Environmental Baseline Survey
Surplus II Parcels
Former Fort Ord, California

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DISTRIBUTION

SELECTED A R NYMS

ACM	Asbestos-Containing Materials
ARAR	Applicable or Relevant and Appropriate Requirement
ASR	Archive Search Report
Army	U.S. Department of the Army
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
BRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure
BTC	Base Transition Coordinator
CEQA	California Environmental Quality Act
CERFA	Community Environmental Response Facilitation Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System (Superfund)
DEH	Directorate of Engineering and Housing
DENR	Directorate of Environmental and Natural Resources Management
DERP-MIS	Defense Environmental Restoration Program - Management Inventory System
DoD	Department of Defense
EBS/EBST	Environmental Baseline Survey/Environmental Baseline Survey for Transfer
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
ENRD	Environmental and Natural Resources Management Division, DEH
EPA	U.S. Environmental Protection Agency
FORA	Fort Ord Reuse Authority
FORG	Fort Ord Reuse Group

FOST	Finding of Suitability to Transfer
GPS	Global Positioning System
HSMA	Hazardous Materials Storage Area
IAROD	Interim Action Record of Decision
IRP	Installation Restoration Program
LBP	Lead-Based Paint
NEPA	National Environmental Policy Act
NPL	National Priorities List
NoAROD	No Action Record of Decision
OE	Ordnance and Explosives
OU	Operable Unit
PCB	Polychlorinated Biphenyl
PSA	Petroleum Storage Area
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROC	Record of Concurrence
ROD	Record of Decision
SOC	Statement of Conditions
SRE	Screening Risk Evaluation
SWMU	Solid Waste Management Unit
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Center
USAEDH	U.S. Army Engineer Division, Huntsville
UST/AST	Underground Storage Tank/Aboveground Storage Tank
UXO	Unexploded Ordnance

EXECUTIVE SUMMARY

This parcel-specific Environmental Baseline Survey (EBS) presents the results of an assessment of the known existing environmental conditions for a portion of former Fort Ord, Monterey County, California. The area encompassed by this EBS is known as the Surplus II Parcels, consisting of the following specific parcels: E35, E37, L15.1, L30, L31, L32, and L33.

The purpose of the EBS is to support the transfer of real property, by deed or lease, by identifying information available about existing environmental conditions on a parcel and adjacent areas. A Finding of Suitability to Transfer (FOST) or a Finding of Suitability to Lease (FOSL) documents the environmental suitability of a parcel for transfer by deed or lease, respectively, on the basis of specific criteria. The FOST or FOSL may be prepared based on information in the EBS. In accordance with U.S. Department of Defense (DoD) and U.S. Department of the Army (Army) guidance, the appropriate official of the DoD or Army will certify through a FOST or FOSL that one of the following conditions is true:

- The requirements of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section (§) 120(h)(3) have been met (i.e., all remedial action necessary to protect human health and the environment has been taken)

or

- The requirements of CERCLA §120(h)(4) have been met for the parcel because no CERCLA hazardous substances, petroleum products, or their derivatives were known to have been released, or disposed of on the parcel.

The EBS and FOST or FOSL are coordinated and complementary documents that provide information regarding the environmental suitability of a parcel for transfer with respect to available information and specific criteria. These documents are reviewed by the appropriate federal and state agencies, and agency staff comments are incorporated, as necessary, into subsequent versions of the documents.

The results of this EBS indicate that health- or safety-related environmental conditions associated with asbestos and lead-based paint are suspected to exist on some of the Surplus II Parcels. Areas where such conditions exist also include areas otherwise suitable for transfer by deed or lease under CERCLA.

On the basis of the available information, the Surplus II Parcels EBS indicates that the requirements of CERCLA §120(h)(3) have been met for Parcels E35, L15.1, L33, and a portion of Parcel L32. These parcels are assigned DoD environmental condition 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). The requirements of CERCLA §120(h)(4) have been met for all of Parcels E37, L30, and L31. These parcels are assigned DoD environmental condition 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]). Accordingly, draft FOSTs have been prepared for all of the Surplus II Parcels, excluding a portion of Parcel L32. Appendix A is the draft FOST for CERCLA §120(h)(4) DoD Category 1 Parcels; Appendix B is the draft FOST for CERCLA §120(h)(3) DoD Category 4 Parcels. Community Environmental Response Facilitation Act (CERFA) Parcels (delineated in the CERFA program described in Section 4.10) 111, 192, 194, 196, 197, 198, 205, 206, 213, and 226 are within or overlap the Surplus II Parcels. These CERFA parcels were classified as uncontaminated. The EPA concurred with the uncontaminated classification; the DTSC concurred with the uncontaminated classification for all of the CERFA parcels listed except for Parcels 206 and 226. A portion of Parcel L32 has not met the requirements of CERCLA §120(h)(3) and has been assigned DoD Category 7. This portion of Parcel L32 will be transferred when appropriate.

1.0 INTRODUCTION

This parcel-specific Environmental Baseline Survey (EBS) presents the results of an assessment of known existing environmental conditions for a portion of the former Fort Ord installation (hereinafter referred to as Fort Ord), Monterey County, California (Plate 1). The parcels addressed by this EBS are known as the Surplus II Parcels (E35, E37, L15.1, L30, L31, L32, and L33) and are shown on Plate 2. Information presented in this EBS is used by the U.S. Department of the Army (Army) to prepare parcel-specific Findings of Suitability to Transfer (FOSTs) for the Surplus II Parcels, as discussed below.

Fort Ord was selected for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510; BRAC). In the fall of 1993, following 2 years of activities that prepared Fort Ord for closure and troop realignment under Base Realignment and Closure (BRAC), the Army initiated EBSs to support the transfer of excess real property at Fort Ord. The EBS approach developed for Fort Ord considers issues that affect real property transfer, including the nature and extent of contamination at the installation and other health and safety issues associated with the condition of buildings. The EBS also provides information in response to requests received from community organizations regarding parcel reuse.

Reuse parcels were identified by the Army and the community-based Fort Ord Reuse Group (FORG; subsequently superseded by the Fort Ord Reuse Authority [FORA]) (*FORG, 1993*). Subsequently, the FORA Fort Ord Base Reuse Plan outlined the anticipated reuse of designated parcels at Fort Ord (*FORA, 1996*). The list of parcels may be modified periodically as the needs of the local community change.

This EBS was prepared by Harding Lawson Associates (HLA) on behalf of the U.S. Army Corps of Engineers (USACE), Sacramento District, which has been retained by the Army to conduct surveys to support real-property transfer at Fort Ord. This EBS is prepared in accordance with the USACE

February 21, 1995, Revised Amendment to the Supplemental Scope of Work (SSOW, dated September 2, 1993), under Contract DACA 31-94-D-0069, Delivery Order (DO) 0010.

1.1 Purpose and Objectives

The purpose of the EBS is to support the transfer of real property, by deed or lease, by providing an assessment of existing environmental conditions on a parcel and in adjacent areas on the basis of pre-existing information. To the extent that information was available to the authors, the EBS addresses the following:

- Status of site investigations
- Nature and extent of known contamination, if any
- Solid and hazardous waste management practices
- Underground storage tank (UST) management practices
- Status of building surveys for asbestos, lead-based paint (LBP), or radon
- Other information pertaining to environmental conditions on the parcel.

The EBS focuses on identifying and documenting environmental site characterization activities and the presence or likely presence of hazardous substances or hazardous wastes on a portion of real property considered for transfer. The EBS addresses hazardous substances or wastes, including certain substances not usually regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and other substances such as petroleum products, asbestos, and LBP in structures. The EBS includes a consideration of soil or groundwater contamination and a description of potential public health and safety issues, such as those associated with the condition of buildings, that may affect the Army's ability or decision to transfer such property, to the extent that relevant information is available. The EBS may not constitute a complete site characterization because it is

based on existing available information. An EBS may be updated to reflect more recently acquired information or to support transfer of additional areas.

As stated in the most recent DoD guidance on the EBS/FOST process (released June 1, 1994 [*DoD, 1994*]) and in Army implementing guidance dated November 10, 1994 (*Army, 1994b*), the EBS/FOST/FOSL program has the following objectives:

- Protecting human health and the environment
- Preparing EBSs, FOSTs, and FOSLs in a consistent manner to assess, determine, and document the environmental suitability of properties for transfer
- Ensuring transfer of property without interfering with cleanup actions
- Ensuring compliance with applicable environmental requirements, allowing DoD to demonstrate compliance with CERCLA §120(h) before property is transferred
- Providing for adequate public and regulatory participation without unduly encumbering the DoD's authority and mandate to make property available for reuse in a timely manner
- Ensuring that sufficient environmental review of the real property being considered for transfer is conducted to avoid unwarranted risks of future liability.

1.2 Procedures for Conducting an Environmental Baseline Survey

Procedures for conducting an EBS are described in the June 1994 DoD guidance *(DoD, 1994)*. The EBS is similar to a CERCLA Preliminary Assessment (PA) and may include information from many sources, including ongoing programs, such as Fort Ord's CERCLA remedial investigation/feasibility study (RI/FS), building surveys for asbestos, LBP, and radon, solid waste management activities, and other programs, as discussed in Section 4.0. Specific EBS activities may include the following:

- Identification of parcel boundaries
- Search, review, and documentation of existing records regarding environmental conditions on the

parcel

- Description of known current or past activities on the parcel
- Interviews with current and/or former employees involved in operations on the parcel
- Description of known hazardous substance or hazardous waste management practices on the parcel or on adjacent parcels
- Documentation of observations made during visual and physical inspections
- Description of possible sources of contaminants on the parcel or on adjacent parcels, on the basis of available information
- Documentation of ongoing response actions.

1.3 Summary of EBS Purpose and Objectives

The EBS provides information regarding the environmental suitability of a parcel for transfer with respect to available information and specific criteria. The EBS summarizes existing environmental information and provides a technical basis for the FOST or FOSL. The EBS also provides a mechanism for documenting known CERCLA and non-CERCLA information (e.g., possible health-related conditions associated with the presence of non-CERCLA asbestos-containing materials [ACM]). The FOST or FOSL provides an overview of the contents of the EBS and presents conclusions about the parcel's suitability for transfer and restrictions on its use.

1.4 Limitations

This document was prepared for the sole use of HLA's client, the USACE, Sacramento District, the only intended beneficiary of our work, to support preparation of FOSTs or FOSLs for the Surplus II Parcels. No other party should rely on the information contained herein without the prior written consent of HLA.

Although the EBS is a publicly available document, its distribution to other parties does not constitute HLA's consent for those or other parties to rely on the information contained herein. This document may not contain sufficient information for the purposes of other parties.

HLA's professional services for this EBS, including the preparation of this document, were conducted in accordance with practices and procedures generally accepted in the environmental consulting field in northern California at this time; no other warranty is given or implied by this report.

Information about the presence or absence of hazardous substances and/or hazardous wastes in the area discussed in this report is based on limited data and observations. Environmental conditions may change over time and may be different away from locations where data or samples were collected or observations made. HLA does not and cannot have complete knowledge of environmental conditions in the area discussed. Furthermore, this report is complete and accurate only to the extent that cited reports and agency information are complete and correct, and to the extent that all relevant information has been provided to HLA. The purpose of the EBS is to identify and describe available information. In the EBS, HLA has not attempted to independently verify the completeness or accuracy of the information presented, or to independently assess the environmental condition of the described area.

2.0 BACKGROUND

This section presents relevant descriptive information about Fort Ord, with an emphasis on the Surplus II Parcels, including an overview of Fort Ord's physical setting, history, and hydrogeology.

2.1 Fort Ord Physical Setting

Fort Ord is adjacent to Monterey Bay in northwestern Monterey County, California, approximately 80 miles south of San Francisco (Plate 1). The base consists of approximately 28,000 acres adjacent to the cities of Seaside, Sand City, Monterey, and Del Rey Oaks to the south and Marina to the north. The Southern Pacific Railroad and Highway 1 pass through the western part of Fort Ord, separating the beachfront portions from the rest of the base. Laguna Seca Recreation Area and Toro Regional Park border Fort Ord to the south and southeast, respectively. Land use east of Fort Ord is primarily agricultural, as was land use at Fort Ord before the Army acquired the property.

2.2 History

Fort Ord, an Army infantry training and staging facility since 1917, was selected for decommissioning in 1991. The installation was placed on the BRAC 91 list, but troop realignment was not completed until 1994. Fort Ord officially closed on September 30, 1994. A portion of the Fort Ord property remains active and is known as the Presidio of Monterey-Annex.

The three major developed areas within Fort Ord are the Main Garrison in the northwest and central portion of the base, Fritzsche Army Airfield (FAAF) in the northern portion, and the East Garrison in the northeast. The Surplus II Parcels lie within the Main Garrison and include commercial property, light industrial facilities, and barracks. The approximately 20,000 acres lying outside the developed areas remain undeveloped and were used for military training activities. Construction at the base began in 1940 and ended in the 1960s, starting in the northwest corner and expanding southward and eastward. A small airfield was constructed and used in the 1940s and 1950s in the central portion of

the Main Garrison. This airfield was decommissioned when FAAF was completed. The Main Garrison airfield facilities were redeveloped and used as motor pools or for other operations.

2.3 Hydrogeology

This section summarizes information on the general hydrogeology of Fort Ord.

Fort Ord, including the Surplus II Parcels, is underlain by geologic units consisting of (from the deepest known formations to the shallowest at ground surface): granodiorite; marine siltstone and shale; sandstone; various marine sediments; alluvial fan, lake, and flood deposits; and a sand-and-gravel unit. Above these units, unconsolidated gravel, sand, silt, and clay valley fill deposits (including the Salinas Valley Aquiclude [FO-SVA]) are present. Throughout much of the base, these geologic units are overlain by dune sand deposits. Developed from the dune sands, the surface soil is typically sandy.

The Salinas Basin and the Seaside Basin are the two main groundwater basins underlying Fort Ord. Although the location and characteristics of the boundary between these two basins are uncertain, the Surplus II Parcels are known to be in the Salinas Basin, which underlies approximately the northern two-thirds of Fort Ord.

In the area of Fort Ord, four relatively well-defined aquifers occur within the Salinas Basin: the unconfined A-aquifer and the confined 180-, 400-, and 900-foot aquifers. The latter three aquifers were originally named to reflect their average depths in the Salinas Valley proper; however, these aquifers are generally deeper at Fort Ord than in the Salinas Valley. Monitoring wells in the Surplus II Parcels are completed in the A-, 180-foot, and 400-foot aquifers and provide the basis for the descriptions that are presented below.

Groundwater flow in the A-aquifer is generally westward. The A-aquifer is separated from the 180-foot aquifer throughout much of Fort Ord by the FO-SVA. The FO-SVA becomes thinner and apparently disappears (pinches out) in some areas beneath the Main Garrison and near the Salinas Basin southern boundary. Where the FO-SVA pinches out, groundwater appears to flow from the A-aquifer into the 180-foot aquifer.

Groundwater flow directions in the 180- and 400-foot aquifers vary across the base. Historical data suggest that flow was originally to the northwest in both aquifers. However, recent data indicate that groundwater flow in these aquifers is generally eastward, an apparent result of pumping from Salinas Valley and Fort Ord supply wells. Current and historical pumping has also resulted in saltwater intrusion into the 180- and 400-foot aquifers in the vicinity of the City of Marina and the Fort Ord Main Garrison.

A more detailed discussion of the geology and hydrogeology at Fort Ord is presented in the Draft Final Basewide Hydrogeologic Investigation (*HLA, 1994e*).

3.0 APPROACH TO CONDUCTING ENVIRONMENTAL BASELINE SURVEYS

This section describes the activities performed for the Surplus II Parcels EBS. The procedures are described in EBS guidance documents (*DoD, 1994; Army, 1994b*). This EBS for the Surplus II Parcels considers currently available information from various sources, including interviews with Fort Ord personnel and the results of investigations conducted under the RI/FS or other programs. The ongoing or recently completed environmental programs at Fort Ord include the following:

- Building surveys for ACM and LBP
- Radon reduction programs
- Radiological surveys
- Assessment for the presence of ordnance and explosives (OE)
- Management of transformers containing polychlorinated biphenyls (PCBs)
- Underground storage tank (UST) management
- Evaluation of potential releases from on-post solid waste management units (SWMUs)
- Environmental restoration programs under the Community Environmental Response Facilitation Act (CERFA)
- Basewide RI/FS
- Assessment of impacts from adjoining properties
- Evaluation of air quality.

Results of each of these programs for the Surplus II Parcels are described in Section 4.0. Each of the above programs incorporated the methods described in the following subsections: a records search,

interviews with Fort Ord and USACE personnel, visual inspections, sampling, identification of hazardous substance/waste management practices, identification of potential impacts from adjoining properties, and site investigations related to the Installation Restoration Program (IRP).

3.1 Records Search

Existing reports and other available records, including federal government and state and local agency records, were reviewed to identify past or current activities relating to environmental conditions within and near the Surplus II Parcels. Documents and information reviewed for this EBS include the following types of reports or investigative and management plans developed by Fort Ord as part of the IRP and BRAC programs:

- RI/FS literature surveys and base inventory reports
- Preliminary assessment/site inspections
- Enhanced preliminary assessments
- Work plans
- Sampling and analysis plans
- Construction information for buildings within the Surplus II Parcels
- Results of building surveys for asbestos, LBP, and radon and results of radiological programs
- Inventories and management programs for USTs and SWMUs
- Hazardous waste management surveys, including surveys for management of transformers containing PCBs and oils, and review of records from Fort Ord's Defense Environmental Restoration Program—Management Inventory System (DERP-MIS)
- Air monitoring reports/emissions inventories
- Documents developed during the CERFA assessment

- Records of an archive records search for unexploded ordnance (UXO) and OE
- Results of federal and state environmental database searches, including the EPA National Priorities List (NPL) and Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) databases and the list of California Superfund sites, which were obtained from the final CERFA report (*ADL, 1994*).

3.2 Interviews

Personnel employed by Ford Ord when the installation was operational, as well as personnel now employed by USACE or Presidio of Monterey Annex, were interviewed as necessary to support the EBS. In addition, the former and current personnel supplied information on past or current activities. In some cases, interviews documented in this EBS were conducted as part of previous assessments, performed both before and after base closure. The interviewees and other points of contact for this EBS are listed in Table 1.

3.3 Visual Inspections

Visual inspections were conducted, as necessary, either to confirm information reviewed or to identify additional potential problems. Because of the extensive investigations and assessments conducted to date, only limited visual inspections for the Surplus II Parcels were needed to confirm previous information. Previous investigations included those at IRP sites adjacent to the Surplus II Parcels and building surveys for asbestos and LBP. The results of the visual inspections are noted in appropriate portions of Section 4.0.

3.4 Sampling

The EBS, FOST, and FOSL are typically prepared on the basis of available data. However, according to DoD guidance, sampling of environmental media including soil, groundwater, or building materials is appropriate in the EBS to support decision-making and the preparation of a FOST or FOSL. Asbestos, LBP, radon, and radiological surveys have been completed for a number of structures within or near the Surplus II Parcels. These investigations are described in Sections 4.1 through 4.4. Some of these

programs are not complete, but on the basis of the reported scopes and objectives of the individual programs and selected other assessment activities, additional sampling for the EBS did not appear to be necessary to support decision-making and preparation of FOSTs for the Surplus II Parcels.

3.5 Identification of Hazardous Substance/Waste Management Practices

Interviews with and documents identified by Fort Ord personnel provided information on hazardous substance/waste management procedures at Fort Ord. Relevant documents identified and reviewed for this portion of the EBS include the following:

- Evaluation of Solid Waste Management Units (*AEHA, 1989*)
- Fort Ord Regulation 200-1 of the Fort Ord Hazardous Waste Management Plan (HWMP), September 4, 1990
- Fort Ord Underground Storage Tank Management Plan (*HLA, 1991a*)
- Verification of Solid Waste Management Units, Fort Ord, California (*HLA, 1993c*)
- Draft Field Investigation and Data Review, Solid Waste Management Units, Fort Ord, California *(HLA, 1996b)*
- Fort Ord Spill Prevention, Control, and Countermeasures Plan (SPCC), Table 1 and Section VI, Detailed Spill History (*Dynamac Corporation, 1993*)
- Pest Management, Army Regulation 420-76 (June 3, 1986). (Note: Use of pesticides [i.e., herbicides, insecticides, and rodenticides] at Fort Ord is governed by and conforms with Army Regulation 420-76, Pest Management, and is consistent with planned future reuse of parcels *[FORA, 1996]*. Areas where pesticide storage or mixing has occurred or pesticide equipment has been maintained have been identified as part of the basewide investigation at IRP Sites 15, 24, and 33. IRP Sites 15 and 33 are located south of the Surplus II Parcels; a portion of IRP Site 24 is located in the eastern portion of Parcel L33 and is discussed further in Section 4.9.2.1. No other

areas where residual levels of pesticides pose a potential threat to human health or the environment have been identified.)

Other potentially relevant documents, including the HWMP, Hazardous Waste Facility Inventory Report, Spill Plan, and site-specific spill reports, were not available for review.

Interviews conducted with Fort Ord personnel regarding hazardous substance/waste management practices included the following:

- Discussions with Ms. Claire Murdo in December 1993 and February 1994. Ms. Murdo provided information about the status of revisions to various management documents and provided some background on the development of these documents.
- Conversations with Mr. Richard Schmitt. Mr. Schmitt provided a database list of hazardous waste generators and summarized the development and evolution of hazardous waste management activities at Fort Ord.

Information from these documents and interviews is summarized in Section 4.0.

3.6 Identification of Potential Impacts from Adjoining Properties

Potential impacts from adjoining properties were identified from available land use information for properties within approximately 1 mile of the Surplus II Parcels boundary. The 1-mile search distance is consistent with the American Society for Testing and Materials (ASTM) standard for property transfer investigations. Records for the areas surrounding the Surplus II Parcels were then searched for known or suspected Fort Ord IRP sites, SWMUs, USTs, and other previously identified areas where potentially hazardous materials may have been stored, released, or disposed onpost. The evaluation process also considered the nature of the potentially contaminated medium and the capacity for contamination in that medium to affect the Surplus II Parcels. Groundwater flow directions were considered in identifying potential effects of groundwater contamination on the Surplus II Parcels. Details of the potential impacts from adjoining properties are discussed in Section 4.11.

Additionally, the results of known building surveys for asbestos, LBP, and radon were considered in identifying possible sources of potentially hazardous materials. For sites near the Fort Ord installation boundary, potential impacts from areas immediately offpost were also identified by reviewing the results of a search of environmental databases maintained by federal, state, and local agencies, as noted above. Information from this process is presented in Section 4.11.

3.7 Installation Restoration Program Investigations

Fort Ord was placed on the NPL on February 21, 1990. Since then, the Army has conducted investigations at 41 identified sites to assess the nature and extent of contamination at Fort Ord. Thousands of soil, groundwater, air, and biota samples have been collected at Fort Ord under the IRP. The investigations are described in numerous basewide or site-specific reports, including the RI/FS Work Plan (*HLA, 1991c*), Sampling and Analysis Plan (*HLA, 1991b*), Final Basewide RI/FS (*HLA, 1995b*), and 41 site investigation reports that are either completed or in preparation (see Section 6.0, References). The scopes of the investigations documented in these reports were developed in coordination with relevant regulatory agencies.

Three IRP sites (20, 22, and 24) under CERCLA are within or overlap the boundaries of the Surplus II Parcels and are discussed in Sections 4.9 and 4.10. Additionally, a soil treatment area is in operation at the former 519th Motor Pool within Parcel L33 and is discussed further in Section 4.9.2.2. Appropriate information from other site investigation activities, including potential soil contamination associated with USTs, was also evaluated for the Surplus II Parcels EBS in Section 4.7.

4.0 RESULTS

As previously mentioned, the EBS is based on an evaluation of the information from various environmental programs, as well as the information from interviews and other documents. The various environmental programs are described in Sections 4.1 through 4.8. For each program, there is an overall description of the program's objectives and guidance documents: the first subsection describes the program activities conducted at Fort Ord, and the second subsection describes the activities and results that are specific to the Surplus II Parcels. The descriptions of the programs presented in Sections 4.1 through 4.8 and their status to date are based on information made available to HLA by the Army. Surveying, sampling, and analysis were not performed as part of the EBS, nor were assessment or evaluation of the precision, accuracy, or applicability of the methods or data presented herein. Sections 4.9 and 4.10 provide the results of the RI/FS and the CERFA programs, respectively. Sections 4.11 and 4.12 provide the results regarding potential impacts from adjoining parcels and results of air quality investigations, respectively.

4.1 Asbestos Management Program

The purpose of the asbestos management program at Fort Ord was to identify ACM in Army-controlled buildings, evaluate the ACM's friability, condition, and potential for damage, and implement response actions if appropriate. According to Mr. Mark Reese, Environmental Management, Directorate of Environmental and Natural Resources Management (DENR), asbestos-related work at Fort Ord was performed in accordance with the following documents and guidelines:

- Department of the Army Regulation (AR) 200-1, Environmental Protection and Enhancement, Chapter 10, "Asbestos Management Program," May 23, 1990. To control asbestos and minimize environmental release and subsequent occupational and incidental exposure, Chapter 10 of AR 200-1 requires that the following objectives be met:

- Exclude ACM from procurements and uses where possible
- Handle, store, transport, and dispose of asbestos and perform asbestos-related work in accordance with applicable regulations
- Perform building surveys to maintain an inventory of ACM, assess the potential for exposure to asbestos, and implement operations and maintenance programs and management plans to minimize potential exposure to personnel
- Maintain a non-occupational environment safe from asbestos exposure.

- Department of the Army Memorandum, "Policy Guidance - Lead-Based Paint and Asbestos in Army Properties Affected by Base Realignment and Closure," November 15, 1993. This memorandum provides Army policy guidance on identifying and controlling asbestos and LBP hazards for properties affected by BRAC. The guidance requires the following:
  - Compliance with all applicable regulations and coordination with regulators to ensure compliance
  - Maintenance of minimum essential operations, maintenance, and repair standards to prevent deterioration of BRAC properties and to provide sufficient protection of human health and the environment
  - Verification that asbestos surveys and assessments have been or will be performed for BRAC properties prior to disposal
  - Removal of ACM from a BRAC property if one of the following applies:
    - Protection of human health requires ACM removal, such as for damaged friable ACM
    - The property is intended to be used as a school (K through 12) or child care facility

  - The property is unsellable without removal of ACM or removal prior to sale is cost-effective

  - The property is intended by the Army for demolition prior to disposal

- Friable or potentially friable asbestos that presents a health hazard and that has been stored or disposed of underground or elsewhere on the property that presents a health hazard will be properly disposed

- Final BRAC actions taken regarding asbestos will be dependent on the overall disposal plan and any reuse of the building

- If the Army is pressed for early release of vacant property, where it is known that the buyer intends to demolish the property or remove the asbestos before reoccupancy in accordance with applicable regulations, removal of threatening asbestos may not be required. Negotiations are necessary to ensure that the Army's liability is minimized, and notice and disclosure of any restrictions are required in the transfer language.

4.1.1 Summary of Program

An installation-wide asbestos survey of approximately 350 nonhousing buildings (e.g., retail stores, office buildings, lavatories, dining halls, barracks, general purpose buildings, vehicle maintenance and storage, oil storage, bus/taxi stations, and ammunition bunkers) was performed in 1989 and 1990. The survey found both friable and nonfriable ACM. ACM was found in tank and pipe insulation, heating ventilation and air conditions (HVAC) vibration joint cloths, exhaust flues, acoustic ceiling treatment, floor tile, linoleum and associated mastics, and debris in the buildings (*Weston, 1990; DEI, 1993*).

From October 1991 to April 1993, a basewide asbestos survey of an additional 2,689 nonhousing and barracks structures was performed. The survey found both friable and nonfriable ACM such as tank and pipe insulation, HVAC vibration joint cloths, exhaust flues, acoustic ceiling treatment, floor tile,

linoleum and associated mastics, and debris in the buildings (*DEI, 1993*). The survey included the information from *Weston, 1990*.

Surveys of Fort Ord housing units scheduled for disposal began in October 1993 and were completed in August 1995. The final summary report for the housing surveys will be made available to the recipients of the properties (*Reese, 1994*).

4.1.2 Program Status and EBS Results

Of the 104 total structures in the Surplus II Parcels, 83 structures have been surveyed for ACM. The remaining 21 structures were not surveyed for ACM because their construction and use indicate they were not likely to contain ACM. Examples of such structures include grease racks, wash racks, and wood sheds. The ACM in each building was rated by ATC Environmental, Inc. (ATC; formerly DEI), using Priority Rating System Codes. These codes, or ratings, are numerical assessments assigned by ATC during the asbestos surveys. The ratings range from 1 to 13, with the rating of 1 indicating the highest concern. Buildings with ACM ratings of 1 to 5 require immediate repair; buildings with ACM ratings of 6 to 13 require various degrees of repair and/or inspection. The following is a list of the Priority Rating System Codes and corresponding recommended response actions:

1. Immediate total removal
2. Immediate repair, short-term removal
3. Immediate repair, long-term removal
4. Immediate repair, management with 6-month inspection cycle
5. Immediate repair, management with 1-year inspection cycle
6. Short-term repair, long-term removal
7. Short-term repair, management with 6-month inspection cycle
8. Short-term repair, management with 1-year inspection cycle

9. Short-term repair, management with 2-year inspection cycle (biannual)

10. Long-term removal

11. Management with 6-month inspection cycle

12. Management with 1-year inspection cycle

13. Management with 2-year inspection cycle (biannual).

Table 2 lists all of the structures in the Surplus II Parcels. The list indicates which buildings were surveyed for ACM and which buildings contain ACM in need of immediate repair (i.e., ACM rated 1 to 5). Table 3 provides greater detail for each building, indicating the rating number(s) of the ACM in each of the surveyed buildings and the type of material containing the ACM. ACM rated 1 to 5 is shown in bold italics in Table 3. Some buildings show multiple ACM ratings because they contain ACM in different conditions.

Of the 83 buildings in the Surplus II Parcels that were surveyed for ACM, 20 buildings (25 percent) contain ACM with ratings of 1 to 5. The Army does not intend to remove or repair the ACM present in these buildings but intends to disclose the condition of ACM to the recipients.

4.2 Lead-Based Paint Management Program

The objectives of the LBP management program at Fort Ord were to identify and control LBP and lead-contaminated dust related to LBP in target facilities (primarily, housing units) and eliminate LBP hazards in certain BRAC properties in accordance with Title X of Public Law 102-550, Residential Lead-Based Paint Reduction Act of 1992. Title X applies to buildings that: (1) were constructed prior to 1978, (2) are planned for disposal after January 1995, and (3) are intended to be used as residences.

In 1978, the Consumer Products Safety Commission reduced the allowable lead concentration in residential paint to 0.06 percent. Hence, painted structures built prior to 1978 that were not surveyed

as of April 1997 are suspected of containing LBP. The Army does not intend to perform further surveys of these buildings for LBP.

According to Mr. Mark Reese, the LBP management program at Fort Ord was performed in accordance with the following Army documents and guidelines:

- Department of the Army Memorandum, "Policy Guidance - Lead-Based Paint and Asbestos in Army Properties Affected by Base Realignment and Closure, November 15, 1993." The purpose of this memorandum is to provide Army policy guidance on identifying and eliminating LBP and asbestos hazards for properties affected by BRAC. The guidance requires the following:
  - Compliance with all applicable regulations and coordination with regulators to ensure compliance
  - Maintenance of minimum essential operations, maintenance, and repair standards to prevent deterioration of BRAC properties and to provide sufficient protection of human health and the environment
  - Compliance with Title X of Public Law 102-550, which requires (1) inspection, if the following three conditions exist: the housing was constructed before 1978, the housing is affected by BRAC activities, and children younger than 6 years of age are expected to reside in the housing or (2) abatement of LBP in housing constructed prior to 1960
  - Taking steps to ensure that (1) properties sold for residential habitation are free of immediate LBP hazards prior to residential habitation or (2) if a property is transferred before the Army can perform the LBP investigation, that conditions of the sale will prevent use of the property for residential habitation until investigations are completed and potential LBP hazards existing at the time of transfer have been eliminated by the Army or the recipient
  - In-place management of nondefective surfaces to prevent them from becoming hazards

- Notification of potential transferee(s) if evidence suggests that LBP may be present.

- Department of the Army Memorandum, "Lead-Based Management Program," April 28, 1993. The purpose of this memorandum is to determine the greatest health risks and to target resources to achieve acceptable environmental standards for individuals exposed to lead. The memorandum requires the following:

  - Assessing lead levels in water
  - Assessing blood lead levels in children
  - Assessing LBP contamination
  - Developing abatement programs for high-risk health areas
  - Establishing a data tracking system.

4.2.1 Summary of Program

LBP surveys of pre-1978 housing areas were conducted by the U.S. Army Environmental Hygiene Agency (AEHA) in accordance with modified Housing and Urban Development (HUD) guidelines, and as described in the AEHA LBP inspection report (*AEHA, 1994a*). Buildings that had not been used for housing were not included in the LBP survey.

4.2.2 Program Status and EBS Results

The AEHA LBP survey did not include structures in the Surplus II Parcels because no family housing units are within these parcels. Consequently, additional data were evaluated to assess the potential for LBP. Of the 104 structures in the Surplus II Parcels, 83 structures were constructed before 1978 or their dates of construction are not known. The 83 structures are suspected to contain LBP because of their age (Table 2). The structures constructed during and after 1978 are assumed to be free of LBP.

Where the age of the structure is known, the structures within the Surplus II Parcels were constructed between 1941 and 1990. No sampling for lead in soil associated with LBP has been performed on the

Surplus II Parcels. As agreed upon in an agency meeting on August 29, 1997, analytical results of lead in soil samples collected in the Marshall and Stilwell Housing areas (southwest of Surplus II Parcel L32) will be used to represent lead concentrations in soil around buildings in the Surplus II Parcels. Buildings in the Marshall and Stilwell Park Housing areas were constructed of similar materials and during similar time periods as the buildings in the Surplus II Parcels. Average concentrations of lead detected in soil around the buildings in the Marshall and Stilwell Park Housing areas were 33.8 and 44.0 milligrams per kilogram (mg/kg), respectively. The maximum background concentration for lead in soil at Fort Ord is 51.8 mg/kg (*HLA, 1993a*). The federal preliminary remediation goal (PRG) for lead in soil for residential use is 400 mg/kg. On the basis of these results, the BRAC Cleanup Team decided that, with regard to LBP in soil on the Surplus II Parcels, no further action was necessary.

In April, May, and June of 1997, visual site inspections (VSIs) were performed throughout the Surplus II Parcels. One of the purposes of the VSIs was to observe and record the general condition of paint on the outside surfaces of groups of buildings in Surplus II Parcels L15.1, L30, L32, and L33. A summary of the VSI results for these parcels is presented in Table 4. The VSIs indicate that the current paint conditions are fair to good (Table 4).

4.3 Radon Reduction Program

The objectives of the radon reduction program at Fort Ord were to assess indoor levels of radon and mitigate elevated levels of radon. According to Mr. Mark Reese, radon testing was performed in accordance with the following Army documents and guidelines:

- Department of the Army Regulation (AR) 200-1, Environmental Protection and Enhancement Chapter 11, "Radon Reduction Program," May 23, 1990. To identify indoor levels of radon and mitigate elevated levels of radon, this regulation requires that the following be performed:
  - Identification of structures owned or leased by the Army that have indoor radon levels greater than 4 picocuries per liter of air (pCi/L), which is the EPA's occupancy standard

  - Modification of all structures found to have radon levels greater than 4 pCi/L to reduce levels to less than 4 pCi/L

- Department of the Army, Army Radon Reduction Program (ARRP) Instruction Manual for Field Personnel, prepared by Keller & Gannon, August 1991. The purpose of this document is to provide step-by-step procedures to ensure proper deployment, retrieval, and storage of radon detectors. The manual requires the following:

  - Alpha track monitors (ATMs) are to be placed in the lowest living area and left undisturbed for 90 days

  - Charcoal canister monitors (CCMs) are to be placed in the lowest living area and left undisturbed for a period of 72 hours and analyzed within 24 hours

- Department of the Army Memorandum, Army "Radon Reduction Program Completion and Installation Status Update," September 24, 1993. The purpose of this memorandum is to request that (1) radon testing and mitigation programs be completed as soon as possible and (2) the annual installation ARRP Status Report be updated by reporting the results of any retesting performed.

4.3.1 Summary of Program

Radon surveys using ASTM procedures were originally performed in the 1989 through 1990 fiscal year. Those surveys included testing of approximately 2,900 housing and office buildings basewide. Army policy dictates that buildings with radon levels above 4 pCi/L be retested periodically for 1 year. Buildings with levels above 8 pCi/L must undergo complete remediation within 1 to 4 years.

4.3.2 Program Status and EBS Results

No buildings within the Surplus II Parcels had radon test results above 4 pCi/L; therefore, none are being retested (*Ludwig, undated*). For radon concerns, buildings on the Surplus II Parcels can be released for unrestricted use.

4.4 Radiological Survey Program

The objectives of the radiological survey program were to assess the potential for contamination from the storage or use of radioactive materials and to provide for the remediation/decontamination of areas found to be contaminated. The program was implemented in accordance with Army, federal, and state regulations and guidance (see below).

4.4.1 Summary of Program

The radiological survey program was performed at Fort Ord in accordance with a memorandum titled "Base Closure Actions - Radiological Surveys; Trip Report of Mr. John Manfre to Fort Ord, California, 14 - 16 Sep 93," dated September 20, 1993 (*Rankin, 1993*). Potential storage and maintenance areas for licensed radioactive materials or equipment were identified in a memorandum "Revised List of Buildings at Fort Ord Recommended for Radiological Decommissioning," dated December 8, 1993 (*Chmar, 1993*). As radiological base closure consultant and project manager for the surveys, AEHA reviewed historical data for buildings/areas on the list to establish the history of radioactive sources at Fort Ord. Results of this review are published in Industrial Radiation Historical Data Review No. 27-43-E2HU-1-94 (*AEHA, 1994e*). The radiological survey identified 117 structures and three outdoor areas at Fort Ord where radioactive commodities were used or stored at some time in the past. The buildings and outdoor areas were to be thoroughly surveyed for radiation. The historical data review also identified another 230 buildings that were suspected to have contained or stored radioactive commodities in the past but for which there was no documented evidence. Twenty percent of these 230 buildings were to be surveyed in a good-faith effort to demonstrate that the buildings were free of contamination.

According to Mr. Joe R. Daniels, the former Installation Radiological Protection Officer, Directorate of Logistics, radiological survey activities were conducted between January and April 1994 by a 13-member survey team from Seneca Army Depot (*Daniels, 1994*). A three-person mobile radiological laboratory from the Army Communications-Electronics Command (CECOM) analyzed the samples. The survey team was briefed on the procedures for the radiological surveys by personnel from AEHA.

Results of these surveys were reported in Industrial Radiation Surveys No. 27-43-E2HU-2-94 and No. 27-43-E2HU-3-94 (*AEHA, 1994c, 1994d*).

Radiological surveys of the selected buildings and the three outdoor areas were conducted by AEHA in accordance with all applicable regulations, guidelines, and standards (set forth by the State of California, U.S. Code of Federal Regulations, the U.S. Department of the Army, the Nuclear Regulatory Commission Regulatory Guide CR 5489, the EPA, the International Commission of Radiological Protection, the National Council on Radiation Protection and Measurements, and the American National Standards Institute). The protocol that was followed was presented in Industrial Radiation Survey Protocol No. 27-43-E2HU-94 (*AEHA, 1994b*) and was established in consultation with the State of California Department of Health Services (DHS).

A number of buildings and areas were not surveyed during this period, either because they were in the 80 percent of suspected buildings that were not selected for direct surveying or because they were being used for temporary storage. The buildings and areas that were being used for storage were surveyed after removal of the stored materials. The results are presented in AEHA Reports No. 27-MH-0981-R4-97 and No. 27-83-0981-5-95 and cited in a Release of Buildings memorandum (*USACHPPM, 1997*). (USACHPPM stands for U.S. Army Center for Health Promotion and Prevention Medicine and was formerly the AEHA.)

Radiological contamination above background was observed in some buildings; however, decontamination procedures were implemented by the survey team. After decontamination, the areas were resurveyed. On the basis of the final survey results, the USACHPPM has stated that, for radiological concerns, all properties can be released for unrestricted use (*USACHPPM, 1997*). However, the DHS issued a response on June 4, 1997 (*DHS, 1997a*), stating that approximately 45 buildings or areas throughout Fort Ord should not be released for unrestricted use because of radiological concerns.

4.4.2 Program Status and EBS Results

In the Surplus II Parcels, 13 buildings were suspected of historical use or storage of radiological commodities. Reportedly, no documentation exists that would exclude these buildings from consideration. These 13 buildings were surveyed (Classification B1 in Table 2) in early 1994; results are documented in Reports No. 27-43-E2HU-2-94 and No. 27-43-E2HU-3-94 (*AEHA, 1994c, 1994d)* All of the 13 buildings were recommended for release for unrestricted use (*USACHPPM, 1997*) because they were free of radiological contamination. The DHS has agreed to release all 13 buildings for unrestricted use (*DHS, 1997a, 1997b*). The remaining 91 buildings or structures in the Surplus II Parcels (Classification C in Table 2) were not recommended for radiological surveys based on the historical data review.

4.5 OE Assessment Programs

The objectives of the OE Assessment Programs are to identify areas where OE is present and to mitigate the physical hazards identified. OE materials include the following:

- Bombs and warheads
- Guided and unguided ballistic missiles
- Artillery, mortar, and rocket ammunition
- Small arms ammunition
- Antipersonnel and antitank mines
- Demolition charges
- Pyrotechnics
- Grenades
- Torpedoes and depth charges
- Containerized high explosives and propellants

- Military chemical agent identification sets (CAIS)
- All similar or related items designed to cause damage to personnel or material.

Unexploded ordnance (UXO) is an item of OE that has failed to function as designed or has been abandoned, discarded, or improperly disposed of and can still function, causing damage to personnel and material.

Investigation and removal of OE is managed by the U.S. Army Engineer Division, Huntsville (USAEDH), Mandatory Center of Expertise (MCX). The main objectives of the USAEDH program are to evaluate and address physical hazards resulting from the presence of OE. USAEDH's program includes (1) an archive search to identify the types of ordnance and locations of OE areas, (2) a sampling program to evaluate the presence of OE, and (3) a removal program to remove and dispose of OE, if detected. In general, the sampling program consists of visual and magnetometer sweeps conducted in a representative number of randomly selected grid areas within a suspected OE area. If OE is found, the nature and extent of contamination are evaluated. Based on that evaluation, more sampling may be performed and, if necessary, a removal action (including disposal) is performed.

4.5.1 Summary of Programs

Investigations were performed to evaluate whether OE from past training activities is present at Fort Ord. Ordnance-related training at Fort Ord was conducted primarily at the Beach Trainfire Ranges along the western boundary of Fort Ord, within the Multi-Range Area (MRA; approximately 8,000 acres in the southwest portion of Fort Ord), and potentially in several areas outside the Beach Trainfire Ranges and MRA.

The results of the archive search for Fort Ord conducted by the USAEDH are presented in the Archives Search Report (*USAEDH, 1993*) and the Archives Search Report (Supplement No. 1) (*USADEH, 1994*). These reports identify the types of ordnance used at Fort Ord and describe areas both inside and outside of the MRA where ordnance-related training may have occurred. The areas identified for OE investigation and the technical procedures are described in work plans for each phase of the

investigation (*HFAI, 1993; 1994a; 1994b; UXB, 1994; CMS, 1997).* Sites where OE have been found and for which USAEDH recommends a removal action require the preparation of an Explosives Safety Submission (ESS), formerly known as a Land Disposal Site Plan (LDSP). A LDSP addressing areas outside the MRA was prepared by Fort Ord in February 1994. Sites identified for removal actions after distribution of the LDSP will be addressed in future ESSs, as needed.

A draft Phase I engineering evaluation and cost analysis (EE/CA) was prepared to evaluate selected potential OE areas within Fort Ord and to provide recommendations for cleanup, as appropriate (*Earth Tech, 1996*). The draft final EE/CA was prepared after providing the public an opportunity for input regarding the recommendations for the OE sites (*Earth Tech, 1997a*).

A draft Phase II EE/CA, which provides recommendations for OE removal in the remaining portions of Fort Ord, was issued for public review and comment in September 1997 (*Earth Tech, 1997b*).

In addition to the USAEDH OE Program, a second program was performed by HLA and managed by the Sacramento District USACE as part of the RI/FS. The second program evaluated the likelihood that soil and groundwater at ordnance training areas were contaminated with ordnance-related chemical residues. The investigation consisted of (1) a research task to identify possible ordnance-related training areas and to develop a list of contaminants probably related to ordnance, (2) a sampling and analysis program to evaluate the nature and extent of explosive compounds and metals in selected ordnance training areas at Fort Ord, and (3) a risk assessment and feasibility study using data collected during the sampling and analysis program.

The results of the research task and a work plan describing the areas of investigation and technical approach are presented in the Draft Final Data Summary and Work Plan, Site 39 - Inland Ranges (*HLA, 1994a*). The results of the investigation are presented in the Final Fort Ord Basewide RI/FS (*HLA, 1995b*).

Information obtained during the USAEDH and HLA programs was used to identify sites that might contain OE. The findings of these programs are being evaluated as part of the EE/CA and ESS programs.

These programs may conclude that some areas currently considered potential OE areas do not contain OE and, thus, will be excluded from further consideration.

4.5.2 Program Status and EBS Results

Ten OE sites or training areas were identified on or near the Surplus II Parcels as of September 1997:

- One potential OE site with boundaries within or overlapping the Surplus II Parcels (Section 4.5.2.1)
- One training area with boundaries within or overlapping the Surplus II Parcels (Section 4.5.2.2)
- Eight potential OE areas or training areas that are near (within 800 feet of) the Surplus II Parcels.

The OE site boundaries are based on the latest (as of September 1997) information from the several sources previously identified and discussed in Section 4.5.1 (also see explanation on Plate 3). Preliminary surveys, including the Archive Search Report (ASR), ASR Supplements, and interviews with former Fort Ord employees, resulted in identification of a number of OE sites. Some of the sites were identified by more than one source, resulting in multiple site boundaries for many of the OE sites. Subsequently, the Army conducted additional focused studies, including RI/FS studies associated with former OE use, OE sampling, mapping, global positioning system (GPS) surveys, OE removal actions, and the expanded ASR process that was performed as part of the Phase I and II EE/CAs. These additional studies resulted in a refinement of the OE site boundaries. The current approximate extent of each of the OE sites is shown outlined in red on Plate 3.

At several of these OE sites, sampling or removal actions are complete and thus the corresponding site limits represent final site boundaries. For the remaining sites, the boundaries are considered to be working site limits with the site boundaries that will be confirmed in the future on the basis of planned sampling and removal actions.

The one potential OE site and one OE training area with boundaries within or overlapping the Surplus II Parcels are described below and presented on Table 5 and Plate 3. The eight potential OE

areas or training areas that are near, but not overlapping, the Surplus II Parcels are presented on Table 5 and Plate 3 and are not discussed further.

4.5.2.1 OE Sites within or Overlapping the Surplus II Parcels

The one potential OE site (Plate 3) and the corresponding recommendations from the Final Phase I EE/CA (*Earth Tech, 1997a*) are as follows:

- OE Site 13B (Practice Mortar Range) was identified as a potential OE site through the archive search process, which indicated that it was used as a practice mortar range in the 1940s to 1950s. Suspected OE included practice ammunition and sabot trainers. Fifty-seven grids were sampled at the site, which was declared contaminated by USAEDH. The northern portion of the site is within the California State University Monterey Bay (CSUMB) footprint and was subsequently included in a removal action. The southern portion of the site is currently undergoing removal action.

4.5.2.2 OE Training Areas within or Overlapping the Surplus II Parcels

During the archive search, one training area was identified on training facility maps and in records. The identified area was considered a miscellaneous training area where OE is generally not expected. However, OE may be present. Therefore, consistent with the conservative approach taken herein, this area is presented in Table 5 and on Plate 3 and is discussed below.

- Machine Gun Square #5 was identified on the basis of historical training facilities but was not identified in the archive search process as a potential OE site. In a letter to the Department of Toxic Substances Control (DTSC) dated February 24, 1997, the Army stated that, although Machine Gun Squares were identified on training maps through the archive search process, the Machine Gun Squares were not identified as potential ordnance sites (*McCutchon, 1997*).

4.6 Polychlorinated Biphenyls Management Program

The purpose of the PCB management program is to identify electrical transformers and other items that may contain PCBs and assess their potential to contain PCBs.

4.6.1 Summary of Program

In addition to examining the identified transformer locations, HLA examined transformer storage locations and areas where transformers reportedly were buried.

According to an Army memorandum dated August 25, 1982, all PCB transformers and PCB-filled electromagnets at Fort Ord were to be inspected on a weekly, quarterly, or annual basis as required by the EPA Rule on PCBs, 40 CFR, Parts 761, 761.120, and 268, and any other applicable environmental regulations. These guidelines also applied to the handling, use, storage, and disposal of PCBs and PCB-contaminated material.

Several sampling episodes for PCBs in transformer oils have been conducted at Fort Ord. According to the Fort Ord Enhanced Preliminary Assessment (*Weston, 1990*), all transformers at Fort Ord were tested for PCBs in 1987. Information from Fort Ord personnel indicates that additional sampling was conducted between 1985 and 1987 (*Temple, 1994b*). The sampling programs encompassed approximately 1,000 transformers throughout Fort Ord, ranging in size from 1.5 to 750 KVA. Most of the sampled transformers were pole-mounted, although pad- or ground-mounted transformers were also sampled. PCB test results indicated that dielectric fluids from three transformers in Building 3702 (California State University - Monterey Bay Phase I Parcel) had PCB concentrations ranging from 360,000 to 860,000 parts per million (ppm) and that oil from a transformer near Building 2066 (Main Garrison Sewage Treatment Plant) had a PCB concentration of 100 ppm. No other transformer oils tested had PCB levels exceeding the Toxic Substances Control Act (TSCA) limit of 50 ppm. Approximately 168 transformers had PCB levels between 5 and 50 ppm and were considered PCB contaminated on the basis of California guidelines at that time. The remaining transformers at Fort Ord had PCB levels under 5 ppm (*Weston, 1990*).

The last transformers containing greater than 50 ppm PCBs were removed and replaced with non-PCB transformers by 1992 (*Weston, 1990; Temple, 1994b*). There was no basewide program to replace transformers with PCB levels between 5 and 50 ppm; these transformers are replaced with non-PCB transformers as needed (*Weston, 1990*). HLA's review of Army documents indicated that many transformers have been removed and disposed of and that dielectric fluid from the transformers has

been tested for PCBs, changed out, and disposed as necessary. However, little supporting documentation is available to match test results and disposal manifests to specific transformers and their current or former locations.

4.6.2 Program Status and EBS Results

No reported releases of PCBs are known to have occurred on the Surplus II Parcels. For PCB concerns, property on the Surplus II Parcels can be released for unrestricted use.

4.7 Petroleum Storage Tank Program

The objectives of the petroleum storage tank program have been to oversee the removal, replacement, or upgrading of USTs and aboveground storage tanks (ASTs) at Fort Ord, Fritzsche Army Airfield, and the Presidio of Monterey; to investigate and remediate any contaminated sites; and to ensure compliance with federal, state, and local tank regulations.

4.7.1 Summary of Program

This summary section describes the Army's UST and AST program at Fort Ord, regulatory compliance objectives, and the goals of the Fort Ord UST Management Plan (*HLA, 1991a*). The current status of the program and the status of USTs and ASTs within the Surplus II Parcels are based on data available through May 1997. The Army UST management program requires compliance with federal, state, and local requirements as outlined in AR 200-1 and the Fort Ord Hazardous Waste Management Plan (*Fort Ord, 1990*). Army UST standards state that USTs permanently taken out of service will be removed from the ground. Any UST determined to be leaking is emptied immediately and taken out of service. The UST is then either removed or repaired and retested. Monterey County Department of Health (MCDOH) permits are obtained for all UST repairs and removals.

HLA located and mapped all known existing and former USTs at Fort Ord, documented their regulatory status so that recommendations for compliance with UST regulations could be developed, and identified their location, age, and capacity, the materials they stored, and whether they were in use

(*HLA, 1991a*). On the basis of information available at the time, some of the identified USTs were also placed on one of the following lists in the UST Management Plan:

- Removal List - USTs designated for removal
- Phase II Vapor Recovery List - USTs designated for piping system upgrades with Phase II vapor recovery systems to reduce emissions into the atmosphere from gasoline-dispensing facilities
- Environmental Assessment List - USTs for which additional documentation or environmental assessments were necessary to properly close the UST.

The results of the field work, site plan development, and regulatory review were evaluated to formulate recommendations to abandon, replace, or upgrade each UST on the above lists. USTs that were no longer in service (those on the "removal list" in the UST Management Plan) were removed during 1991, under MCDOH permits.

Specific criteria such as age, construction, pressure test results, documentation of leaks or spills, and costs associated with upgrading were used to further categorize the USTs into the following groups:

- USTs that met current requirements
- USTs that were suitable for upgrading
- USTs that should be replaced
- USTs that were no longer in use and should be removed
- USTs whose purpose could be replaced by another facility or by an alternative energy source or system
- Hazardous waste (primarily waste oil) USTs that should be replaced or eliminated.

Each UST was assigned to one of the above groups or lists. UST summary sheets and site plans were included as appendixes to the UST Management Plan (*HLA, 1991a*). All 261 USTs at Fort Ord have now been removed or replaced with new USTs or ASTs.

In addition to the USTs, 39 ASTs at Fort Ord were identified on a list provided by the DENR (*Temple, 1994a*). HLA interviewed Ms. Claire Murdo of the DENR, on January 4, 1994, and requested information about known spills from ASTs at Fort Ord. She was unaware of any reportable spills or leaks from the ASTs other than a 50-gallon diesel spill near Building 2722 in Parcel E2b.2 outside the Surplus II Parcel.

4.7.2 Program Status and EBS Results

This section summarizes the status of the UST management program at the Surplus II Parcels as of May 1997 and includes a list of the tanks that have been removed and a description of site characterization activities. An inventory of former USTs on the Surplus II Parcels was compiled from various sources of information, including a database provided by the DENR, a map of the parcel boundaries provided by the USACE, the CERFA report (*ADL, 1994*), and the UST Management Plan (*HLA, 1991a*).

Seventeen USTs were on the Surplus II Parcels; all 17 USTs have been removed. The MCDOH has granted closure for 12 of the 17 sites (3803.1, 3803.2, 3803.3, 3855.1, 3855.2, 4430.1, 4440.1, 4441.1, 4552.1, 4493.1, 4493.2, and 4493.3). At five of the sites, the USTs have been removed and closure is pending (4492.1, 4492.2, 7850.1, 7850.2, and 7850.3). Table 6 lists the 17 former USTs by number and indicates the parcel number, tank contents, tank size in gallons, year placed, date removed, and whether closure has been granted by the MCDOH. Table 6 also identifies the date of the MCDOH closure letters for each former UST in the Surplus II Parcels. Plate 4 shows the former UST locations.

Petroleum hydrocarbons apparently had been released at two of the former UST sites (3803.2 and 4493.3) on the Surplus II Parcels. USTs 3803.2 and 4493.3 were removed in March 1991 and October 1993, respectively. Soil samples collected during the UST removals contained petroleum

hydrocarbons at concentrations above Regional Water Quality Control Board (RWQCB) and MCDOH cleanup levels. Consequently, additional investigations were conducted in the vicinity of USTs 3803.2 and 4493.3.

Soil excavation, soil boring, and sampling were conducted at former UST 3803.2, as well as at adjacent former USTs 3803.1 and 3803.3. During the investigation, approximately 1,500 cubic yards (cy) of soil were excavated from the vicinity of former USTs 3803.1 and 3803.2. Although there was no apparent release, soil excavation was performed at UST 3803.1 because the tank numbers were inadvertently switched during the UST removals. Confirmation samples from both excavations were collected and analyzed. A clearance report describing the investigation was submitted and the MCDOH granted closure for USTs 3803.1, 3803.2, and 3803.3 in a letter dated August 22, 1996 (*MCDOH, 1996*).

Follow-up investigation was also conducted at former UST 4493.3. This investigation included soil excavation, soil boring, and sampling. Approximately 1,730 cy of soil was excavated from the vicinity of former UST 4493.3 and its associated product lines. Excavation confirmation soil samples were collected and analyzed. A clearance report describing the investigation was submitted and the MCDOH granted closure for UST 4493.3 in a letter dated August 22, 1996 (*MCDOH, 1996*).

An inventory of ASTs within the Surplus II Parcels was reviewed (*Uribe, 1997*), and information was verified during visual site inspections in May and June 1997. The inventory listed four ASTs on the Surplus II Parcels, all of which are within Parcel L32 (Table 7 and Plate 4).

ASTs 4441.1, 4460.1, and 4460.2 are inactive steel tanks that had formerly held diesel, propane, and liquid propane, respectively. The fourth AST (4492A.1) could not be located. The Army does not plan to remove any of the ASTs.

4.8 Solid and Hazardous Waste Management Program

The objectives of the solid and hazardous waste management program were to establish procedures and provide guidance for the management of hazardous wastes generated in association with Fort Ord activities. Procedures and guidance apply to all aspects of hazardous waste management, including

generation, treatment, disposal, and reclamation. The program is governed by the requirements of the Resource Conservation and Recovery Act (RCRA) and the 1984 Hazardous and Solid Waste Amendments to RCRA. These requirements address, among other things, the identification and assessment of solid waste management units (SWMUs). The EPA RCRA Facility Investigation Guidance (*EPA, 1986*) defines a SWMU as any discernible waste management unit at a RCRA facility from which hazardous constituents may migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. The SWMU definition includes:

- Containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells, including those units defined as "regulated units" under RCRA
- Recycling units, wastewater treatment units, and other units that the EPA has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by "routine, systematic, and deliberate discharges" from process areas.

The definition does not include accidental spills from production areas and units in which wastes have not been managed (e.g., product storage areas).

4.8.1 Summary of Program

When Fort Ord first submitted its RCRA Part A permit application to the EPA in 1980, the base became subject to the requirements of RCRA. The application declared Fort Ord's intent to operate as a treatment, storage, and disposal (TSD) facility under RCRA by storing hazardous wastes onsite for more than 90 days in a permanent storage area. Fort Ord was subsequently authorized to operate as a TSD facility in accordance with RCRA interim status regulations until it submitted its Part B application to the EPA.

During the interim status period, under the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA, Fort Ord was required to identify and assess all SWMUs on the base and to include the results of the assessment in its Part B permit application. The intent of this regulation was to require that a

facility complete corrective action at its SWMUs as a condition of its RCRA permit. In 1988, Fort Ord asked the AEHA to conduct the SWMU assessment. The AEHA findings were published in the *Interim Final Report, Hazardous Waste Consultation No. 37-26-0176-89, Evaluation of Solid Waste Management Units, Fort Ord, California (AEHA, 1989)*. In the Interim Final Report, the AEHA identified, described, and evaluated 58 SWMUs (FTO-001 through FTO-058) and recommended that its report be included in the Fort Ord RCRA Part B permit application. The RCRA Part B permit application was never submitted. In 1995, in conjunction with base closure, Fort Ord formally withdrew its Part A application.

4.8.2 Program Status and EBS Results

Two SWMUs are within the Surplus II Parcels: FTO-068 in Parcel L32 and FTO-024 in Parcel L33 (Plate 4). These SWMUs are described below and in Table 8. The SWMU descriptions are based on the Draft Field Investigation and Data Review, Solid Waste Management Units, Fort Ord (*HLA, 1996b*). No SWMUs are present in Parcels E35, L15.1, L30, or L31.

4.8.2.1 FTO-068—Parcel L32

FTO-068 consists of Building 4492, the former Auto Craft Shop. Building 4492 was used for personal vehicle maintenance by military personnel who remained onsite after the base closed. During a 1995 site visit, HLA staff observed a portable metal storage locker outside the building. Hazardous waste signs were posted on the locker. Two smaller metal storage sheds posted with flammable signs were nearby. Because no evidence of these units was seen in 1996, no further action regarding this SWMU is required (*HLA, 1996b*). The 1996 draft SWMU report suggested that wastes associated with vehicle maintenance activities could be stored temporarily at Building 4492. However, this potential use could not be confirmed, because the building interior was inaccessible (*HLA, 1996b*).

4.8.2.2 FTO-024—Parcel L33

FTO-024 consists of the former 519th Motor Pool, where two SWMU structures are at the east end of IRP Site 20 near North-South Road. Building 3896 is approximately 10 feet by 15 feet and has wood frame sides and a chain-link gate. Building 3896 was used for the storage of vehicle lubricants but is no

longer in use. Adjacent to Building 3896, Building 3899, which is of similar construction, covers an area approximately 10 feet by 30 feet, and has three chain-link gates. Building 3899 is currently used for fuel and equipment storage in support of RI activities at the installation. Both structures are free of floor cracks or evidence of spillage. For Building 3896, the 1996 draft SWMU report recommended no further action. For Building 3899, the 1996 draft SWMU report recommended that, when the unit is deactivated, the remaining inventory be removed and the area be cleaned prior to transfer (*HLA, 1996b*).

4.9 Remedial Investigation/Feasibility Study (RI/FS)

A principal component of Fort Ord's overall environmental restoration program is the RI/FS program, which provides for the characterization and cleanup of contaminated property. The program was formally initiated in 1991, following the listing of Fort Ord on the NPL. The following sections present an overview of the RI/FS program, a discussion of the sites within and adjacent to the Surplus II Parcels, and the status of site investigation and remedial activities.

4.9.1 Summary of RI/FS Program

Fort Ord was added to the NPL (55 Federal Register 6154) on February 21, 1990. In July 1990, a Federal Facilities Agreement (FFA) was signed by Fort Ord (for the Army), the EPA, Region IX; the DHS; and the RWQCB. Under the FFA, the Army was required to perform an RI/FS at Fort Ord.

To date, the Army and regulatory agencies have identified two RI/FS Operable Units (OUs) at Fort Ord:

- OU 1 - Fritzsche Army Airfield Fire Drill Burn Pit
- OU 2 - Main Garrison Landfill Areas.

Investigation and remediation activities at these two OUs preceded the RI/FS activities performed for the remainder of Fort Ord. The latter RI/FS activities were presented in *Final Basewide Remedial Investigation/Feasibility Study, Fort Ord, California* (*HLA, 1995b*). The RI/FS includes basewide investigation programs and individual site characterizations. Five basewide studies have been conducted:

- Background Soil and Groundwater Investigation
- Basewide Biological Inventory
- Basewide Hydrogeologic Characterization
- Basewide Surface Water Outfall Investigation (BSWOI)
- Basewide Storm Drain and Sanitary Sewer System Investigation (BSDSSI).

In addition to the two identified OUs, 41 sites at Fort Ord, known as IRP sites, have been identified for inclusion in the RI/FS. Site characterization activities were designed to screen sites for contamination. The primary objective of the site characterizations was to assess the absence or presence and nature of contaminants at each site.

Based on the results of the investigations, the 41 IRP sites at Fort Ord have been categorized as follows:

- Remedial Investigation sites: Sites where soil and/or groundwater data indicated that a complete RI/FS will be necessary prior to remediation. Eleven sites at Fort Ord have been assigned to this category.
- Interim Action sites: Sites where small areas of contamination have been delineated and remedial action can be implemented quickly by excavation. Eighteen sites at Fort Ord have been assigned to this category.
- No Action sites: Sites where screening risk evaluations using data from collected samples indicate that the threat to human health or the environment, if any, is acceptably low. These sites will not require additional investigation or remediation. Twelve sites at Fort Ord have been assigned to this category.

The assignment of sites to these categories is based on available information. The designation of a site will not be considered final until the appropriate decision document has been completed. Additional information on the RI/FS program is provided in the Final Basewide RI/FS (*HLA, 1995b*); Sampling and

Analysis Plan (*HLA, 1991b*); Work Plan (*HLA, 1991c*); basewide study reports prepared by HLA; and individual site characterization reports prepared by HLA.

4.9.2 Program Status and EBS Results

Portions of three IRP sites coincide with the Surplus II Parcels and are described in Section 4.9.2.1. In addition, a soil treatment area for the RI/FS program is in operation in Parcel L33 at the location of the former 519th Motor Pool. The operation of this soil treatment area is discussed in Section 4.9.2.2. The status of these RI/FS program activities is based on data available through May 1997.

4.9.2.1 IRP Sites

Portions of IRP Sites 20, 22, and 24 coincide with the Surplus II Parcels (Plate 4, Table 10). These three IRP sites were categorized as Interim Action (IA) sites based on the results of the site investigations described below:

- IRP Site 20 (South Parade Ground, 3800 and 519th Motor Pools) - Although a part of IRP Site 20 falls within Surplus II Parcel L33, the portion of Site 20 requiring additional investigation (IA area) is not within Parcel L33 (Plate 4). The Site 20 IA area is approximately 400 feet from Parcel L33. The IA consists of excavation of soil around two former grease racks. Samples collected from the location of the former grease racks contained concentrations of total recoverable petroleum hydrocarbons (TRPH), unknown petroleum hydrocarbons, toluene, 2-methyl naphthalene, and butylbenzylphthalate.

  Seven monitoring wells (MW-20-01-180 through MW-20-07-180) were installed as part of the Site 20 characterization activities. Four of the seven monitoring wells (MW-20-01-180 through MW-20-04-180) lie within Parcel L33 (Plate 4, Table 9). Three of the four Site 20 monitoring wells are sampled on a quarterly basis. Monitoring Well MW-20-04-180 was dropped from the quarterly sampling program because compounds were either not detected or were detected at concentrations below their maximum contaminant levels (MCLs). Groundwater samples collected from Monitoring Wells MW-20-01-180 through MW-20-03-180 in the December 1996 quarterly sampling round were

analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons as diesel (TPHd), TRPH, TPH as motor oil ([TPHmo] MW-20-02-180 only), and lead. TPHmo was detected at a concentration of 550 micrograms per liter (µg/l) in Well MW-20-02-180. None of the other analytes were detected.

After excavation, confirmation soil samples were collected, which indicated that soil with concentrations of chemicals above their respective target cleanup concentrations (TCCs) had been removed. Results of the confirmation sampling and the subsequent risk evaluation indicated that No further threat to human health, the environment, or groundwater was anticipated at this site. No further investigation or remediation was recommended (*HLA, 1996c*).

The Draft Final Site Characterization Report for Site 20 was submitted to the EPA and DTSC in May 1995 (*HLA, 1995b*); the IA approval memorandum for Site 20 was submitted June 1, 1995, and approved by the EPA and DTSC in June 1995. The Site 20 IA Confirmation Report was submitted to the regulatory agencies in July 1996; agency approval is pending.

- IRP Site 22 (4400/4500 Motor Pool, West Block) - Although a part of IRP Site 22 falls within Surplus II Parcel L32, the portion of Site 22 identified as requiring additional investigation is needed (IA area) is approximately 900 feet east of Parcel L32 (Plate 4). The IA consisted of excavation of soil around a former grease rack. Soil samples collected from the location of the former grease rack contained concentrations of unknown hydrocarbon mixtures detected in the analysis for TPHd, total oil and grease (TOG), and metals. The IA was deemed necessary based on evaluation of health risks from possible exposure to the TPH mixtures and TOG.

  The Draft Site Characterization Report for Site 22 was submitted to the EPA and DTSC on May 1994 (*HLA, 1994d*); the IA approval memorandum for Site 22 was submitted to the EPA and DTSC in April 1995 and approved in June 1995. The Draft Final Site Characterization Report for Site 22 was submitted to the EPA and DTSC in June 1995. The Site 22 IA Confirmation Report was submitted to the regulatory agencies in May 1996. The EPA concurred that contamination was adequately

remediated at Site 22 in a letter dated September 19, 1996; DTSC concurrence is pending.

- IRP Site 24 (Old DEH Yard) - Four IA Areas (A1, A2, B, and C) were identified within IRP Site 24. IA Area A1 is within Parcel L33; IA Areas A2 and B overlap the southeastern boundary of Parcel L33; and IA Area C is approximately 600 feet east of Parcel L33 (Plate 4). IA Area A1 is the location of former aboveground storage tanks; IA Area A2 is the location of a former grease rack. TOG and TPH (as extractable unknown hydrocarbons) were detected in the soil at IA Areas A1 and A2. Pesticides were detected in a sample collected from a soil boring at IA Area B. Buried drums were found at the location of IA Area C. Halogenated VOCs and polyaromatic hydrocarbons (PAHs) were detected in soil samples collected at the bottom of the excavation after the drums were removed. Soil was excavated at IA Area C to remove soil that contained halogenated VOCs and PAHs at concentrations exceeding preliminary remediation goals (PRGs).

  Four monitoring wells (MW-24-01-180 through MW-24-03-180 and MW-B-24-180) were installed as part of the characterization activities at Site 24. Three of the four monitoring wells (MW-24-02-180, MW-24-03-180, and MW-B-24-180) lie within Parcel L33 (Plate 4). Two of the three Site 24 monitoring wells are sampled quarterly. Monitoring Well MW-B-24-180 was dropped from the quarterly sampling program because compounds were either not detected or were detected at concentrations below their MCLs. Samples collected from Monitoring Wells MW-24-02-180 and MW-24-03-180 in the most recent quarterly sampling round were analyzed for VOCs, TPHd, TPH as gasoline (TPHg), TRPH, and TPHmo. The only compounds detected were TPHmo at concentrations of 950 and 7,600 µg/L, in Monitoring Wells MW-24-02-180 and MW-24-03-180, respectively, and TRPH at concentrations of 1,700 and 8,000 µg/L in Monitoring Wells MW-24-02-180 and MW-24-03-180, respectively.

  Results of the IA confirmation sampling indicated that soil with concentrations of chemicals above their respective target cleanup concentrations had been removed. Results of the confirmation sampling and subsequent risk evaluation indicated that no further threat to human health, the

environment, or groundwater was anticipated at this site. No further investigation or remediation was recommended (*HLA, 1997*).

The Draft Site Characterization Report for Site 24 was submitted to the EPA and DTSC in April 1995 (*HLA, 1995a*); the IA approval memorandum for Site 24 was submitted to the EPA and DTSC in February 1996 and approved in April 1996. The Draft Final Site Characterization Report for Site 24 was submitted to the EPA and DTSC in March 1996. The Site 24 IA Confirmation Report was submitted to the regulatory agencies in January 1997. The EPA concurred that contamination was adequately remediated at Site 24 in a letter dated April 14, 1997; DTSC concurrence is pending.

4.9.2.2 Fort Ord Soil Treatment Area and UST Soil Remediation Area (FOSTA/USRA)

Two soil treatment areas are at Fort Ord: the Fort Ord Soil Treatment Area (FOSTA) and the UST Soil Remediation Area (USRA). Both of the soil treatment areas are in Parcel L33 at the former 519th Motor Pool. The FOSTA is designed for storage and treatment of soil excavated during IAs at IRP sites. The USRA is designed for storage and treatment of soil excavated at UST sites.

The FOSTA and USRA consist of several distinct units for the handling and treatment of soil:

- The FOSTA is a 40,000-square-foot (200 feet wide by 200 feet long) bioremediation/treatment unit. This unit is bermed and lined with high-density polyethylene (HDPE).
- The USRA is a 20,000-square-foot (200 feet wide by 100 feet long) bioremediation/aeration treatment unit. The treatment unit is composed of two cells, each 100 feet by 100 feet. This unit is bermed and lined with HDPE.
- A soil stockpile area is located adjacent to the treatment units where nonhazardous soil is stored pending analytical results and/or placement in the treatment units.
- An AST area for the collection, as necessary, of stormwater drained from within the treatment units.

- An office building (T3854) that serves as the operations office for the treatment activities.

A closure plan was prepared for the FOSTA and USRA (*HLA, 1994c; 1996a*). HLA understands that these closure plans will be implemented prior to transfer of Parcel L33.

4.10 Community Environmental Response Facilitation Act (CERFA)

One of the principal components of Fort Ord's overall environmental restoration program is the CERFA program, which provides for the identification of uncontaminated real property. This section discusses the CERFA program, including the purpose of CERFA legislation, the effect of the legislation on real property transfer, and the findings of the Fort Ord CERFA report for the Surplus II Parcels. The information from the CERFA report and the EBS assessment described herein are then used to assign DoD Categories that reflect the environmental conditions at the parcel.

4.10.1 Summary of CERFA Program

CERFA (Public Law 102-426) was enacted on October 19, 1992, and amended CERCLA in two principal areas. First, CERFA added CERCLA §120(h)(4), which provides for the identification of uncontaminated property ("CERFA parcels") at federal sites. The fundamental purpose of CERCLA §120(h)(4) is to identify real property with the greatest opportunities for redevelopment at facilities where federal operations are terminating. Specific procedures for conducting property evaluations are described in the CERFA legislation. In general, the CERFA procedures encompass the following:

- A search of government records
- Review of recorded chain of title documents
- Review of aerial photographs reflecting prior uses
- Visual inspection of the property
- Physical inspection of and review of information for adjacent properties

- Interviews with current or former employees.

For installations on the NPL, such as Fort Ord, identification of uncontaminated property is not considered complete until EPA concurs.

Another purpose of CERFA is to clarify the CERCLA §120(h)(3) requirements for declaring that all necessary remedial actions have been taken. Generally, according to CERFA, remedial action has been taken if an approved remedial system has been constructed and demonstrated to the administrator of the EPA to be operating properly and successfully. This provision permits the transfer of real property within a time frame that is significantly more favorable to communities surrounding closing installations by allowing such transfers to proceed before remedial actions end.

The DoD Authorization Act for Fiscal Year 1997 made some additional changes to CERCLA that affect the transfer of property at closing installations. A principal change was to refine the definition of uncontaminated property to include property where storage of hazardous materials or petroleum products or their derivatives has occurred, but where there is no evidence of release or disposal. Such property is considered uncontaminated and available for transfer under CERCLA §120(h)(4).

4.10.2 Program Status and EBS Results

In the fall of 1992, a CERFA assessment was initiated for Fort Ord by the Army Environmental Center (USAEC) on behalf of Fort Ord. On December 6, 1993, the draft CERFA report was issued to Fort Ord and the regulatory agencies. On January 28, 1994, a meeting was conducted to discuss preliminary comments on the draft CERFA report. The final CERFA report was issued on April 8, 1994 (*ADL, 1994*). The CERFA report identified areas that were considered to be uncontaminated as defined by CERCLA §120(h)(4) and CERFA, and classified various parcels in accordance with the following CERFA definitions:

- A CERFA uncontaminated parcel is defined as a parcel in which there is no evidence of current or past storage, release, or disposal of hazardous substances or petroleum products or their derivatives,

and for which there is no evidence of the presence of other environmental, hazard, or safety concerns

- A CERFA parcel with qualifiers is defined as a parcel in which there is no evidence of current or past storage, release, or disposal of hazardous substances or petroleum products or their derivatives, but for which there is evidence of the presence of other environmental, hazard, or safety concerns.
- A CERFA disqualified parcel is defined as a parcel in which storage, release, or disposal of petroleum products such as CERCLA hazardous substances has occurred (presently or in the past).

The distribution of CERFA-defined parcels (CERFA uncontaminated parcels, CERFA parcels with qualifiers, CERFA disqualified parcels) is presented in the CERFA report (Figure 5.1, Sections 3, 5, and 6). According to the CERFA report, the following CERFA-defined parcels overlap all or part of the Surplus II Parcels:

- CERFA uncontaminated parcels: 111, 142, 194, 196, 197, 198, 205, 206, 213, and 226
- CERFA disqualified and/or qualified parcels: 4, 21, 28, 31, 34, 35, 36, 47, 113, 114, 132, and 134.

Table 11 identifies all CERFA parcels within the Surplus II Parcels, lists the CERFA category, and summarizes the environmental conditions present on the parcel at the time of the CERFA investigation. Parcel E37 was not included in the CERFA assessment. CERFA Parcels 111, 192, 194, 196, 197, 198, 205, 206, 212, 213, and 226 were determined to be uncontaminated (Plate 6). The EPA concurred with the categorization of the uncontaminated parcels and the DTSC concurred with all of the listed CERFA parcels except 206 and 226 in letters dated April 18 and 19, 1994 (*EPA, 1994b; DTSC, 1994*).

Because of environmental cleanup activities, portions or all of the seven Surplus II Parcels (E35, E37, L15.1, L30, L31, L32, and L33) that were categorized as CERFA qualified or disqualified may now be transferable under either CERCLA §120(h)(3) (E35, L15.1, L32, L33) or CERCLA §120(h)(4) (E37, L30 and L31). The proposed revisions to the 1994 CERFA categories (*ADL, 1994*) are based on either the completion of required remediation activities or the removal of hazardous materials that were formerly

stored on the parcel (e.g., waste oil, hazardous substance storage, and radioactive commodities), and agency concurrence that no further action was necessary.

Table 12 lists those hazardous materials storage areas (HMSAs) and petroleum storage areas (PSAs) in the Surplus II Parcels that were described in Table 5-1 of the CERFA report (*ADL, 1994*). The results of visual site inspections performed in April, May, and June 1997 are summarized in Table 12. With the exception of Building 3899, which is still being used for fuel and equipment storage, hazardous materials are no longer stored in the HMSAs and PSAs in the Surplus II Parcels, as of the date of the visual site inspection. There was no evidence of release at the HSMAs listed in Table 12.

Using the results of the EBS assessment, including the previous CERFA results, DoD categories were assigned to each of the Surplus II Parcels to reflect the environmental conditions present (see explanation on Plate 5 for DoD category definition). Guidance documents used for this categorization include the following:

- DoD - *BRAC Cleanup Plan Guidebook*, Fall 1993
- DoD - *FOST for BRAC Property*, June 1, 1994
- Army - *FOST - Army Implementing Guidance*, November 10, 1994
- DoD, *Addendum to BRAC Cleanup Plan Guidebook*, August 1996.

Table 13 summarizes the environmental issues for each of the Surplus II Parcels and lists the proposed DoD category. Plate 5 shows the proposed DoD categories assigned to each of the Surplus II Parcels. Only DoD Categories 1 through 4 are transferable. All Surplus II parcels that are considered transferable at this time are classified as either DoD Category 1 or DoD Category 4. DoD Category 1 (uncontaminated; white areas on Plate 5) parcels are available for transfer under CERCLA §120(h)(4). Those CERFA parcels that the agencies have concurred are uncontaminated (111, 192, 194, 196, 197, 198, 205, and 213) are also shown on Plate 5, with the current DoD classification. DTSC did not concur with the uncontaminated classification for Parcels 206 and 226. The dark green areas on Plate 5, DoD Category 4, are transferable under CERCLA §120(h)(3). The areas on Plate 5 shown as DoD Category 7 are not considered transferable at this time.

4.11 Potential Impacts from Nearby Parcels

The Surplus II Parcels are surrounded by other Fort Ord parcels. Potential environmental impacts from OE areas and IRP sites in nearby parcels could affect the Surplus II Parcels. The identified environmental conditions on nearby parcels, at areas other than OE and IRP sites, are not expected to affect the Surplus II Parcels because identified releases to the environment, other than those at OE and IRP sites, are localized releases that are not expected to impact nearby parcels.

OE areas and potential OE areas within 800 feet of the Surplus II Parcels are shown on Plate 3, listed in Table 5, and discussed in Section 4.5. OE areas outside but within approximately 1,000 feet of the Surplus II Parcels are displayed on Plate 3 but are not discussed in the text.

IRP sites on adjoining parcels are shown on Plate 4. The sites are labeled with the IRP site number and the type of site (No Action, Interim Action, or Remedial Investigation).

4.12 Air Quality

Air quality issues at Fort Ord have been investigated as part of three major studies undertaken at the base. These studies and the years they were conducted are:

- Solid Waste Air Quality Assessment Test (SWAQAT) at OU 2, 1987
- Toxic Air Emissions Inventory Report, Headquarters 7th Infantry Division and Fort Ord, 1990
- Remedial Investigation of Site 3 - Beach Trainfire Ranges, 1993.

Each study is summarized below.

4.12.1 SWAQAT

The SWAQAT was undertaken to evaluate the presence and distribution of landfill gas (LFG) and the ambient air quality in the vicinity of the OU 2 landfills. The LFG contained methane, carbon dioxide, and nitrogen in ratios consistent with those found in landfills of similar age. Methane was found to have migrated outside the landfills into the soil underlying adjacent recreational areas north of Imjin Road. No bare areas or dead vegetation was found, however, that might indicate that methane

was migrating to the surface and presenting a health or explosive hazard. Analysis of samples collected in the air space immediately above the landfills detected 6 ppm total organic compounds. Low levels of 1,1-dichloroethene (1,1-DCE) were detected in the LFG and the ambient air both upwind and downwind of the landfill. The prevailing wind direction during sampling was from the west.

4.12.2 Toxic Air Emissions Inventory

The Toxic Air Emissions Inventory measured emission rates of chemicals from sources around the base, including those on the Surplus II Parcels, when the base was fully active in 1990. This investigation quantified emissions from:

- Diesel-fired boilers
- Natural gas-fired boilers
- Pathological waste incinerator
- Stationary engines
- Munitions use
- Painting booths
- Offset printing presses
- Miscellaneous paint and solvent use
- Ozalid (blueprint) printers
- Gasoline storage and transfer
- Laboratory chemical use.

The five most significant emissions to the air and the emission sources were found to be:

- Gasoline vapors (110,000 pounds per year [lbs/yr]) from filling stations

- Toluene (2,700 lbs/yr) from paint and solvent use
- Chlorofluorocarbons (CFCs) (1,900 lbs/yr) from paint booths
- Ammonia (1,550 lbs/yr) from munitions use and Ozalid printers
- Trichloroethene (TCE) (1,350 lbs/yr) from solvent use.

The remaining chemical emissions to air were estimated to amount to less than 900 lbs/yr. All these emissions, excluding a portion of the gasoline emissions, have been reduced drastically or eliminated altogether by base closure.

4.12.3 Remedial Investigation of Site 3

Site 3, the Beach Trainfire Ranges, extends for 3.2 miles along the Pacific Ocean and consists of approximately 780 acres. The portion of the ranges closest to the base is approximately 700 feet west of the Surplus II Parcels. The chemicals of concern for air monitoring at Site 3 were heavy metals related to expended munitions (bullets) in the target areas. During the summer of 1993, high-volume ambient air monitoring for particulates was attempted at three locations in the eastern (downwind) side of Site 3. The monitoring effort was not successful because the winds were light and variable during the monitoring period and not representative of typical conditions. Consequently, air quality modeling was performed as an alternate means of estimating the particulate loading. Reaching a conclusion regarding the impact of Site 3 air quality on the Surplus II Parcels was not possible (*HLA, 1995d*).

5.0 SUMMARY AND CONCLUSIONS

This EBS presents an overview of existing environmental conditions on the Surplus II Parcels based on available information as of April 1997. The summary and conclusions for the Surplus II EBS are presented below.

5.1 Summary

The findings of the EBS for the Surplus II Parcels are summarized on Table 13 and include the following:

- Asbestos surveys were completed for 83 buildings of the 104 buildings/structures listed in Table 13 for the Surplus II Parcels. Twenty of the 83 buildings surveyed contain ACM with ratings 1 to 5 (values that indicate the need for immediate action).
- Of the 104 structures in the Surplus II Parcels, 83 were constructed before 1978 or their dates of construction are not known. Because of their age, the 83 structures are suspected to contain LBP.
- Radon surveys showed that no buildings in the Surplus II Parcels had radon levels above 4 pCi/L.
- Radiological surveys were performed on 13 buildings. No radiological contamination was found in any of the buildings surveyed.
- One potential OE site and one training area are within or overlap the boundaries of the Surplus II Parcels.
- No releases of PCB-contaminated dielectric fluids have been reported for the Surplus II Parcels.
- Seventeen former UST locations are known to exist in the Surplus II Parcels (all 17 USTs have been removed). Evidence of release was found at two former UST locations. Both of these locations have been remediated and granted closure. Four current ASTs are known to exist in the Surplus II Parcels; however, only three of the ASTs were found. No evidence of release was found at any of

the three AST locations.

- Two SWMUs were identified in the Surplus II Parcels. No evidence of releases was found at either of the SWMU locations.

- Three IRP sites were identified within the Surplus II Parcels. All three of the IRP sites were identified for interim action, and remediation is complete. A soil treatment area is currently located at one of the IRP sites.

- The final CERFA report, which is equivalent to a basewide EBS, identifies both CERFA qualified and CERFA disqualified parcels within the Surplus II Parcels. In addition, 10 CERFA uncontaminated parcels are within or partially overlap the Surplus II Parcels.

- With the exception of Building 3890, the HMSAs and PSAs in the Surplus II Parcels described in the CERFA report (*ADL, 1994*) are free of hazardous materials or petroleum storage as of the dates of visual site inspections in March, April, and September 1997.

- DoD Categories 1, 4, and 7 have been assigned to the Surplus II Parcels.

5.2 Conclusions

On the basis of the EBS and FOST guidance criteria, it is concluded that some of the Surplus II Parcels are transferable by deed under the provisions of CERCLA §120(h)(3). The requirements of CERCLA §120(h)(3), DoD Category 4, have been met for part of Parcel L32 and all of Parcels E35, L15.1, and L33 (Table 13 and Plate 5). The Surplus II Parcels suitable for transfer under CERCLA §120(h)(4), DoD Category 1, include Parcels E37, L30, and L31 (see Plate 5). A portion of Parcel L32 has not met the requirements of CERCLA §120(h)(3) and has been assigned DoD Category 7. This portion of Parcel L32 will be transferred when appropriate.

Several health-related environmental conditions (e.g., presence of ACM and LBP) currently exist or are suspected to exist on the Surplus II Parcels in areas considered suitable for transfer by deed. These

environmental conditions have been evaluated or investigated by the Army, and the results have been summarized in this EBS.

Copies of the draft FOSTs for the Surplus II Parcels are attached as Appendixes A and B.

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