

**Environmental Baseline Survey
Main Garrison Parcels
Former Fort Ord, California**

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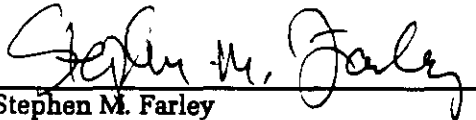
Prepared for

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HLA Project No. 36085 010701



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Version 1

September 26, 1997



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DISTRIBUTION

SELECTED ACRONYMS

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)
COE	U.S. Army Corps of Engineers
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
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 Main Garrison Parcels.

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 on the basis of the 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 Main Garrison Parcels. Areas where such conditions exist also include areas otherwise suitable for transfer by deed or lease under CERCLA.

On the basis of available information, the Main Garrison Parcels EBS indicates that the requirements of CERCLA §120(h)(3), DoD Category 4, have been met for Parcels E2b.1, E2c.1, E2c.2, E2c.3, E2e, L12.2.2, L12.2.3, and S1.4 and the majority of Parcels E2c.4 and S1.5.1. The requirements of CERCLA §120(h)(3), DoD Category 3, have been met for portions of Parcels E2b.3, E2d, and L20.16 and all of Parcels E15.1 and LE20.16. Accordingly, draft FOSTs have been prepared for the above Main Garrison Parcels. Appendix A is the draft FOST for the CERCLA §120(h)(3), DoD Category 3 Parcels; Appendix B is the draft FOST for the 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) 194, 195, 201, 205, 206, 209, 210, 211, 212, and 213 are within or overlap the Main Garrison 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 above except CERFA Parcels 206 and 212. CERFA uncontaminated parcels meet the requirements of CERCLA §120(h)(4), but the Army elects to transfer the Main Garrison Parcels that are eligible for transfer under the requirements of CERCLA §120(h)(3). The following Main Garrison Parcels have not met the requirements of CERCLA §120(h)(3) and will be transferred later, when appropriate: portions of Parcels E2b.3, E2c.4, E2d, L20.16, S1.5.1 and all of Parcels E2a, E2b.2, E15.2, L2.2, L5.8.2, L20.17.1 and L20.17.2.

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 former Fort Ord, Monterey County, California (Plate 1). The parcels addressed by this EBS are known as the Main Garrison Parcels, 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 Main Garrison Parcels, as discussed below and in Section 2.0.

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 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 responds 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). The FORA Fort Ord Base Reuse Plan outlines the anticipated reuse of designated parcels at former 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 (COE), 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 COE February 21, 1995, Revised Amendment to the Supplemental

Scope of Work (SSOW, dated September 2, 1993), under Contract DACA31-94-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 COE, Sacramento District, the only intended beneficiary of our work, to support preparation of FOSTs or FOSLs for the Main Garrison 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 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 Main Garrison Parcels, including an overview of Fort Ord's physical setting, history, and hydrogeology.

2.1 Fort Ord Physical Setting

The former Fort Ord installation (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 BRAC91 list, but troop realignment was not completed until 1993. Fort Ord officially closed on September 30, 1994. A portion of the Fort Ord property remains active to date 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 remaining approximately 20,000 acres are undeveloped property that was used for training activities. The Main Garrison area contains commercial, residential, and light industrial facilities. Construction began in 1940 and ended in the 1960s, starting in the northwest corner of the base 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 hydrogeology of the Main Garrison Parcels area.

Fort Ord, including the Main Garrison 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. Over 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 Main Garrison 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 Main Garrison 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, 1994c*).

3.0 APPROACH TO CONDUCTING ENVIRONMENTAL BASELINE SURVEYS

This section describes the activities performed for the Main Garrison Parcels EBS. The procedures are described in EBS guidance documents (*DoD, 1994; Army, 1994b*). This EBS for the Main Garrison 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 Main Garrison 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 COE 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 Main Garrison 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 Main Garrison 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 polychlorinated biphenyls (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

Fort Ord (now Presidio of Monterey-Annex) or COE personnel were interviewed, as necessary, to support the EBS. The Army identified a specific point of contact for each of the environmental programs at Fort Ord. The points of contact for this EBS are listed in Table 1. In addition, other current or former employees of Fort Ord were contacted to gather information about past or current activities. In some cases, interviews documented in this EBS were conducted as part of previous assessments.

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 Main Garrison Parcels were needed to confirm previous information. Previous investigations included those at IRP sites adjacent to the Main Garrison 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 Main Garrison 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 Main Garrison 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, 1988; 1988b*)
- 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, 1993b*)
- Draft Field Investigation and Data Review, Solid Waste Management Units, Fort Ord, California (*HLA, 1996*)
- 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, 1994]. 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. 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 Hazardous Waste Management Program (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 the 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 Main Garrison 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 Main Garrison Parcels were then searched for known or suspected locations of Fort Ord IRP sites, SWMUs, USTs, and other previously identified areas where potentially hazardous materials may have been stored, released, or disposed on-post. The evaluation process also considered the nature of the potentially contaminated medium and the capacity for contamination in that medium to affect the Main Garrison Parcels. Groundwater flow directions were considered in identifying potential effects of groundwater contamination on the Main Garrison 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 site 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), the 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.

Twelve IRP sites under CERCLA are within or overlap the boundaries of the Main Garrison

Parcels, as discussed in Sections 4.9 and 4.10. Additionally, the groundwater plumes associated with Operable Unit 2 (OU 2) (the Fort Ord Landfills) and with Sites 2/12 underlie several of the parcels. OU 2 is being investigated and remediated under the installation's RI/FS program. Information from OU 2 investigations was reviewed during development of the Main Garrison Parcels EBS.

The Sites 2/12 groundwater plume is being investigated under the installation's RI/FS program; remediation has not been initiated. Appropriate information from other site investigation activities, including potential soil contamination associated with USTs, was also evaluated for the Main Garrison Parcels EBS.

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 presented 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 Main Garrison 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 by the Army to HLA. 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 Protection, 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 nonoccupational 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 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
 - 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 unsalable 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, 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 and 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 the Weston report referenced above.

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 921 total structures in the Main Garrison Parcels, 829 buildings have been surveyed for ACM. The remaining 92 structures were not surveyed for ACM because their construction and use indicate they would not 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 Main Garrison Parcels and 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 and indicates 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 829 buildings in the Main Garrison Parcels that were surveyed for ACM, 263 buildings (32 percent) contain ACM with ratings of 1 to 5. The Army does not intend to remove or repair the ACM present in these structures but intends to disclose the condition of ACM to the recipients.

4.2 Lead-Based Paint Management Program

The purpose of the LBP management program at Fort Ord was 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 buildings in the Main Garrison Parcels because no housing units are within the parcels. Consequently, additional data were evaluated to assess the potential for LBP. Of the total 921 structures in the Main Garrison Parcels, 900 structures were constructed before 1978 or their dates of construction are not known. The 900 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.

Most of the buildings within the Main Garrison Parcels were constructed between 1940 and 1991. The paint on the Main Garrison Parcels buildings is in poor to good condition (Table 4). No sampling for lead in soil has been conducted on the Main Garrison Parcels. As agreed upon in an agency meeting on August 29, 1997, analytical results for lead in soil samples collected in the Marina Sports Center Parcel (in the northeast vicinity of Main Garrison Parcel E2b.3) and the Peninsula Outreach Parcel (in the northeast vicinity of Main Garrison Parcel E2b.1) will be used to represent lead concentrations in soil around buildings in the Main Garrison Parcels. Buildings in the Marina Sports Center and Peninsula Outreach parcels were constructed of similar materials and during similar time periods as the buildings in the Main Garrison Parcels. Average concentrations of lead detected in soil around the buildings in the Marina Sports Center and Peninsula Outreach parcels were 228 and 99 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 Main Garrison Parcels, no further action was necessary.

In March 1997, visual site inspections (VSIs) were performed throughout the Main Garrison 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 Main Garrison Parcels E2b.1, E2b.2, and E2b.3. The buildings in these parcels were constructed in a similar manner in 1940 and 1941 (Table 2) and were originally used as barracks. Therefore, the buildings are assumed to be representative of the pre-1978 buildings elsewhere in the Main Garrison Parcels. A summary of the VSI results for Parcels E2b.1, E2b.2, and E2b.3 is presented in Table 4. The VSIs indicate that the condition of the paint on approximately 1/3 of the buildings is good, 1/3 is fair, and 1/3 is poor (Table 4).

4.3 Radon Reduction Program

The purpose of the radon reduction program at Fort Ord was 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 U.S. Environmental Protection Agency (EPA) 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 Main Garrison Parcels had radon test results above 4 pCi/L; therefore,

none are being retested (*Ludwig, undated*). For radon concerns, buildings on the Main Garrison 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 under AEHA supervision 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.

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 USACHPPM, 1997 (USACHPPM stands for U.S. Army Center for Health Promotion and Prevention Medicine and was formerly the AEHA).

Radiological contamination was observed above background in some buildings; however, decontamination procedures were implemented by the survey team and the areas were resurveyed. On the basis of the final survey results, the U.S. Army Center for Health Promotion and Preventive Medicine

(USACHPPM, formerly AEHA) stated that, for radiological concerns, all properties can be released for unrestricted use (USACHPPM, 1997). However, the California Department of Health Services (DHS) issued a response on June 4, 1997 (DHS, 1997) 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 Main Garrison Parcels, 19 buildings were included in the radiological surveys based on documented storage or use of radiological commodities. These buildings are assigned a radiological survey classification of "A" in Table 2 for the purposes of this report. The 19 buildings were surveyed between January and April 1994; survey results are documented in Reports No. 27-43-E2HU-2-94 and No. 27-43-E2HU-3-94 (AEHA, 1994c, 1994d). The reports also recommend that these buildings be released for unrestricted use because the surveys showed no radiological contamination. The California DHS concurred on the release of 16 of the 18 buildings (Table 2).

An additional 167 buildings in the Main Garrison Parcels were suspected of historical use or storage of radiological commodities. Reportedly, no documentation exists that would exclude these buildings from consideration. Of the 167 buildings, 65 (i.e., more than 20 percent originally intended) were actually surveyed (Classification B1 in Table 2), and 102 were not surveyed (Classification B2). Sixty-two of the buildings were surveyed in early 1994; results are documented in Reports No. 27-43-E2HU-2-94 and No. 27-43-E2HU-3-94 (AEHA, 1994c, 1994d). The remaining three buildings were surveyed in 1995. All of the 167 buildings were recommended for release for unrestricted use (USACHPPM, 1997) because the 65 surveyed buildings (Classification B1 in Table 2) were free of radiological contamination and were considered to be representative of the 102 unsurveyed buildings. The California DHS concurred on all except one (Building 1724) of the 65 surveyed buildings and all except 10 of the 102 unsurveyed buildings (DHS, 1997). The remaining 735 buildings or structures in

the Main Garrison 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 and UXO are 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.

UXO is an item of explosive ordnance 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 being managed by the U.S. Army Engineer Division, Huntsville (USAEDH), Center of Expertise (CX). The main objective of the USAEDH program is to evaluate and address physical hazards due to 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 are 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 USAEDH are presented in the Archives Search Report (USAEDH, 1993) and the draft Archives Search Report (Supplement No. 1) (USAEDH, 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 has 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 engineering evaluation and cost analysis (EE/CA), Phase I, was prepared by Earth Tech in 1996 to evaluate selected potential OE areas within former Fort Ord and to provide

recommendations for cleanup, as appropriate (Earth Tech, 1996). The final EE/CA was prepared after the public had an opportunity to provide input regarding the recommendations for the OE sites.

A draft Phase II EE/CA, which provides recommendations for OE removal in the remaining portion of Fort Ord, was issued for public review and comment in September 1997.

In addition to the USAEDH OE Program, a second program was performed by HLA and managed by the Sacramento District COE 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

Five potential OE sites were identified for the Main Garrison as of May 1997:

- Four potential OE sites with boundaries within or overlapping the Main Garrison Parcels (Section 4.5.2.1)
- One potential OE site that is near (within 800 feet of) the Main Garrison Parcels.

In addition to these OE sites, six potential OE training areas occur within or overlap with the boundaries of the Main Garrison Parcels. These training areas are further discussed in Section 4.5.2.2. An additional four potential OE training areas are near, but not overlapping, the Main Garrison Parcels.

The OE site boundaries are based on the latest (as of May 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 more than one source, resulting in multiple site boundaries for many of the OE sites. Subsequently, the Army has conducted more focused studies of former OE use including the RI/FS. These focused studies, field work by the Army, other field activities by the Army contractors (including OE sampling, mapping, global positioning system [GPS] surveys, and OE removal actions) and the expanded ASR process performed as part of the Phase I and II EE/CAs have 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 to be confirmed in the future based on the planned sampling and removal actions. All of the OE sites shown on Plate 3 are final site boundaries.

The four potential OE sites and the six potential OE training areas whose boundaries are within or overlap the Main Garrison Parcels are presented on Table 5 and Plate 3 and are described below. The potential OE site and the four potential OE training areas that are near, but not overlapping, the Main Garrison Parcels

are also presented on Table 5 and Plate 3. Information pertinent to the OE site and training areas near the Main Garrison Parcels is provided in Table 5 and is not discussed further.

4.5.2.1 Potential OE Sites Within or Overlapping the Main Garrison Parcels

The four potential OE sites (Plate 3) and the corresponding recommendations for the Final Phase I EE/CA are as follows:

- The Flame Thrower Range #1 (OE Site 1) was identified as a potential OE site based on information from historical training facilities maps. Some sampling for UXO has been performed at this site; the Phase I EE/CA recommends confirmation sampling at the site.
- Pete's Pond (OE Site 2) was identified as a potential OE site based on interviews with former Fort Ord personnel. The interviews indicate that the site may have been used for training in landmine warfare, as well as training soldiers to respond to chemical, biological, and radioactive (CBR) warfare. Several 2.36-inch rockets (bazooka rounds) had been removed prior to the ASR (i.e., before 1994). In April 1997, additional bazooka rounds were uncovered during remediation activities within the adjacent Pete's Pond Extension. The additional bazooka rounds were found approximately 10 feet below the ground surface in the sidewall of an excavation to remove contaminated soil identified in the IRP Site 16 Remedial Investigation. The additional bazooka rounds have been removed or destroyed in place. The Phase I EE/CA recommends no further action.
- The Mine and Booby Trap Area #1 (OE Site 6) was identified as a potential OE site based on information shown on historical training facility maps. Sampling for OE has been completed. The Phase I EE/CA recommends no further action.
- The Recoilless Rifle Training Area (OE Site 20) was identified as a potential OE area based on information from historical

training facility maps. No OE was found during the grid sampling program. The Phase I EE/CA recommends no further action.

4.5.2.2 OE Training Areas Within or Overlapping the Main Garrison Parcels

Six training areas were identified on training facilities maps and in records. These areas were identified during the archive search and were considered miscellaneous training areas where OE is not generally expected. However, the potential presence of OE is possible (e.g., an inert training landmine was found at the Storage Yard Landmine area). Therefore, consistent with the conservative approach taken herein, these training areas are presented in Table 5 and on Plate 3 and are discussed below.

- The 75 mm Pack Howitzer Firing Area was identified as a potential OE site based on interviews with former Fort Ord personnel. USAEDH is evaluating the need for further OE evaluation.
- The Storage Yard Landmine area was used to store recreational vehicles and was associated with OE because an Army contractor, Westar Cable TV, found a training landmine at the yard. Explosive ordnance personnel with the Army determined it was a training aid and was nonexplosive. USAEDH is evaluating the need for further OE evaluation.
- Mortar Square #1 was identified on historical training facilities but was not identified in the archive search process as a potential OE site. No further action has been recommended.
- The Machine Gun Proficiency Training Area was identified from former range control records. This area was not identified in the archive search process as a potential OE site. No further action has been recommended.
- Machine Gun Square #3 was identified on historical training facilities maps but was not identified in the archive search process

as a potential OE site. No further action has been recommended.

- Machine Gun Square #4 was identified on historical training facilities maps but was not identified in the archive search process as a potential OE site. No further action has been recommended.

4.6 Polychlorinated Biphenyls Management Program

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

4.6.1 Summary of Program

In addition to identified transformer locations, HLA also 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's 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 KVA 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*).

All transformers having dielectric fluid containing between 50 and 500 ppm PCBs have been replaced (*Weston, 1990*). The last transformers containing greater than 500 ppm PCBs were removed and replaced with non-PCB transformers in 1992 (*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 and that dielectric fluid from the transformers has been tested for PCBs, changed out, and disposed as necessary. 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 Main Garrison Parcels. For PCB concerns, property on the Main Garrison Parcels can be released for unrestricted use.

4.7 Petroleum Storage Tank Program

The objectives of the petroleum storage tank program are 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 Main Garrison Parcels are based on data available through April 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 three 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 are 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 permit.

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.

In addition to the USTs, approximately 39 ASTs at Fort Ord were identified on a list provided by the DEH Environmental and Natural Resources Management Division (formerly ENRD, now DENR), (Temple, 1994a). HLA interviewed Ms. Claire Murdo, 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, as discussed below.

4.7.2 Program Status and EBS Results

This section summarizes the status of the UST management program at the Main Garrison Parcels as of April 1997, including a listing of the number of tanks that have been removed and a description of site characterization activities. An inventory of former USTs on the

Main Garrison Parcels was compiled from various sources of information, including a database provided by the DENR, a map of the parcel boundaries provided by the COE, the CERFA report (ADL, 1994), and the UST Management Plan (HLA, 1991a).

Eighty-nine USTs were located on the Main Garrison Parcels; all 89 USTs have been removed. Table 6 lists the 89 former USTs by number and indicates the parcel, contents, size, year placed, year 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 Main Garrison Parcels. Plate 4 shows the former UST locations.

Petroleum hydrocarbons had apparently been released at 12 UST sites. Soil samples collected during UST removals at these sites contained petroleum hydrocarbons at concentrations above RWQCB and MCDOH cleanup levels or preliminary remediation goals (PRGs). The MCDOH has granted closure at 6 of the 12 sites (2253.1, 2754.1, 1483.1, 1483.2, 1697.1, 1697.2). The other 6 sites (1060.1, 1060.2, 1060.3, 1483.3, 3004A.1, 3111A.1) are currently being investigated.

USTs 2754.1, 2253.1, 1697.2, and 1483.2 were removed in February 1991, March 1991, March 1992, and September 1992, respectively. USTs 1483.1 and 1697.1 were removed during the HLA site investigations in June 1994. Investigations were conducted by HLA at the 6 UST sites. Additional soil was excavated from the vicinity of the former USTs and associated product lines. Excavation confirmation soil samples were collected and analyzed. Soil was removed from around the former USTs in the following approximate amounts:

- 320 cubic yards (cy): former USTs 1483.1 and 1483.2
- 230 cy: former USTs 1697.1 and 1697.2
- 380 cy: former UST 2253.1
- 900 cy: former UST 2754.1.

Clearance reports describing the HLA site investigations were submitted to the MCDOH. The MCDOH granted closure for USTs 1483.2 and 1697.2 in a letter dated March 3, 1995, and for USTs 1483.1, 1697.1, 2253.1, and 2754.1 in a letter dated August 22, 1996.

Eight of the 89 former USTs have not been granted closure as described below:

- Two of the former USTs (2038.1 and 2038.2) were located in the same area and were excavated and transferred to the Fort Ord UST Soil Remediation Area (USRA) where they are currently in use as stormwater collection ASTs.
- Further investigation is required at six of the former UST locations (1060.1, 1060.2, 1060.3, 1483.3, 3004A.1, and 3111A.1) which were in close proximity to one another) because petroleum hydrocarbon concentrations in excess of MCDOH cleanup levels were detected during UST removal sampling. These USTs are currently being investigated.

An inventory of ASTs on the Main Garrison Parcels was obtained from a report by Uribe and Associates (*Uribe, 1997*) and verified in the field during visual site inspections in March 1997. Four ASTs were identified on the Main Garrison Parcels (Table 7 and Plate 4). Two propane tanks are on Parcel E2c.3 and are not in use. Two ASTs are in Parcel L20.17.1; one of them is a waste oil tank, and the other is a diesel tank. Both are in use. The Army does not plan on removing the four ASTs.

According to Ms. Claire Murdo of DENR, a 50-gallon diesel spill occurred in 1992 or 1993 near Building 2722 in Parcel E2b.2 when a diesel AST tipped over during its filling. Most of the diesel fuel was contained within the current berm surrounding the AST; however, because of heavy rains at that time, a portion of the rain/diesel mixture overflowed the berm and flowed down a culvert into a storm drain. Booms and absorbent material were used to divert the release from the storm drain, and the release was subsequently cleaned up. According to Ms. Murdo, no subsurface sampling was performed (*Murdo, 1997*).

4.8 Solid and Hazardous Waste Management Program

This section provides a summary of the Solid and Hazardous Waste Management (SWMU) program at Fort Ord in general and the Main Garrison Parcels in particular.

4.8.1 Summary of Program

When it first submitted its RCRA Part A permit application to the EPA in 1980, Fort Ord became subject to the requirements of the Resource Conservation and Recovery Act (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 to RCRA, Fort Ord was required to identify and assess all SWMUs on the base and include the results of the assessment in the 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 1995, in conjunction with base closure, Fort Ord formally withdrew its Part A application.

The EPA RCRA Facility Investigation Guidance (*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).

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, 1988b)*. The AEHA (1988a) identified, described, and evaluated 58 SWMUs (FTO-001 through FTO-058) and recommended that its report be included in the RCRA Part B permit application.

4.8.2 Program Status and EBS Results

Thirty SWMUs are in the Main Garrison Parcels and are identified by parcel and described below; descriptions are taken from HLA's 1996 Draft SWMU Report (HLA, 1996). Plate 5 shows the locations of the Main Garrison Parcels SWMUs. Most of the SWMUs are cages consisting of concrete-bermed floors, chainlink fence walls, and sheet metal roofs supported by wooden posts. The SWMU cages were used typically to store waste materials from vehicle maintenance activities, including drums of waste oil, vehicle batteries, lubricating fluids, and antifreeze. The cages in the Main Garrison Parcels ranged in size from approximately 10 by 20 feet to 10 by 60 feet. The AEHA noted that these cages appeared to meet RCRA standards for temporary storage facilities (AEHA, 1988a; 1988b).

The SWMUs associated with specific Main Garrison Parcels are described below.

4.8.2.1 Parcel E2b.2

Four SWMUs are in Main Garrison Parcel E2b.2:

- FTO-007 -- the Cannibalization Area (now called the Cannibalization Yard; Plate 5) is described in the 1988 AEHA Report as an approximately 100-foot by 100-foot fenced asphalt-paved lot where usable parts from military vehicles were dismantled and retrieved; associated with Building 2460. Remediation to be managed under the CERCLA program as part of IRP Site 12; no further action (NFA) under the SWMU program
- FTO-037 -- a temporary container storage unit associated with Building 2726; typical SWMU cage; NFA
- FTO-038 -- a temporary container storage unit (SWMU cage) associated with Building 2424; NFA
- FTO-060 -- the Lower Meadow Disposal Area, a landfill; remediation to be managed under the CERCLA program as part of IRP Site 12.

4.8.2.2 Parcel E2d

One SWMU is in Main Garrison Parcel E2d:

- FTO-022 -- the Former DRMO Yard (IRP Site 25), a vacant, unpaved 11-acre field in the Main Garrison (Plate 5). Between 1950 and 1972, the site was used for storing decommissioned equipment, including electrical transformers. Miscellaneous materials such as waste oil, diesel fuel, and possibly solvents may also have been stored onsite. The area was investigated as part of IRP Site 25, and a risk assessment was performed. The risk assessment indicated that chemicals detected at Site 25 are expected to be below levels of concern, and no further action is recommended (HLA, 1995)

4.8.2.3 Parcel L5.8.2

One SWMU is in Main Garrison Parcel L5.8.2:

- FTO-062 -- comprises two former waste disposal areas: Pete's Pond and Pete's Pond Extension. These former disposal areas were not identified as SWMUs in the 1988 AEHA Report. Pete's Pond is a 3.3-acre triangular depression between 5th Avenue, the 5th Avenue Cutoff, and 8th Street (Plate 5). Six storm drains discharge to the area. Pete's Pond Extension is a 3.5-acre vacant area east of Pete's Pond and northwest of the Directorate of Logistics (DOL) Yard. Stained soil, concrete, rusted ordnance, and other scrap metal were encountered during storm drain repairs.

Soil samples collected at Pete's Pond and Pete's Pond Extension during the RI contained some metals above background concentrations and some organic compounds. The remedial action recommended in the Basewide RI/FS Report was excavation of approximately 3,600 cubic yards of debris and associated contaminated soil. The debris would be screened, treated, and incorporated in the OU 2 foundation layer. The area would then be backfilled with clean soil and revegetated. The remediation is currently underway under the RI/FS CERCLA program (see Sections 4.5.2.1 and 4.9.2). No further action is recommended under the SWMU program.

4.8.2.4 Parcel L20.17.1

One SWMU is in Main Garrison Parcel L20.17.1:

- FTO-036 -- a temporary container storage unit (SWMU cage) in the DOL Heavy Equipment Maintenance Yard that is associated with Building 4900. This unit is active and part of the Presidio of Monterey Annex. During 1993, 1995, and 1996 site visits, HLA observed no spills nor evidence of a release from the cage. The area is regularly inspected and maintained. Prior to transfer, the SWMU inventory should be properly disposed of and the area cleaned.

Other pretransfer cleanup activities near the SWMU cage will be managed under CERCLA.

4.8.2.5 Parcel S1.4

Two SWMUs are in Parcel S1.4. These are listed below with the 1996 SWMU report recommendations for the SWMUs:

- FTO-054 -- a temporary container storage unit associated with Building 3772, NFA
- FTO-069 -- a temporary container storage unit associated with Building 3767, NFA.

4.8.2.6 Parcel S1.5.1

Nineteen SWMUs are in Parcel S1.5.1. These are listed below with the 1996 SWMU Report recommendations for the SWMUs:

- FTO-013 -- Building 1442 Autoclave, a low-temperature thermal treatment unit, no further action (NFA)
- FTO-017 -- TASC Plastics Shop, Building 1663, a temporary container storage unit, NFA
- FTO-019 -- AAFES Economy Cleaners, three USTs (removed) associated with Building 1434, NFA
- FTO-023 -- TASC Graphics Shop, Building 1665, a temporary container storage unit, NFA
- FTO-040 -- a temporary container storage unit associated with Building 1672, NFA
- FTO-041 -- a temporary container storage unit associated with Building 1637, NFA
- FTO-044 -- a former temporary container storage unit site associated with Building 1697, NFA
- FTO-048 -- two temporary container storage units associated with Building 1483, NFA

- FTO-049 -- a temporary container storage unit associated with Building 1489, NFA
- FTO-050 -- a temporary container storage unit associated with Building 1495, NFA
- FTO-051 -- a temporary container storage unit associated with Building 1489, NFA
- FTO-052 -- two temporary container storage units associated with Building 1641, NFA
- FTO-053 -- a temporary container storage unit associated with Building 1697, NFA
- FTO-056 -- a temporary container storage unit associated with Building 1681, NFA
- FTO-057 -- a temporary container storage unit associated with Building 1686, NFA
- FTO-058 -- a temporary container storage unit associated with Building 1656, NFA
- FTO-063 -- a wood-frame temporary container storage unit associated with Building 1440, NFA
- FTO-064 -- a temporary container storage unit associated with Buildings 1458 and 1468, NFA
- FTO-065 -- a landfill associated with Building 1483. During the Basewide RI/FS, an approximately 350-foot by 500-foot area in the northeast corner of the 1400 Block Motor Pool and east of the baseball field was identified as a former disposal area (Plate 5). Incinerated and unburned debris was encountered between ground surface and 16 feet bgs. Remediation of an estimated 63,000 cubic yards of debris is being addressed under the CERCLA program as part of IRP Site 17. No further action is recommended under the SWMU program.

4.9 Remedial Investigation/Feasibility Study (RI/FS)

A principal component of Fort Ord's overall environmental restoration program is the RI/FS program to characterize and cleanup

contaminated property. The program was formally initiated in 1991, following Fort Ord's listing on the NPL. The following sections present an overview of the RI/FS program, a discussion of the sites within and adjacent to the Main Garrison 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 California Department of Health Services (DHS); and the RWQCB. Under the FFA, the Army is 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 (SBWOI)
- Basewide Storm Drain and Sanitary Sewer System Investigation (BSDSSI).

In addition to the two identified OUs, 41 sites at Fort Ord, known as Installation Restoration Program (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 characterized 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 of 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

RI/FS program activities pertinent to the Main Garrison Parcels include (1) the investigation of the OU 2 and Sites 2/12 groundwater plumes;

(2) the BSWOI and the BSDSSI; and (3) characterization of some of the IRP sites. The status of RI/FS program activities are based on data available through April 1997.

4.9.2.1 Groundwater Plumes

OU 2 Groundwater Plume

The OU 2 groundwater plume underlies the Fort Ord Landfills site. The Fort Ord Landfills site consists of three known inactive landfill areas covering approximately 150 acres, the immediate surrounding area, and the underlying contaminated OU 2 groundwater plume. The landfill areas were used during the past 35 to 40 years for disposal of residential and commercial waste. The approximate extent of the volatile organic compound (VOC) groundwater plume, as defined by chemical concentrations exceeding the OU 2 cleanup criteria, is shown on Plate 7 (*HLA, 1995a*). Two VOCs, trichloroethene (TCE) and 1,2-dichloroethene (1,2-DCE), are the chemicals of primary concern for the OU 2 groundwater plume. A list of monitoring wells, piezometers, extraction wells, and injection wells on the Main Garrison Parcels is in Table 9 along with the analytical results for TCE and 1,2-DCE from the most recent sampling events.

The RI/FS has been completed for OU 2, and five remedial alternatives were evaluated in the FS. The FFA parties agreed to Alternative 4, which includes construction of a landfill cap, currently in progress, as well as a pump-and-treat system for groundwater in the A-aquifer and Upper 180-foot aquifer (*HLA, 1995a*). A Record of Decision (ROD) for OU 2 that specifies the remedial actions to be taken for the A-aquifer was signed in August 1994 (*Army, 1994a*). An Explanation of Significant Differences (ESD) regarding the extent of groundwater contamination in the Upper 180-foot aquifer was prepared and approved by the EPA and the DTSC in August 1995 (*Army, 1995*). In addition, the Army has received concurrence from the EPA that the pump-and-treat system installed in 1995 for the remediation of the OU 2 groundwater plume is in place and operating "properly and successfully" (*EPA, 1996*).

Sites 2/12 Groundwater Plume

The Sites 2/12 groundwater plume underlies IRP Sites 2 and 12; however, no significant continuing source areas were identified within these two IRP sites. The RI indicated that dissolved VOCs were detected in the Upper 180-foot aquifer at concentrations exceeding their respective maximum contaminant levels (MCLs). As stated in the ROD, Basewide Remedial Investigation Sites (Army, 1997), the remedial objective for the Sites 2/12 groundwater plume is to remediate the Upper 180-foot aquifer to MCLs for most of the detected VOCs, and to more stringent levels for some constituents, for the detected VOCs (Army, 1997). The Sites 2/12 groundwater plume, as defined by the cleanup criteria of 5 micrograms per liter ($\mu\text{g/L}$) for TCE, is shown on Plate 7 for the December 1996 sampling event. The isoconcentration line for 1 $\mu\text{g/L}$ is also shown to illustrate the extent of dissolved TCE at a lower concentration.

In 1996, a pilot study was performed to measure groundwater discharge rates from the Sites 2/12 groundwater plume. Results of the pilot study will be used to evaluate methods to remediate the Sites 2/12 groundwater plume.

4.9.2.2 BSWOI and BSDSSI

Basewide Surface Water Outfall Investigation

The objectives of the Basewide Surface Water Outfall Investigation (BSWOI) was to evaluate the quality of discharges from the surface water drainage system (including the storm drain system) and characterize the impact of these discharges on soils at the outfalls. The investigation consisted of

- Prioritizing the basewide surface water outfalls based on their potential to transport contaminants to the outfall
- Sampling and analyzing soil gas samples
- Obtaining soil boring samples and sediment samples at each high priority outfall
- Conducting a source area evaluation

- Performing remote video reconnaissance of a portion of the storm drain pipe system
- Conducting a human health risk evaluation of the sampling results.

Eight of the sampling locations for the BSWOI lie within the boundary of the Main Garrison Parcels (Plate 5) (HLA, 1995b). The human health risk assessment evaluated the soil and sediment samples obtained at seven of the eight sampling locations. The evaluation did not identify a need for further characterization or evaluation, although further characterization of unknown hydrocarbons at the eighth sampling location (Sampling Location OF-31; Plate 5) were completed as part of the IRP Site 12 investigation.

Basewide Storm Drain and Sanitary Sewer Investigation

The objectives of the Basewide Storm Drain and Sanitary Sewer Investigation (BSDSSI) were to assess the integrity of the pipelines and to evaluate the potential presence of contamination in soil beneath the storm drain and sanitary sewer systems. The investigation consisted of excavating five representative sections of pipe; observing the pipe for fractures and evidence of leakage; collecting soil samples beneath pipe joints for chemical analysis; and backfilling the trench (Plate 5) (HLA, 1995b).

The screening risk evaluation for the BSDSSI indicated that no adverse health or environmental effects are expected to be associated with the chemicals detected in the trench soil samples. The evaluation of possible chemical migration to groundwater indicated that impacts to groundwater are not expected.

4.9.2.3 IRP Sites

Remedial Investigation Sites

Four IRP sites (12, 16, 17, and 25) were characterized as Remedial Investigation sites on the basis of results of site investigation:

- IRP Site 12 - three remedial investigation areas, including the industrial area formerly part of IRP Site 13, are located within IRP Site 12

- Lower Meadow (includes SWMU FTO-060): A geophysical survey and trenching investigation confirmed the presence of a disposal area. Results of investigations indicate the presence of volatile and semivolatile organic compounds, hydrocarbons, and metals in soil.
 - DOL Yard and Cannibalization Yard (includes SWMU FTO-007): Monitoring wells installed indicate the presence of TCE and tetrachloroethene (PCE) above MCLs in groundwater. A soil gas survey identified several areas of elevated concentrations of solvents in soil gas.
 - Industrial Area: Results of a soil investigation detected total petroleum hydrocarbons as diesel (TPHd), an unidentified TPH, unidentified VOCs, PCE, acetone, and 4,4'-DDT in soil.
 - IRP Site 16 - three remedial investigation areas are located within the site:
 - Pete's Pond (includes SWMU FTO-062): A soil gas survey, a soil boring investigation, and excavation/installation and sampling of six trenches and one monitoring well indicate the presence of petroleum hydrocarbons, VOCs, and metals in soil.
 - Pete's Pond Extension: Test pits and soil borings were installed to delineate extent of a disposal area. Organic and inorganic chemical contamination is associated with disposal debris. Bazooka rounds discovered during RI excavation were addressed in the OE program.
 - DOL Maintenance Yard: A soil boring and test pit investigation was performed to define the extent of hydrocarbon contamination.
 - IRP Site 17 (includes SWMU FTO-065) - one remedial investigation area (a disposal area) is located within the site. Investigations delineated the extent of the disposal area. Organic and inorganic chemical contamination is associated with disposal debris.
 - IRP Site 25 (includes SWMU FTO-022) - one remedial investigation area is located within the site, which is the former defense reutilization and mobilization office (Old DRMO). A release of PCBs and pesticides was detected at Site 25 in shallow soil. A human health risk assessment and ecological risk assessment for soil were performed at Site 25. On the basis of the risk assessments, no further action was required at the site.
- The three remaining remedial investigation areas (IRP Sites 12, 16, and 17) are currently undergoing soil remediation by excavation. Soil from the remediation of the three sites is being transferred to the OU 2 landfill for disposal. The RI Sites Record of Decision (ROD) was signed by the DTSC on January 16, 1997 and the EPA on January 17, 1997. Methods are being evaluated to remediate the Sites 2/12 groundwater plume that underlies IRP Sites 2 and 12 (Section 4.9.2.1).

Interim Action Sites

Four IRP sites (14, 15, 20, and 24) have been characterized as Interim Action sites on the basis of results of the investigations:

- IRP Site 14 -- Two areas at the site were identified as IA areas: the former location of a waste oil UST and three existing and one former grease racks. Samples collected from the former UST contained detectable concentrations of PCE, unidentified VOCs, unknown hydrocarbons, and arsenic. Samples collected from one of the former grease racks contained detectable concentrations of chrysene, unknown hydrocarbons, and TRPH. The Draft Final Site Characterization Report for Site 14 was submitted to the EPA and DTSC in November 1994; the Interim Action (IA) approval memorandum for Site 14 was submitted and approved by the EPA and

DTSC in April 1995. The Site 14 IA Confirmation Report was submitted to the regulatory agencies in February 1996. The EPA concurred that contamination was adequately remediated at Site 14 in a letter dated March 7, 1996; DTSC concurrence is pending.

- IRP Site 15 -- One area at the site was identified as an IA area: an unpaved area around Building T-4913 contained several pesticides in shallow soil samples. The Draft Final Site Characterization Report for Site 15 was submitted to the EPA and DTSC in November 1995; the IA approval memorandum for Site 15 was submitted in March 1995 and approved by the EPA and DTSC in April 1995. The Site 15 IA Confirmation Report was submitted to the regulatory agencies in August 1996. The EPA concurred that contamination was adequately remediated at Site 15 in a letter dated April 7, 1997; DTSC concurrence is pending.
- IRP Site 20 -- Although a part of IRP Site 20 falls within the Main Garrison, the portion of Site 20 identified as requiring additional investigation (IA area), is near but not within the Main Garrison Parcels (Plate 7). The excavation of soil around two former grease racks was the focus of the IA; samples collected from the location of the former grease racks contained concentrations of TRPH, unknown petroleum hydrocarbons, toluene, 2-methyl naphthalene, and butybenzylphthalate. The Draft Final Site Characterization Report for Site 20 was submitted to the EPA and DTSC in May 1995; the IA approval memorandum for Site 20 was submitted in June 1995 and approved by the EPA and DTSC the same month. The Site 20 IA Confirmation Report was submitted to the regulatory agencies in July 1996. The EPA commented on the Site 20 IA Confirmation Report in a letter dated April 4, 1997; the Army responded to the EPA's comments in a letter dated May 21, 1997.
- IRP Site 24 -- Four areas at the site were identified as IA Areas: the former location of above ground storage tanks, the former location of a grease rack, an area of

pesticide use, and an area where buried drums were discovered and removed. The former location of above ground storage tanks is not on Main Garrison Parcel S1.4; the other three IA Areas are located on Main Garrison Parcel S1.4 (Plate 7). The Draft Final Site Characterization Report for Site 24 was submitted to the EPA and DTSC in March 1996; the IA approval memorandum for Site 24 was submitted in February 1997 and approved by the EPA and DTSC. The Site 24 IA Confirmation Report was submitted to the regulatory agencies in January 1997. The EPA concurred that cleanup levels have been achieved at Site 24 in a letter dated April 14, 1997; DTSC concurrence is pending.

No Action Sites

Six IRP sites that fall within the Main Garrison (13, 18, 19, 23, 28, and 38) have been characterized as No Action sites on the basis of results of the investigations. The No Action Record of Decision (NoAROD) for the No Action sites was signed by the regulatory agencies in the spring of 1995. Documentation that site-specific No Action criteria were met for the No Action sites is provided through the Approval Memorandum process. This process is referred to as the "plug-in" process, because the Approval Memoranda plug into the NoAROD. The status of the six No Action Approval Memoranda is discussed below:

- The screening risk evaluation indicated minimal risk posed by compounds detected in soil at Site 13 in the southern portion of the site. Contaminated soil was restricted to the industrial areas. The No Action Approval Memorandum for Site 13 was approved by the EPA on August 2, 1995, and the DTSC on August 18, 1995. The final public notice of agency concurrence was published November 24, 1995.
- Low levels of copper and unidentified TPH were detected in soil samples from Site 18. Agency approval of the Site 18 No Action Approval Memorandum is pending.

- At Site 19, TPH diesel was detected in a soil sample at a concentration of 1,400 mg/kg at a former tank location, and chlordane was detected at a concentration of 3 mg/kg at a photo lab vault. Agency approval of the Site 19 No Action Approval Memorandum is pending.
- At Site 23, soil and groundwater conditions associated with potential sources of contamination were assessed. The potential sources of contamination included 6 former USTS, 3 former grease racks, 3 oil/sand interceptors and a drain. Chemical concentrations were below levels of concern and a No Action Approval Memorandum for Site 23 was issued in August 1997. Agency approval is pending.
- Metals were detected above background levels but below PRGs in surface soil samples from Site 28. The No Action Approval Memorandum for Site 28 was approved by the EPA on September 25, 1995, and by the DTSC on October 10, 1995. The final public notice of agency concurrence was published November 24, 1995.
- No releases to the environment were detected at Site 38. The No Action Approval Memorandum for Site 38 was approved by the EPA on July 11, 1996, and DTSC approval is pending. The final public notice of agency concurrence was published December 2, 1996.

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.

4.10.1 Summary of ERFA 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 requirements of CERCLA §120(h)(3) 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 transfer to proceed potentially well 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 deviations, 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 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, 4, 5, and 6). These sections summarize information from the final CERFA report for areas surrounding and including the Main Garrison Parcels. The final CERFA report identifies the majority of the Main Garrison Parcels as being within either CERFA disqualified Parcel 4 or CERFA qualified Parcel 100. Several other CERFA disqualified and/or qualified parcels (2, 5 through 14, 21, 27, 42, 99, 100, 114, 162, and 191) and CERFA uncontaminated parcels (194, 195, 201, 205, 206, 209, 210, 211, 212, and 213) are also within the Main Garrison Parcels. Table 12 identifies all CERFA parcels within the Main Garrison Parcels, lists the CERFA category, and summarizes the environmental conditions present on the parcel at the time of the CERFA investigation. CERFA Parcels 194, 195, 201, 205, 206, 209, 210, 211, 212, and 213 were determined to be uncontaminated (Plate 8). The EPA concurred with this categorization and the DTSC concurred to all of the listed CERFA parcels except 206 and 212 in letters dated April 18 and 19, 1994 (*DTSC, 1994; EPA, 1994b*).

Because of environmental cleanup activities, portions of several of the Main Garrison Parcels that were categorized as CERFA qualified or disqualified parcels may now be transferable under either CERCLA §120(h)(3) or CERCLA §120(h)(4). 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 11 presents hazardous materials storage areas (HMSAs) and petroleum storage areas (PSAs) in the Main Garrison Parcels that were described in Table 5-1 of the CERFA report (*ADL, 1994*). The results of visual site inspections performed in March and April 1997 are presented in Table 11. With the exception of two active facilities (Buildings 1483 and 2048), the HMSAs and PSAs in the Main Garrison Parcels are free of hazardous materials or petroleum storage as of the date of the visual

site inspection. There was no evidence of release at the HSMAs or PSAs listed in Table 11.

Using the results of the EBS assessment, including the previous CERFA results, DoD categories were assigned to each of the Main Garrison Parcels to reflect the environmental conditions present (see explanation in Plate 8 for DoD category definition). Guidance documents for EBS assessments and DoD category assignments include the following:

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

Table 13 summarizes the environmental issues for each of the Main Garrison Parcels and lists the proposed DoD category. Plate 8 shows the proposed DoD categories assigned to each of the Main Garrison Parcels. Only DoD Categories 1 through 4 are transferable. All Main Garrison Parcels that are considered transferable at this time are classified as either DoD Category 3 or DoD Category 4. Both DoD Categories 3 and 4 are transferable under CERCLA §120(h)(3). Those CERFA parcels that the agencies have concurred are uncontaminated (194, 195, 201, 206, 209, 210, 211, 212, and 213) are also shown on Plate 8, with the current DoD classification. The dark green areas on Plate 8, DoD Category 4, are transferable under CERCLA §120(h)(3). Those areas on Plate 8 shown as DoD Category 5, 6, and 7 are not considered transferable at this time.

4.11 Potential Impacts from Nearby Parcels

The Main Garrison Parcels are surrounded by other Fort Ord parcels. Potential environmental impacts from OE areas and IRP sites in nearby parcels could affect the Main Garrison Parcels. The identified environmental conditions on nearby parcels, at areas other than OE and IRP

sites, are not expected to affect the Main Garrison 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 nearby (within 800 feet of) the Main Garrison 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 Main Garrison Parcels are displayed on Plate 3 but are not discussed in the text.

IRP sites on adjoining parcels are shown on Plate 7. 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 parts

per million (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 Main Garrison 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 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 Site 3 Investigation

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 1,500 feet west of the Main Garrison 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. No conclusion regarding the impact of Site 3 air quality on the Main Garrison Parcels was possible (HLA, 1995b).

5.0 SUMMARY AND CONCLUSIONS

5.1 Summary

This EBS presents an overview of existing environmental conditions on the Main Garrison Parcels based on available information as of April 1997. The findings of the EBS for the Main Garrison Parcels are summarized on Table 13 and include:

- Asbestos surveys were completed for 829 buildings of the 921 structures listed in Table 13 for the Main Garrison Parcels. Thirty-two percent of the 829 buildings surveyed contain ACM with ratings 1 to 5 (values that indicate the need for immediate action).
- Of the 921 structures in the Main Garrison Parcels, 900 were constructed before 1978 or their dates of construction are not known. The 900 structures are suspected to contain LBP because of their age.
- Radon surveys showed that no buildings in the Main Garrison Parcels had radon levels above 4 pCi/L.
- Radiological surveys were performed on 84 buildings. No radiological contamination was found in any of the buildings surveyed.
- Four potential OE sites are within or overlap the boundaries of the Main Garrison Parcels.
- There have been no reported releases of PCB-contaminated dielectric fluids within the Main Garrison Parcels.
- Eighty-nine former UST locations are known to exist in the Main Garrison Parcels (all 89 have been removed). Evidence of release was found at 12 former UST locations. Six of these locations have been remediated and granted closure, and the remaining 6 are currently being remediated or are undergoing further investigation. Four current ASTs are known to exist in the Main Garrison Parcels. No evidence of release was found at any of the AST locations.
- Thirty SWMUs were identified in the Main Garrison Parcels. Evidence of releases was found at four SWMU locations. These SWMUs are being remediated under the RI Program.
- With the exception of two active facilities (Buildings 1483 and 2048), the HMSAs and PSAs in the Main Garrison 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.
- Two groundwater plumes have been identified underlying the Main Garrison Parcels. Remediation is in place and operating effectively at the OU 2 plume. The second groundwater plume (Sites 2/12) is awaiting implementation of remedial action.
- Fourteen IRP sites were identified within the Main Garrison Parcels. Four sites were originally identified as remedial investigation (RI) sites; one of the four RI sites (IRP Site 25) was subsequently recommended for no action, and the remaining three sites are currently undergoing remediation. Four of the 12 IRP sites were identified for interim action, and remediation is complete. The remaining six IRP sites were identified for no action.
- The final CERFA report, which is equivalent to a basewide EBS, identifies both CERFA qualified and CERFA disqualified parcels within the Main Garrison Parcels. Nine CERFA uncontaminated parcels are within or partially overlap the Main Garrison Parcels.
- DoD categories 3, 4, 5, 6, and 7 have been assigned to the Main Garrison Parcels.

5.2 Conclusions

On the basis of the EBS and FOST guidance criteria, it is concluded that some of the Main Garrison 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 Parcels E2b.1, E2c.1, E2c.2, E2c.3, E2e, L12.2.2, L12.2.3, and S1.4 and the majority of Parcels E2c.4 and S1.5.1 (see Plate 8) because the remedial action for the OU 2 groundwater plume has been implemented and shown to be operating effectively (EPA, 1996). The Main Garrison Parcels suitable for transfer under CERCLA §120(h)(3), DoD Category 3, include portions of Parcels E2b.3, E2d, and L20.16 and all of Parcels E15.1 and LE20.16 (see Plate 8).

Several health-related environmental conditions (ACM and LBP) currently exist or are suspected to exist on the Main Garrison 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 of the Main Garrison Parcels are included in Appendixes A and B. Available Records of Survey are included in Appendix C.

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(Note: Not all references listed here are cited in the text).

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