Free Product observed during drilling by T&R at B56 and B75)
- Approximate extent of Municipal Debris (IRIS, 2002 with modifications)

Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment
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SOIL EXCEEDANCES (0 - 5 feet bgs)

Date 3/30/05	Project No. 4000.04	Figure 7

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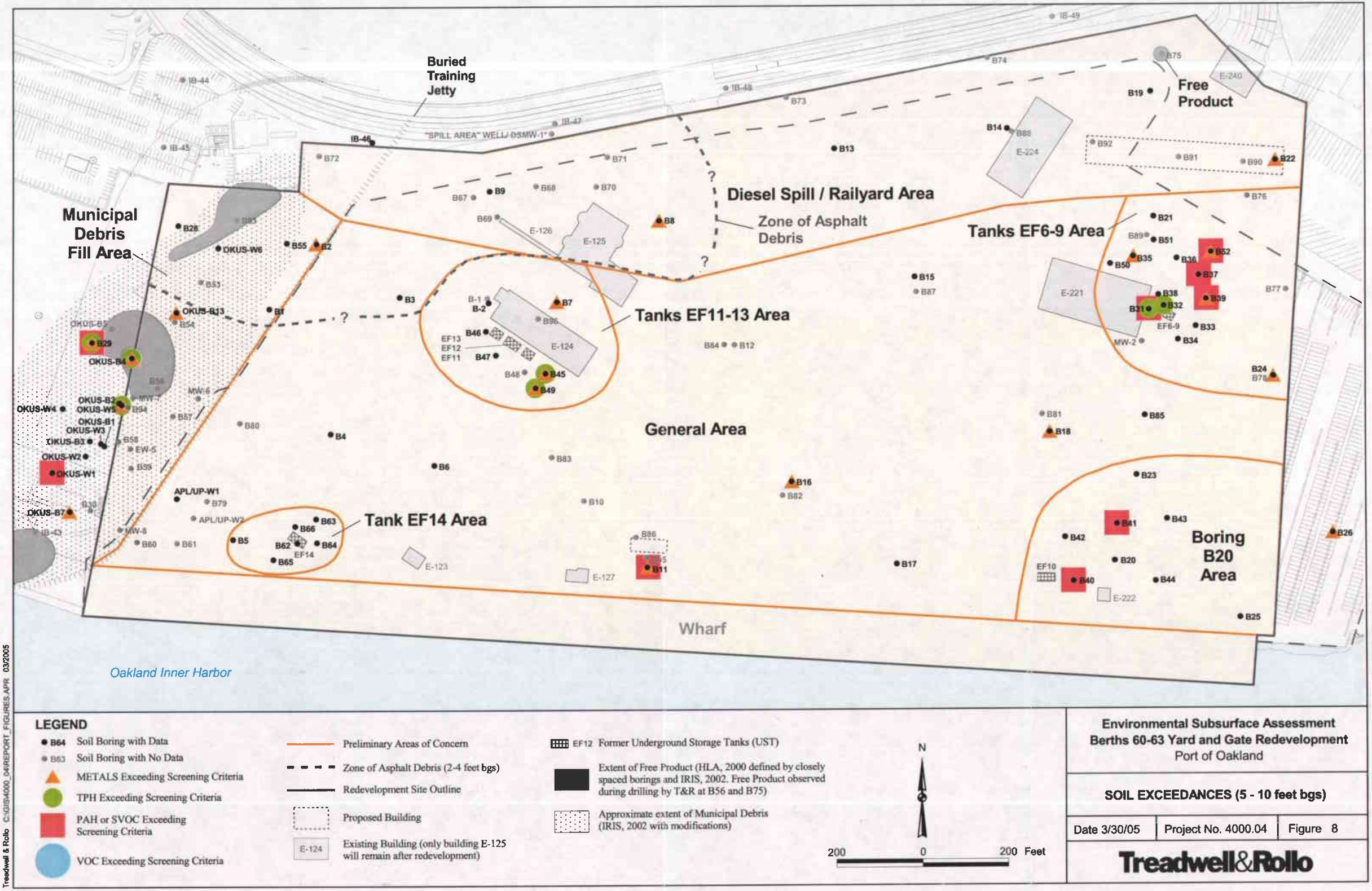
Treadwell & Rollo C:\GIS\4000_04\REPORT_FIGURES.APR 03/2005



LEGEND

- B64 Soil Boring with Data
- B63 Soil Boring with No Data
- METALS Exceeding Screening Criteria
- TPH Exceeding Screening Criteria
- PAH or SVOC Exceeding Screening Criteria
- VOC Exceeding Screening Criteria
- Preliminary Areas of Concern
- Zone of Asphalt Debris (2-4 feet bgs)
- Redevelopment Site Outline
- Proposed Building
- E-124 Existing Building (only building E-125 will remain after redevelopment)
- EF12 Former Underground Storage Tanks (UST)
- Extent of Free Product (HLA, 2000 defined by closely spaced borings and IRIS, 2002. Free Product observed during drilling by T&R at B56 and B75)
- Approximate extent of Municipal Debris (IRIS, 2002 with modifications)

N

200 0 200 Feet

Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment
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SOIL EXCEEDANCES (5 - 10 feet bgs)

Date 3/30/05	Project No. 4000.04	Figure 8

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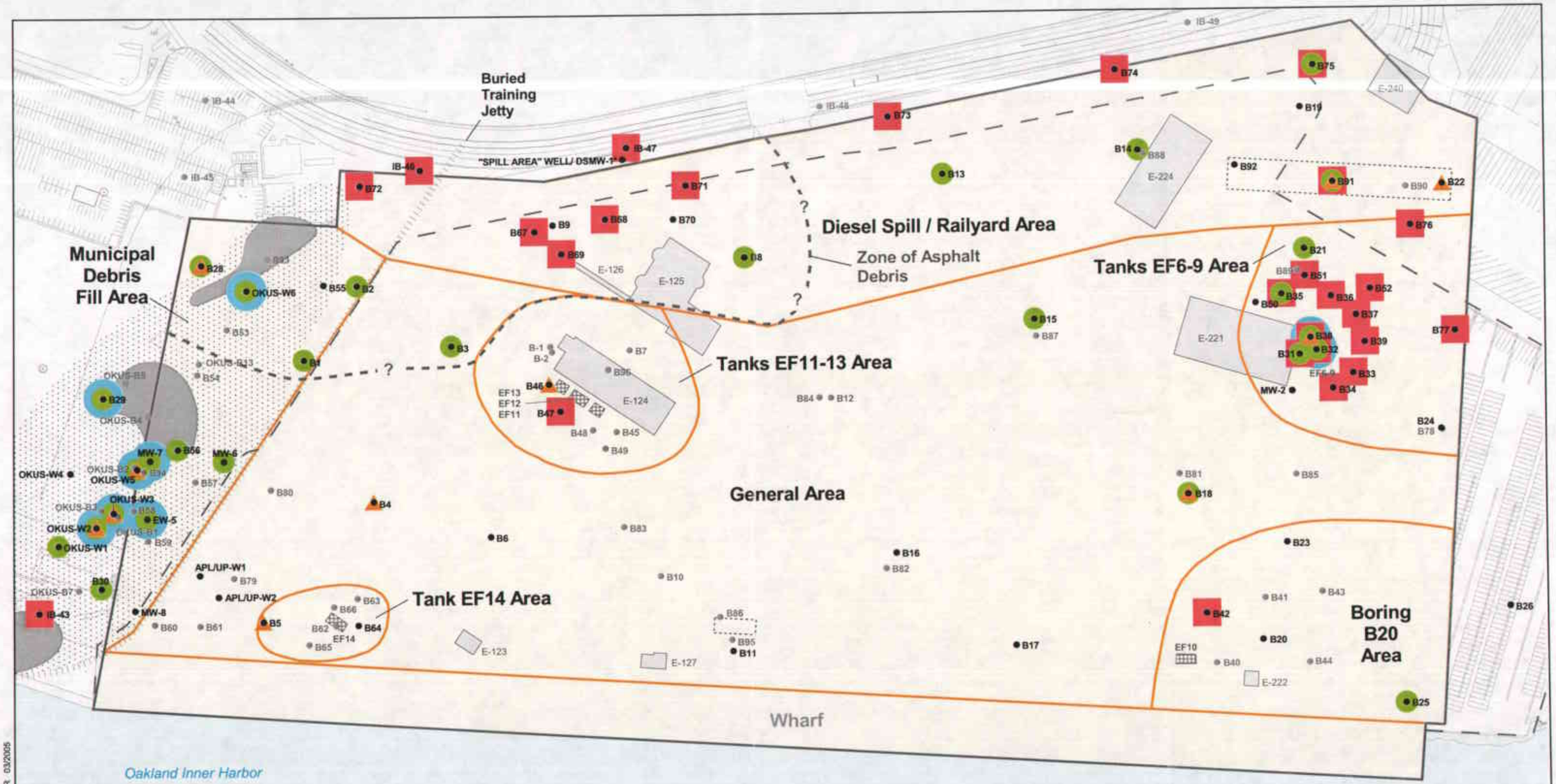
Treadwell & Rollo C:\GIS\4000_04\REPORT_FIGURES.APR 03/2005



LEGEND

- B64 Soil Boring with Data
- B63 Soil Boring with No Data
- METALS Exceeding Screening Criteria
- TPH Exceeding Screening Criteria
- PAH or SVOC Exceeding Screening Criteria
- VOC Exceeding Screening Criteria
- Preliminary Areas of Concern
- Current Site Boundaries
- Zone of Asphalt Debris (2-4 feet bgs)
- Redevelopment Site Outline
- Proposed Building
- E-124 Existing Building (only building E-125 will remain after redevelopment)
- EF12 Former Underground Storage Tanks (UST)
- Extent of Free Product (HLA, 2000 defined by closely spaced borings and IRIS, 2002. Free Product observed during drilling by T&R at B56 and B75)
- Approximate extent of Municipal Debris (IRIS, 2002 with modifications)

N

200 0 200 Feet

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

GROUNDWATER EXCEEDANCES

Date 3/30/05	Project No. 4000.04	Figure 9

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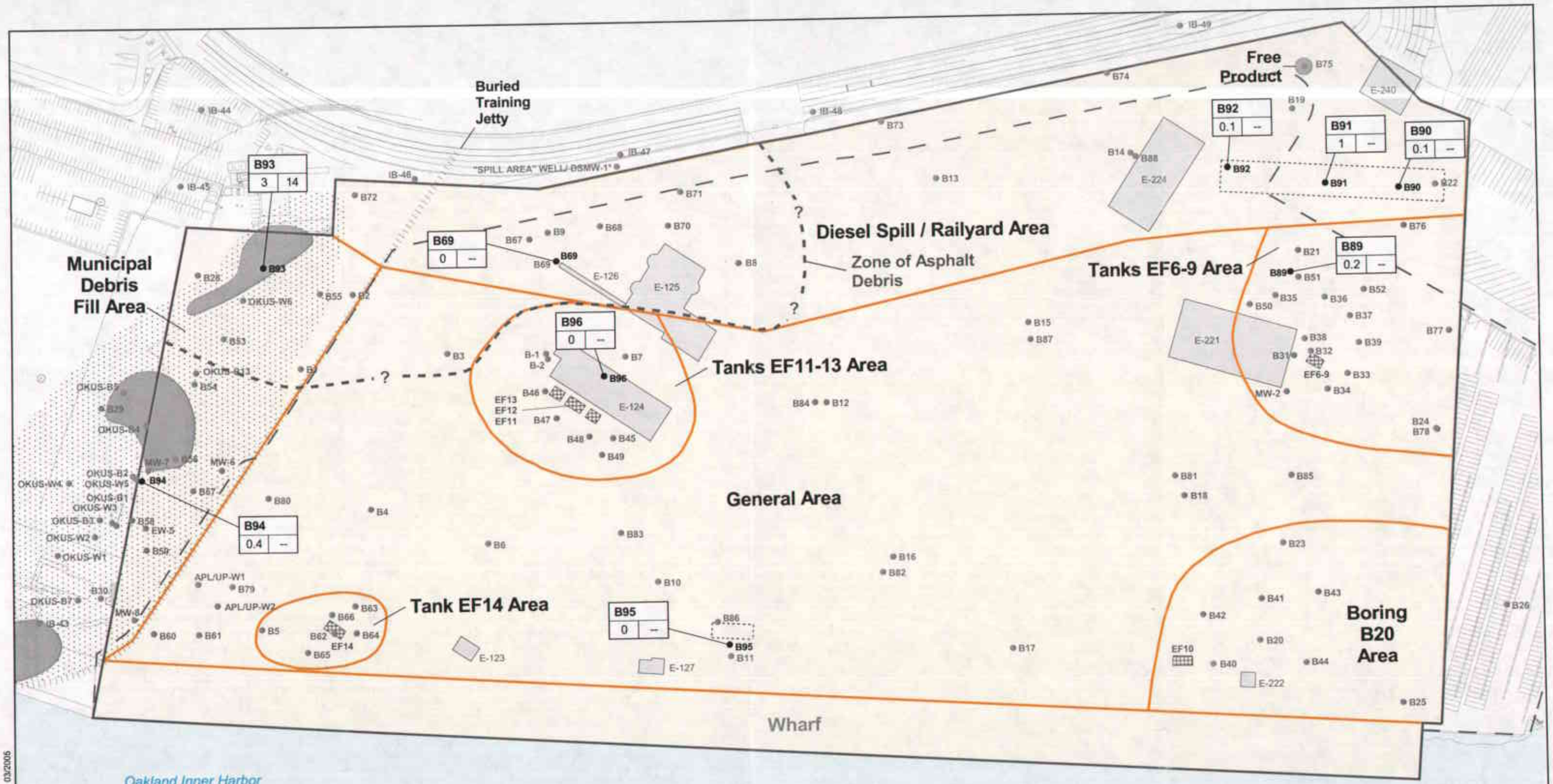
Treadwell & Rollo C:\GIS\4000_04\REPORT_FIGURES.APR 03/2005



LEGEND

- B94 Soil Boring with Data
- B80 Soil Boring with No Data
- Preliminary Areas of Concern
- Current Site Boundaries
- Zone of Asphalt Debris (2-4 feet bgs)
- Redevelopment Site Outline
- EF12 Former Underground Storage Tanks (UST)
- Extent of Free Product (HLA, 2000 defined by closely spaced borings and IRIS, 2002. Free Product observed during drilling by T&R at B56 and B75)
- Approximate extent of Municipal Debris (IRIS, 2002 with modifications)
- Proposed Building
- E-124 Existing Building (only building E-125 will remain after redevelopment)

B96 | 3 | 14

Field Screening Result (% vol.) / Laboratory Result (% vol.)

Notes:
– Not Analysed
Methane results in percent by volume in air.
Lower Explosive Limit is approximately 5% by volume.

N

200 0 200 Feet

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

METHANE SAMPLING RESULTS

Date 3/30/05	Project No. 4000.04	Figure 10

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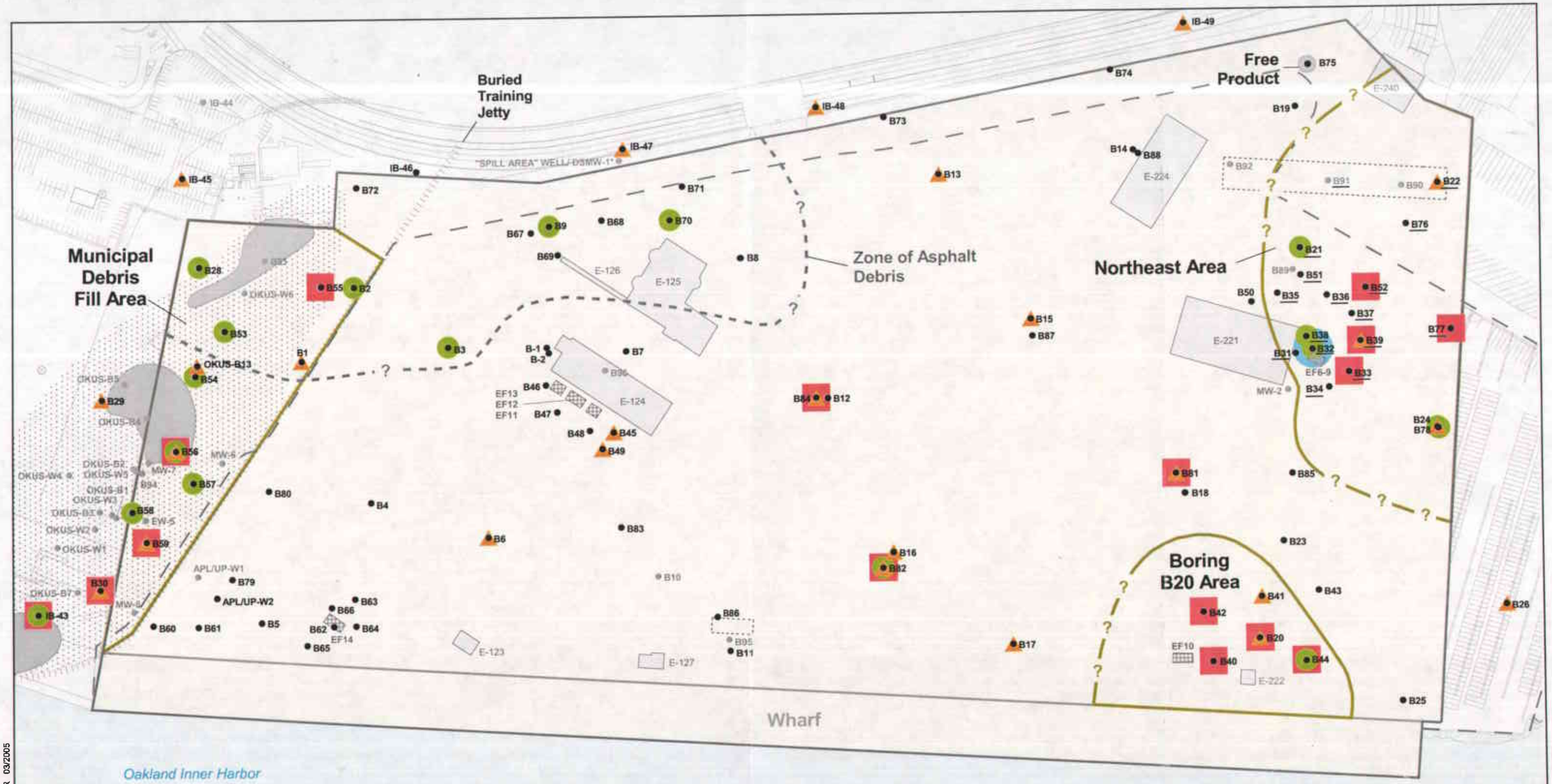


LEGEND

- B64 Soil Boring with Data
- B36 Location of Impacted Groundwater in Northeast Area
- B10 Soil Boring with No Data
- METALS Exceeding Screening Criteria
- TPH Exceeding Screening Criteria
- PAH or SVOC Exceeding Screening Criteria
- VOC Exceeding Screening Criteria
- Approximate Extent of Significant Impact Areas in Shallow Soil (as identified by sampling points)
- Current Site Boundaries
- Zone of Asphalt Debris (2-4 feet bgs)
- Redevelopment Site Outline
- Proposed Building
- E-124 Existing Building (only building E-125 will remain after redevelopment)
- EF12 Former Underground Storage Tanks (UST)
- Extent of Free Product (HLA, 2000 defined by closely spaced borings and IRIS, 2002. Free Product observed during drilling by T&R at B56 and B75)
- Approximate extent of Municipal Debris (IRIS, 2002 with modifications)

N

200 0 200 Feet

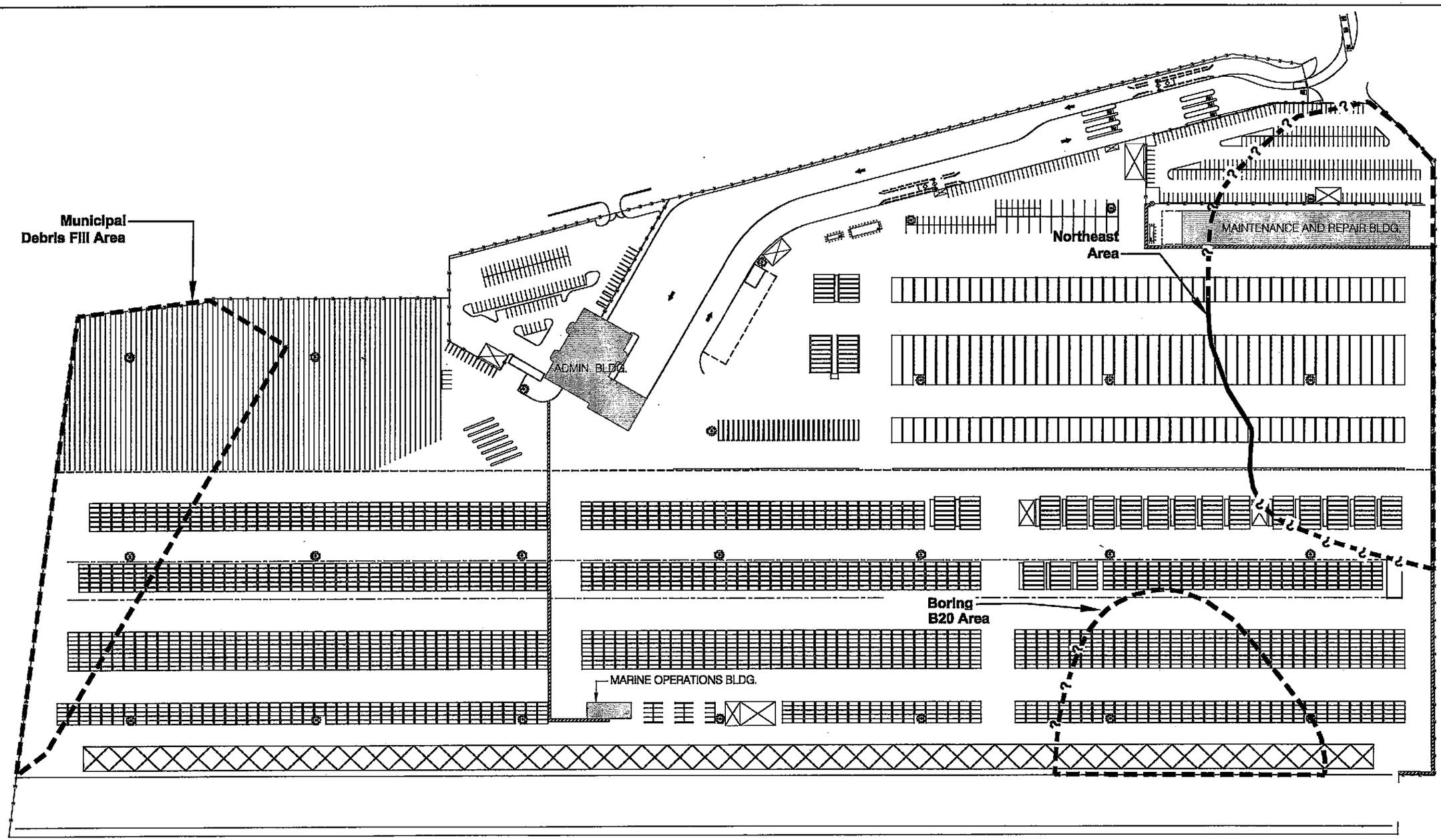
Environmental Subsurface Assessment
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SIGNIFICANT IMPACTED AREAS IN SHALLOW SOIL

Date 3/30/05	Project No. 4000.04	Figure 11

Treadwell&Rollo

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



EXPLANATION

APPROXIMATE EXTENT OF SIGNIFICANT IMPACT AREAS IN SHALLOW SOIL AS IDENTIFIED BY SAMPLING POINTS. (QUERIED WHERE BOUNDARY LOCATION IS RELATIVELY LESS CERTAIN)).

N

200 0 200 Feet

Source: Moffat & Nichol, 2004.

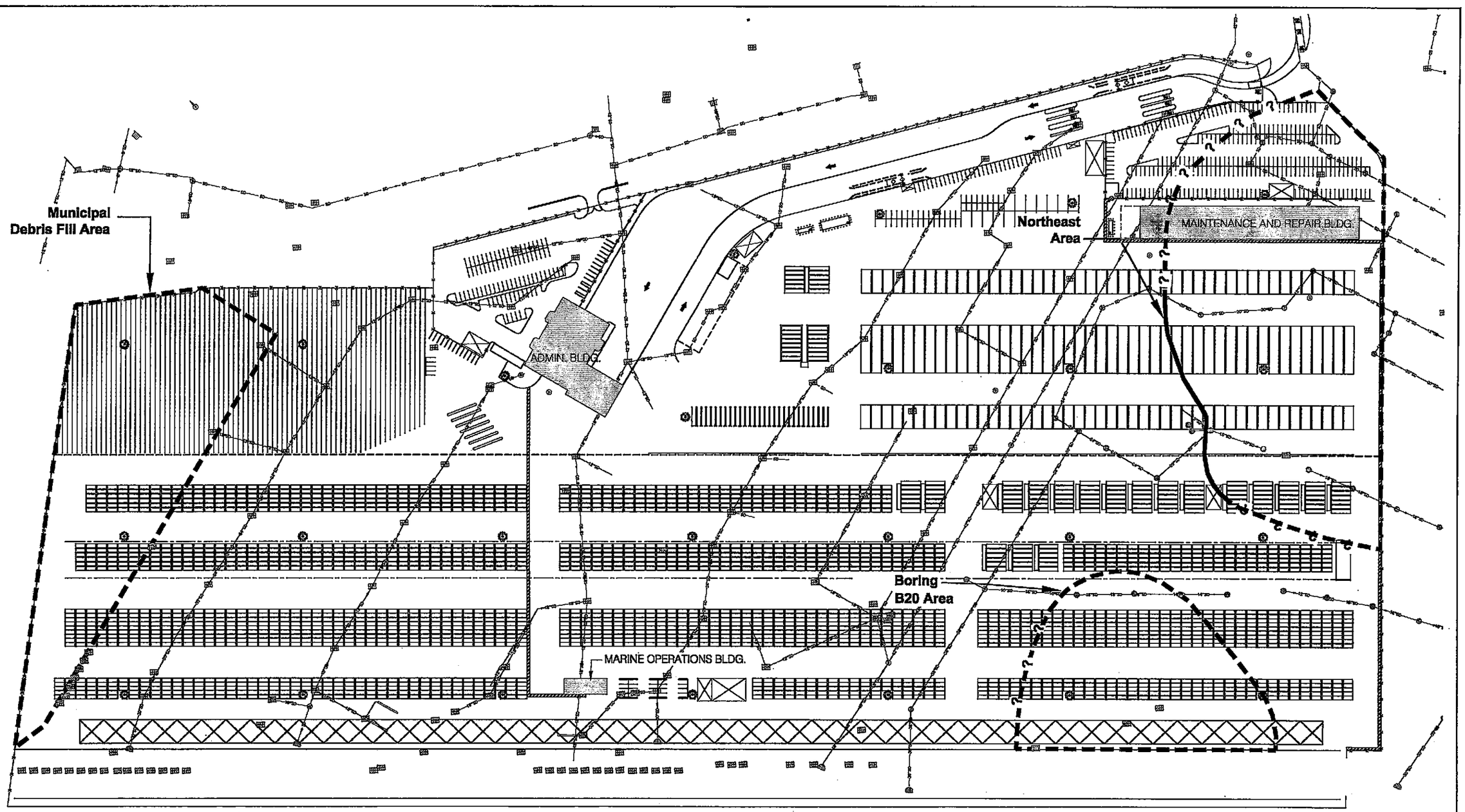
ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SIGNIFICANT IMPACTED AREAS IN SHALLOW SOILS OVER REDEVELOPMENT LAYOUT

Date 03/30/05	Project No. 4000.04	Figure 12

Treadwell&Rollo

400004_PLANNEDREDEVELOPMENT.DWG



EXPLANATION

APPROXIMATE EXTENT OF SIGNIFICANT IMPACT AREAS IN SHALLOW SOIL AS IDENTIFIED BY SAMPLING POINTS. (QUERIED WHERE BOUNDARY LOCATION IS RELATIVELY LESS CERTAIN)).

N

200 0 200 Feet

Source: Moffat & Nichol, 2004.

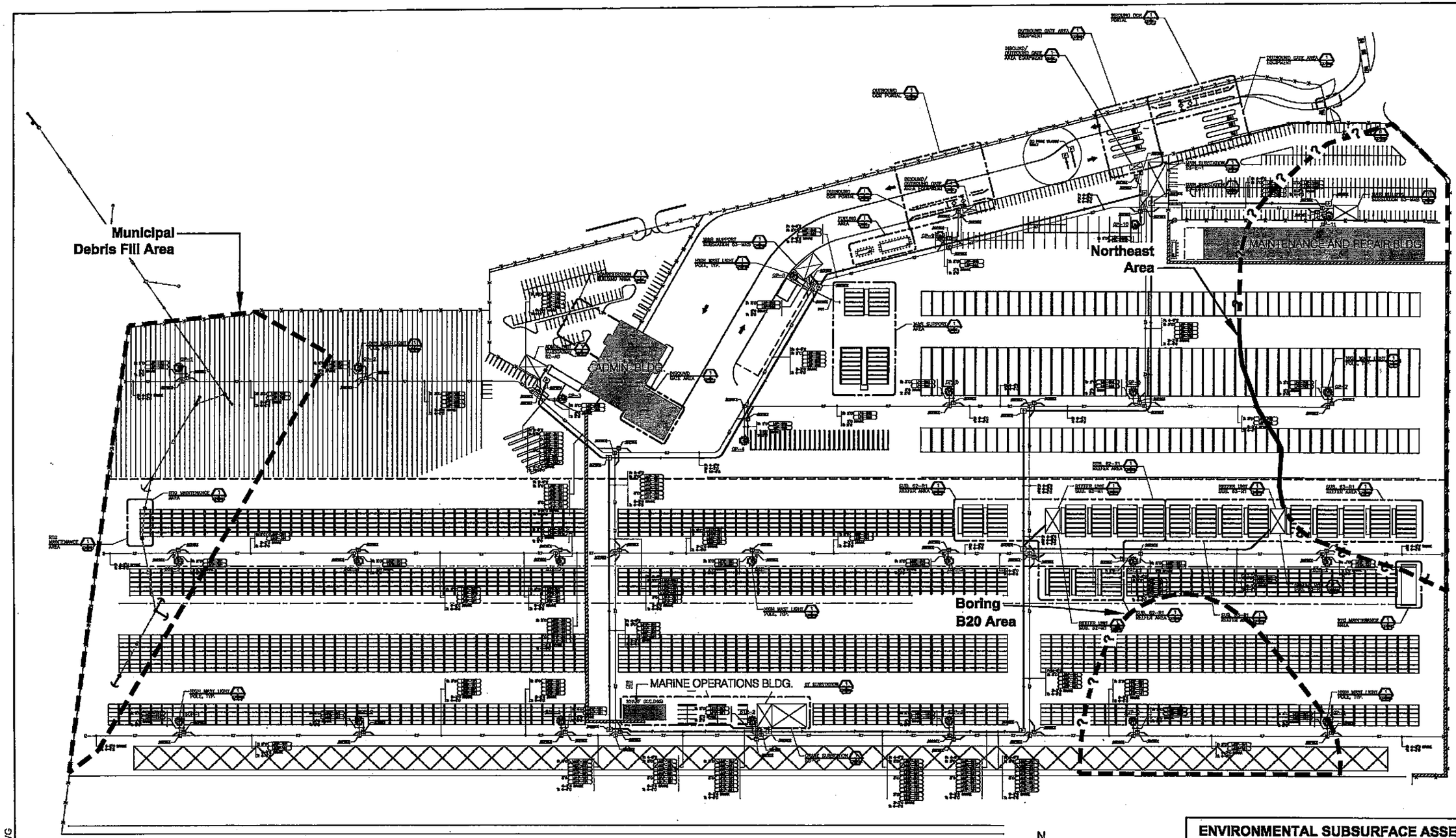
400004_STORMDRAINLAYOUT.DWG

ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SIGNIFICANT IMPACTED AREAS IN SHALLOW SOILS OVER STORM DRAINAGE LAYOUT

Date 03/30/05	Project No. 4000.04	Figure 13

Treadwell&Rollo



EXPLANATION

APPROXIMATE EXTENT OF SIGNIFICANT IMPACT AREAS IN SHALLOW SOIL AS IDENTIFIED BY SAMPLING POINTS. (QUERIED WHERE BOUNDARY LOCATION IS RELATIVELY LESS CERTAIN)).

N

200 0 200 Feet

Source: Moffat & Nichol, 2004.

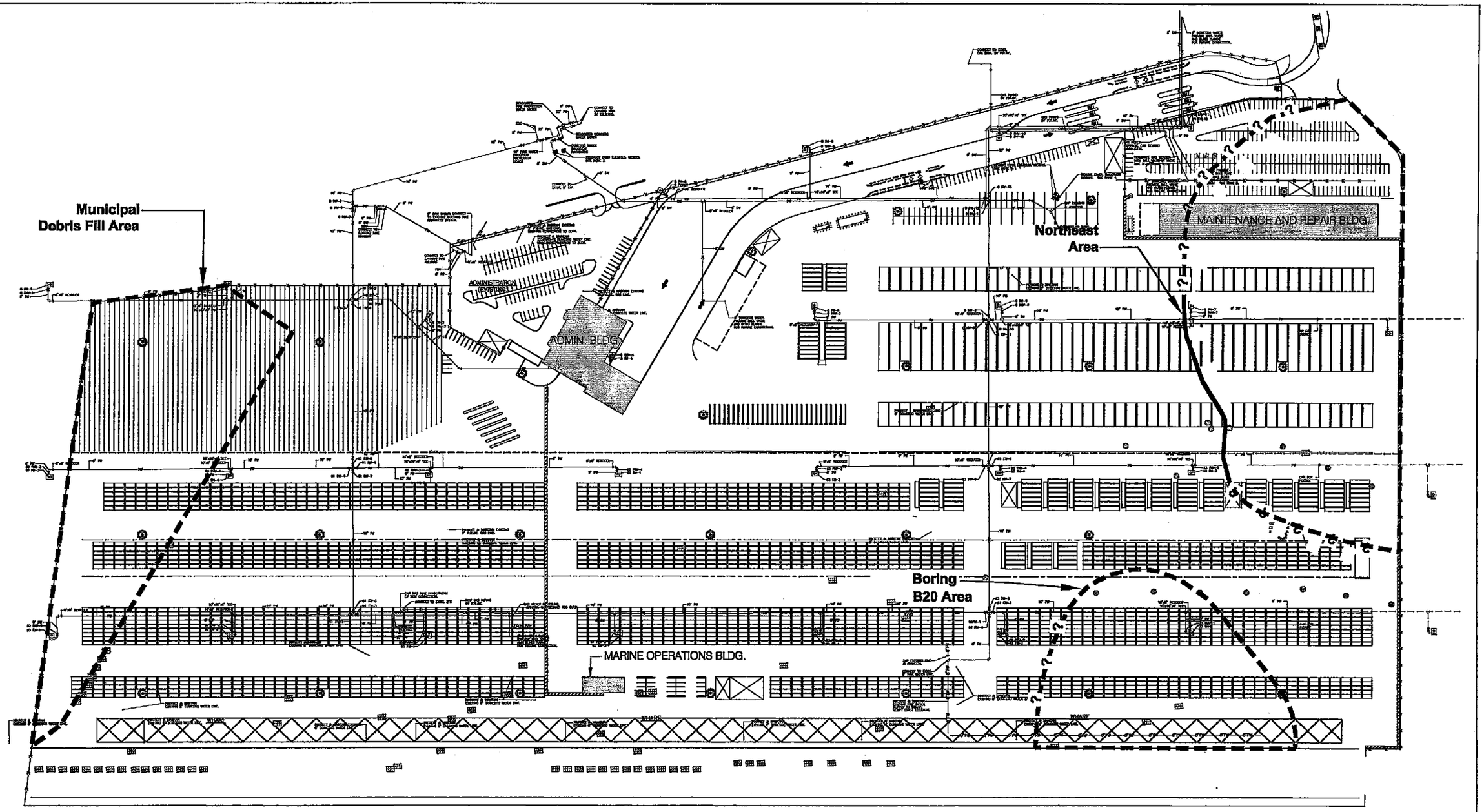
400004_ELECTRICLAYOUT.DWG

ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SIGNIFICANT IMPACTED AREAS IN SHALLOW SOILS OVER ELECTRICAL LAYOUT

Date 03/30/05	Project No. 4000.04	Figure 14

Treadwell&Rollo



EXPLANATION

APPROXIMATE EXTENT OF SIGNIFICANT IMPACT AREAS IN SHALLOW SOIL AS IDENTIFIED BY SAMPLING POINTS. (QUERIED WHERE BOUNDARY LOCATION IS RELATIVELY LESS CERTAIN)).

N

200 0 200 Feet

ENVIRONMENTAL SUBSURFACE ASSESSMENT
Berths 60-63 Yard and Gate Redevelopment
Port of Oakland

SIGNIFICANT IMPACTED AREAS IN SHALLOW SOILS OVER YARD, GAS WATER AND FIRE PROTECTION PLAN

Date 03/30/05 | Project No. 4000.04 | Figure 15

Treadwell&Rollo

Source: Moffat & Nichol, 2004.

400004_YARDGASFIRE.DWG