Oakland Army Base
Oakland, California

Prepared for
U.S. Department of Army

Prepared by
MWH Americas, Inc.
1340 Treat Blvd., Suite 300
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Final
Environmental Baseline Survey for Transfer

December 2002
FINAL
ENVIRONMENTAL BASELINE SURVEY
FOR TRANSFER

FOR
OAKLAND ARMY BASE
OAKLAND, CALIFORNIA

Prepared for:
U.S. Department of Army

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December 2002
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LIST OF ACRONYMS AND ABBREVIATIONS

AAFES  Army and Air Force Exchange Services
ACD  asbestos cement duct
ACM  asbestos-containing material
AST  aboveground storage tank
bgs  below ground surface
BCP  Base Realignment and Closure Cleanup Plan
BRAC  Base Realignment and Closure
bsl  below sea level
Caltrans  California Department of Transportation
CERCLA  Comprehensive Environmental Response, Compensation, and Liability Act
CERFA  Community Environmental Response Facilitation Act
CG  Commander General
DoD  U.S. Department of Defense
DTSC  Department of Toxic Substances Control
EBS  Environmental Baseline Survey
EBS-T  Environmental Baseline Survey for Transfer
ECP  Environmental Condition of Property
EDC  Economic Development Conveyance
EIS  Environmental Impact Statement
EKI  Erler and Kalinowski, Inc.
FOSET  Finding of Suitability for Early Transfer
FS  Feasibility Study
gal/day  gallons per day
IRP  Installation Restoration Program
IT  IT Corporation
LDR  Land Disposal Restriction
mg/L  milligrams per liter
MOTBA  Military Ocean Terminal Bay Area
MTMC  Military Traffic Management Command
MTMCWA  Military Traffic Management Command-Western Area
MTMTS  Military Traffic Management and Terminal Services
MWH  MWH Americas, Inc.
OARB  Oakland Army Base
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</tr>
<tr>
<td>RMP</td>
<td>Risk Management Plan</td>
</tr>
<tr>
<td>RI</td>
<td>Remedial Investigation</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>SI</td>
<td>Site Inspection Site</td>
</tr>
<tr>
<td>TDS</td>
<td>total dissolved solids</td>
</tr>
<tr>
<td>USACE</td>
<td>U.S. Army Corps of Engineers</td>
</tr>
<tr>
<td>USAMC</td>
<td>U.S. Army Materiel Command</td>
</tr>
<tr>
<td>USAR</td>
<td>U.S. Army Reserves</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>UST</td>
<td>underground storage tank</td>
</tr>
<tr>
<td>VOC</td>
<td>volatile organic compounds</td>
</tr>
<tr>
<td>VSI</td>
<td>Visual Site Inspection</td>
</tr>
<tr>
<td>WAMTMTS</td>
<td>Western Area, Military Traffic Management and Terminal Services</td>
</tr>
<tr>
<td>YBM</td>
<td>Young Bay Mud</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

MWH Americas, Inc. (MWH) has prepared this Environmental Baseline Survey for Transfer (EBS-T) for Oakland Army Base (OARB) on behalf of the U.S Department of Army (Army). The work was performed under a subcontract agreement with Plexus Scientific, Inc. Background text for this document was prepared by IT Corporation (IT, 2001k).

1.1 BRAC PROGRAM OVERVIEW

On July 1, 1995, the Base Realignment and Closure (BRAC) Commission announced the closure of OARB (Figure 1). Typically, prior to transfer of BRAC installation property, areas posing potential risks to human health and the environment are remediated through an Environmental Restoration Program. The basic strategy for completing the Environmental Restoration Program at OARB was provided in the Base Realignment and Closure (BRAC) Cleanup Plan (BCP) (Foster Wheeler, 1996a). The strategy integrated activities performed under the Installation Restoration Program (IRP), the associated environmental compliance programs, and other closure activities.

The disposal process involves three interrelated activities: 1) the preparation of an Environmental Impact Statement (EIS) per the requirements of the National Environmental Policy Act; 2) the preparation of a property disposal plan through an Environmental Baseline Survey (EBS) per the Community Environmental Response Facilitation Act (CERFA); and 3) the development of a community reuse plan. The Army finalized the EIS, including the public review and Record of Decision, in 2002. The CERFA EBS was completed in 1996 (Foster Wheeler, 1996b). The Oakland Base Reuse Authority (OBRA), which is the local reuse authority, prepared the community reuse plan (OBRA, 2002).

The environmental cleanup of OARB was initiated in 1989 through the Army’s IRP. A major aspect of the IRP is the completion of Remedial Investigation (RI) and Feasibility Study (FS) reports per the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Another major IRP activity is closure of fuel tank sites, which are exempt from CERCLA requirements. To streamline the completion of the RI/FS process, OARB was divided into Operable Units (OUs) 1, 2, 3, 4, 5, and 7. The organizations that have principal roles in supporting the IRP include OARB, U.S. Army Corps of Engineers (USACE) Sacramento District, the Department of Toxic Substances Control (DTSC), the U.S. Environmental Protection Agency
Although the IRP has not been completed, the OBRA has requested early transfer of OARB BRAC property in accordance with Section 334 of the 1997 Defense Authorization Act. This EBS-T is supporting documentation for two separate Finding of Suitability for Early Transfer (FOSET) actions to implement disposal of the base property. One FOSET is for transfer of the land that contains Parcels 2 through 5, 8 through 17, 19 (partial), 20, 21 (partial), and 22 through 26 to the OBRA under an Economic Development Conveyance (EDC). The other FOSET is for Parcel 1, which is to be transferred to the Department of Interior (DOI). The property will ultimately be transferred from the National Park Service (NPS) to the East Bay Regional Park District (EBRPD) through a Public Benefit Conveyance (PBC). In order to conform to the regulatory requirements for such a transfer, the Army is producing a FOSET package that will include, among other items, this EBS-T.

1.2 PURPOSE AND SCOPE OF ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBS-T)

This EBS-T describes each BRAC parcel to be transferred (Parcels 1 through 5, 8 through 17, 19 (partial), 20, 21 (partial), and 22 through 26) and assigns it an environmental condition classification (Section 1.3). It includes all of the base property excluding Parcels 6, 7, and 18 in their entirety and portions of Parcels 19 and 21 that were re-assigned to the U.S. Army Reserves.

The EBS-T provides a description of environmental conditions at each FOSET parcel based on information and data gathered from previously prepared documents (Section 2.1). A limited Visual Site Inspection (VSI) was also conducted to verify current conditions at OARB (Section 2.3). This information was then used to place each parcel into one of seven U.S. Department of Defense (DoD) Environmental Condition of Property (ECP) categories.

1.3 ENVIRONMENTAL CONDITION OF PROPERTY CATEGORIES

ECP categories refer to the status of release, disposal, or migration of hazardous substances or petroleum products at DoD IRP sites and/or real estate parcels. The seven ECP categories are defined as follows:
Category 1 – Areas where no release or disposal of hazardous substances or petroleum products has occurred, including no migration of these substances from adjacent areas.

Category 2 – Areas where only release or disposal of petroleum products has occurred.

Category 3 – Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

Category 4 – Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.

Category 5 – Areas where release, disposal, and/or migration of hazardous substances have occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.

Category 6 – Areas where release, disposal, and/or migration of hazardous substances have occurred, but required actions have not yet been implemented.

Category 7 – Areas that are not evaluated or require additional evaluation.
2.0 SOURCES OF INFORMATION

Existing documents covering previous investigations and removal actions and VSI provided information on current parcel conditions.

2.1 EXISTING DOCUMENTS

A complete list of documents reviewed for the EBS-T is provided in Section 5.0. The primary documents that contain information on past and current environmental conditions at OARB are described below.

Remedial Action Plan and Risk Management Plan. These documents were prepared by Erler and Kalinowski, Inc. (EKI, 2002a and 2002b) on behalf of the OBRA. The Remedial Action Plan (RAP) identifies and evaluates potential remedial alternatives for sites of environmental concern at OARB, and recommends remedies. The Risk Management Plan (RMP), which is Appendix E to the RAP, identifies presumptive style remedies for locations within OARB with standard contaminant profiles and site conditions; in addition, the RMP establishes site identification and risk management protocols as institutional controls, to be transferred with the land and to be implemented at unknown or newly discovered RMP locations as they are identified in the future at OARB. Upon execution of the Land Use Covenant, the RMP would become an appendix to, and enforceable as part of, the Land Use Covenant. The final RAP and RMP were signed by the OBRA and the DTSC on 27 Sep 2002.

Environmental Baseline Surveys. Two previous EBS reports have been prepared. The first EBS covered all of OARB (Foster Wheeler, 1996b). The second EBS was for Parcels 17, 22, 23, 25, and 26 (Foster Wheeler, 2000). This EBS-T consolidates and updates both previous EBS reports.

Preliminary Assessment and Site Inspection. A Preliminary Assessment (PA), which presented an analysis of available information on environmental conditions at OARB, and a Site Inspection (SI), which presented the results and conclusions of site-wide soil, groundwater, and soil vapor sampling, was developed to complete the property assessment (Kleinfelder, 1998a). The purpose of the SI was to determine if sites identified during the PA were potential contaminant sources.
Remedial Investigation Reports. RI reports and addenda present the methodologies, results, and conclusions of RIs of each OU conducted under the BRAC program at OARB (IT, 1999a, 2000a, 2000c, 2000e, 2000f, 2001a, 2001i; Harding ESE, 2001). The primary purpose of the RI reports was to evaluate the nature and extent of contamination and to present an evaluation of potential risks to human health and the environment.


Feasibility Study Reports. FS reports provide an evaluation of remedial options for contaminated areas. Draft final (not reviewed by the regulatory agencies) FS reports have been developed for OU1 (Parcels 4, 5, and 9 through 15), OU2 (Parcel 8), OU3 (Parcels 16, 17, 19, 20, 21, 24, and 25), and OU7 (portions of Parcels 12 and 15) (IT, 2000g and 2001b).

Miscellaneous Technical Reports. Technical reports have been prepared for an investigation conducted at OU7 (ICF Kaiser Engineers, 1999; IT, 2002b); an evaluation of the beneficial uses of shallow groundwater (IT, 2000d); a review of historical documents that focused on the period prior to the establishment of OARB (IT, 2000b); a removal action work plan for OU2 (IT, 2001c); storm drain and sewer pipeline investigations (ERM-West, Inc., 1994; IT, 1999b); a basewide hydrogeologic study (Kleinfelder, Inc., 1998b); an investigation of areas occupied by the Army and Air Force Exchange Services (AAFES) (CDM, 1996); a closure report for the OU2 off-site wetland (IT, 2002c); a report on the removal of a pipeline near Building 99 (IT, 2002d); and a supplemental investigation report for Building 1 (IT, 2002e). In addition, both IT and EKI prepared reports on the Phase II investigation performed March through May of 2002 (IT, 2002f; EKI, 2002c) to fill in data gaps uncovered during the document review process.

Lead-Based Paint Survey and Asbestos Surveys. Reports documenting inspections of OARB facilities for lead-based paint and asbestos were prepared by the USACE (1997 and 1999). The Master Plan of Oakland Army Base, Analysis/Environmental Assessment Report (MTMC, 1985) provided information on the asbestos cement duct (ACD) that has been used as a conduit for telecommunication lines basewide.
2.2 FEDERAL, STATE, AND LOCAL GOVERNMENT REGULATORY RECORDS

Since the CERFA EBS was prepared (Foster Wheeler, 1996b), regulatory involvement with OARB has been through the BRAC process that is documented in the various reports cited in Section 2.1. Therefore, no regulatory records were reviewed.

2.3 VISUAL INSPECTIONS AND CONSULTATIONS

IT conducted a VSI of OARB during the week of March 12, 2001. The VSI covered all FOSET parcels except for Parcels 17 and 25, which were inspected in May 2000 (Foster Wheeler, 2000), and portions of Parcels 19 and 21 previously transferred to the U.S. Army Reserves. The results of the two VSIs are presented in Table 2-1.
3.0 PROPERTY DESCRIPTION

This section provides a description of OARB in terms of the general environmental and cultural features.

3.1 GENERAL GEOGRAPHIC AND ENVIRONMENTAL SETTING

3.1.1 Physical Setting

OARB is located in an industrialized area of the City of Oakland, Alameda County, California and is within the area known as the Oakland Outer Harbor. Much of the area encompassing the OARB was natural tidal marsh or shallow open water before 1916 (Kleinfelder, 1998b). Prior to the Army’s occupancy of the OARB in January 1941, portions of the property were partially filled with dredge spoils placed by the City of Oakland and subsequently the Port of Oakland (USACE, undated; City of Oakland, 1918; Minor Woodruff, 2000). During 1941, the Army Quartermaster Corps (OARB was referred to at the time as the S.F. Port of Embarkation) placed over 6.5 million cubic yards (cy) of dredged sand and imported soil to create the remainder of the land area (Army Port Contractors, 1941; Army Port Contractors, 1942; Bechtel-McCone-Parsons Corporation, 1941; Labarre, R.V., 1941; Rogers, David and Sands Figuers, 1991).

3.1.2 Climatology

The Oakland area has a mild climate with distinct wet and dry seasons. Almost 90 percent of the annual precipitation is recorded between the months of November and April. The average rainfall is approximately 22 inches per year. Morning fog is prevalent during early summer months. The prevailing wind direction is from the west.

3.1.3 Hydrology

Other than the adjacent San Francisco Bay, no permanent surface water bodies exist at OARB. Since OARB is mostly paved, precipitation during winter storms primarily flows overland into storm drains that discharge into San Francisco Bay. Some precipitation and irrigation water
infiltrates the ground surface in landscaped areas where the water is either lost to evapotranspiration or recharges the shallow water-bearing zone.

3.1.4 Geology and Soils

OARB is located within the Coast Ranges, which consist of a series of fault blocks that have been uplifted by pressure along the Pacific and North American plate boundary. San Francisco Bay is located in a basin formed between two of these uplifted blocks. The oldest geologic unit in the vicinity of OARB is the Franciscan Complex, which consists predominantly of sandstone, shale, and greenstone, with minor amounts of serpentinite, and is typically overlain by course- and fine-grained sedimentary deposits. At OARB, the top of the Franciscan bedrock is 500 to 600 feet below sea level (bsl) (Rogers and Figuers, 1991).

Sedimentary formations overlying the Franciscan bedrock in the vicinity of the OARB include, from oldest to youngest, the Alameda formation, Old Bay Mud (OBM), San Antonio formation, and Young Bay Mud (YBM) formations. The YBM is overlain by hydraulically placed sandy dredge spoils and gravelly borrow pit fill material. These sedimentary units are described in more detail below.

**Alameda Formation.** The top of the Alameda Formation is about 100 feet bsl at OARB. The upper part of this formation is a blue-gray clay and silt. Little is known about the lower part of the Alameda formation at OARB (Rogers and Figuers, 1991).

**Old Bay Mud.** The top of the OBM is about 50 feet bsl at OARB. This formation is a widespread gray marine clay with a 10 to 15 feet thick sandy, shell-rich middle unit. At OARB, the OBM is about 50 feet thick (Rogers and Figuers, 1991).

**San Antonio Formation.** The San Antonio Formation is about 25 to 50 feet thick beneath OARB. This formation is highly variable, having been deposited in many different environments. As a result, individual units are discontinuous. In many areas, the Merritt Sand is the uppermost unit of the San Antonio formation. This sand was deposited by winds at the end of the last ice age when sea levels were much lower than they are now (Rogers and Figuers, 1991).
Young Bay Mud. The YBM was deposited in San Francisco Bay as sea levels rose beginning about 11,000 years ago. According to structural contour maps prepared by Rogers and Figuers (1991), the bottom of the YBM occurs 15 to 50 feet bsl at OARB. This unit is encountered at approximately 6 to 15 feet below ground surface (bgs) and appears to be present across OARB. The deepest sections occur in OU4 along the California Department of Transportation (Caltrans) right-of-way of the approach to the Bay Bridge. The shallowest sections occur in the southernmost areas of OARB. The YBM, as described on logs of borings completed during environmental investigations, is a very dark gray to black soft clay with occasional shell fragments and vegetative matter. The average grain size percentages for three samples collected from this unit were 10 percent sand and 90 percent silt and clay.

Sand Fill. Sand overlying the YBM is primarily the hydraulically placed fill discussed by Rogers and Figuers (1991); however, some of the sand is part of the YBM formation. The sand is generally fine-grained and loose with localized clay lenses, contains shell fragments, and is brown to dark gray in color. Average grain percentages for 8 samples collected from this unit were 2 percent gravel, 66 percent sand, and 32 percent silt and clay.

Gravel Fill. Most of OARB is underlain by gravelly fill from the ground surface to about 5 feet bgs. The gravel fill, which was taken from quarries near Lake Temescal and Oak Knoll Naval Hospital (Rogers and Figuers, 1991), is generally angular and very dense. Average grain size percentages for 12 samples collected from this unit were 29 percent gravel, 53 percent sand, and 18 percent silt and clay. Rock fill for seawalls was imported from quarries at Point Richmond and Point San Pedro.

3.1.5 Hydrogeology

Two groundwater aquifers (Harding Lawson Associates, 1987) and one shallow water-bearing zone are present in the vicinity of OARB. The deeper aquifer is found within the Alameda Formation. A shallower saline aquifer is found within the Merritt Sand and Posey Formation. The OBM separates these two aquifers. The shallow water-bearing zone is present in the artificial fill overlying the YBM. At OARB, all monitoring wells except five have been installed in the shallow water-bearing zone. The following five monitoring wells have been installed in the Merritt Sand aquifer: K99DW01 and K99DW02 in OU1, K738DW01 in OU3, K160DW01 in OU4, and K807DW01 in OU7. No known borings or monitoring wells were completed in the lower Alameda Formation (deeper) aquifer at OARB.
Groundwater is generally encountered at 5 to 7 feet bgs within the shallow water-bearing zone at OARB. The YBM acts as an aquitard beneath the shallow water-bearing zone, inhibiting the downward movement of shallow groundwater and resulting in a thin, unconfined water-bearing zone in the overlying fill. Rogers and Figuers (1991) found continuity of the YBM throughout the greater Oakland-Alameda area. In the areas investigated in the Basewide Hydrogeologic Study (Kleinfelder, 1998b), the YBM appeared to be uniformly present across OARB. The Basewide Hydrogeologic Study concluded that hydraulic communication between the upper unconfined water-bearing zone and the Merritt Sand aquifer is unlikely based on the widespread presence of the YBM and the fact that volatile organic compounds (VOCs) have not migrated below the YBM in the OU7 area. Also, a 48-hour constant rate pump test was conducted for the Basewide Hydrogeologic Study of well K99DW02. This well is installed in the Merritt Sand aquifer. No response was detected in adjacent observation wells installed in the YBM or unconfined water-bearing zone during the pump test, providing additional evidence of the lack of communication between the upper water-bearing zone and the Merritt Sand aquifer.

A tidal influence study was also conducted for the Basewide Hydrogeologic Study (Kleinfelder, 1998b). During the study, water levels were monitored in selected wells installed in the upper unconfined water-bearing zone, the YBM, and in the Merritt Sand aquifer; in storm drains; and in the Oakland outer harbor. The report concluded that tidal influence extends approximately 600 feet inland from the harbor.

Two documents (Kleinfelder, 1998b and IT, 2000d) have been prepared to assess the potential beneficial use of groundwater from the shallow water-bearing zone. Both documents conclude that categories with no beneficial use are municipal, domestic, and agricultural supply. Non-beneficial use of groundwater for municipal and domestic categories is due to high concentrations of total dissolved solids (TDS) and manganese. Non-beneficial use of groundwater for the agricultural category is due to high concentrations of chloride and sodium. The IT document also concludes that the shallow water-bearing zone is not suitable for industrial uses because of well construction regulations, the limited supply of groundwater, and the easy availability of a reliable water supply from East Bay Municipal Utilities District. Potential beneficial uses of groundwater include livestock watering and freshwater replenishment.

California State Water Resources Control Board Resolution No. 88-63 states that all groundwater in California is considered a potential drinking water source unless (a) the average TDS are greater than 3,000 milligrams per liter (mg/L) and it is not reasonably expected by the Board that the groundwater could supply a public water system; or (b) it is not possible to pump
a sustained yield from the aquifer of 200 gallons per day (gal/day). The state definition differs from the USEPA federal definition, which defines a potential drinking water source as one with 10,000 mg/L TDS or less and a yield of at least 150 gal/day.

Based on further evaluations of the water chemistry, recorded water supply leaks at OARB, the potential for seawater intrusion, and the effects of landscape irrigation, the RWQCB concluded that the freshwater nature of the artificial fill at OARB is most likely due to artificial or man-made inputs (McMurtry, 1998). Therefore, based on the effects of the man-made sources on TDS values, the high TDS values detected in the shallow water-bearing zone, and the hydrogeology of OARB, the RWQCB determined that the shallow water-bearing zone is not a potential drinking water source (McMurtry, 1998). The RWQCB determination of non-potability is restricted to the shallow water-bearing zone at OARB, and has several contingencies. At each OU, the presence of the YBM must be established and the extent of groundwater contamination must be defined. The YBM has been encountered in all deeper borings at OARB, and the lateral extent of groundwater contamination has been sufficiently delineated. Also, the RWQCB has stated that the Army must ensure that for potential groundwater pollution at OARB, (a) the source has been removed, (b) the pollution does not pose an unacceptable risk to human health or the environment, and (c) that any residual plumes are being monitored and are stable (McMurtry, 1998).

3.2 INSTALLATION DESCRIPTION

OARB is composed of BRAC Parcels 1 through 26 (Figure 1). Facilities located in OARB primarily consist of parking lots and open storage areas (Parcels 1, 3, 4, 5, 6, 7), wharf facilities (Parcel 2), railroad yards (Parcel 15), administrative areas and offices (Parcels 9, 10, 19, 24), maintenance shops (Parcels 8, 10, 11, 16, 17), warehouses (Parcels 11, 12, 13, 14, 23), housing (Parcel 21), and housing support facilities (Parcels 18, 20, 22, 25). Housing facilities are no longer occupied. Parcel 26 consists of Maritime Street.

3.3 INSTALLATION HISTORY AND MISSION

OARB was constructed and began performing its primary military mission as a transportation port and distribution terminal for the Department of the Army in the early 1940s. Mission support activities included maintaining facilities and equipment, performing industrial processes, repairing and upgrading equipment, preparing vehicles and equipment for overseas shipment,
storing fuels and managing wastes, performing cleaning operations, and supporting seagoing vessels, rail, and land transportation fleet service vehicles.

Important events in OARB’s development, administration, and mission are summarized below:

1940. The San Francisco Port of Embarkation Board of Officers recommended expanding the Port of Embarkation at Fort Mason, California, and also recommended that waterfront areas in the partially developed Oakland Outer Harbor be acquired to meet expansion needs.

1941. In January, the first land was acquired following War Department approval of the expansion plan. Base operations started on a limited basis in February, using existing site facilities. Landfill and building construction started in April. “Port and General Depot” was the initial designation of the installation. In December, the “Oakland Sub-Port of the San Francisco Port of Embarkation,” with headquarters at Fort Mason, was officially commissioned.

1942. The Administration Area was officially commissioned and designated as “Camp John T. Knight.”

1943. The Integrated Terminal Facility was completed at a cost of $35 million. All waterfront areas of the base, including the piers, wharves, and warehouses, received the name “Oakland Army Base,” effective January 1944.

1946. The Administration Area was officially combined with the operational areas known as Oakland Army Base. Use of the name Camp John T. Knight was discontinued.

1941-1952. This was one of the busiest periods at OARB. The installation moved 8.5 million tons of cargo during the 4 most active years of World War II. During the 3 active years of the Korean Conflict, 7.2 million tons of cargo passed through the terminal.

1955. Reorganization of the San Francisco Port of Embarkation in October resulted in a name change to U.S. Army Transportation Terminal Command Pacific, and the base became the Oakland Army Terminal.
1964. Gilbreath Hall (Building 1) at Oakland Army Terminal replaced Fort Mason as headquarters for the U.S. Army Transportation Terminal Command Pacific.

1965. In February, the Army established five Military Traffic Management and Terminal Services (MTMTS) traffic regions. One of the five, Western Traffic Region, established its headquarters at the Oakland Army Terminal.

In April 1965, the Joint Army-Navy Ocean Terminal, Oakland, California, was transferred from jurisdiction under the Commander General (CG), U.S. Army Material Command (USAMC), to that of the CG, MTMTS. The U.S. Army Terminal Command, Pacific (under the jurisdiction of CG, USAMC) was discontinued and its functions, personnel, equipment, and records were transferred to Commander, Western Area, MTMTS (Western Area, Military Traffic Management and Terminal Services [WAMTMTS]). Western Traffic Region (under the jurisdiction of Commander, MTMTS) was discontinued, and its functions, personnel, equipment, and records were also transferred to Commander, WAMTMTS.

1966-1974. In July 1966, Oakland Army Terminal was renamed Oakland Army Base and reassigned from Commander, MTMTS to HQ WAMTMTS. OARB was home to the largest military port complex in the world during the Vietnam era. Operations were handled by the Military Ocean Terminal Bay Area (MOTBA), a subordinate command of Military Traffic Management Command-Western Area (MTMCWA). Over 37 million tons of cargo passed through MOTBA and its associated commercial piers during the 8 years of the Vietnam conflict. During this period, the trend toward containerization changed the marine terminal and ocean shipping industry. A decision was made to not make a military investment in the extensive equipment necessary for container operations. As a result, the traffic manager responsibilities of MTMCWA expanded to include extensive coordination with carriers for the placement and scheduling of container traffic. Over 70 percent of DoD cargo transported during this period through the Bay Area moved under MTMCWA and MOTBA management through commercial container piers in Oakland and San Francisco.

1974. In June, the Department of the Army granted to the Department of the Navy through the Navy Public Works Center, San Francisco, a permit for a 5-year term to use, administer, and maintain the base infrastructure, and to administer, maintain, and occupy the OARB family housing (112 units), family housing office and warehouse buildings, and the administrative building. Permit extensions occurred in 1979, 1984, and 1985.
1984. In October 1984, the territorial boundaries of the Military Traffic Management Command (MTMC) Eastern Area and the MTMC Western Area were realigned to give the Eastern Area a 28-state geographic responsibility covering the 1st, 2nd, and 4th Army areas. Western Area was given a 20-state geographic responsibility covering the 5th and 6th Army areas. The realignment also divided the Regional Storage Management Offices and Military Air Traffic coordinating units according to geographic areas of responsibility.

1995. On July 1, the BRAC Commission called for the closure of OARB and relocation of the MTMC Western Area and the establishment of an Army Reserve Enclave. The recommendation became effective September 28.

1999. OARB officially closed on September 30.

3.4 **OARB TRANSFER OVERVIEW**

Following announcement of the closure of OARB on July 1, 1995, the Army divided the 425-acre base into 26 areas referred to as BRAC Parcels. These parcels were delineated based on factors such as similar types of past or current uses, age and type of existing structures, and the potential for future reuse. Although the prime purpose of this EBS-T is to support the FOSET for the property to be transferred through an EDC to OBRA, other areas of the OARB outside of the EDC area are described below to allow an overall picture of the envisioned future environmental considerations.

3.4.1 **Economic Development Conveyance Area**

Of the total OARB land area of approximately 425 acres, a total of 360-366 (+/-) acres will be transferred to the OBRA under an EDC. This area consists of BRAC Parcels 2 through 5, 8 through 17, 19 (partial), 20, 21 (partial), and 22 through 26.

3.4.2 **Public Benefit Conveyance Area**

The upland and adjacent submerged land that is within the perimeter of OARB, known variously as the “Spit” or BRAC Parcel 1, is to be transferred to the DOI for ultimate disposition to the EBRPD through the NPS. The area has as yet not been surveyed but is generally understood to
comprise 12.65 to 14 acres +/- of dry land and 5.87 to 6.4 acres +/- of submerged land. The exact areas will be determined upon development of the fee deed transferring the property to the DOI. The Army is intending to perform the remediation of this parcel, if any is required, to a suitable level for recreational use either before or after transfer depending upon discussions with the DOI, the NPS, and the EBRPD.

### 3.4.3 Federal Highway Administration (FHWA)/CalTrans Area

Pursuant to a request by the FHWA in support of an application by the State of California Department of Transportation (CalTrans) seeking appropriation by means of a Federal Land Transfer of 18.852, more or less, encompassing the footprint of the Interstate 880 (I-880) Cypress Freeway Structure, a quitclaim deed allowing the transfer in fee was filed on 13 February 2002 at the Alameda County, California Recorder’s Office. The request also states that appropriate environmental documentation has been included which may be summed as “Grantor and Grantee acknowledge the potential presence of hazardous substances within the Parcel as reported” in the PA/SI, 1998 and that the “Grantor hereby reserves to the Army…a right of entry and access” for the purposes of investigation and remediation. The area is shown on Figure 1 as being part of the non-EDC area.

### 3.4.4 Area Reassigned to the U.S. Army Reserves

Three areas totaling 26.182 +/- acres were reassigned to the U.S. Army Reserves as a result of the BRAC closure of OARB. The reassignments are within the purview of the United States government as the real property administration remains within the Department of Army.

BRAC Parcel 18, comprising 1.682 acres +/- and containing the current Veteran’s Administration Outpatient Clinic was reassigned in September 1997. A Record of Environmental Consideration (REC), signed by the cognizant authority on 3 September 1997 evaluated and supported the transfer as categorically excluded under the provisions of CX A-24 AR 200-2, Appendix A, and that no extraordinary conditions existed as defined in that citation.

Building 780, comprising 5.071 +/- contiguous acres of BRAC Parcels 19 and 21, and BRAC Parcels 6 and 7, comprising 19.429 +/- acres (also known as the “Subaru Lot”) were reassigned on 17 December 1998. The applicable evaluating RECs were signed by the cognizant authority on 11 September 1998.
The USTs and other facilities of environmental concern associated with the USAR property are listed in Table 3-2.

3.5 BASEWIDE CATEGORIZATION FINDINGS

This section provides a summary of the basewide hazardous substances or conditions that have been considered in assigned CERFA categories. BRAC parcel-specific information is presented in Section 4.0.

3.5.1 Storage Tanks

A total of approximately 93 USTs and ASTs have been identified at approximately 73 locations at OARB (EKI, 2002b). Available information regarding the tanks is included in the parcel-specific tables in Section 4.0. A separate summary of USTs and ASTs is provided in Table 3-3 and Table 3-4.

3.5.2 Asbestos

Asbestos surveys have been conducted at OARB. The findings of the surveys are provided in the parcel-specific tables in Section 4.0. In addition, approximately 12,184 linear feet of 3-inch ACD and 132 linear feet of 4-inch ACD have been used as an underground conduit for telecommunication lines (MTMC, 1985). ACD is likely present in every BRAC parcel.

3.5.3 Radionuclides and Licensing

Radiation-containing materials have been shipped via OARB facilities (Foster Wheeler, 1996b). The materials were handled by the 1302nd Major Port Command, which maintained a log of all incoming and outgoing radiation-containing shipments. Radiation sources were packaged in specified U.S. Department of Transportation radiation containers, sealed, and manifested for shipment. Portions of Buildings 161, 806, and 807 were used as storage areas of the shipments. SSPORTS Environmental Detachment of Vallejo, California, performed radiological surveys of Buildings 161 and 806 in October 1998 and of Building 807 in November 1998. Stationary alpha and beta surveys and dry swipe and wet swipe surveys were found to be below loose and
fixed alpha and beta contamination limits specified in the Nuclear Regulatory Commission (Regulatory Guide 1.86), Termination of Operating Licenses for Nuclear Reactors. Therefore, the areas surveyed were determined to be free of evidence of radiological contamination

3.5.4 **Lead-Based Paint**

Lead-based paint surveys have been conducted at OARB, and the findings are summarized in the parcel-specific tables in Section 4.0.

3.5.5 **Polychlorinated Biphenyls (PCBs)**

A survey of OARB transformers was conducted in 1994 and 1995 (Oakland Army Base, 1996). The testing continued through 1999. The Army's caretaker office has maintained all of the updated testing results and has compiled a summary of transformer oil PCB analyses. The results of the PCB surveys are included in the parcel-specific tables in Section 4.0.

3.5.6 **Radon**

In 1989, Tech/Ops Landauer, Inc. conducted a radon survey of OARB within the following buildings: 1, 6, 70, 647, 650, 655, 690, and 762. According to the report, all samples were below 4 picocuries/liter (pCi/L). The highest level at OABB was 0.6 pCi/L in the west wing of Building 650. The Army concluded that all detections were below the action level and no further testing was needed (Tech/Ops Landauer, 1989; OARB, 1992).

3.5.7 **Ordnance**

There is no record of the existence of unexploded ordnance (UXO) at OARB. According to personnel interviews conducted as part of the EBS (Foster Wheeler, 1996b), ammunition for small arms has been shipped through OARB.
3.5.8 Shallow Groundwater

As discussed in Section 3.1.4, OARB was constructed on an area that contains both hydraulic fill and dry fill from the Oakland Hills. Both types of fill contain arsenic, which is a naturally occurring constituent of soil. During the investigation of OARB, a subset of the groundwater samples collected during the various environmental investigations of OARB were unfiltered samples taken from open boreholes. Due to the presence of fine-grained material in the groundwater samples and the presence of the fill material, some of these groundwater samples contained arsenic at concentrations that present an unacceptable risk to human health if it were used as potable water. However, the additional groundwater data collected during the Phase II investigation (IT, 2002f and EKI, 2002c) were of higher overall quality. Groundwater samples were collected from permanent or temporary wells that were properly installed and developed, and groundwater samples collected from borings were filtered in the field. As a result, the arsenic results are more uniform and also more representative of actual conditions.

Arsenic was detected in 46 of the 77 groundwater samples that were collected as part of the Phase II investigations and analyzed for arsenic. The arithmetic mean arsenic concentration was 11 µg/L. The arsenic water quality criterion for protection of ecological receptors in the Basin Plan (RWQCB, 1995) is 36 µg/L. The arithmetic mean arsenic concentration for nearshore East San Francisco Bay groundwater is 11 µg/L (EKI, 1998). Therefore, the Phase II data suggest that arsenic in groundwater at OARB is naturally occurring and not a threat to the environment (EKI, 2002b).

3.6 PLANNED REUSE

Planned final reuse of OARB is presented in the Final Reuse Plan for Oakland Army Base (OBRA, 2002). Planned reuse, which is summarized in Table 3-1 by BRAC parcel, is primarily for commercial and industrial purposes. In the interim period between closure of the Base and final transfer, OARB facilities are either vacant or are being used similarly to prior Army use. Three major final commercial/industrial reuses of OARB are planned:

Maritime

This designation allows for marine terminal, transit sheds, ship repairing, freight forwarders, chandlers employee parking, container freight stations, cargo storage, trucking facilities/parking and railroad yards, government offices related to port activities, and marine services. The area
designated for maritime use encompasses the western ends of Parcels 14, 16, and 25, and all of Parcel 20.

**Joint Intermodal Terminal**

The Port of Oakland is planning to construct an intermodal staging rail yard along the east side of OARB, including the eastern ends of Parcels 12, 13, 14, 16, 19, and 25, and all of Parcels 8, 15, 17, 21, 22, 23, 24 and 26.

**Gateway Development Area**

The Oakland Redevelopment Agency will guide the redevelopment of Parcels 2, 3, 4, 5, 9, and 11 and portions of Parcels 10, 12, and 13. This area has been designated as the Gateway Development Area. Possible reuses include a public park, office buildings, research and development facilities, training facilities, light industrial facilities, warehouse distribution facilities, ancillary maritime support services, a hotel, and retail.

### 3.7 ADJACENT PROPERTY

OARB is situated near the eastern terminus of the San Francisco-Oakland Bay Bridge. It is bounded by the California Department of Transportation right-of-way for the Bay Bridge and the East Bay Municipal Utility District wastewater treatment plant on the north, a Union Pacific railroad switching yard and the City of Oakland on the east, and Port of Oakland facilities on the south and west. The Oakland Outer Harbor is located west of OARB. The Interstate 880 approach to the San Francisco-Oakland Bay Bridge crosses Parcels 5 and 11 at the northern end of the Base. Maritime Street crosses OARB from the southwest to the northeast.
4.0 TRANSFER PARCEL DISCUSSION AND EVALUATION

This section presents descriptions of each parcel, including the results of environmental investigations and findings of asbestos, PCB transformer, and lead-based paint surveys. All potentially contaminated areas originally identified by the Army are listed. In addition, all RAP sites and specific RMP locations (EKI, 2002b) are included in the parcel-specific text and tables. Other areas denoted as RMP locations by the OBRA that have not been previously investigated are not included within the parcel description, although a listing can be found in the RMP (EKI, 2002b). It should be noted that all UST and AST sites are also RMP locations.

The ECP classification (described in Section 1.3) of each parcel is presented. A comparison of available chemical constituent data collected within each parcel to the site-specific remediation goals developed in the RAP (EKI, 2002a) is provided.

4.1 TRANSFER PARCEL 1

4.1.1 Description of Land and Facilities

BRAC Parcel 1 is a 15-acre area of undeveloped land located at the western end of OARB (Figure 1). The parcel is bounded to the south by the Oakland Outer Harbor, to the west by a small area owned by Caltrans, to the north by the entrance to the Bay Bridge, and to the east by BRAC Parcel 2. It contains no structures other than Burma Road, which terminates at the western end of the parcel, and underground utilities. The ground surface is unpaved with scattered debris washed up during storm tides. The southern boundary bordering the Oakland Outer Harbor is protected by riprap. Parcel 1 also includes 5.9 acres of submerged land near the landfill at the eastern end of the parcel.

Prior to the construction of the Bay Bridge (1933-1937), what is now Parcel 1 was either immediately south of, or partially occupied by, a narrow spit used by the Key system commuter railroad and ferry terminal. The remaining area of the future Parcel 1 was open water. Beginning with the construction of the Bay Bridge, through the 1960s, and possibly into the 1970s, Parcel 1 was gradually filled in. The southeast corner of the parcel at the curve of the shoreline was used as a landfill.
4.1.2 Environmental Investigations Within Parcel 1

Potentially contaminated areas investigated in Parcel 1 include the following:

- Former surface soil stains
- Minor surface soil stains
- Landfill/debris yard
- VOC hot spot
- Storm sewer lines

Results of the investigations are summarized in Table 4-1. The landfill/debris yard was delineated during the RI with a geophysical survey and exploratory trenches. Material encountered in the trenches consisted primarily of ferrous cable, asphalt, concrete, wood, and plastic. The VOC hot spot appears to be associated with unauthorized undocumented spills at the end of Burma Road. The area contains elevated levels of VOCs in groundwater and pesticides in soil. The RI data suggest that the area of contaminated groundwater extends off site, onto CalTrans property (Harding ESE, 2001). A summary of the potential risks associated with future use of Parcel 1 is provided in Table 4-2.

4.1.3 ECP Classification of Parcel 1

Based on the potential health risks posed to future construction workers by the contaminants in soil and groundwater, Parcel 1 is currently assigned to ECP Category 6.

4.2 TRANSFER PARCEL 2

4.2.1 Description of Land and Facilities

BRAC Parcel 2 was developed in 1942 for maritime related activities (Figure 1). The parcel is bounded by the Oakland Outer Harbor to the south and southeast, Parcel 1 to the west, Parcel 3 to the east, and the Bay Bridge entry to the north. It contains Wharf 7, which includes Facility 153 (a bulkhead), Building 161 (a receiving warehouse and transit shed), and Facility 162 (a ship operations building). Northwest of Wharf 7 is a large paved area used for breakbulk cargo and
open storage. The parcel also contains Building 164 (a sewer lift station), a loading ramp, Buildings 167 and 169 (temporary hazardous waste storage sheds), and one monitoring well (SCIMW1C) installed by the Port of Oakland. Three monitoring wells (SMW-49, SMW-50, and K160DW01) were recently removed under an Alameda County permit. Monitoring Well SMW-48 could not be located during the well destruction program conducted during 2001.

4.2.2 Environmental Investigations Within Parcel 2

Potentially contaminated areas investigated in Parcel 2 include the following:

- Surface staining and miscellaneous spills
- Hazardous material storage sheds (Buildings 167 and 169)
- Former Tank 3
- Surface water discharges
- Wharf 7 (storm sewer lines)
- Building 161
- Building T-166
- Building T-165
- Building T-164

Results of the investigations are summarized in Table 4-3. Fuel Oil Tank 3 was removed and investigated with oversight by the RWQCB. The Army received a closure letter for the tank. Monitoring well K106DW01 was installed for a hydrogeological study that was not part of a contaminant investigation. The soil and groundwater near damaged storm drain sewer lines were investigated for contamination, and polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons were detected in the area around the storm drain. Sampling of the former soil stain areas showed the presence of contaminants of concern (COCs) in both the soil and groundwater. In the area known as the Hazardous Materials Storage Areas (Buildings 167 and 169), COCs were detected in the soil. Table 4-4 contains a list of the chemicals detected in Parcel 2 that exceed their respective site-specific remediation goals for soil.

OARB conducted lead-based paint surveys of selected buildings within Parcel 2 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. PCB analytical results of transformer oil are also included. Results are summarized in Table 4-5.
4.2.3 ECP Classification of Parcel 2

Based on the presence of contaminants above remediation goals, Parcel 2 is assigned to ECP Category 6.

4.3 TRANSFER PARCEL 3

4.3.1 Description of Land and Facilities

BRAC Parcel 3 was developed by 1942 for maritime-related activities (Figure 1). The parcel is bounded by the Bay Bridge entry to the north, Africa Street and Parcels 4 and 9 to the east, the Oakland Outer Harbor to the south, and Parcel 2 to the west. It is a mostly paved and gravel surface open area used for tractor trailer and cargo container storage. Parcel 3 also contains Wharves 6 and 6½, also known as Facilities 151 and 152, respectively. Northeast of Wharf 6 is Building 148 (a sewer lift station), an electric switch station, and Building 168 (a sentry station). A background monitoring well (BB-1), installed in 1991, was closed in 2001 under a well destruction permit issued by Alameda County.

4.3.2 Environmental Investigations Within Parcel 3

Potentially contaminated areas investigated in Parcel 3 include the following:

- Former surface soil stains (near Wharf 6½ and former Buildings 141 and 145)
- Dark mounded material (seen in 1950 photograph)
- Wharf 6 and 6½ storm drain
- Former incinerator near Buildings 141 and 145
- Two former 1700-gallon horizontal steel tanks in a concrete pit near Building T-124

Results of the investigations are summarized in Table 4-6. The storm sewer running through the area was discovered to be damaged. Analysis of samples collected in this area indicate that soil and groundwater contain COCs. Monitoring well BB-1 was installed for the UST program. Table 4-7 contains a list of the chemicals detected in Parcel 3 that exceed their respective site-specific remediation goals for soil and/or groundwater.
OARB conducted lead-based paint surveys of selected buildings within Parcel 3 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-8.

4.3.3 ECP Classification of Parcel 3

Based on the presence of contaminants above remediation goals, Parcel 3 is currently assigned to ECP Category 6.

4.4 TRANSFER PARCEL 4

4.4.1 Description of Land and Facilities

BRAC Parcel 4 was developed by 1942 for open storage (Figure 1). This parcel is bounded by the West Grand Avenue viaduct to the north, Parcel 9 to the east and south, and Parcel 3 to the west. A paved parking lot that was used for Army personnel private vehicle storage and inspection during transshipment of personal goods occupies almost the entire parcel. Facilities located in the parcel include Building 12 (the installation monument), Building 14 (a vehicle loading dock), and Building 15 (a latrine). A background monitoring well (BB-2), installed in 1991, was closed in 2001 under a well destruction permit issued by Alameda County.

4.4.2 Environmental Investigations Within Parcel 4

Potential or known contaminant sources in Parcel 4 include the following:

- Former Parcel 4 AST
- Former Building 16/Tank 21/oil/water separator (OWS)-3 (vehicle wash rack)
- Storm drain and sanitary sewer pipelines

Results of the investigations are summarized in Table 4-9. The Army received a closure letter from the RWQCB for the Parcel 4 AST. Investigation results indicate that the Parcel 4 shallow water-bearing zone contains arsenic. Institutional controls are recommended to prevent the use of shallow groundwater as drinking water (IT, 2001b). The Former Tank 21/OWS-3 area is a
designated RMP site (EKI, 2002a) due to the detection of benzidine in soil. Table 4-10 contains a list of the chemicals detected in Parcel 4 that exceed their respective site-specific remediation goals for soil and/or groundwater.

OARB conducted lead-based paint surveys of selected buildings within Parcel 4 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. Results are summarized in Table 4-11. No PCB-containing transformers are located in the parcel.

4.4.3 ECP Classification of Parcel 4

Based on the presence of contamination above remediation goals, Parcel 4 is assigned to ECP Category 6.

4.5 TRANSFER PARCEL 5

4.5.1 Description of Land and Facilities

BRAC Parcel 5, also known as the Baldwin Yard, was originally developed as a railroad switching yard for overland shipment and receiving (Figure 1). The parcel is bounded by Parcels 4 and 9 to the southwest, Parcel 6 to the southeast, and Engineer Road to the north. The railroad tracks were removed in 2000 and the area is now used for open storage and a concrete recycling facility. The Oakland Terminal Railway Office is located in the northwest corner of the parcel and the West Grand Avenue viaduct is located along the southwestern parcel boundary.

4.5.2 Environmental Investigations Within Parcel 5

Potentially contaminated areas investigated in Parcel 5 include the following:

- Oil and diesel spills
- Former asphalt and fuel oil ASTs
- Former rail yard
- Potential off-site sources along the northern parcel boundary
- West Grand Avenue viaduct
• Storm drain pipeline

Results of the investigations are summarized in Table 4-12. The Army received a closure letter for the asphalt and fuel oil ASTs, which were removed in 1958 and 1968.

Soil beneath the West Grand Avenue viaduct contains lead at a concentration that exceeds the remediation goal. The shallow water-bearing zone at one temporary well point under the Grand Avenue viaduct contains benzene (Environmental Assessors, 1994). This area is included in the land for which the FHWA has filed a motion to take.

Table 4-13 contains a list of the chemicals detected in Parcel 5 that exceed their respective site-specific remediation goals for soil.

Because there were no structures on Parcel 5, no lead-based paint surveys or asbestos surveys were performed. No PCB-containing transformers are located in the parcel.

4.5.3 ECP Classification of Parcel 5

Soil and groundwater in Parcel 5 contain contaminants above their respective remediation goals; therefore, the parcel is assigned to ECP Category 6.

4.6 TRANSFER PARCEL 8

4.6.1 Description of Land and Facilities

Parcel 8 was developed for rail car maintenance (Figure 1). This parcel is bounded by a low-quality wetland owned by Union Pacific Railroad on the east, the East Bay Municipal Utility District wastewater treatment plant on the north, and Parcels 7 and 15 on the south. The Union Pacific Railroad 16th Street Rail Classification Yard is located east of the low quality wetland. Two railroad trestles are located along the northern border of the parcel. The southern trestle, known as the 26th Street Overpass, formerly extended across the Rail Classification Yard in an arc to the south. The right-of-way for the 26th Street Overpass, which is now underneath an elevated portion of Interstate 880, is part of Parcel 8. The northern trestle, which is not part of
the Base, extends across the Rail Classification Yard in an arc to the north. Parcel 8 contains the remaining section of the 26th Street Overpass trestle, Building 991 (a railroad engine shop), and a concrete washrack. It is generally paved west of Building 991; the surface east of Building 991 is dirt and gravel. Eleven monitoring wells (CE-2, CE-3, RCI-1, RCI-2, RCI-3, K991MW-4, K991MW-5, ICFMW225, ICFMW226, ICFMW227, and ICFMW228), installed for several different investigations, are also located in the parcel.

4.6.2 Environmental Investigations Within Parcel 8

Potentially contaminated areas investigated in Parcel 8 include the following:

- Former Tanks 6, O, and P
- Soil pile north of roundhouse
- Diesel spill (2- to 20-gallon)
- Former 26th Street overpass
- Former OWS
- Washrack
- Former septic tank and outfall line
- Former AST (Facility 994) and product spill
- Building 991
- Topographic low area
- Former Facility 992

Results of investigations are summarized in Table 4-14. Underground diesel fuel Tanks 6, O, and P and the Facility 994 diesel AST were removed and investigated with oversight by the RWQCB. The Army received closure letters for Tanks 6, O, and P. At the AST site, groundwater encompassing an area approximately 35 by 35 feet contains diesel exceeding the remediation goal. Based on results of the RI, soils at the 26th Street overpass, OWS, septic tank, Building 991, topographic low, and Facility 992 do not contain contamination above levels of concern. In 2001, approximately 1,200 tons of pesticide-contaminated soil were excavated and removed from an off-site low-quality wetland adjacent to Parcel 8. Excavation sidewall confirmation soil results indicate that the soil along the eastern boundary of Parcel 8 contains pesticides at elevated concentrations. In addition, analytical results from sampling groundwater downgradient of Parcel 8 (off-site) indicate that groundwater has also been affected by pesticides (IT, 2002c). The responsibility for remediation of this off-site area is retained by the Army. The
Army fully intends to perform all necessary environmental remediation in accordance with federal, state, and local laws and regulations. The Building 991 area has been designated a RAP site due to releases of petroleum hydrocarbons, pesticides, and other hazardous substances (EKI, 2002b). Table 4-15 contains a list of the chemicals detected in Parcel 8 that exceed their respective site-specific remediation goals for soil and/or groundwater.

OARB conducted lead-based paint surveys of selected buildings within Parcel 8 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-16.

4.6.3 ECP Classification of Parcel 8

Based on the presence of contaminants in soil and groundwater at concentrations in exceedance of their remediation goals, Parcel 8 is assigned to ECP Category 6.

4.7 TRANSFER PARCEL 9

4.7.1 Description of Land and Facilities

BRAC Parcel 9 was fully developed in 1942 as the administrative center of the Base (Figure 1). This parcel is bounded by Parcel 3 and Parcel 4 to the northwest, the West Grand Avenue Viaduct to the northeast, Maritime Street to the southeast, and Bataan Avenue to the southwest. It contains Building 1 (the former post headquarters). Buildings 4 and 9 (used for Army personnel private vehicle storage and inspection during transshipment of personal goods), Building 5 (standby diesel generators for Buildings 1 and 6), Building 6 (automated data processing and communications center for Building 1), Building 2 (a stand-alone, weatherized diesel generator), and a large parking area for command, administrative, and support workers. It also contains four monitoring wells (SMW-37, SMW-58, SMW-59, SMW-62) installed for fuel UST site investigations. Parcel 9 was the ceremonial area of the base with salute cannon and a flagpole centered on the Building 1 main entrance.

Prior to the mid-1930s, most of the area that is now Parcel 9 was a mudflat of San Francisco Bay. The southern edge of future Parcel 9 was part of an area that was filled in during the early part of the century and used primarily for shipbuilding. The northern edge of the original filled...
area, just within the southern edge of Parcel 9, held a small Oil Reclaiming Plant (ORP) during the 1920s and 1930s. The ORP was built and operated by tenants of the then landowner, the City of Oakland. Rail and auto causeways connected the area to the main shore of Oakland.

The mudflats were filled intermittently during the 1920s and 1930s by spoils from hydraulic dredging of the ship harbor and ship channel leading to the base wharves. In 1941 and 1942, Army construction included an overlay of several feet of dry fill from the Oakland hills to provide engineered fill for roadway, railway, and non-piled foundation support of base structures.

4.7.2 Environmental Investigations Within Parcel 9

Potentially contaminated areas investigated in Parcel 9 include the following:

- Former Tanks 1, 1A, 2, 2A, 19, and 20
- Former post exchange (PX) gas station (former Building 42) and associated USTs 42a and 42b
- Former ORP
- Storm drain/sanitary sewer pipelines
- Former publicly owned vehicle service garage (Building 4)

Results of the investigations and tank closure activities are summarized in Table 4-17. The diesel and fuel oil USTs have been removed and investigated with oversight by the RWQCB. The Army received closure letters for Tanks 1 and 2 and has requested closure for Tanks 1A, 2A, and 20. Base building records indicate that the PX gas station and associated tanks (USTs 42a and 42b) were removed in 1965. Although the site was apparently not investigated during removal, it was investigated during the SI and RI and was not found to contain contaminants at levels of concern. However, the tank locations are under an existing building.

The former ORP is the source of a tarry residue and acid sludge south of Building 1 and underneath the east wing of the building. In 2001, an in-depth investigation was completed in the area around the former ORP area, including soil and air samples. The investigation showed that the tarry residue and soils contain petroleum hydrocarbons, PAHs, lead, dioxins, and furans. During the investigation, 10 gallons of tarry residue and 20 cubic yards of soil and debris were disposed of off site. The Army has recommended that remedial options for mitigating the remaining contaminated soil at the former ORP be evaluated (IT, 2002e). The Building 1/ORP
area has been designated a RAP site (EKI, 2002b). A Land Disposal Restriction variance has been sought from the USEPA, in compliance with the Resource Conservation and Recovery Act, for handling and disposing of contaminated soil located beneath Building 1 (Caswell, 2002). Table 4-18 contains a list of the chemicals detected in Parcel 9 that exceed their respective site-specific remediation goals for soil and/or groundwater.

OARB conducted lead-based paint surveys of selected buildings within Parcel 9 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. In addition, MCDS Incorporated performed an asbestos survey of Building 1 prior to its demolition and found that the joint compound contains chrysotile (Forensic Analytical, Oct 02). OARB also tracks PCB analytical results of transformer oil. Results of these surveys are summarized in Table 4-19.

4.7.3 ECP Classification of Parcel 9

Based on existing contaminated soil at the former ORP, Parcel 9 is assigned to ECP Category 6.

4.8 TRANSFER PARCEL 10

4.8.1 Description of Land and Facilities

Parcel 10 was developed by the Army for administrative activities, warehousing, and vehicle maintenance (Figure 1). This parcel is bounded by Bataan Avenue and Parcel 9 to the north, Maritime Street to the east (Parcel 26), Corregidor Avenue to the west, and Chunking Street to the south. It contains Building 60 (former exchange cafe), Building 65 (shipping operations), Building 70 (security), Building 85 (printing plant and training supplies warehouse), Building 88 (publications storehouse), Building 90 (administrative building and photo lab), and Building 99 (vehicle/electrical maintenance shop). It also contains 24 monitoring wells installed for several fuel UST investigations (ICFMW203 through ICFMW205, ICFMW207, K99BM01, K99DW01, K99DW02, SMW-39, SMW-41 through SMW-45, SMW-76, SMW-79, SMW-80, SMW-81, SMW-83, SMW-84 through SMW-87, and SMW-91). Monitoring well ICFMW206 was closed under a well destruction permit from Alameda County. Facility 98, a decommissioned wash rack, is located east of Building 99.
Most of Parcel 10, which was originally a tidal mud flat, was filled in during the early part of the century. In 1918, the Union Construction Company erected Buildings 99 and 88 for ship building operations. By 1935, ship building operations had ceased and the building was being used by Pacific Coast Engineering Company as a “structural iron and pipe works.” Between 1941 and 1942, the remaining portions of Parcel 10 were fully developed.

4.8.2 Environmental Investigations Within Parcel 10

Potentially contaminated areas investigated in Parcel 10 include the following:

- Former gasoline Tanks B, C, and Q
- Building 99
- Building 85
- Facility 98 (Building 99 wash rack)
- Excavation of pipeline near Building 99
- Former OWS-4
- Building 90 drain
- Former Building 99 degreasing units
- Building 60 grease trap
- Ocean dredge materials
- Former waste oil AST
- Storm drain and sanitary sewer pipelines
- VOC plume in groundwater near Building 99
- 3 former waste oil tanks near Building 99

Results of the investigations and tank closure activities are summarized in Table 4-20. Also, the northeast corner of Parcel 10 is impacted by the former ORP in Parcel 9 (see Section 4.7.2). The gasoline USTs (Tanks B, C, and Q) have been removed and investigated with oversight by the RWQCB. Groundwater data obtained from two additional wells, installed at the former sites of Tanks B and C, were determined to be below remediation goals. Additional groundwater monitoring around Tank Q showed that no COCs in the area were above remediation goals. If the COCs continue to remain below remediation goals during further monitoring, no further action will be required at Tanks B, C, and Q.
The Army has excavated a 2.5-inch product line along with 289 tons of waste soil (IT, 2002d). The product line was excavated to the north of Building 99 until it turns west and enters Port of Oakland property. During the excavation, suspected asbestos-containing material (ACM) was unearthed in an area adjacent to the product line now known as the boiler debris area; soil samples confirmed ACM was present. Approximately 16 tons of ACM-containing soil and debris were excavated from the area adjacent to the product line. Later additional excavations in the boiler debris area showed that the ACM appears to continue to the north and east. Additional investigations are recommended in the boiler debris area (EKI, 2002c).

Extensive sampling has been conducted inside and outside of Building 99 and Facility 98. Soil and groundwater in the area appear to be impacted by organic contaminants. Samples collected
during removal of OWS-4 indicate that soil is impacted by low concentrations of PAHs. Soil and groundwater sampling at the Building 90 drain, Building 60 grease trap, storm drains, and sanitary sewer lines indicates that contaminants are below levels of concern. The Parcel 10 shallow water-bearing zone contains arsenic, vinyl chloride, and benzene. These contaminants present an unacceptable potential risk to human health if the groundwater is used as a potable water source; therefore, the OU1 FS recommended that institutional controls be implemented to prevent its use (IT, 2001b). Building 85 has been designated as a RMP location (EKI, 2002a) due to its possible previous use as a photograph-processing laboratory. The VOC-impacted area near Building 99 and Building 99 itself have been designated RAP sites (EKI, 2002b).

Table 4-21 contains a list of the chemicals detected in Parcel 10 that exceed their respective site-specific remediation goals for soil and groundwater.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 10 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-22.

4.8.3 ECP Classification of Parcel 10

Based on the presence of contaminants above remediation goals for soil and groundwater, Parcel 10 is assigned to ECP Category 6.

4.9 TRANSFER PARCEL 11

4.9.1 Description of Land and Facilities

BRAC Parcel 11 was developed by the Army for maintenance operations and storage facilities (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcels 6 and 7 and the West Grand Avenue Viaduct to the north, the Knight Rail Yard (Parcel 15) to the east, and Parcel 12 to the south. It contains Building 808 (general-purpose warehouse), Building 812 (vehicle/equipment maintenance shop), Building 823 (box and crate shop/heavy equipment maintenance and repair facility), and Buildings 821 and 822 (former warehouses). The West Grand Avenue viaduct crosses the northeast side of the parcel. A background monitoring well (BB-3), installed in 1991 as part of an investigation of fuel USTs, is located at the eastern end of the parcel. The parcel also contains 8 monitoring wells (ICFMW212, ICFMW213, SMW-33,
SMW-53, SMW-55, SMW-56, SMW-74, SMW-75) installed for several investigations. Monitoring wells SMW-29 and SMW-30 were closed under a well destruction permit issued by Alameda County in 2001.

4.9.2 Environmental Investigations Within Parcel 11

Potentially contaminated areas investigated in Parcel 11 include the following:

- Former Facility 815 (a wash rack, waste oil Tanks 7 and 8, and OWS-2)
- Former Tanks 8A and A
- Building 812
- Building 808
- Storm drain/sanitary sewer pipelines
- Former Buildings T815 and T816
- Building 823
- Footing locations for the West Grand Avenue viaduct
- Northern edge of OU7 (waste-handling practices east of Building 807)

Results of the investigations and tank closure activities are summarized in Table 4-23. The Army received a closure letter from the RWQCB for Tank A, which was removed in 1990. Contaminants detected in groundwater along storm drain lines appear to be related to general conditions, and not to use of the drain lines. Well installation and groundwater sampling along the southern border of Parcel 11 and into Parcel 12 has provided evidence of the presence of a VOC plume. Chlorinated solvents, including trichloroethene and its byproducts, are present in the groundwater between Buildings 808 and 823; this area has been designated a RAP site (EKI, 2002b). Table 4-24 contains a list of the chemicals detected in Parcel 11 that exceed their respective site-specific remediation goals for soil and/or groundwater.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 11 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-25.
4.9.3 ECP Classification of Parcel 11

Based on the presence of contaminants above remediation goals, Parcel 11 is assigned to ECP Category 6.

4.10 TRANSFER PARCEL 12

4.10.1 Description of Land and Facilities

BRAC Parcel 12 is dominated by two general-purpose warehouses (Buildings 806 and 807) (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcel 11 to the north, the Knight Rail Yard (Parcel 15) to the east, and Parcel 13 to the south. It also contains Building 810 (a sentry station), Building 811 (a temporary hazardous waste holding facility), 11 monitoring wells (ICFMW201, ICFMW202, K807BM01, K807DW-1, K807EW-1, K807MW02 through K807MW05, ICFMW221, and ICFMW222), and 8 piezometers (P-1 through P-8). The wells and piezometers were installed for an investigation of contaminated groundwater east of Building 807.

4.10.2 Environmental Investigations Within Parcel 12

Potentially contaminated areas investigated in Parcel 12 include the following:

- Former Tank 9
- Building 806
- Building 807 (temporary hazardous waste facility and two hydraulic fluid spills)
- OU7 (waste-handling practices east of Building 807)
- Potential drum drainage area east of Buildings 805 and 806
- General parcel-wide conditions

Results of the investigations and tank closure activities are summarized in Table 4-26. The gasoline UST (Tank 9) was removed in 1994 and the Army has received a closure letter from the RWQCB. Spills and/or releases east of Building 807 (studied under OU7) are the likely source of chlorinated VOCs detected in groundwater. The OU7 FS recommended a combination of groundwater monitoring and institutional controls be implemented to prevent the use of the
shallow water-bearing zone as a potable source of water in this area (IT, 2000g). OU7 has been designated a RAP site (EKI, 2002b). Table 4-27 contains a list of the chemicals detected in Parcel 12 that exceed their respective site-specific remediation goals for soil and/or groundwater.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 12 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-28.

4.10.3 ECP Classification of Parcel 12

Based on the presence of contaminants above remediation, Parcel 12 is assigned to ECP Category 6.

4.11 TRANSFER PARCEL 13

4.11.1 Description of Land and Facilities

BRAC Parcel 13 is dominated by two general-purpose warehouses (Buildings 804 and 805) (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcel 12 to the north, the Knight Rail Yard (Parcel 15) to the east, and Parcel 14 to the south. Five monitoring wells (SMW-34, SMW-35, SMW-36, SMW-78, and SMW-91) installed for a fuel UST site investigation were closed in 2001 under a well destruction permit issued by Alameda County.

4.11.2 Environmental Investigations Within Parcel 13

Potentially contaminated areas investigated in Parcel 13 include the following:

- Former Tank M
- Surface soil stains and spills
- Building 805 battery charging area
- Building 805 unpaved area
- Storm drain and sanitary sewer pipelines
- Fill material under Buildings 804 and 805
• Potential drum drainage area east of Buildings 805 and 806
• Parcel-wide conditions

Results of the investigations and tank closure activities are summarized in Table 4-29. The Army has received a closure letter for gasoline Tank M, which was removed and investigated with oversight by the RWQCB. Chlorinated VOCs were detected in groundwater adjacent to the storm drain line. The results of the RI risk assessment indicate that the Parcel 13 shallow water-bearing zone contains arsenic that presents an unacceptable potential risk to human health if used as a potable water source; therefore, the OU1 FS recommended that institutional controls be implemented to prevent its use (IT, 2001b). Table 4-30 contains a list of the chemicals detected in Parcel 13 that exceed their respective site-specific remediation goals for soil.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 13 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-31.

4.11.3 ECP Classification of Parcel 13

Based on the presence of contaminants above remediation goals, Parcel 13 is assigned to ECP Category 6.

4.12 TRANSFER PARCEL 14

4.12.1 Description of Land and Facilities

BRAC Parcel 14 is dominated by two general-purpose warehouses (Buildings 802 and 803) (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcel 13 to the north, the Knight Rail Yard (Parcel 15) to the east, and Parcel 16 to the south. It also contains Building 801 (a sentry station). A background monitoring well (BB-4) was closed under a well destruction permit from Alameda County in 2001.
4.12.2 Environmental Investigations Within Parcel 14

Potentially contaminated areas investigated in Parcel 14 include the following:

- Multiple ground stains
- Parcel-wide conditions
- Building 802

Results of the investigations are summarized in Table 4-32. Parcel-wide soil and groundwater were investigated in 1996 by AAFES and a background monitoring well was installed in 1991. Table 4-33 contains a list of the chemicals detected in Parcel 14 that exceed their respective site-specific remediation goals for soil.

The USACE conducted lead-based paint surveys of selected buildings in Parcel 14 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-34.

4.12.3 ECP Classification of Parcel 14

Based on the presence of contaminants above remediation goals, Parcel 14 is assigned to ECP Category 6.

4.13 TRANSFER PARCEL 15

4.13.1 Description of Land and Facilities

BRAC Parcel 15, also known as the Knight Rail Yard, was developed as a railroad switching yard for overland shipment and receiving (Figure 1). The parcel is bounded by Parcels 7, 11, 12, 13, and 14 to the west and Union Pacific rail lines to the east. It is occupied entirely by rail lines laid on crushed rock ballast. The northern third of the yard was rebuilt during the Caltrans Cypress replacement construction.
4.13.2 Environmental Investigations Within Parcel 15

Potentially contaminated areas investigated in Parcel 15 include the following:

- OU7 (waste handling practices east of Building 807)
- Parcel-wide conditions (excluding OU7)

Because solvent-contaminated soil and groundwater were encountered east of Building 807 adjacent to Parcel 15, the northern portion of Parcel 15 was investigated under OU7. Soil and groundwater were also investigated in 1996 by AAFES (CDM, 1996). Results of the two investigations are summarized in Table 4-35. The AAFES investigation showed that general railroad operations were not a source of soil or groundwater contamination that exceeds levels of concern. The portion of OU7 recommended for possible remediation is located in Parcel 12. Table 4-36 contains a list of the chemicals detected in Parcel 15 that exceed their respective site-specific remediation goals for soil.

PCB analytical results for a transformer located in Parcel 15 are presented in Table 4-37.

4.13.3 ECP Classification of Parcel 15

Based on the presence of contaminants above remediation goals, Parcel 15 is assigned to ECP Category 6.

4.14 TRANSFER PARCEL 16

4.14.1 Description of Land and Facilities

Parcel 16 was developed by the Army as a vehicle service and motor pool maintenance area (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcel 14 to the north, Parcels 18 and 19 to the south, and Parcel 17 to the east. It contains Building 825 (communications cable house), Facility 827 (electrical switch station), Building 828 (Army Air Force Exchange Services gas station), Building 830 (auto hobby shop), Building 832 (central motor pool), Building 833 (non-commissioned officer dining facility), Building 834 (motor pool
dispatch), Building 835 (lube oil storage building), Facility 837 (grease rack), Building 838 (auto hobby shop), and a hazardous waste storage shed north of Building 838. It also contains 18 monitoring wells (ICFMW208 through ICFMW211, ICFMW223, ICFMW224, SMW-22, SMW-25, SMW-26, SMW-27, SMW-65, SMW-66, SMW-69 through SMW-73, and SMW-82) installed for several UST investigations.

4.14.2 Environmental Investigations Within Parcel 16

Potentially contaminated areas investigated in Parcel 16 include the following:

- Former Tanks 4, 4A, 5, 5A, 10, 11, 11A, 12, 12A, 13, and 13A (gasoline and diesel tanks)
- Building 842 AST
- Diesel dispensing facility
- Former Tanks 14, 14A, 18, and N (waste oil tanks)
- Former Building 830 OWS and hydraulic lifts
- Building 830 storm drain inlet
- Grease and oil release at Building 830
- Former OWS-5
- Former Building 828 hydraulic lifts
- Former OWS-6, OWS-7, OWS-8, and OWS-9
- Hazardous waste storage shed
- Building 838 storm drain inlets
- Former waste oil AST located in hazardous waste storage shed
- Former propane ASTs
- Former washracks (Building 831)
- Former washracks (Buildings 838 and 839)
- Building 835 grease rack and lube house
- Stained surface soil

Results of the investigations and tank closure activities are summarized in Table 4-38. All known petroleum fuel-related tanks (USTs 4, 4a, 5, 5a, 10, 11, 12, 13, 11a, 12a, 13a, 14, 14a, 18, and N) have been removed from the parcel. Continued groundwater and biodegradation monitoring is recommended for the Tanks 11, 11A, 12, 12A, 13, and 13A site, located adjacent to Building 828 (IT, 2001d), due to the detection of benzene and methyl tert-butyl ether in
groundwater samples. This area has been designated a RAP site (EKI, 2002b). The Army was granted closure of the Tanks 4/5 and 4A/5A sites by the RWQCB on 9 Sep 2002. The Army was granted closure of the Building 842 AST site by the City of Oakland Fire Department. The RWQCB also issued a closure letter for the former diesel Tank 10 site.

All known waste oil tanks, OWSs, and hydraulic lifts have also been removed from Parcel 16. The OU3 FS (IT, 2000g) recommended institutional controls to prevent the use of the shallow water-bearing zone as a potable source of water. Table 4-39 contains a list of the chemicals detected in Parcel 16 that exceed their respective site-specific remediation goals for soil and groundwater.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 16 in 1995 and 1996, and asbestos surveys of selected buildings in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-40.

### 4.14.3 ECP Classification of Parcel 16

Based on the presence of contaminants at concentrations that exceed the site-specific remediation goals, Parcel 16 is assigned to ECP Category 6.

### 4.15 TRANSFER PARCEL 17

#### 4.15.1 Description of Land and Facilities

Parcel 17 originally was an open storage area with a vehicle maintenance facility at one edge (Figure 1). The parcel is bounded by Parcel 14 to the north, Parcel 15 to the east, Parcel 19 to the south, and Parcel 16 to the west. It contains Building 840, a former vehicle maintenance shop currently used for storing landscaping equipment and supplies, Facility 845 (softball field) and Facility 844 (handball court). Accessory buildings near Building 840 include two pesticide storage sheds to the west and an open-sided shed to the east. The area north of Building 840 is paved while the area to the south is unpaved.
4.15.2 Environmental Investigations Within Parcel 17

Potentially contaminated areas investigated in Parcel 17 include the following:

- Pesticide storage sheds
- Motor oil stains north of Building 840
- Plugged drain line
- Dark surface soil stains north of Building 840
- Painting operations at Building 840

Results of the investigations are summarized in Table 4-41. An investigation of soil near Building 840 revealed the presence of lead above its remediation goal. The Army has attributed the presence of lead in soil to releases from the vehicle painting room air handling system rather than to weathering of lead-based paint from Building 840. Table 4-42 contains a list of the chemicals detected in Parcel 17 that exceed their respective site-specific remediation goals for soil.

The USACE conducted lead-based paint surveys of Building 840 within Parcel 17 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-43.

4.15.3 ECP Classification of Parcel 17

Based on the presence of contaminants above remediation goals, Parcel 17 is assigned to ECP Category 6.

4.16 TRANSFER PARCEL 19

4.16.1 Description of Land and Facilities

BRAC Parcel 19 was developed for temporary housing (Figure 1). The parcel is bounded by Parcels 18 and 20 to the west, Parcels 16 and 17 to the north, Union Pacific rail lines to the east, and Parcel 21 to the south. It contains Buildings 790, 792, 794, and 796 (barracks) and Building
793 (a boiler room for Buildings 792 and 794). Washracks and grease traps that previously served kitchen facilities are located north of Buildings 790, 792, and 794. A sump that receives blowdown from the Building 793 boiler is located east of Building 793. A monitoring well (SMW-11) installed for a fuel UST site investigation was closed under a well destruction permit from Alameda County in 2001.

Building 780 and the associated former fuel Tank 16, groundwater monitoring wells, a backup generator, a diesel AST, a wash rack, and a grease trap are also in Parcel 19; however, these were transferred to the U.S. Army Reserves effective December 18, 1998 and are not part of the property transfer.

4.16.2 Environmental Investigations Within Parcel 19

Potentially contaminated areas investigated in the portion of Parcel 19 scheduled for transfer include the following:

- Former fuel oil Tank 17
- Wash racks and grease traps at Buildings 792 and 794
- Building 793 boiler room sump

Results of the investigations are summarized in Table 4-44. The Army received a closure letter from the RWQCB for former Tank 17. The risk assessment results in the RI indicate that the arsenic within the Parcel 19 shallow water bearing zone presents an unacceptable potential risk to human health if the aquifer is used as a potable water source; therefore, the OU3 FS recommended that institutional controls be implemented to prevent its use (IT, 2000g). No chemicals detected in Parcel 19 exceed their respective site-specific remediation goals.

The USACE did not conduct lead-based paint surveys of buildings within the portion of Parcel 19 scheduled for transfer. A summary of the asbestos survey results within Parcel 19 is presented in Table 4-45.
4.16.3  ECP Classification of Parcel 19

Based on the presence of RMP sites within Parcel 19, the portion of Parcel 19 scheduled for transfer is assigned to ECP Category 6.

4.17  TRANSFER PARCEL 20

4.17.1  Description of Land and Facilities

Parcel 20 was developed by the Army for personnel support services (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcel 18 to the north, Parcels 19 and 21 to the east, and Parcel 22 to the south. It contains Building 701 (post chapel), Building 726 (EM Service Club), Building 738 (Arts and Crafts Center), and Building 740 (bowling center). It also contains 18 monitoring wells (ICFMW216 through ICFMW219, K738BM01, K738DW01, SMW-12, SMW-15, SMW-16, SMW-17, SMW-19, SMW-21, SMW-88, SMW-89, SMW-90, SMW-92, SMW-93, and SMW-94) that were installed for a fuel UST sites investigation and a hydrogeological study.

4.17.2  Environmental Investigations Within Parcel 20

Potentially contaminated areas investigated in Parcel 20 include the following:

- Former fuel oil Tanks D, D1, F and G
- Building 738

Results of the investigations are summarized in Table 4-46. Three newly installed wells around the former locations of Tanks D and F showed no contamination in the groundwater above the remediation goals. The Army has received closure letters from the RWQCB for former Tanks D1 and G. The Building 738 site did not contain contamination above remediation goals. The RI indicates that the Parcel 20 shallow water bearing zone contains arsenic that presents an unacceptable potential risk to human health if used as a potable water source; therefore, the OU3 FS recommended that institutional controls be implemented to prevent its use (IT, 2000g).
Table 4-47 contains a list of the chemicals detected in Parcel 20 that exceed their respective site-specific remediation goals for soil and groundwater.

The USACE conducted lead-based paint surveys of buildings within Parcel 20 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-48.

4.17.3 ECP Classification of Parcel 20

Based on the presence of contaminants in exceedance of the remediation goals, Parcel 20 is assigned to ECP Category 6.

4.18 TRANSFER PARCEL 21

4.18.1 Description of Land and Facilities

Parcel 21 was developed for family housing (Figure 1). The parcel is bounded by Parcels 20 and 22 to the west, Parcel 19 to the north, Union Pacific rail lines to the east, and Parcel 24 to the south. The family housing area, is composed of Buildings 644 and 776 (waiting shelters), Buildings 670, 674, 675, 676, 680, 689, 772, 773, 774, and 775 (family housing), and Facility 736 (baseball field). Former Building 682, located in what is now the inner court area of Buildings 670, 674, 680, and 689, was identified on a base map as an indoor small bore firing range. A background monitoring well (BB-5) was closed under a well destruction permit issued by Alameda County in 2001. The parcel also contains the former fuel oil Tank E site and Facility 778 tennis courts; however, these were transferred to the U.S. Army Reserves, effective December 18, 1998.

4.18.2 Environmental Investigations Within Parcel 21

Potentially contaminated areas investigated in the portion of Parcel 21 scheduled for transfer include the following:

- Former fuel oil Tanks H and I
• Former Building 682 (former Rifle and Pistol Club)
• Building 683 (former Automotive Craft Shop with a grease rack)
• 15 USTs
• Family housing

Results of the investigations are summarized in Table 4-49. The Army received closure letters for former Tanks H and I. A geophysical investigation at the locations of suspected USTs uncovered evidence of 15 tanks that require further investigation (Table 4-49). Soil and groundwater samples were taken at each of the sites. Soil and groundwater samples collected near selected UST sites (673, 678, 682, 686, and 688) showed the presence of COCs. Table 4-50 contains a list of the chemicals detected in Parcel 21 that exceed their respective site-specific remediation goals for soil and groundwater.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 21 in 1995 and 1996, and asbestos surveys in 1989 and 1999. Lead was detected in two surface soil samples above the 400 parts per million allowable limit. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-51.

4.18.3 ECP Classification of Parcel 21

Based on the presence of contaminants that exceed remediation goals and UST sites that have not been investigated, Parcel 21 is assigned to ECP Category 6.

4.19 TRANSFER PARCEL 22

4.19.1 Description of Land and Facilities

Parcel 22 is bordered by 11th street to the north, Maritime Street to the west, 10th Street to the south, and Midway Street to the east. Facilities located within Parcel 22 include a guest house (Building 650, a child development center (Building 655), a playground (Facility 656), a theater (Building 660), and a sewer pump station (Building 663) (Figure 1). Buildings 650 and 660 are currently vacant. The child development center and associated playground is currently being subleased to the City of Oakland. Fuel oil UST J was formerly located in Parcel 22.
4.19.2 Environmental Investigations Within Parcel 22

Potentially contaminated areas investigated in Parcel 22 include the following:

- Fuel oil UST J
- USTs 651, 652, 660
- Parcel wide conditions

Results of the investigations are summarized in Table 4-52. The Army received a closure letter for Tank J. The PA/SI concluded that additional study of Parcel 22 was not warranted due to its historical use as housing and housing support (Kleinfelder, 1998a). A geophysical investigation at the location of suspected USTs uncovered evidence of three tanks requiring further investigation (Table 4-52). The soil and groundwater chemical data collected within Parcel 23 do not exceed the remediation goals.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 24 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-53.

4.19.3 ECP Classification of Parcel 22

Based on the need for additional investigation of UST sites, Parcel 22 is assigned to ECP Category 6.

4.20 TRANSFER PARCEL 23

4.20.1 Description of Land and Facilities

Parcel 23 is bordered by 10th Street to the north, Maritime Street to the west, 8th Street to the south, and Midway Street to the east (Figure 1). Facilities within the parcel consist of a general purpose building (Building 640) of which portions have been used as a general purpose warehouse, gymnasium, open dining area, administration and post office branch. An emergency generator with an integral diesel tank (approximately 100 gallons) is located on the southwest
side of the building. A dry cleaning transfer operator in the building reportedly sent clothes out for cleaning off site. AAFES is currently subleasing the warehouse and administration portion of the building, while Papasan Catering occupies the former open dining area. Bay Co. Roofing is using a portion of Building 640 as a training facility. The gymnasium and post office branch are currently vacant. The liquor store (Building 641) was also located in Parcel 23. A portion of Building 641 is being subleased to the City of Oakland and is being used for bicycle repairs. Map records from 1942 indicate that a motor pool and salvage area were located on the parcel before the current buildings were constructed.

4.20.2 Potential or Known Sources Within Parcel 23

Potential contaminant sources investigated in Parcel 23 include the following:

- Dry commodes (possible methane gas pathway)
- Fertilizers and pesticides storage (Building 640)
- Emergency generator with diesel fuel tank (Building 590)
- Former service station
- Former Motor Pool/Salvage Yard
- Parcel-wide conditions

Results of the investigations are summarized in Table 4-54. A geophysical investigation at suspected UST locations within the former service station in Parcel 23 showed possible anomalies, which require additional investigation. The Former Motor Pool and Salvage Yard have been designated as a RMP location (EKI, 2002a).

The USACE conducted lead-based paint surveys of Building 590 within Parcel 25 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-55.

4.20.3 ECP Classification of Parcel 23

Based on the results of geophysical investigations, Parcel 23 is assigned to ECP Category 6.
4.21 TRANSFER PARCEL 24

4.21.1 Description of Land and Facilities

Parcel 24 was developed for warehousing (Figure 1). The parcel is bounded by Parcel 23 to the west, Parcel 21 to the north, and Union Pacific rail lines to the east. It contains Building 645 (offices), Building 646 (general storehouse), and Building 690 (bachelor-enlisted headquarters company). Three monitoring wells (EMW1, EMW2, and EMW3) installed for an investigation of former Building 648 and a monitoring well (ICFMW220) installed at former Tank K are also located in the parcel.

4.21.2 Environmental Investigations Within Parcel 24

Potentially contaminated areas investigated in Parcel 24 include the following:

- Former fuel oil Tanks K and L
- Building 647 (former shop)
- Building 645 (former shop)
- Hydraulic lifts associated with former Building 648

Results of the investigations are summarized in Table 4-56. The Army received a closure letter for Tank L. Additional groundwater monitoring is recommended for former Tank K. However, subsequent results of groundwater sampling from permanent wells indicate that PAHs are no longer detectable in groundwater (IT, 2001i). The OU3 FS recommended that institutional controls be implemented to prevent the use of the shallow water bearing zone as a source of potable water (IT, 2001b). Table 4-57 contains a list of the chemicals detected in Parcel 24 that exceed their respective site-specific remediation goals for soil and groundwater.

The USACE conducted lead-based paint surveys of selected buildings within Parcel 24 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-58.
4.21.3  ECP Classification of Parcel 24

Based on the presence of contaminants that exceed remediation goals, Parcel 24 is assigned to ECP Category 6.

4.22  TRANSFER PARCEL 25

4.22.1  Description of Land and Facilities

Parcel 25 is dominated by Building 590, the former base commissary (Figure 1). The parcel is bounded by Maritime Street (Parcel 26) to the west, Parcel 23 to the north, Parcel 24 and Union Pacific rail lines to the east, and Union Pacific property used for container storage to the south. Three monitoring wells (SMW-01, SMW-04, and SMW-05) installed for a fuel UST site and a background monitoring well (BB-6) were closed under a well destruction permit issued by Alameda County in 2001.

4.22.2  Potential or Known Sources Within Parcel 25

Potential contaminant sources investigated in Parcel 25 include the following:

- Former fuel oil Tank 15
- Former incinerator (Building 530)
- Pesticide mixing shed south of Building 590
- Building 591 battery maintenance shop
- Ground stains
- Standing liquid observed in 1960
- Possible debris observed in a 1946 photograph
- Building 590 lead-based paint

Results of the investigations are summarized in Table 4-59. The Army received a closure letter for Tank 15. Pesticides are present in soil in the immediate vicinity of the mixing shed. The OU3 FS (IT, 2000g) recommended no further action beyond institutional controls to prevent the use of the shallow water bearing zone as a potable source of water. Table 4-60 contains a list of
the chemicals detected in Parcel 25 that exceed their respective site-specific remediation goals for soil.

The USACE conducted lead-based paint surveys of Building 590 within Parcel 25 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-61. Lead-based paint has impacted soil adjacent to Building 590, where lead was detected at a maximum concentration of 1,470 milligrams per kilogram (IT, 2001a).

**4.22.3 ECP Classification of Parcel 25**

Based on the results of soil and groundwater investigations, Parcel 25 is assigned to ECP Category 6.

**4.23 TRANSFER PARCEL 26**

**4.23.1 Description of Land and Facilities**

Parcel 26 consists of the portion of Maritime Street (Figure 1) located between West Grand Avenue and 7th Street. Included in Parcel 26 are several guardhouses (Buildings 702, 801 and 810) on the east side of Maritime Street and a bus stop waiting shelter (Building 644) located on the west side of Maritime Street.

**4.23.2 Environmental Investigations Within Parcel 26**

Potentially contaminated areas investigated in Parcel 26 include a 50-100 gallon diesel spill on Maritime Street.

Results of the investigations are summarized in Table 4-62. The diesel spill was contained and cleaned by Laidlaw before any fuel entered storm drains. The PA/SI stated that there is sufficient information to document past use and environmental impact and concluded that further investigation of Parcel 26 is not warranted.
The USACE conducted lead-based paint surveys of selected buildings within Parcel 26 in 1995 and 1996, and asbestos surveys in 1989 and 1999. OARB also tracks PCB analytical results of transformer oil. Results are summarized in Table 4-63.

4.23.3 ECP Classification of Parcel 26

Based on the presence of RMP sites within Parcel 26, this parcel is assigned to ECP Category 6.

4.24 ECP PARCEL SUMMARY

All BRAC parcels addressed in this EBS-T have been assigned an ECP classification based on current status of investigation, remediation, and/or removal actions. These ECP assignments are summarized in Table 4-64.
5.0 REFERENCES

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