Draft Final
Field Investigation and Data Review
Solid Waste Management Units
Fort Ord, California

Prepared for

Department of the Army
Sacramento District Corps of Engineers
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July 30, 2002

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EXECUTIVE SUMMARY

This report present the results of Harding ESE's investigation of solid waste management units (SWMUs) at the former Fort Ord, Monterey County, California. The work was performed for the Department of the Army, Sacramento District Corps of Engineers, under Contract DACA05-86-C-0241 and Supplemental Scopes of Work dated 9 August 1994 and 14 February 1996.

Background

Fort Ord, a former military base, is a Resource Conservation and Recovery Act (RCRA) interim status facility. A SWMU is "[a]ny 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."

In support of Fort Ord's RCRA Part B permit application, the Army Environmental Hygiene Agency (AEHA) in 1988 identified 58 SWMUs at Fort Ord, numbering them FTO-001 through FTO-058 (*AEHA, 1988*). In a 1993 draft report, HLA evaluated the status of the 58 SWMUs (*HLA, 1993d*).

At about the same time, environmental investigations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) began at Fort Ord; the base was named to the National Priorities (Superfund) List in February 1990; a Federal Facility Agreement was signed by the Army and the involved regulatory agencies in July 1990; the accelerated remedial investigation/feasibility study (RI/FS) began in October 1990; and the base was selected for closure under the Defense Base Closure and Realignment Act (commonly known as BRAC) in 1991. The final RI/FS report was published in October 1995 (*HLA, 1995h*); recommendations were made for no further action, interim action, or remedial action for the 41 sites investigated.

All but 2 of the original 58 SWMUs were in areas investigated during the RI/FS or areas previously identified as operable units under CERCLA.

Purpose and Scope of Work

As part of RCRA/CERCLA integration and because Fort Ord has been closed and portions of the base are being transferred to other parties, Harding ESE was requested to perform the following:

- Assess the presence, condition, and status of previously identified SWMUs
- Identify previously unidentified SWMUs and evaluate their condition and status
- Identify areas where additional sampling may be necessary
- Make recommendations regarding actions that may need to be undertaken prior to transfer of parcels where the units are located.

During site visits in 1995 and 1996, HLA evaluated and photographed the original 58 SWMUs, or their former locations if they no longer existed. In addition, 14 areas not previously identified as SWMUs were identified, assessed, photographed, and given sequential numbers beginning with FTO-059. In December 2001, a field verification was completed for those SWMUs that were active in 1996. The eleven SWMUs reported as active in 1996 were inspected and their status updated in this report. Plates 2 through 7 show SWMU locations. Table 1 summarizes information about the SWMUs. The SWMUs

include two Fort Ord operable units, three RCRA interim status facilities, as well as sewage treatment plants, former fire drill areas, and former disposal areas. Other SWMUs include the Army and Air Force Exchange Service (AAFES) Service Station, an autoclave, and an infectious waste incinerator.

By far the most prevalent SWMUs on base are temporary container storage units; 49 of the 72 identified SWMUs were or are used for temporary storage of containerized wastes. Most of these are SWMU "cages," covered, concrete-bermed, temporary container storage facilities with chainlink fencing sides. They were constructed in the late 1980s and early 1990s to replace the sandbag-enclosed areas in motor pools that were the original motor pool SWMUs. Nine of the eleven SWMUs active in 1996 are temporary container storage units. Eight were being used for waste storage (FTO-004, -015, -024, -036, -055, -061, -068, and –071) and one was used for storing furniture (FTO-034). The remainder were clean, free of major staining, and empty. The 2001 site visit confirmed that 3 of the 9 temporary container storage units reported as active in 1996 are still active (FTO-055, -068, and –071), and a fourth (FTO-027) had been reactivated. SWMU FTO-071 is no longer operated by the Army. The six remaining temporary container storage units are no longer in use and were empty and clean.

Of the two remaining SWMUs active in 1996, one was verified as closed (FTO-011) and the second (FTO-010, the AAFES Service Station) remains active and is inspected monthly.

Conclusions and Recommendations

The following conclusions and recommendations regarding the SWMUs at Fort Ord are made on the basis of HLA's site visits in 1995, 1996, and 2001 and review of previous reports:

- No investigative sampling is recommended under the SWMU program.
- Operable Units 1 and 2, the Fritzsche Army Airfield Fire Drill Area and the Fort Ord Landfills (FTO-001 and FTO-002): Continue/complete site remediation and groundwater monitoring under CERCLA.
- RCRA Interim Status Units: Formal RCRA closure has been granted for the Defense Reutilization and Marketing Office (DRMO) Hazardous Waste Storage Yard (FTO-008). Formal RCRA closure plans for clean closure of the DRMO polychlorinated biphenyl (PCB) Storage Area (FTO-009) and the Explosive Ordnance Demolition Range (FTO-016) have been prepared and subsequent closure should be implemented.
- Sewage Treatment Plants: No further action. All sewage sludge has been removed as recommended.

RI/FS Site Areas Identified as SWMUs: Under the CERCLA program, all remedial actions have been completed and all Remedial Action Objectives achieved as defined in the Basewide Remedial Investigation Sites Record of Decision (*Army, 1997*) for the following areas:

- RI/FS Site 12: Cannibalization Area (FTO-007) and Lower Meadow Disposal Area (FTO-060)
- RI/FS Sites 16/17: Pete's Pond and Pete's Pond Extension (FTO-062) and Site 17 Disposal Area (FTO-065)
- RI/FS Site 31: East Garrison Dump Site (FTO-070).

No further action at SWMUs FTO-007, -060, -062, -065, and –070 is necessary.

- Interim Action Areas: No further action. Interim actions have been completed and confirmation reports submitted to the regulatory agencies for the former fire training area at the Fort Ord Fire Station (FTO-014) and the Crescent Bluffs Burn Pit (FTO-072).

- Active Temporary Container Storage Units: Prior to property transfer, properly dispose of remaining inventory and clean the three units currently used for waste storage (FTO-027, FTO-055, and FTO-068). No further action for SWMU FTO-071.

- AAFES Service Station (FTO-010): Continue regular inspections of temporary container storage units at this active service station.

- Infectious Waste Incinerator at Hayes Hospital (FTO-020): No further action.

- Silver Recovery Unit (FTO-021): No further action.

- Empty SWMU Cages and Other Inactive Units: No further action. These units are listed in Table 1.

1.0 INTRODUCTION

This report presents the results of the 1995 and 1996 field investigations, and 2001 limited field verifications conducted to assess the status of solid waste management units (SWMUs) previously identified at the former Fort Ord, Monterey County, California (Plates 1 and 2), and to identify previously unidentified SWMUs. The work was performed by Harding ESE, Inc. (Harding ESE; formerly known as Harding Lawson Associates [HLA]) for the Department of the Army, Sacramento District Corps of Engineers (USACE), under Contract DACA05-86-C-0241 and the Supplemental Scopes of Work dated 9 August 1994 and 14 February 1996.

This report follows the draft format developed by the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) 1994 for Resource Conservation and Recovery Act (RCRA) Facility Assessment Reports.

1.1 Purpose of the Investigation

The purpose of this investigation was to identify active and inactive SWMUs at the former Fort Ord, and to recommend any additional investigation of these units necessary to complete the RCRA requirements for the closure and transfer of this property for public use. Fort Ord became subject to the RCRA requirements when it first submitted a RCRA Part A permit application to the U.S. EPA in 1980. That application declared Fort Ord's intent to operate as a transfer, 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 the interim status regulations until required to submit its Part B Permit Application by the U.S. EPA. Further information on Fort Ord's permit status is included in Section 3.0 of this report.

In 1984 the U.S. EPA amended the RCRA regulations to include the Hazardous and Solid Waste Amendments (HSWA). In part, these regulations required any interim status facility that intended to continue operation by formal permit to complete an assessment of all SWMUs, regardless of the date waste was handled or disposed of at these units, and to include this assessment in the Part B permit application. It was EPA's intent with this regulation to require that facilities complete corrective action at these units as a condition of the facility's permit.

In 1988, Fort Ord requested the assistance of the U.S. Army Environmental Hygiene Agency (AEHA) in conducting the SWMU assessment. AEHA was the branch of the Army responsible for technical support and enforcement of environmental programs. AEHA subsequently visited Fort Ord and conducted a SWMU assessment. Its 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,* dated September 18, 1988. AEHA recommended that its report be included in the Part B permit application submittal.

In 1991, Fort Ord was included on the Defense Base Realignment and Closure Act (commonly known as BRAC) 1991 list, and was scheduled to be closed and transferred for public use. As part of the closure process, and because the base had been listed on the National Priorities List (NPL, or Superfund), investigations of the base were begun under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

In 1995, Fort Ord formally withdrew its Part A application and announced its intent to close all RCRA TSD interim status units and cease operating as a TSD facility. Just prior to and during this time, Fort Ord conducted SWMU assessments in 1993 and 1995 to update and verify the 1988 SWMU report.

This report contains a summary of information from the 1988, 1993, and 1995 SWMU assessments as well as additional information gathered in a subsequent SWMU assessment in 1996 and from limited site visits conducted in December 2001. Fourteen SWMUs not previously identified were added to the SWMU list. Where relevant, information gathered during the Basewide Remedial Investigation/Feasibility Study (RI/FS) conducted under CERCLA is also summarized.

The Basewide RI/FS presents the results of a review of existing documents that relate to RCRA facilities including SWMUs and Areas of Concern (AOCs) at Fort Ord. Also included is a summary of CERCLA documents that address the potential for releases from SWMUs and AOCs. This review was completed to comply with the Fort Ord Federal Facility Agreement (FFA), which requires that the Army "integrate CERCLA response actions and RCRA corrective action obligations, which relate to the release(s) of hazardous substances, hazardous wastes, pollutants or contaminants." Additionally, the FFA states that remediation of releases performed under the CERCLA program shall "obviate the need for further corrective action under RCRA."

In addition, the Basewide RI/FS summarizes additional investigations and programs under which SWMUs and AOCs were documented or investigated, identifies the programs under which SWMUs were investigated as part of CERCLA, and summarizes future activities related to the integration of RCRA and CERCLA programs.

1.2 Background

In 1988, AEHA identified, described, and evaluated 58 SWMUs at Fort Ord and identified units requiring further sampling, investigation, or corrective action (*AEHA, 1988*; the 1988 AEHA Report). In 1993, HLA prepared a draft Verification of Solid Waste Management Units report that addressed the current status of the original 58 SWMUs (*HLA, 1993d*; the 1993 HLA SWMU Report). Many of the SWMUs at Fort Ord have been investigated under other environmental programs, primarily the Fort Ord Basewide RI/FS.

Environmental investigations began at Fort Ord in 1984 at the Fritzsche Army Airfield Fire Drill Area (FTO-001) and in 1986 at the Fort Ord Landfills (FTO-002). These sites, currently Operable Units 1 and 2, respectively, were identified as SWMUs in the 1988 AEHA Report. They are being cleaned up under the CERCLA program.

In February 1990, Fort Ord was added to the National Priorities List (NPL, or Superfund), and in July 1990, a Federal Facility Agreement (FFA) was signed by representatives of the U.S. Army, the U.S. EPA, the California Department of Health Services (now Cal/EPA) Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board, Central Coast Region (RWQCB).

The FFA required the preparation of a Basewide RI/FS under CERCLA. The RI began in October 1991 and was carried out under an accelerated program mandated by forthcoming base closure under the Base Closure and Realignment Act and Public Law 102-190, the "Panetta legislation," which stipulates that RI/FSs at closing military facilities that are on the NPL be completed within 30 months of the passage of the legislation. (The base was closed in September 1994.)

HLA identified and investigated over 40 potential contaminant source areas during the RI/FS. On the basis of the results of the Basewide RI/FS, which was finaled in October 1995 (*HLA, 1995h*), the sites investigated were classified as:

- No Action Sites, which do not warrant remedial action under CERCLA

- Interim Action Sites, which have only a limited volume and extent of contaminated soil that can easily be excavated as an interim action

- RI/FS Sites, which have sufficient contamination to warrant a full remedial investigation, baseline human health risk assessment, ecological risk assessment, and feasibility study.

To accelerate cleanup and transfer, records of decision (RODs) have been prepared for the no action and interim action sites. The RODs present criteria for a site to be classified as a no action or interim action site and describe the approval process. The No Action ROD was signed in February 1995 and the Interim Action ROD (IAROD) was signed in February 1994. The RI/FS sites were included in the Basewide ROD signed in January 1997.

Sixty-eight of the previously and newly identified 72 SWMUs are within the sites investigated during the RI/FS. However, the results of most of the investigations do not indicate that the SWMU(s) within a site were sources of contamination. Two of the SWMUs (FTO-001 and FTO-002) are operable units that are being cleaned up under CERCLA. Two SWMUs (FTO-020 and FTO-021) were located at Silas B. Hayes Hospital and were not investigated during the RI/FS; FTO-021, the silver recovery unit was operated as a RCRA interim status unit. In September 2000, the DTSC determined that the Silver Recovery Unit was no longer regulated under State law and the Army implemented clean closure of the unit (i.e., all hazardous waste removed and any contamination exceeding cleanup goals remediated) (*Harding ESE, 2002*). Only the infectious waste incinerator (FTO-020) at the hospital has not been assessed under a separate program. FTO-020 is inactive.

1.3 Facility Information

The following facility information is required by the DTSC:

- Facility Name: Fort Ord

- EPA Identification Number: CA7210020676

- Dates of Completion of Investigation Phases: 1995 Site Visits in March and April; 1996 Site Visits in April, May, and July; 2001 limited site visits in December.

1.4 Investigation Procedures

The format for this report follows EPA's guidance for RCRA Facility Assessments (*EPA, 1986*). The EPA 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 which 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).

With the closing of Fort Ord, investigation of the SWMUs was necessary to:

- Assess the presence, condition, and status of previously identified SWMUs
- Identify previously unidentified SWMUs and evaluate their condition and status
- Identify areas where additional sampling may be necessary
- Make recommendations regarding actions that may need to be undertaken prior to transfer of parcels where units are located.

For the 1995 and 1996 SWMU site visits, HLA developed forms (samples in Appendix A) that were filled out by the site investigators while they were onsite. At least one photo was taken at each site. In December 2001 limited site visits were completed and the status updated for SWMUs active in 1996. The new information was compared with information in the previous SWMU reports. The Basewide RI/FS Report (*HLA, 1995h)* and appropriate site characterization reports and interim action confirmation reports were reviewed and relevant information incorporated herein. On the basis of site conditions observed during the site visits and previous information about the sites, Harding ESE has made recommendations for each SWMU. Recommendations generally fall into one of the following categories:

- No further action
- Address work under the Fort Ord CERCLA program, IAROD program, or UST program
- Address future work as part of RCRA interim status unit closure activities
- For currently active units, properly dispose of remaining inventory and clean the unit prior to transfer.

In its 1988 report, AEHA gave each SWMU a number, identified the military unit with which it was affiliated, and provided a location map showing the approximate location of the SWMU. Some of the military unit designations by which the SWMUs were originally identified in 1988 had changed between 1988 and 1993. These designations are even less relevant as property transfers proceed. To facilitate finding a specific SWMU, Harding ESE has grouped SWMUs by facility type (e.g., sewage treatment plant) or by NPL site number.

Underground Storage Tanks Used for Waste Storage

Although the SWMU definition (*EPA, 1986*) encompasses underground storage tanks (USTs) used for storing wastes (e.g., waste oil), such tanks are not addressed in this report. They have been or are being addressed under the Fort Ord UST management program. This is consistent with the 1988 AEHA Report, which identified only two waste storage tank SWMUs. One was the waste oil tank at the AAFES Service Station (FTO-010). The other tank identified as a SWMU by the AEHA was at the AAFES Economy Dry Cleaners (FTO-019); AEHA believed a UST there was used for storing waste dry cleaning solvent. Subsequently, it was discovered that there were three USTs at the cleaners, but the tanks were found to be used for product storage.

Firing Ranges

The Basewide RI/FS Report (*HLA, 1995h*) indicated that the Beach Ranges (RI/FS Site 3), Inland Ranges (RI/FS Site 39), and East Garrison Ranges (Site 39A) could be SWMUs; however, ordnance expended for its intended purpose has not been classified as waste under RCRA; therefore areas where spent ordnance remains on the ground are not considered to be SWMUs. Only areas where spent ammunition is intentionally disposed of are SWMUs. The only trainfire range discussed herein is Range 36A, the Explosive Ordnance Demolition Rage (FTO-016, also called the Open Detonation Range). This range is a RCRA interim status unit that was described in the 1988 AEHA Report. It was used by the Army for disposing of military ordnance and ammunition and commercial explosives, and subsequently used by Fort Ord's unexploded ordnance (UXO) contractor to dispose of ordnance found during the RI/FS.

2.0 SITE DESCRIPTION

2.1 Location

Fort Ord is adjacent to Monterey Bay in northwestern Monterey County, California, approximately 80 miles south of San Francisco (Plate 1). The former base comprised 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. SWMUs were located throughout the base, near wherever solid or hazardous wastes were generated (Plate 2).

2.2 History

Beginning with its founding in 1917, Fort Ord served primarily as a training and staging facility for infantry, cavalry, and artillery units. From 1947 to 1975, Fort Ord was a basic training center. After 1975, the 7th Infantry Division (Light) occupied Fort Ord. Light infantry troops operate without heavy tanks or armor. Fort Ord was selected in 1991 for decommissioning, but troop reallocation was not completed until 1993. Although Army personnel still operate the base, no active Army division is stationed at Fort Ord.

In 1917, the U.S. Army bought the present day East Garrison and nearby lands on the east side of Fort Ord to use as a maneuver and training ground for field artillery and cavalry troops stationed at the Presidio of Monterey. Before the Army's use of the property, the area was agricultural, as is much of the surrounding land today. No permanent improvements were made until the late 1930s, when administrative buildings, barracks, mess halls, tent pads, and a sewage treatment plant were constructed in the present-day East Garrison.

In 1940, additional agricultural property was purchased for the development of the Main Garrison. At the same time, the beachfront property was donated to the Army. The Main Garrison was constructed between 1940 and the 1960s, starting in the northwest corner of the base and expanding southward and eastward. During the 1940s and 1950s, a small airfield within the Main Garrison was present in what is now the South Parade Ground and 519th Motor Pool area (Site 20). In the early 1960s, Fritzsche Army Airfield (FAAF) was completed. The Main Garrison airfield was then decommissioned and its facilities redeveloped as motor pools and other facilities.

2.3 Facility Processes and Waste Management

2.3.1 Historical

Over half of the original 58 SWMUs were temporary hazardous waste storage areas in motor pools. At the time of the 1988 AEHA site visit, these SWMUs (FTO-024 through FTO-058) were sandbagged units where typical motor pool wastes (e.g., waste fuel, waste oil, antifreeze, asbestos break pads) were temporarily stored. These units are described in detail in Section 5.6.2. By early 1993 when HLA conducted its SWMU Verification Study, most had been replaced by bermed SWMU cages, also described in Section 5.6.2.

Original SWMUs FTO-001 through FTO-023 included some motor pool SWMUs, but also included three sewage treatment plants, an autoclave, an incinerator, a fire training area, and a pesticide mixing area. In addition, four of the original SWMUs are RCRA interim status units and two are the CERCLA operable units.

2.3.2 Current Status

During site visits in 1995 and 1996, HLA identified 14 additional SWMUs, and gave them sequential numbers beginning with FTO-059. Three of Fort Ord's four sewage treatment plants were among the original 58 SWMUs; the Ord Village Sewage Treatment Plant (FTO-059) was added to the SWMU list for completeness. Additionally, disposal areas investigated or identified during the RI/FS that were not listed in the 1988 AEHA SWMU Report were included as SWMUs: the Lower Meadow Disposal Area in RI/FS Site 12 (FTO-060), Pete's Pond and Pete's Pond Extension in RI/FS Site 16 (FTO-062), the RI/FS Site 17 disposal area east of the baseball field (FTO-065), and RI/FS Site 31, the East Garrison Dump Site (FTO-070). Two fire training area burn pits were among the original 58 SWMUs; the Crescent Bluffs Burn Pit (NPL Site 4; FTO-072) was added to the list. Eight of the SWMUs identified in 1996 are temporary container storage units, either the bermed "SWMU cage" structures described in Section 5.0 or portable metal storage lockers; one of these units is active (FTO-068), and another (FTO-071) continues to be used to support maintenance operations at the golf course under control of the City of Seaside. Three of the original 58 SWMUs are active: the AAFES Service Station (FTO-010), and two temporary container storage units (FTO-027 and FTO-055; [Table 1]). As of December 2001, the remainder had been decommissioned.

3.0 REGULATORY INVOLVEMENT AND VOLUNTARY ACTIONS

3.1 U.S. EPA and State Permit Status

In 1980, Fort Ord submitted a RCRA Part A permit application to both U.S. EPA Region IX and the California Department of Health Services. The application identified two RCRA treatment storage, and disposal (TSD) units: The Defense Reutilization and Marketing Office (DRMO) Hazardous Waste Storage Yard (FTO-008) and Range 36A Explosive Ordnance Demolition (EOD) Range (FTO-016). These units were granted interim status pending submittal of the RCRA Part B Permit Application. The Part A Application was updated and resubmitted to both agencies in 1984, 1986, 1987, 1990, 1991, and 1994. The 1987 application included two additional TSD units: the Silver Recovery Unit (SRU) at the hospital (FTO-020) and Building T-111 PCB Storage Building (FTO-009). The additional units were subsequently granted interim status. Later revisions of the Part A application included additions to the amounts and types of wastes handled, but no additional TSD units. In September 2000, the DTSC determined that the SRU was no longer regulated under State law. Subsequently, the Army implemented clean closure of the SRU.

In response to a letter (dated July 3, 1991) from the U.S. EPA requesting portions of the RCRA Part B Permit Application, Fort Ord, from 1991 to 1993, submitted various portions of the RCRA Part B Permit Application to both EPA Region IX and the State of California. The submittals included the Range 36A EOD Closure Plan (*HLA, 1991b*) and the DRMO Closure Plan (*HLA, 1995h*).

In 1995 Fort Ord requested voluntary withdrawal of its Part A Application in anticipation of the facility's closure under the BRAC. The three former RCRA interim status units are vacant and undergoing formal RCRA closure under interim status. RCRA closure of the DRMO (FTO-008) was granted by the DTSC in January 2001 (*DTSC, 2001*). The Army has prepared and submitted closure plans for the remaining TSD units.

3.2 U.S. EPA, DTSC, and RWQCB Enforcement Actions

To date there have been no known enforcement actions from the U.S. EPA, the DTSC, or the RWQCB at the Fort Ord facility.

Fort Ord received a Notice of Violation for violations of hazardous waste statutes and regulations observed by the California Department of Health Services during an initial inspection in November 1985. Fort Ord was reinspected in April 1987 to determine compliance and was found to be in compliance at that time. In addition, the 1994 revision of Fort Ord's RCRA Part A application was prepared to provide a comprehensive compilation of information in the original permit request and subsequent requests for changes from 1981 to 1993 in response to DTSCs Amended Report of Violation dated 5 August 1993 and a written request from DTSC dated 2 March 1994.

3.3 Voluntary Actions (e.g., IRP Activities at Federal Facilities)

Under the Federal Facilities Agreement signed in July 1990 in response to Fort Ord's listing on the NPL, the Army was required to conduct an RI/FS at Fort Ord. The USACE conducted the RI/FS for the former Fort Ord. The final Basewide RI/FS report was issued in October 1995 (*HLA, 1995h*). Many of the remedial actions have been completed.

4.0 ENVIRONMENTAL SETTING

This section summarizes topographic, geologic, hydrogeologic, and climatological information about the former Fort Ord. Additional information is presented in the Basewide RI/FS Report (*HLA, 1995h*).

4.1 Topography and Surface Waters

Elevations at Fort Ord range from approximately 900 feet above mean sea level (MSL) near Impossible Ridge, on the east side of the base, to sea level at the beach. The predominant topography of the area reflects a morphology typical of the dune sand deposits that underlie the western and northern portions of the base. In these areas, the ground surface slopes gently west and northwest, draining toward Monterey Bay. Runoff is minimal due to the high rate of surface water infiltration into the permeable dune sand; consequently, well-developed natural drainages are absent throughout much of this area. Closed drainage depressions typical of dune topography are common.

The topography in the southeastern third of the base is notably different from the rest of the base. This area has relatively well-defined, eastward-flowing drainage channels within narrow, moderately to steeply sloping canyons. Runoff is into the Salinas Valley.

4.2 Geology

Fort Ord is within the Coast Ranges Geomorphic Province. The region consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. In the Coast Ranges, older, consolidated rocks are characteristically exposed in the mountains but are buried beneath younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits.

Fort Ord is at the transition between the mountains of the Santa Lucia Range and the Sierra de la Salinas to the south and southeast, respectively, and the lowlands of the Salinas River Valley to the north. The geology of Fort Ord generally reflects this transitional condition; older, consolidated rock is exposed at the ground surface near the southern base boundary and becomes buried under a northward-thickening sequence of poorly consolidated deposits to the north. Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units:

- Mesozoic granitic and metamorphic rocks
- Miocene marine sedimentary rocks of the Monterey Formation
- Upper Miocene to lower Pliocene marine sandstone of the Santa Margarita Formation (and possibly the Pancho Rico and/or Purisima Formations).

Locally, these units are overlain and obscured by geologically younger sediments, including:

- Plio-Pleistocene alluvial fan, lake, and fluvial deposits of the Paso Robles Formation
- Pleistocene eolian and fluvial sands of the Aromas Sand
- Pleistocene to Holocene valley fill deposits consisting of poorly consolidated gravel, sand, silt, and clay
- Pleistocene and Holocene dune sands

- Recent beach sand
- Recent alluvium.

4.3 Hydrogeology

Recent studies of Fort Ord hydrogeology concluded that the base straddles two distinct groundwater basins, the Salinas and Seaside basins. Fort Ord includes the southwestern edge of the Salinas basin and the eastern portion of the smaller Seaside basin. The Salinas basin underlies the northern and southeastern portions of the base, and the Seaside basin underlies the southern and southwestern areas. RI/FS sites with recognized groundwater contamination are limited to the Salinas groundwater basin at Fort Ord; therefore, only the Salinas basin is described in detail in this RI/FS report.

The Salinas groundwater basin is relatively large and extends well beyond the boundaries of Fort Ord. At Fort Ord, the Salinas basin is composed of relatively flat-lying to gently dipping poorly consolidated sediments. Although relatively simple structurally, the sediments are stratigraphically complex, reflecting a variety of depositional environments. Aquifers within the Salinas basin at Fort Ord, from top to bottom, include the unconfined A-aquifer, the confined Upper 180-foot aquifer, the confined and unconfined Lower 180-foot aquifer, and the confined 400-foot and 900-foot aquifers. The 900-foot aquifer is deep and apparently isolated from the shallower aquifers. These aquifer names reflect local historical water levels and are not directly correlated to present water levels at Fort Ord.

4.4 Climate

The area's climate is characterized by warm, dry summers and cool, rainy winters. The Pacific Ocean is the principal influence on the climate at Fort Ord, causing fog and onshore winds that moderate temperature extremes. Daily ambient air temperatures typically range from 40 to 70 degrees Fahrenheit (F), but temperatures in the low 100s have occurred. Thick fog is common in the morning throughout the year. Winds are generally from the west.

The average annual rainfall of 14 inches occurs almost entirely between November and April. Because the predominant soil is permeable sand, runoff is limited and streamflow only occurs intermittently and within the very steep canyons in the eastern portion of Fort Ord.

5.0 SOLID WASTE MANAGEMENT UNITS

This section presents a SWMU-by-SWMU evaluation based on the 1995 and/or 1996 and 2001 site visits, the previous SWMU reports, and other pertinent information. The names and numbers of the original 58 SWMUs described the earlier reports (FTO-001 through FTO-058) were retained for consistency. The 14 new SWMUs were given numbers beginning with FTO-059. SWMUs are grouped as follows: operable units, RCRA units, sewage treatment plants, and then sequentially by NPL site number.

Table 1 summarizes SWMU information in the order presented below. More detailed information is presented in the references cited. SWMU locations are shown on Plates 2 through 7. Photographs of the SWMUs are presented in Appendix B.

5.1 Operable Units

The two Fort Ord operable units (OUs) are SWMUs: the Fritzsche Army Airfield Fire Drill Area (OU 1) and the Fort Ord Landfills (OU 2). AEHA (in *1988*) recommended that cleanup at these units continue.

5.1.1 FTO-001 (Operable Unit 1) – FAAF Fire Drill Area

FTO-001 is the Fritzsche Army Airfield Fire Drill Area (FDA), OU 1. It was established in 1962 as a training area for the Fort Ord Fire Department (Plate 2). The area comprised a burn pit, a drum unloading area, a gravity feed storage tank, and underground piping connecting the storage tank to a discharge nozzle in the center of the burn pit. The burn pit was a depression approximately 140 feet in diameter that was surrounded by a ditch. Waste gasoline, JP-4, aircraft fuel, diesel fuel, lube oil, and industrial solvents were conveyed to the pit, where they were ignited for firefighter training exercises. No efforts were made to prevent the hazardous materials from percolating into the subsurface soil. The pit was operated until 1985, when training activities were discontinued and the associated structures were removed.

Under RWQCB cleanup and abatement orders and waste discharge requirements, environmental investigations began in 1984. The remedial investigation/feasibility study was completed in 1987. Petroleum hydrocarbons were detected in shallow surface soil, and benzene, trichloroethene (TCE), trans-1,2-dichloroethene, and methyl ethyl ketone were detected in groundwater. The recommended remedial action was excavation and bioremediation of approximately 4,000 cubic yards of petroleum-contaminated soil and extraction and carbon treatment of contaminated groundwater.

Soil biotreatment was completed by August 1991. Groundwater treatment will continue until cleanup goals are achieved or chemical concentrations are reduced to levels that are protective of human health and the environment.

A Remediation Confirmation Study was conducted in late 1993 (*HLA, 1994c*) to evaluate the effectiveness and completeness of soil treatment and to demonstrate that the lateral and vertical extent of groundwater contamination had been characterized and that the extraction and treatment system is adequate and effective. The risk assessment conducted using data from the study concluded that the residual chemicals in the soil are not a risk to human health or ecological receptors under the designated land use. The area is now protected habitat as part of the University of California Natural Reserve System. Groundwater capture analyses demonstrated that the groundwater extraction system is adequate and that contaminated groundwater is apparently not migrating offsite.

The Remediation Confirmation Study was approved by the regulatory agencies. The Record of Decision is dated July 1995.

Recommendation. Continue groundwater treatment under the CERCLA program until cleanup goals are achieved.

5.1.2 FTO-002 (Operable Unit 2) – Fort Ord Landfills

FTO-002, or Operable Unit 2, the Fort Ord Landfills, comprises the north and main landfills, which cover approximately 150 acres, the immediate surrounding area, and the underlying contaminated groundwater (Plate 2). The north landfill area is north of Imjin Road; the main landfill is south of Imjin Road at the west end of the area bounded by Imjin Road, Abrams Drive, Inter-Garrison Road, the 8th Street Cutoff, and 6th Avenue. The landfills were used for over 30 years for residential and commercial waste disposal. The north landfills were used from 1956 to 1966. The main landfill was operated from 1960 until May 1987, when interim facility closure began.

The 1988 AEHA Report describes the landfill as an area comprising 11 cells that were filled over time using the area and/or trench methods of filling. According to AEHA, the wastes disposed in the landfill included domestic trash, paper, cardboard, and other common nonhazardous debris, as well as (during the early 1950s) hazardous materials and wastes such as petroleum sludge, solvents, and waste oils.

At the time of AEHA's site visit, chemicals had been detected in Fort Ord and other local drinking water wells and the landfills were covered with interim cover and were no longer in use; however, a segregated area of the landfill was used for storing dumpsters, which a contractor picked up regularly for offpost landfill disposal. An attendant culled hazardous materials and wastes from the dumpsters and stored them on pallets for DRMO pickup.

After volatile organic compounds (VOCs) were detected in local water supply wells, the RWQCB issued cleanup and abatement orders to investigate and clean up groundwater contamination caused by the landfills and subsequently issued waste discharge requirements stipulating landfill closure by 1989.

During the OU 2 RI, metals and low levels of semivolatile organic compounds were detected in soil samples, methane and VOCs were detected in soil gas, and VOCs were detected in A-aquifer and 180-foot aquifer groundwater samples. TCE was the chemical detected most frequently in groundwater at a maximum concentration of 80 µg/L. On the basis of the RI, the baseline risk assessment, and the feasibility study (*Dames and Moore, 1993a, b; 1994*), the preferred remedial action includes capping the landfill, cleaning up A-aquifer groundwater, conducting interim action groundwater cleanup of affected 180-foot aquifer groundwater, and reusing or recharging the treated groundwater. The Record of Decision approving this alternative was signed by the Federal Facility Agreement parties in August 1994 (*HLA, 1994d*).

Recommendation. Continue implementation of remedial action under CERCLA.

5.2 RCRA Interim Status Units

Separate closure plans for the three RCRA interim status units identified in this section are being or have been prepared. These units are discussed briefly below.

5.2.1 FTO-008 – DRMO Hazardous Waste Storage Yard

The Defense Reutilization and Marketing Office (DRMO) Hazardous Waste Storage Yard is an inactive RCRA interim status container storage area and transfer point. The unit is an approximately 135-foot by 370-foot paved fenced outdoor area in the East Garrison between Fremont and Sherman streets. Containerized hazardous wastes were stored in eight storage bays for more than 90 days before being

manifested and shipped offsite. Although the area around the DRMO (NPL Site 29) was investigated during the Basewide RI/FS, the hazardous waste storage yard itself was still active at the time and was not investigated. Operations at the yard ceased in November 1994.

Closure of SWMU FTO-008 was conducted under RCRA and included the completion of soil borings and the excavation of soil impacted by the storage of hazardous waste at the facility. Additionally, a video survey of the underlying storm drain system was conducted and sediments were removed. Based on the results of closure activities conducted at FTO-008, the unit meets the criteria for clean closure. Details of the closure investigation are presented in the DRMO closure report (*HLA, 2000*). The DTSC concurred with the RCRA closure of FTO-008 in a letter dated January 25, 2001.

Recommendation. No further action.

5.2.2 FTO-009 – DRMO PCB Storage Building T-111

Building T-111 is a 50-foot by 100-foot tile-roofed building in the East Garrison within NPL Site 29. Site 29 is a no action site based on the results of the site characterization investigation (*HLA, 1995h*). Waste transformer oil containing greater than 5 ppm polychlorinated biphenyls (PCBs) was stored in drums in the building beginning in 1985 (*AEHA, 1988*). The building had sloped, bermed, epoxy-sealed floors separated into three chambers. AEHA observed that the building was clean and well managed with no evidence of spillage or releases.

Fort Ord's 1994 RCRA Part A permit application states that the building was approved for temporary storage of PCBs by the California Department of Health Services in August 1984. The facility is a RCRA interim status storage unit that will be formally closed in accordance with RCRA requirements. A closure plan for this unit has been prepared and will be implemented prior to transfer of this property (*HLA, 1999*). The unit is presently inactive.

Recommendation. Formal RCRA closure.

5.2.3 FTO-016 (Site 5) – Open Detonation Area in RI Site 39 (Range 36A)

Range 36A is an approximately 200-foot by 400-foot area within the Inland Ranges (RI/FS Site 39) in Impossible Canyon (Plate 2). The range was operated by the 49th Ordnance Detachment FORSCOM Field Operating Activity for disposing of commercial explosives and military ordnance and ammunition between sometime in the 1940s (*AEHA, 1988*) and October 1992.

The area was investigated by James M. Montgomery Consulting Engineers (*JMM, 1990*) and by HLA in 1992 (*HLA, 1993a*). Several explosive compounds were detected in shallow samples at low concentrations; lead and beryllium detected in shallow soil appear to be site-related.

The range was reactivated in January 1994 for disposing of unexploded ordnance (UXO) identified by Fort Ord's Time Critical Removal Action Program for UXO and ordnance and explosive waste found outside the Inland Ranges (*HLA, 1995h*). HLA's 1995 field notes indicate that approximately 50-foot by 75-foot shallow pit had been used until January 1995 by Fort Ord's UXO contractor to detonate UXO found on base. The contractor had exploded all found items and had cleared the range. The site was inactive during HLA's 1995 site visit and no disposal activities are known to have occurred at Range 36A since January 1995. The area is currently managed by the U.S. Bureau of Land Management.

This unit was investigated under the RI/FS program as NPL Site 5 (*HLA, 1995h*). Because a final RCRA permit decision was not issued for Range 36A, this unit was to be closed as an interim status unit pursuant to state and federal hazardous waste management programs. A RCRA Closure Plan for Range 36A has been prepared and will be implemented prior to transfer (*HLA, 1997e*).

Recommendation. Formal RCRA closure.

5.3 Sewage Treatment Plants

Fort Ord operated four sewage treatment plants.

5.3.1 FTO-059 (NPL Site 1) – Ord Village Sewage Treatment Plant

The Ord Village Sewage Treatment Plant was not listed as one of the original 58 SWMUs, although the other three Fort Ord sewage treatment plants were. This inactive sewage treatment plant is at the south end of Beach Range Road within the coastal dunes in the southwest portion of the base (Plate 2). Sewage treatment operations ceased in 1964; however, the lift station at the northeast corner of the plant with its associated pipelines and pumps remains active as part of the regional sewage system (*Hlebasko, 1996*). The sludge beds remain; the aeration and settling tanks have been removed.

The unit has approximate dimensions of 200 feet by 300 feet. HLA investigated the site during the Basewide RI/FS and installed three groundwater monitoring wells in the 180-foot aquifer. Mercury was detected in soil samples collected near a former trickling filter at concentrations above its preliminary remediation goal (PRG). Fecal coliform was detected at low concentrations near the present pumping facility (*HLA, 1994i*). The site was determined to be a no action site on the basis of the site characterization investigation results (*HLA, 1995h*).

An additional investigation was conducted to evaluate the suitability of disposing treated sewage residue from the sludge-drying beds at the OU 2 landfill, and to address agency concerns about elevated mercury levels within soil at the former trickling facility. Soil samples were collected from the sludge drying beds, the holding ponds and from the former trickling filter area. Based on the data from the additional investigation, the soil at the former trickling filter was recommended for removal under the Interim Action (IA) Record of Decision (*HLA, 1996g*). Approximately 740 cubic yards of soil was removed as part of the Site 1 IA. The cleanup of the rest of SWMU FTO-059 was conducted concurrently with Site 1 IA activities. As part of the cleanup of SWMU FTO-059 all waste sludge (approximately 870 cubic yards) associated with the operation of sewage treatment plant was removed. Additional SWMU cleanup activities included the removal of an old overflow bypass clay pipe; demolition and removal of the concrete footwall associated with a surge reservoir, chlorine building, chlorine contact chamber, and all associated valve pits (*IT, 2000*). Approximately 480 cubic yards of demolition debris and 870 cubic yards of sludge were excavated and removed from the site. The Site 1 IA Confirmation Report was submitted to the regulatory agencies in December 1997. The EPA concurred that contamination was adequately remediated and no further action was necessary at Site 1 (*EPA, 1998*). DTSC concurrence is pending.

Recommendation. No further action.

5.3.2 FTO-012 (RI/FS Site 2) – Main Garrison Sewage Treatment Plant

The Main Garrison Sewage Treatment Plant was a secondary wastewater treatment plant capable of treating about 15,900 cubic meters per day (*AHEA, 1988*; Plate 3). The facilities included a bar screen,

two barminutors, an aerated grit removal chamber, three primary sedimentation tanks, two trickling filter units, a secondary settling tank, a chlorine contact chamber, and two digesters.

The plant occupies an unpaved area of approximately 28 acres west of Range Road between Trainfire Range No. 9 and Stilwell Hall. It was the primary sewage treatment facility for Fort Ord, serving most of the housing areas from the late 1930s until it was decommissioned in May 1990. Effluent was discharged under a National Pollutant Discharge Elimination System (NPDES) permit to a storm drain that emptied onto Indianhead Beach during low tide and to Monterey Bay during high tide.

The site was investigated during the Fort Ord RI/FS. Priority pollutant metals were detected above maximum background concentrations in surface and near-surface soil samples collected from the sludge drying beds. No significant continuing source areas were identified.

RI/FS Sites 2 and 12 were combined because a TCE plume in the upper 180-foot aquifer extends from Site 12 into Site 2. No continuing sources of groundwater contamination were identified in Site 2.

The baseline human health risk assessment for Site 2 found noncancer risks to be below EPA's threshold level of concern for ingestion of or dermal contact with soil and inhalation of dust particles or VOC vapors emanating from groundwater; cancer risk estimates for exposure to soil are within or below EPA's threshold risk range.

No remedial action was proposed for soil at RI/FS Site 2 (FTO-012) (*HLA, 1995h*). However, as part of the cleanup activities associated with the closure of SWMU FTO-012 all sludge remaining in the Main Garrison Sewage Treatment Plant sludge drying beds and evaporation ponds was removed. Additional SWMU cleanup activities included the demolition of the asphalt lined drying beds, removal of drying bed conveyance piping and excavation of soils below the drying beds and ponds (*IT, 2000*).

Recommendation. No further action.

5.3.3 FTO-011 (NPL Site 32) – East Garrison Sewage Treatment Plant

The East Garrison Sewage Treatment Plant is on the east side of Fort Ord, just north of Inter-Garrison Road near its intersection with Reservation Road (Plate 2). The plant was built before the 1940s as the primary East Garrison treatment plant. The 1988 AEHA Report states that the plant comprised two Dotten tanks, three sand percolation ponds, and several small sludge drying beds where sludge removed from the Dotten tanks was placed. AEHA noted that the plant accounted for 1,200 to 3,400 cubic meters per month of hydraulic loading and that because there was no offpost discharge from the plant, no permit was required for operation. The plant was inactive at the time of AEHA's site visit.

The plant was active in 1992 when HLA conducted the site characterization investigation (*HLA, 1997a*), although only one Dotten tank was operating. Most of the sludge bed and percolation pond area was inactive and the boundaries obscured due in part to off-road vehicle traffic. Sludge produced at this facility was being transported to the regional sewage treatment plant in Marina. The plant was also active in 1993 (*HLA, 1993c*).

HLA's site characterization investigation at the plant site included collecting soil samples from three 20-foot borings and three rounds of groundwater samples from three previously installed monitoring wells. The samples were analyzed for petroleum hydrocarbons, VOCs, PCBs, pesticides, metal, and fecal coliform.

On the basis of the results of the site characterization investigation, no further action was recommended under the RI/FS program (*HLA, 1995h*). However, the Basewide RI/FS Report recommended that

samples be collected from the sludge beds and if necessary, the sludge be removed as a maintenance procedure after the plant is closed and before the property is transferred (*HLA, 1995h*).

On the basis of the site characterization results, it was recommended that sewage residue and soil from the sewage outfall and the northeastern cell of the percolation pond be removed under the Interim Action Record of Decision (ROD) process. The cleanup of the rest of SWMU FTO-011 was conducted concurrently with Site 32 IA activities. As part of the cleanup of SWMU FTO-011, all waste sludge (approximately 7,160 cubic yards) associated with the operation of sewage treatment plant was removed. Additionally, the treatment Dotten tanks were emptied and sealed with concrete (*IT, 2000*).

Recommendation. No further action.

5.3.4 FTO-003 (NPL Site 36) – FAAF Sewage Treatment Plant

The FAAF Sewage Treatment Plant is in the northeast corner of Fritzsche Army Airfield near the former base's northern boundary. It was operated from the 1950s until March 1991. The facility treated an average of 16,500 gallons per day of sanitary sewage and wastewater from wash racks and maintenance shops at the airfield and the nearby Army Reserve Center. Chlorination was not carried out (*HLA, 1996i*). The plant was not monitored because there was no offbase effluent discharge from the evaporation ponds. The sludge was not removed from the sludge beds (*HLA, 1996i*).

The facility comprised a barminutor, an Imhoff tank, two cement soil-lined oxidation ponds, and two small sludge drying beds for sludge from the Imhoff tank. It was operated under a National Pollutant Discharge Elimination System permit (No. CA110001) *(AEHA, 1988*). Oil-water separators were installed in the mid 1960s to pretreat wastewater and prevent hydrocarbons from entering the sanitary sewer. The barminutor and Imhoff tank have been removed (*HLA, 1996i*).

The site characterization investigation included drilling and sampling seven soil borings. Samples were analyzed for petroleum hydrocarbons, VOCs, metals, fecal coliform, semivolatile organic compounds (SOCs), pesticides and PCBs (*HLA, 1996i*). Samples were collected from an existing monitoring well and analyzed for many of the same chemicals. On the basis of the results of the site characterization investigation, no further action was recommended under the RI/FS program (*HLA, 1995h*). However, the RI/FS report recommended that samples be collected from the sludge beds and if necessary, the sludge be removed as a maintenance procedure before the property is transferred (*HLA, 1995h*).

Additional soil samples were collected from the sludge beds and evaporation ponds to evaluate the nature extent of organic compounds at Site 36. Site characterization results identified sewage residue and soil with elevated concentrations of chlordane, cadmium, lead and total petroleum hydrocarbons (TPH) in the evaporation holding ponds. The sludge and soil was recommended for removal under the Interim Action Record of Decision (*HLA, 1997d*). Approximately 600 cubic yards of impacted soil was removed as part of the Site 36 IA. The cleanup of the rest of SWMU FTO-003 (sludge drying beds) was conducted concurrently with Site 36 IA activities. As part of the cleanup of SWMU FTO-003 all waste sludge (approximately 8,700 cubic yards) associated with the operation of sewage treatment plant was removed. The Site 36 IA confirmation Report was submitted to the regulatory agencies in June 1997. The EPA concurred that contamination was adequately remediated and no further action was necessary at Site 36 in a letter dated July 22, 1997. DTSC no further action concurrence was granted July 23, 1998.

Recommendation. No further action.

5.4 RI/FS Sites

5.4.1 FTO-014 (NPL Site 10) – Fire Training Area Burn Pit

FTO-014 (NPL Site 10) is a former burn pit approximately 160 feet south of the Fort Ord Fire Station in the Main Garrison (Plate 4). The site was an unlined rectangular pit approximately 45 feet long by 25 feet wide by 2 feet deep. Flammable liquids were placed, ignited, and subsequently extinguished during firefighter training exercises. A 2-inch-diameter pipe was apparently used to regulate fluid level in the pit and a narrow drainage ditch exited the pit to the south. Flammable liquids reportedly used include JP-4, gasoline, diesel, solvents, and waste oil (*HLA, 1995d*).

The 1988 AEHA Report indicates that old vehicles and other objects were placed in the pit, covered with waste fuel and ignited. AEHA noted that the pit was discolored and scarred from previous exercises and observed stressed vegetation and evidence of spillage and overflow of contaminated water and/or waste fuels onto the ground surface beyond the pit.

HLA saw little evidence of stressed vegetation at the site during its 1993 and 1995 site visits.

On the basis of the results of the site characterization investigation, the site was determined to be an interim action site (*HLA, 1995h*). Contaminated soil was excavated in 1995 by Davy International and the excavation was backfilled with clean soil. The Site 10 IA Confirmation Report was submitted to the regulatory agencies for approval in September 1996 (*HLA, 1996h*). The EPA concurred that contamination was adequately remediated and no further action was necessary at Site 10 in a letter dated September 19, 1996. DTSC concurrence is pending.

Recommendation. No further action.

5.4.2 FTO-010 (NPL Site 11) – AAFES Service Station

FTO-010, the Army and Air Force Exchange Service (AAFES) Service Station in the Main Garrison (Building 4220), is an active service station that was recently renovated (Plate 4). It was investigated by JMM in 1991. HLA evaluated the JMM data and conducted a screening risk evaluation (SRE) during the Fort Ord RI/FS. On the basis of the SRE results, no further action under the RI/FS program was recommended; any future work is to be conducted under the UST program (*HLA, 1995h*).

The 1988 AEHA Report identified the service station SWMU as a waste oil UST with a surface grate but also stated that the "waste POL tanks [*sic*] are used by tenants of Fort Ord, to dump waste oil after vehicle maintenance." AEHA indicated that the area had been in use since the early 1980s, that waste oil, antifreeze, brake fluid, and other POL products were disposed of, and that numerous surface spills were present, indicative of poor housekeeping. It was one of four SWMUs basewide for which AEHA recommended soil sampling.

A 1,000-gallon waste oil UST equipped with a leak detection system was installed in the northwest corner of the site in 1989 to replace the original tank, and HLA found the area to be well maintained in 1993 with evidence only of "a few, very minor spills," (*HLA, 1993c*). The waste oil UST was removed in 1996 and replaced with a 1,000-gallon aboveground storage tank (AST 4220) that is currently active.

At the time of the 1996 SWMU inspection, two waste storage cages were present. One was an approximately 5-foot by 5-foot portable shed surrounded by a sandbag berm. Approximately 35 used car batteries were being stored. Leakage from some of the batteries was noted and the concrete under the shed was stained. The second shed was an approximately 10-foot by 10-foot SWMU cage posted with

"Flammable Storage" and "Hazardous Waste Storage Area" signs and a spill plan. It was noted during the December 2001 field verification that no hazardous materials were being stored within the exterior storage cages. All waste materials are currently contained in drums kept within the service garage.

SWMU FTO-010 (including AST 4220) is a RCRA generator-only storage area. The unit is inspected monthly by the installation. A RCRA storage permit is not required by the DTSC because all waste is disposed within 90 days of generation. In addition to waste oil, waste currently stored at SWMU FTO-010 include empty aerosol cans, batteries, gasoline, used antifreeze, used oil filters, used brake fluid, rags and contaminated dry sweep (*Schmitt, 2002*).

Recommendation. Continue monthly inspections of the storage unit.

5.5 RI Site 12: The Lower Meadow, DOL Automotive Yard, and Cannibalization Area

RI Site 12 comprises three areas in the northwest portion of the Main Garrison near the 12th Street gate: the Lower Meadow, DOL Automotive Yard and the Cannibalization Area and its associated industrial area. Four SWMUs are present in Site 12: FTO-007, the Cannibalization Yard; FTO-037, two SWMU cages in the DOL Automotive Yard Motor Pool; FTO-038, a SWMU cage in the DOL General Equipment Maintenance Motor Pool; and FTO-060, the Lower Meadow Disposal Area. SWMU Locations are shown on Plate 3. The SWMUs are inactive.

Site 12 is (with Site 2 groundwater) one of the five RI/FS sites remediated under the CERCLA program. The VOC plume that extends under Sites 2 and 12 forms the groundwater remedial unit. Two of the Site 12 soil remedial units are SWMUs: soil near the Cannibalization Yard (FTO-007) is Site 12 Soil Remedial Unit 3 and the Lower Meadow Disposal Area (FTO-060) is Soil Remedial Unit 1.

5.5.1 FTO-007 – Cannibalization Area

The Cannibalization Area (now called the Cannibalization Yard; Plate 3) is described in the 1988 AEHA Report as an approximately 100-foot by 100-foot fenced asphalt-paved lot where usable parts from deadlined military vehicles were dismantled and retrieved. According to HLA's Basewide RI/FS Report, operations at the yard began in 1964. Used motor oil was collected in pans, then transferred to 55-gallon drums. Between January and August 1988, waste oil was stored in an aboveground 450-gallon tank in the hazardous waste storage area associated with the adjacent machine shop. Other historical activities at the yard included draining/removing gasoline (leaded and unleaded), diesel fuel, brake fluid, asbestos-containing brake shoes and linings, antifreeze/coolants, and acid from batteries, lubricating greases, and transmission fluids (*HLA, 1995h*).

AEHA described the yard as "cluttered," but saw no evidence of releases. In its 1993 SWMU Report, HLA noted that the area was rarely used and that only a few vehicle parts and skeletons of vehicles were present.

Under the CERCLA program, approximately 1,000 cubic yards of shallow soil on the eastern margin of the yard (this is a drainage area that received runoff from the DOL Yard and adjacent Industrial Area) containing petroleum hydrocarbons at concentrations greater than the preliminary remediation goal of 500 milligrams per kilogram (mg/kg) was excavated and removed. The Site 12 Remedial Action Confirmation Report And Post-Remediation Health Risk Assessment was submitted to the regulatory agencies in June 1999 (*IT, 1999c*). Concurrence of no further remedial action with regard to soil at Site 12 was granted by the EPA on September 20, 1999. DTSC concurrence is pending.

Recommendations. No further action.

5.5.2 FTO-037 – DOL Main Automotive Yard

FTO-037 is a typical motor pool SWMU. Because SWMUs in motor pools are very similar, they are described below to eliminate redundancy in the remaining portions of this report. The FTO-037 description follows the general description.

Temporary Container Storage Units in Motor Pools

Many of the units described in the 1988 AEHA Report that were in motor pools (FTO-024 through FTO-058) were approximately 10-foot by 15-foot outdoor areas surrounded by a 2-foot-high wall of sandbags. The area within the sandbags was lined with sand, a thick plastic liner, and a second 3- to 4-inch-thick layer of sand. Drums containing hazardous or solid waste were stored on pallets in the sandbagged area. Each area had a sign that stated "HAZARDOUS WASTE STORAGE AREA" and spill contingency plans were posted at most of them. The units had been in use for an unknown period of time (*AEHA, 1988*).

At the time the AEHA Report was prepared, more permanent covered, concrete-bermed hazardous waste storage facilities had been or were being constructed in most of the motor pool yards to replace the sandbagged units. AEHA noted that these SWMU cages appeared to meet RCRA standards for temporary storage facilities. Most of these units had been completed and were in use by 1993. These concrete-bermed chainlink cages have sheet metal roofs supported by wood posts. Floors are concrete. These units vary in size from approximately 10 feet by 15 feet to 15 feet by about 60 feet. The larger units may be divided into two, or sometimes three, separately bermed sections.

AEHA identified the wastes stored in the motor pool units as waste oil, used oil filters, used hydraulic fluid, used ethylene glycol, used brake shoes and pads, waste JP4, fuel filters, petroleum-oil-lubricant-(POL)-contaminated soil, and POL-contaminated rags. AEHA (*1988*) notes that "[a]ll of the wastes stored at the temporary sites are POL-based, with the exception of brake shoes, which are asbestos waste. The characteristics of POL waste products are that (*sic*) of hydrocarbon-based waste."

AEHA observed that spilled POL waste products could migrate and disperse into the shallow surface sands, but such migration and dispersal was judged by AEHA to be highly unlikely at any of the motor pool areas. The agency noted that very minor spillage occurred locally, but was isolated within the sandbagged area and contained onsite. The only potential for exposure that AEHA identified was to workers if they handled drums in a sloppy and unauthorized manner.

AEHA recommended that clean waste oil handling practices continue and that waste handlers be properly trained. They recommended that wastes and the new SWMU cages be labeled properly and that wastes be adequately segregated.

To avoid needless repetition, motor pool units identified in the following sections as "sandbagged units" or "SWMU cages" are assumed to have been constructed and managed as described above unless indicated otherwise.

FTO-037

FTO-037 comprises two adjacent SWMU cages associated with Building 2722, a former vehicle maintenance shop (Plate 3). The SWMUs are north of and adjacent to Wash Rack 2723 in the DOL Automotive Yard portion of RI/FS Site 12. The easternmost SWMU cage is approximately 15 feet by

30 feet and accessed from the north side; the SWMU cage to the west is approximately 15 feet by 20 feet and accessed via a ramp on the west side. There is an asphalt-bermed area just west of the westernmost SWMU cage. Corner drains in the cages open onto the adjacent wash rack.

The original FTO-037 was a sandbagged area; the SWMU cages were constructed prior to 1993, and the SWMU was deactivated in June 1994. HLA's 1995 field notes indicate that acid batteries had previously been stored in the small cage, other POL wastes had been stored in the large cage, and drums of oil had been stored in the bermed asphalt area.

HLA's 1993 SWMU Report noted that the storage area was free of spills. HLA observed some minor staining in the SWMU cages in 1995; however, the unit was vacant.

Recommendation. No further action.

5.5.3 FTO-038 – DOL General Equipment Maintenance Motor Pool

FTO-038 is an approximately 10-foot by 20-foot SWMU cage immediately south of Building 2424 in the Site 12 Industrial Area (Plate 3). The 1993 SWMU Report states that the area was free of spills and that there was no evidence of a release. During HLA's 1995 site visit the unit appeared to be inactive, but two pallets, a mop, and a clipboard were still inside and the spill contingency plan was still posted. HLA noted minor (mostly rust) staining on the intact concrete pad and some standing water.

The unit apparently drains onto adjoining asphalt. The area beneath the drain opening was clean, dry, and free of stains.

Recommendation. No further action.

5.5.4 FTO-060 – The Lower Meadow Disposal Area

The Lower Meadow is a former disposal area that was not identified as a SWMU in the 1988 AEHA Report (Plate 3). The site is presently a grassy open field at the intersection of 12th Street and 1st Avenue. The approximately 300-foot by 125-foot area slopes to the southeast. It is bordered on the south and east by trees at the base of a 10-foot-high embankment. At the southeast corner is a storm drain outfall and inlet. Waste materials such as scrap metal, oil, and batteries generated by the DOL were disposed of in the area, as was road construction waste.

HLA investigated the site during the Basewide RI/FS and recommended that debris buried at the site be removed. As part of the remediation of Site 12, approximately 16,000 cubic yards of debris and hydrocarbon impacted soil extending to a depth of approximately 20 feet was excavated and removed (*IT, 1999c*). The Site 12 Remedial Action Confirmation Report And Post-Remediation Health Risk Assessment was submitted to the regulatory agencies in June 1999. Concurrence of no further remedial action with regard to soil at Site 12 was granted by the EPA on September 20, 1999. DTSC concurrence is pending.

Recommendation. No further action.

5.6 NPL Site 14: 707th Maintenance Battalion Motor Pool

NPL Site 14, the former 707th Maintenance Battalion Motor Pool, comprises an approximately 19-acre area in the Main Garrison on the northwest corner of 3rd Street and 6th Avenue (Plate 5). The area was used as a maintenance and fueling facility for military vehicles from the early 1950s until base closure.

Site 14 is a CERCLA interim action site; the interim action recommended in the RI/FS report is excavation of contaminated soil near a former waste oil UST site and in the areas beneath grease racks.

There are two former SWMUs at Site 14: FTO-004, a SWMU cage northeast of Building 4885, and newly identified SWMU FTO-061, five portable steel storage lockers in the parking area south of Building 4885.

5.6.1 FTO-004 – 707th Maintenance Battalion, A, B, and C Company Motor Pool

FTO-004 was originally associated with Buildings 4855 and 4860 (Plate 5). AEHA describes a 15-foot by 10-foot locked metal cage with a sheet metal roof, and notes that the floor of the cage was lined with heavy plastic and covered with sand and that the edges of the cage were bound by sandbags. AEHA also states that the "units (*sic*) have two 600-gallon aboveground waste oil storage tanks (converted 'water buffaloes')." Hazardous wastes were placed in 55-gallon drums and other containers; some of the waste oil drums were uncovered and some spillage from overfilling was observed. The wastes disposed were typical motor pool wastes (*AEHA, 1988*).

No evidence of SWMU cages outside either Building 4855 or 4860 remained in April 1996 when HLA visited the site. A 550-gallon waste oil UST identified in HLA's 1993 SWMU report as having been behind Building 4855 was not mentioned in the 1988 AEHA Report; HLA's Draft Final Site Characterization Report for Site 14 (*HLA, 1994l*) states that this tank was excavated in 1985 but not removed until 1988. This former tank location was included in the interim action soil excavation (Area 14A) performed by Davy International in July 1995 (*HLA, 1996b*).

By 1993, FTO-004 had been moved to the area northeast of Building 4885. The unit, an approximately 12 1/2-foot by 38-foot SWMU cage with plywood sides and rear, has a 1-foot-high berm. When HLA visited the SWMU in April 1996, approximately ten 55-gallon drums and about twenty-five 5-gallon drums, all labeled "hazardous waste," were stored in the unit. The wastes may have included paint, waste oil, antifreeze, paint thinner, hydraulic fluid, toner, adhesive, brake cleaner, windshield deicer, gasoline, stain, varnish, and diesel. No leaks or spillage was observed and no cracks were seen in the concrete floor of the unit. The unit was regularly inspected and maintained as a RCRA generator-only storage unit. The recommendation made in the Draft SWMU report was that when the SWMU is deactivated, remove and properly dispose of the final inventory and the unit be cleaned.

Approximately 500 feet west of the SWMU cage is a second former waste oil UST site. The UST, which had not been used for over 8 years (*Murdo, 1995*), was removed in Spring 1996 by Remedial Constructors, Inc.

FTO-004 was inspected on December 12, 2001. The SWMU was inactive and all contents had been removed.

Recommendation. No further action.

5.6.2 FTO-061 – Transfer Station South of Building 4885

FTO-061 was a RCRA generator-only temporary hazardous waste container storage area operated by the Army in the asphalt-paved parking area south of Building 4885 (Plate 5). A 1996 inspection noted that the SWMU consisted of five metal storage lockers, all with secondary containment and posted with "Caution: Hazardous Waste Storage Area. . ." and other appropriate signs. The lockers were labeled "Poison," "Oxidizer," "Corrosive" (two lockers), and "PCBs." Spill plans were posted and spill kits were

nearby. The lockers were regularly inspected and maintained by the Army. HLA observed no spillage or staining. HLA's 1995 field notes state that these units have been in use since the DRMO Hazardous Waste Storage Area (FTO-008) was shut down, and that containers are stacked on pallets over spill pans. The recommendation made in the Draft SWMU report was that when the SWMU is deactivated, properly dispose of remaining inventory and clean and recycle the storage lockers.

FTO-061 was inspected on December 12, 2001. The SWMU was inactive and all contents had been remove.

Recommendations. No further action.

5.7 NPL Site 15: DEH Yard

NPL Site 15, the Directorate of Engineering and Housing (DEH) Yard, is an approximately 10-acre parcel in the Main Garrison on 6th Avenue between 3rd Street and Imjin Road (Plate 5). Site 14 is just south of this area and Site 16 is to the northwest. Buildings in this area were used as administrative offices or for light industry or storage. The DEH Yard began operations in about 1967.

The two SWMUs in Site 15 are FTO-015, the PCB Storage Area, and FTO-018, the Pesticide Mixing Area. SWMU locations are shown on Plate 5.

5.7.1 FTO-015 – PCB Storage Area

Two inactive storage cages are present on the west side of NPL Site 15: Building 4891 and Building H482 (Plate 5). Building 4891 is an approximately 10-foot by 20-foot three-sided wooden shed with chainlink fencing gates forming the fourth (access) side. Transformers were stored in this building. H482 is an approximately 15-foot by 30-foot SWMU cage previously used to store flammable liquid products.

In April 1996 when HLA visited these units, five small transformers were stored in Building 4891 on a spill pallet; the transformers were unlabeled. The unit drains to the asphalt. H-482 was also active; about eight 55-gallon hazardous waste drums and miscellaneous equipment were stored in one bermed area and three empty steel tanks with approximate capacities of 250 gallons were stored in the other. Empty rusted drums were stored outside the SWMU cage.

Available information about the historical location(s) of this SWMU is inconsistent.

The 1988 AEHA Report describes a 10-foot by 20-foot fenced, bermed storage area that appears on the accompanying map in that report to be south of Building 4890 (Plate 5). AEHA states that transformers were brought to the site and stored in spill pans pending results of DEH tests for PCBs. If the transformer oil contained greater than 5 parts per million (ppm) PCBs, the transformer was taken to the DRMO PCB Storage Area (FTO-009) for proper disposal. The area was described as clean, neat, and well managed, with no evidence of releases.

The March 1991 EA Literature Review states that "[t]ransformers are currently kept in an open-air tin shed on a concrete slab in the middle of the [DEH] yard while the contents are tested for PCB concentrations." HLA's Draft Final Site Characterization Report for Site 15 notes that in May 1992 transformers were stored on pallets at the west side of the site (*HLA, 1995c*).

HLA's Site 15 Site Characterization Investigation focused on PCBs and pesticides; no PCBs were detected in the soil samples collected. The recommendation made in the Draft SWMU report was that

when the area is to be deactivated, remove and properly dispose of the remaining inventory, and clean the units.

FTO-015 was inspected on December 12, 2001. The SWMU was inactive and all contents had been remove.

Recommendations. No further action.

5.7.2 FTO-018 – Pesticide Mixing Area

This SWMU is no longer active. Its former location has been the subject of speculation in several reports.

The Pesticide Mixing Area is described in the 1988 AEHA Report as a "small metal shack" that appears on the map in that report to be outside Building 4897 (Plate 5). AEHA states that all pesticide product cans were triple-rinsed when emptied, and the empty cans were disposed of offsite in a Class III landfill in accordance with applicable state regulations. The area is described as clean without obvious spillage. Only "very small quantities" of waste were produced. The pesticides used included Warfarin, lindane, chlordane, Sevin, Baygon, Diazinon, and rarely, malathion. The AEHA report asserts that "[n]o spillage or release of waste water from the pesticide mixing and/or rinsing of used containers exists."

Weston's December 1990 Enhanced Environmental Assessment Report observes that the pesticide mixing area was "most recently located in Building 4897, a concrete and metal building subdivided into separate work and maintenance areas."

HLA visited Building 4897 in 1995. The field notes describe a windowless room in that building with a concrete floor, cinderblock walls, and a metal door. The Army told HLA in 1995 that until 1986 or 1987 the room was used almost daily for mixing pesticides and herbicides used basewide, and that the materials were transferred manually from containers into handheld sprayers (*Hlebasko, 1995*). Building 4897 is currently empty.

According to Claire Murdo, Fort Ord Department of Public Works, pesticides were mixed outside (*1996*). During HLA's RI, pesticides were detected in shallow soil outside Building 4913, where pesticide products were stored.

On the basis of site characterization investigation results, NPL Site 15 is an IA site. It was recommended that soil containing pesticides be removed under the IA ROD process. In August 1995, approximately 860 cubic yards of soil was removed from the vicinity of Building 4913. The Site 15 IA Confirmation Report was submitted to the regulatory agencies in August 1996. The EPA and DTSC concurred that contamination was adequately remediated and no further remedial action was necessary at Site 15 in letters dated April 14, 1997 and February 11, 1998, respectively.

Recommendation. No further action.

5.8 RI Site 16: DOL Maintenance Yard, Pete's Pond, and Pete's Pond Extension

The DOL Maintenance Yard is an approximately 4-acre area on 8th Street near the 5th Avenue Cutoff (Plate 5). FTO-036 is a SWMU cage in the DOL Maintenance Yard. Pete's Pond and Pete's Pond Extension comprise a nearly 7-acre former disposal area northwest of the DOL Yard. These Site 16 areas (and areas in RI Site 17) were remediated under the RI/FS program. Because Pete's Pond and Pete's Pond Extension areas were used for disposal, it has been identified as new SWMU FTO-062.

5.8.1 FTO-036 – DOL Heavy Equipment Maintenance Motor Pool

FTO-036, located on the southwest side of Building 4900 at the former Directorate of Logistics (DOL) Heavy Equipment Maintenance Motor Pool, was a RCRA generator-only hazardous waste storage cage (Plate 5). The cage comprised about two-thirds of an approximately 10-foot by 30-foot bermed area. In the remaining third of the bermed area was an approximately 400-gallon diesel containing aboveground storage tank (AST) on stilts (AST 4901). An approximately 500-gallon waste oil AST was inside the SWMU cage (AST 4900).

In the 1988 AEHA Report, the SWMU was identified as a sandbagged unit. The cage and bermed AST area were constructed and in operation by February 1993. HLA observed no spills nor evidence of a release from the cage or tanks during its 1993, 1995, and 1996 site visits. The area was regularly inspected and maintained.

The DOL Maintenance Yard portion of RI/FS Site 16 was used as a heavy equipment maintenance facility since the 1950s. Facilities adjacent to the SWMU cage include the steam cleaner shed, a wash rack, and an oil/water separator. The diesel AST supplied fuel to the steam cleaner shed via gravity feed.

During HLA's site characterization investigation, petroleum hydrocarbons were detected in soil adjacent to the oil/water separator, the steam cleaner shed, and the AST at concentrations greater than 500 mg/kg, the PRG for petroleum hydrocarbon concentrations in soil. Leakage from the diesel fuel lines between the AST and the steam cleaner shed may be one source of this contamination.

Remediation of the DOL Maintenance Yard included the excavation and removal of 6,620 cubic yards of soil containing hydrocarbons, metals and dioxins released at the site (*IT, 1999a*). The excavation included the area surrounding the location of SWMU FTO-036. Remediation of the DOL Maintenance Yard was conducted in compliance with the CERCLA, achieving the Remedial Action Objectives defined in the Basewide Remedial Investigation (RI) Sites ROD. The Site 16 Remedial Action Confirmation Report was submitted to the regulatory agencies in April 1999. Agency concurrence of no further remedial action at Site 16 was granted by the DTSC on June 3, 1999 and the EPA on September 20, 1999.

The recommendation made in the Draft SWMU report was that prior to transfer, the SWMU inventory should be properly disposed of and the area cleaned. Other pretransfer cleanup activities near the SWMU cage would be managed under CERCLA.

Recommendation. No further action.

5.8.2 FTO-062 – Pete's Pond and Pete's Pond Extension

Pete's Pond is an approximately 3.3-acre triangular depression between 5th Avenue, the 5th Avenue Cutoff, and 8th Street (Plate 5). Prior to remedial activities, six storm drains discharged to the area. Although the depression is dry most of the year, it occasionally fills with up to 5 feet of water during heavy rainfall. During drainage improvements in 1985, scrap metal and a drum containing a clear gel-like substance were encountered. Historical aerial photographs reviewed during HLA's remedial investigation show past chemical spillage and evidence of earthworks.

Pete's Pond Extension is an approximately 3.5-acre vacant area east of Pete's Pond and northwest of the DOL Yard. Stained soil, concrete, rusted ordnance, and other scrap metal were encountered during storm drain repairs.

During the RI, debris was found in both areas from the ground surface to a depth of approximately 8 feet. The debris found at Pete's Pond included metal drums, automotive parts, pieces of ceramics, and

crystallized tar-like material. The debris in Pete's Pond Extension included glass, metal pieces, engine parts, medical debris, ordnance, and ordnance parts. On the basis of aerial photos and dated materials among the debris, disposal likely occurred in the mid 1950s.

Soil samples collected during the site characterization contained some metals above background concentrations and some organic compounds. The recommendation made in the Draft SWMU report was that the SWMU be remediated under the RI/FS CERCLA program, and that no further action under the SWMU program was necessary.

Remediation of Pete's Pond and Pete's Pond Extension (SWMU FTO-062) included the excavation and removal of 21,150 cubic yards of debris and soil containing hydrocarbons, volatile organic compounds, semi-volatile organic compounds, dioxins, pesticides, oil and grease and metals related to past disposal at the sites (*IT, 1999a*). The remediation of Pete's Pond and Pete's Pond Extension were conducted in compliance with CERCLA, achieving the Remedial Action Objectives defined in the Basewide RI Sites ROD. Upon completion of the Remedial Action the two locations were backfilled and re-graded. The Site 16 Remedial Action Confirmation Report was submitted to the regulatory agencies in April 1999. Agency concurrence of no further remedial action at Site 16 was granted by the DTSC on June 3, 1999 and the EPA on September 20, 1999.

Recommendation. No further action.

5.9 RI Site 17: 1400 Block Motor Pool

There are eight SWMUs in the 1400 Block Motor Pool; five were identified in the 1988 report, an additional three were identified by HLA in 1995 or 1996. One of the SWMUs is an autoclave that was used to treat infectious waste (FTO-013). Another is the Site 17 Disposal Area, newly identified as a SWMU (FTO-065). The others are SWMU cages. All are inactive. Locations are shown on Plate 5.

The 1400 Block Motor Pool, RI Site 17, was operated from about 1977 until base closure. The motor pool encompassed the area between 4th and 5th avenues and 3rd and 8th streets in the Main Garrison. About 99 percent of the area is paved with asphalt or concrete. RI/FS Site 17 also encompassed a baseball field and storage buildings along the east side of 4th Avenue, which were built in the 1940s.

Building 1442, the AAFES Economy Cleaners, although within the Site 17 boundary, was a separate NPL site, Site 38; it was identified as a SWMU (FTO-019) in the 1988 report, but a tank(s) originally thought to store waste was subsequently found to store virgin product and thus was not a SWMU. See Section 5.21 for additional information.

5.9.1 FTO-013 – Building 1442 Autoclave

Building 1442, a brick building at the corner of 8th Street and 4th Avenue (Plate 5), housed a 1,000-gallon Thompson Tank Company autoclave that treated infectious waste from the troop clinics. This low temperature thermal treatment unit (100 psi at 100 degrees Fahrenheit) rested on a concrete slab greater than 2 feet thick and was operated from 1984 until base closure.

The 3-foot by 4-foot unit was used to treat medical clinic infectious waste, gauze, disposable gowns, and other materials common to medical clinics. The autoclaved material was double-bagged and disposed of in an offsite sanitary landfill. Between pickups for offpost disposal, the material was stored in two medium-sized dumpsters. The physical, chemical, and toxicological characteristics of the wastes were unknown. No migration and dispersal characteristics were identified.

The 1988 report states that the unit was "[c]lean, neat and fully operational." The AEHA found no migration pathways, no evidence of release, and no exposure potential "if the operation continue[d] in a sound and safe manner." The agency had no recommendations.

HLA found in 1993 that "All information [was] unchanged from that in the 1988 [report]."

The unit is inactive but still present. No wastes are stored onsite. The concrete slab is moderately stained, but soil contamination is unlikely given the thickness of the slab.

Recommendation. No further action.

5.9.2 FTO-048 – 6th /8th Field Artillery Battalion Motor Pool

SWMU FTO-048 comprises two SWMU cages associated with Building 1483, a former vehicle maintenance shop (Plate 5). The 1993 report does not mention a second unit at this location, although the scope of the 1993 investigation did not include identifying additional SWMUs. In 1995, HLA confirmed the presence of one 10-foot by 15-foot SWMU cage approximately 135 feet south of Building 1483 and observed a second cage opposite it, one adjacent to Wash Rack 1484 and the other adjacent to Wash Rack 1485. The cages are separated by a chainlink fence. The original SWMU was a sandbagged unit.

HLA observed no spills or staining in 1993 when the unit was active. SWMU FTO-048 is no longer active and the cages were empty, clean and free of cracks when HLA inspected them in 1995.

Recommendation. No further action.

5.9.3 FTO-049 – 7th /15th Field Artillery Battalion Motor Pool

This unit (H146) was associated with Building 1489, a former vehicle maintenance shed (Plate 5). The original sandbagged unit was replaced before 1993 by an approximately 13-foot by 13-foot SWMU cage adjacent to and west of Wash Rack 1490 and about 180 feet west of Building 1489. The location of the original unit is unknown.

No evidence of release was indicated in the 1993 report. The unit was inactive and empty in April 1996; no staining or cracking was observed.

Recommendation. No further action.

5.9.4 FTO-050 – 7/7th Air Defense Artillery Motor Pool

This inactive SWMU cage (H141) is west of Building 1495 next to Wash Rack 1496 (Plate 5). The location of the former sandbagged unit replaced by the cage is unknown. The approximately 10-foot by 15-foot cage is empty, clean, and free of cracks. Some minor staining was observed on the floor of the cage.

Recommendation. No further action.

5.9.5 FTO-051 – 5/15th Field Artillery Battalion Motor Pool

This approximately 13-foot by 13-foot SWMU cage (H145) is about 180 feet west of Building 1489 and adjacent to and west of Wash Rack 1488 (Plate 5). FTO-049 is to the south on the other side of a chainlink fence. A 55-gallon drum labeled "floor sweep -- spill can" was present in the unit at the time of

HLA's 1996 site visit. The same or a similarly labeled drum was seen in the cage during HLA's March 1995 site visit. Otherwise the unit is empty, clean, and inactive.

Recommendation. No further action.

5.9.6 FTO-063 – Temporary Container Storage Shed Outside Aces Carpentry Building

East of the Aces Carpentry building, Building 1440, is Building H144, a container storage shed that may have been associated with the carpentry building (Plate 5). FTO-063 was not identified in the earlier SWMU reports. It lies between Buildings 1461 and 1462. Three sides and the roof of the shed are wood frame. The gate was missing from the shed at the time of HLA's site visit in April 1996; it was probably composed of chainlink fencing as front panels on the shed are fencing material. The shed has a concrete bermed floor.

The period of operation and the wastes managed are unknown. Only the construction characteristics and the building number indicate that the shed may have been used to store waste; many SWMU cages have "H" designations. No samples were collected in the area during the RI/FS. The unit is bermed and inactive and there is no evidence of any past releases.

Recommendation. No further action.

5.9.7 FTO-064 – Temporary Container Storage Cage East of Building 1434

FTO-064 is an approximately 13-foot square inactive SWMU cage between Buildings 1458 and 1468 and east of FTO-019, the AAFES Economy Cleaners building (Plate 5). On the basis of its location, it may have been associated with the cleaners. It was probably not associated with the motor pool because it is outside (west of) the fence around the motor pool. There is some trash in the unit, and it is overgrown with ice plant.

It is unknown when the SWMU was active or what materials were stored in it. AEHA did not indicate that a temporary container storage unit was associated with the cleaners. If the cage was associated with the dry cleaners, it could have been used to store spent dry cleaning solvent or other chemicals such as denatured alcohol, ethanol, methanol, or isopropyl alcohol. Harding ESE did not observe any potential releases from this unit.

Recommendation. No further action.

5.9.8 FTO-065 – Site 17 Disposal Area

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. Scrap metal, glass, wood, asphalt and concrete chunks, medical debris, and other miscellaneous materials were encountered. Heavy petroleum hydrocarbons were detected in the debris zone at concentrations greater than 500 mg/kg. Most of this area is asphalt-paved except for a landscaped area along 8th Street and 5th Avenue. The area is part of the 1400 Block area and from 1977 until base closure, light and heavy trucks and other Army vehicles were serviced or stored in the area. The exact age of the disposal area is unknown.

Remediation of the Site 17 Disposal Area (FTO-065) included the excavation and removal of 107,000 cubic yards of soil and debris containing hydrocarbons, metals and dioxins released at the former disposal area (*IT, 1999a*). Remediation of the Site 17 Disposal Area was conducted in compliance with CERCLA, achieving the Remedial Action Objectives defined in the Basewide RI Sites ROD. The Site 17 Remedial Action Confirmation Report was submitted to the regulatory agencies in April 1999. Agency concurrence of no further remedial action at Site 17 was granted by the DTSC on June 3, 1999 and the EPA on September 20, 1999.

Recommendation. No further action.

5.10 NPL Site 18: 1600 Block Facility

NPL Site 18, the 1600 Block Facility in the Main Garrison, was a multipurpose complex that included maintenance and support facilities for motor pool vehicles, the DOL Busworks Yard, and several light industrial buildings (Plate 5). Approximately 99 percent of the site is covered with asphalt or concrete. The area is bounded by 8th Street on the north, 5th Street on the south, 4th Avenue on the east, and 2nd Avenue on the west. On the basis of the site characterization investigation, no further action has been recommended for soil at Site 18.

There are 10 SWMUs at Site 18: eight SWMU cages (two at one site), two buildings where hazardous wastes were generated (the TASC Plastics and Graphics shops), and one former SWMU site that is now vacant. These are described below.

5.10.1 FTO-017 – TASC Plastics Shop

At Building 1663, the Training and Audiovisual Support Center (TASC) Plastics Shop, the Army manufactured plastic imitation grenades, pistols, rifles, etc., for use as training aids (*Weston, 1990*). Chemicals stored in the building included methylenedianiline, phenyl-mercuric proprionate, methylene chloride, uralite (a polymer that contains mercury), and polyester resin (*EA, 1991*). Waste chemicals from the plastics shop activities were generated slowly. EA estimated the waste volume at less than one 55-gallon drum per month; AEHA reported that the drum was filled about every 8 to 12 months (*1988*). AEHA describes the waste material as a urethane elastomer compound resulting from a methylene chloride flush of the plastic shop molding system. Weston (*1990*) observed that on the basis of a review of available documents, there had been no known or suspected releases or spills of hazardous waste generated during the manufacturing process.

The SWMU associated with the Plastics Shop, FTO-017, is described by AEHA as one 55-gallon drum on a pallet in a locked storage shed. The shed, Building R-161, is an approximately 20-foot by 20-foot wooden flammable storage building just southwest of Building 1663 (Plate 5). AEHA indicated the area was clean and well maintained and that the drum was properly labeled.

By HLA's site visit in 1993, the Plastics Shop had been closed, although waste material from both the Plastics and Graphics (FTO-023) shops was stored at FTO-017 (*HLA, 1993c*). Seven poly-overpack salvage drums were properly labeled and stored on pallets at the SWMU in 1993. The 1993 report, however, indicated that the drums were in "a locked building that formerly housed the Plastics Shop," which suggests that the SWMU was relocated from the adjacent storage shed to the shop building itself. HLA observed in 1993 that wastes stored at the SWMU included cleaning compounds, caustics, and anti-foaming compounds in addition to the methylene chloride wastes described in the AEHA Report.

HLA visited the site in April 1996. Building 1663 was boarded up and both the building and the shed were inactive. Buildings were emptied and inspected prior to being boarded up. The Fort Ord DPW conducted rechecks to confirm that the buildings were empty and clean.

Recommendation. No further action.

5.10.2 FTO-023 – TASC Graphics Shop

In 1988 the AEHA identified three 55-gallon drums on pallets at the TASC Graphics Shop, Building 1665, as SWMU FTO-023 (Plate 5). AEHA noted that the drums were used for temporary storage of waste materials from daily Graphics Shop operations. AEHA stated that the drums were kept clear of the work area and accumulated approximately 50 gallons of waste per year. Wastes were transferred to the DRMO Hazardous Waste Storage Area (FTO-008) for storage and ultimate disposal (*Weston, 1990*). Used solvents, used paint, and used potassium hydroxide were the wastes generated. The storage area was described as clean, neat, and free of spills; spill absorbent material was kept nearby. There was no evidence of a release. EA (*1991*) also observed no evidence of a release.

HLA's 1993 SWMU Report indicated that the Graphics Shop SWMU had been deactivated and the waste stored at the former TASC Plastics Shop building (FTO-017).

EA (*1991*) also described the spray paint area in the Graphics Shop and noted that various types of paint (including lacquers, enamels, and alkyds) had been sprayed there over "the last 20 years," and that a waterfall system had been installed to help remove the aerosol byproducts from the air. The area that was oversprayed would appear to fit that portion of the SWMU definition that includes an [a]rea contaminated by routine, systematic, and deliberate discharges' from process areas."

The waterfall system consisted of a trough (water reservoir) from which water was continuously pumped up above the spray paint area and allowed to cascade down, capturing excess paint mist in the process. Paint sludge accumulated in the trough and was disposed of in the Fort Ord landfill. Periodically the water was discharged to a dry well (sump) west of the building (*EA, 1991*). EA noticed a gray film on the gravel in the dry well. HLA drilled a 31-foot-deep soil boring at the dry well location during its site characterization investigation. The only organic compound detected was methylene chloride at a concentration just above the detection limit; however, because methylene chloride is a common laboratory contaminant, the detection was determined to be unreliable as an indicator of site contamination.

Because FTO-023 was judged to be inactive in 1993 (*HLA, 1993c*), HLA did not visit the site in 1995 or 1996.

Recommendation. No further action.

5.10.3 FTO-040 – DOL Temporary Motor Pool

FTO-040 is an approximately 10-foot by 15-foot SWMU cage (H163) about 75 feet north of Building 1672, the DOL Busworks (Plate 5). It is north of and adjacent to an oil-water separator and west of and adjacent to Wash Rack 1671. A drainage ditch runs north-south between the SWMU cage and the wash rack, which is heavily rust-stained. The SWMU was originally a sandbagged unit, the exact location of which cannot be ascertained; on the SWMU location map in the 1988 AEHA Report, the arrow points to the southeast corner of Building 1672.

HLA's 1993 SWMU Report noted that an aboveground waste oil tank was stored inside the cage. The area was free of spills. The 1993 photo of the active unit shows that the cage was properly labeled and that several 55-gallons labeled hazardous waste were also present.

During HLA's site characterization, a 21.5-foot soil boring (SB-18-20) was drilled south of and adjacent to the oil-water separator. Samples collected at 5.5, 10.5, and 15.5 feet below ground surface (bgs) were analyzed; no organic analytes were detected in any of the samples. Metals concentrations were below preliminary remediation goals (PRGs) (*HLA, 1995h*).

When HLA visited this SWMU in March 1995 the unit was inactive. Waste materials had been removed and signs had been taken down. The floor of the cage was clean and free of cracks.

Recommendation. No further action.

5.10.4 FTO-041 – 590th S&S Company Motor Pool

FTO-041 is one of the four SWMUs AEHA recommended to be sampled because they observed that sloppy handling had resulted in spillage of waste oil to the ground surface. The SWMU was one of the sandbagged units described collectively by AEHA; however, there is no map in the AEHA Report showing the approximate location of this unit.

The 1993 SWMU Report describes this unit as an approximately 6-foot by 10-foot metal storage locker with wooden pallets on the floor. The 1993 photo shows two 55-gallon drums bearing hazardous waste labels and identified as containing "Engine Oil" and "Drycleaning Solvent." No spills were observed and no evidence of a release was noted.

HLA's 1995 field notes indicate that FTO-041 had been in the area outside Building 1637, a vehicle maintenance shed in the northwest portion of Site 18 near the intersection of 8th Street and 2nd Avenue. The metal locker was no longer present.

In May 1996, HLA observed a SWMU cage (H-162) adjacent to and north of Wash Rack 1639 that appears to be associated with Building 1637 (Plate 5). The unit could not be accessed but was inactive and appeared to be empty. On the basis of its location about 150 feet west-southwest of 1637 and its presence inside the fenced area associated with 1637, it was assumed that this cage is the final manifestation of FTO-041. This cage was also seen during HLA's 1995 site visit but was identified at the time as a possible new SWMU. No stains or cracks were observed.

No soil borings were drilled near this SWMU during Harding ESE's site characterization. The oil-water separator associated with Wash Rack 1639 was identified after completion of the site characterization field investigation. It was inspected, however, and based on the inspection results, no soil borings were deemed to be necessary.

Recommendation. No further action.

5.10.5 FTO-044 – 121st Aviation Battalion, E Company Motor Pool

This SWMU was identified in the 1988 AEHA Report as a typical sandbagged unit; however no map showing its location was included in the AEHA Report. At the time of HLA's 1993 site visit, the SWMU was still a sandbagged unit. The 1993 photo shows a 55-gallon drum and several smaller containers surrounded by sandbags; a rectangular block of wood(?) about 2 inches thick covers the drum, and brown metal storage bins/dumpsters are present on either side of the drum. The 1993 report notes that the area was free of spills and that there was no evidence of a release.

HLA's review of a 1992 aerial photo and 1993 and 1995 site photos indicates the SWMU was near the southeast corner of Building 1697 next to a north-south-trending fence (Plate 5).

The sand bagged unit had been removed by 1995. No evidence of this unit remains.

Recommendation. No further action.

5.10.6 FTO-052 – 2/62nd ADA B-Battery Motor Pool

FTO-052 comprises two SWMU cages just north of Building 1641 (Plate 5). The first is an approximately 10-foot by 15-foot SWMU cage about 50 feet northeast of the building. No spills or evidence of a release was noted in the 1993 report. This unit was empty and clean in 1995.

Approximately 75 feet directly north of Building 1641 is a small SWMU cage that is also associated with Building 1641. This approximately 13-foot by 13-foot cage is empty and inactive. Housekeeping appeared to be good, although the surrounding fence was locked at the time of HLA's 1996 site visit and the SWMU could not be directly accessed. A "Flammable Storage" sign remains on the cage.

Recommendation. No further action.

5.10.7 FTO-053 – 7th Medical Battalion Motor Pool

FTO-053 is an approximately 10-foot by 10-foot SWMU cage about 100 feet northeast of Building 1697, adjacent to and east of Wash Rack 1698 (Plate 5). It was identified in the 1988 AEHA Report as a typical sandbagged unit. No photo of the unit was included in the 1993 report, and that report cited no spills nor evidence of a release.

HLA drilled a soil boring near this unit during the Site 18 site characterization investigation. No organic chemicals were detected in the three analyzed samples from this boring except acetone in the deepest (15.5 feet bgs) sample; acetone is a common laboratory contaminant and its detection at a low concentration was deemed not to be site-related.

HLA visited the SWMU in April 1996. The unit was empty and inactive; no stains, leaks, cracks were observed.

Recommendation. No further action.

5.10.8 FTO-056 – 7th MP Company Motor Pool

FTO-056 is an approximately 10-foot by 10-foot SWMU cage in the south-central portion of the 1600 Block Motor Pool near the intersection of 3rd Avenue and 5th Street, about 100 feet east of Building 1679 (Plate 5). The north wall of Building 1681 forms the south wall of FTO-056. Building 1681 is a boarded-up cinderblock building still posted with painted-on flammable and hazardous waste signs. A waste oil UST north of and adjacent to the SWMU cage has been removed. The cage is also adjacent to and east of Grease Rack 1680.

The 1988 AEHA Report identifies this SWMU as a typical sandbagged unit and places its approximate location near 1647, which is south of Building 1679 and southwest of the grease rack.

The 1993 photo of the SWMU cage shows approximately ten 55-gallon drums on pallets, together with some smaller containers. The drums are variously identified as containing "Spill residue contaminated with oil," "Wastewater with surfactant," "Combustible," and "Toxic." Yellow hazardous waste stickers

were on all drums and housekeeping appeared to be good. The 1993 report indicates no spillage or evidence of releases.

The unit had been deactivated prior to HLA's 1995 site visit and was observed to be empty and clean with minor surface cracks on the floor inside the cage and some minor staining on the asphalt outside the SWMU's drain pipe.

The conditions observed in 1995 were confirmed during HLA's April 1996 visit.

Recommendation. No further action.

5.10.9 FTO-057 – 571st MP Company Motor Pool and 536th THMC Motor Pool

FTO-057 is an approximately 10-foot by 15-foot SWMU cage east across 3rd Avenue from FTO-056 (Plate 5). The SWMU is south of and adjacent to Building 1686 and Wash Rack 1687. The original location of this SWMU indicated on the site map in the 1988 AEHA Report was in the northeast corner of the 1600 Block Motor Pool east of Building 1667 and north of Building 1672. However, HLA's 1993 photo shows the unit to be an active SWMU cage in the south central portion of the motor pool as described above. It is currently inactive and empty.

Recommendation. No further action.

5.10.10 FTO-058 – 761st Chemical Company Motor Pool

FTO-058 is an approximately 10-foot by 15-foot SWMU cage south of and adjacent to Wash Rack 1639 (see Section 5.11.4 - FTO-041), but on the opposite side of the fence from 1639 (Plate 5). The SWMU appears to be associated with Building 1656 or former Building 1657. The 1988 AEHA Report map shows the original sandbagged unit to be associated with Building 1654, just south of 1656.

The SWMU cage was observed in 1993 to be clean and free of spills, with no evidence of a release. The unit had been deactivated by 1995; in March 1995 the empty unit was clean and free of cracks and stains. There was no change in its condition by May 1996.

Recommendation. No further action.

5.11 NPL Site 20: South Parade Ground and 3800 and 519th Motor Pools

NPL Site 20 comprises four areas in the Main Garrison totaling about 63 acres. The site is bounded by Highway 1 on the west, North-South Road on the east, 1st Street on the north, and Light Fighter Road, the main entrance road to Fort Ord, on the south. The Site 20 areas are the 9.5-acre South Parade Ground, the 27-acre troop training area west of the parade ground, and two motor pools, the 6-acre 3800 Motor Pool and the 20-acre 519th Motor Pool. Portions of the 519th Motor Pool and the parade ground were used as an airfield for small aircraft until the 1960s, and the 519th was used as an aircraft service area. In 1982, it was redesignated as a vehicle equipment and maintenance yard.

The AEHA (*1988*) identified FTO-024 in the 519th Motor Pool. HLA identified a second SWMU area in the 519th Motor Pool area (FTO-066) and a third in the 3800 Motor Pool area (FTO-067). SWMU locations are shown on Plate 4. Photos are in Appendix B.

5.11.1 FTO-024 – 519th Motor Pool

FTO-024 comprises two SWMU cages at the east end of Site 20 near North-South Road (Plate 4). Building 3899 is approximately 10 feet by 30 feet and has wood frame sides and three chainlink metal gates. The unit was being used to store waste and equipment at the time of the 1995 inspection. Adjacent Building 3896 is of similar construction and approximately 10 feet by 15 feet, with one gate. It is no longer in use. Both units are free of floor cracks or spills. No evidence of a release or spillage was observed by HLA in 1993 or 1995.

At the time of the 1995 inspection a portion of FTO-024 (Building 3899) was active. The recommendation made in the Draft SWMU report was that when the unit is deactivated, remove and properly dispose of remaining inventory and clean unit prior to transfer. SWMU FTO-024 was inspected in December 2001 and was empty and free of spills.

Recommendation. No further action.

5.11.2 FTO-066 – 519th Motor Pool

FTO-066 is a newly identified inactive SWMU in the west-south-central portion of the 519th Motor Pool east of 2nd Avenue and the former troop training area (Plate 4). The SWMU consists of two approximately 10-foot by 20-foot chainlink SWMU cages, H381 and H382. Both units are empty, inactive, unlocked, and clean, with no staining or cracking on the floors. "Hazardous waste" and "Flammable" signs are still posted on the units. A concrete ramp slopes up to the top of the 1-foot berm in each. One unit has two segregated bermed areas, the other has three. Each area has a 4-inch-deep, 1-foot-square sump/drain that drains to outside the berm. The pavement near the drains is clean. The units were probably used to store motor pool wastes.

Recommendation. No further action.

5.11.3 FTO-067 – 3800 Motor Pool

FTO-067 is a newly identified inactive SWMU location in the 3800 Motor Pool between Buildings 3870 and 3867 (Plate 4). These two approximately 10-foot by 15-foot chainlink SWMU cages are adjacent to each other but separated by a fence. The westernmost SWMU cage was associated with Building 3867 and Wash Rack 3868; the other was within about 100 feet of the former grease rack associated with Building 3872. The draft final site characterization report for Site 20 (*HLA, 1995e*) recommended that soil near the two former grease racks be excavated under the IAROD. Davy International excavated approximately 320 cubic yards of soil from the IA areas in July 1995. The soil was taken to the FOSTA for treatment and the excavations were backfilled (*HLA, 1996d*). New SWMU FTO-067 lies between and within 200 feet of both of these IA areas.

Monitoring well 20-05-180 is close to these SWMU cages; depth to groundwater in the area is approximately 180 feet. No organic analytes were detected in groundwater samples collected from this well during the site characterization investigation.

Recommendation. No further action.

5.12 NPL Site 21: 4400/4500 Motor Pool, East Block

NPL Site 21, the 4400/4500 Motor Pool, East Block, is a former vehicle maintenance area in the Main Garrison east of 8th Avenue and between Inter-Garrison and Gigling roads. Nine motor pools, with

associated wash racks, grease racks, oil-water separators, and USTs occupied the site, 99 percent of which is paved. Most of the buildings were constructed in 1977; two were built in 1980. A concrete-lined canal collected stormwater runoff from part of the site and discharged it to an unpaved area in the northeastern portion of the site.

Nine chainlink SWMU cages are present at Site 21. SWMUs FTO-027 through FTO-033 are approximately 10-foot by 15-foot units, each associated with a separate former motor pool. FTO-034 consists of two 10-foot by 15-foot cages north of Building 4512. These units are perpendicular to each other and in 1995 were being used to store furniture and miscellaneous nonhazardous goods. The other seven SWMU cages were empty, inactive, and clean. Plate 6 shows SWMU locations. Photographs are in Appendix B.

During the site characterization investigation of Site 21, six soil borings were drilled near oil-water separators. Each of these borings was less than about 100 feet from a SWMU. No organic chemicals except low concentrations of acetone, a common laboratory contaminant, were detected in any of the borings. Metals concentrations were below PRGs or within background levels. The draft final site characterization report for Site 21 recommended an interim remedial action under the IAROD because metals (antimony, arsenic, beryllium, cadmium, and lead) were found in soil at the canal discharge point north of the site at concentrations above PRGs (*HLA, 1995b*). The interim action excavation was completed by Davy International in August 1995 (*HLA, 1996e*).

The Site 21 SWMUs are listed below with their associated building numbers. A separate writeup for each is unwarranted.

- FTO-027 -- southwest of Building 4495
- FTO-028 -- south of Building 4499E, back-to-back with FTO-029
- FTO-029 -- south of Building 4499W, back-to-back with FTO-028
- FTO-030 -- west of Building 4518
- FTO-031 -- southwest of Building 4522
- FTO-032 -- north of Building 4506E, back-to-back with FTO-033
- FTO-033 -- north of Building 4506W, back-to-back with FTO-032
- FTO-034 -- north of Building 4512, two SWMU cages.

SWMU FTO-027 was reactivated in 1998 and is located within a fenced area south of Building 4495. FTO-027 is a hazardous waste central accumulation area and receives hazardous wastes generated by military personnel still present at the Ord Military Community (former Fort Ord). The facility does not accept waste generated from off post. The facility is operated by the Hazardous Waste Division of the Army's Directorate of Environmental and Natural Resources and the property is to be retained by the Army. Typical materials stored include waste oil, used antifreeze, lead-acid batteries, oil filters, fluorescent lights, PCB containing ballasts, lead paint chips, pesticides, flammable adhesives, and empty aerosol cans. SWMU FTO-027 was inspected in December 2001 and was neat and free of spills.

At the time of the 1995 SWMU inspection FTO-034 was being used to store non-hazardous materials. The Draft SWMU report recommended that when the cages at Building 4512 (FTO-034) are

decommissioned, the remaining inventory be removed and the cages be cleaned prior to transfer. SWMU FTO-034 was inspected in December 2001 and was empty and clean.

Recommendation. No further action for SWMUs FTO-028 through FTO-034. FTO-027: if the unit is deactivated, remove and properly dispose of remaining inventory.

5.13 NPL Site 22: 4400/4500 Motor Pool, West Block

NPL Site 22 is a former Main Garrison motor pool area that is bounded by Inter-Garrison Road, Gigling Road, 7th Avenue, and 8th Avenue (Plate 6). Fences divide the northern half of the site into four separate areas. The southern part of the site was used mainly for vehicle parking. The site is flat and mostly paved, and was used since the 1950s as a vehicle maintenance and service facility. Four previously identified SWMUs (FTO-005, FTO-025, FTO-026, and FTO-035) are present at Site 22; they are inactive. One new, active SWMU (FTO-068) was identified at the active Auto Crafts Shop, Building 4492.

5.13.1 FTO-005 – 13th Engineer Battalion Motor Pool

Although FTO-005 is currently an approximately 10-foot by 15-foot chainlink SWMU cage northwest of Building 4544 and was apparently a typical sandbagged unit in 1988, it was separately described in the 1988 AEHA Report. The difference was that FTO-005 was described as including two 550-gallon waste oil tanks. EA (*1991)* identified three waste oil USTs in the area: one affiliated with and west of Building 4544, one affiliated with the adjacent 3rd Brigade Consolidated Motor Pool (and just east of Building 4538; See Section 5.14.4, FTO-035, and Plate 6), and one shared by the two units.

The USTs associated with Building 4544 have been removed. The SWMU cage contained empty metal garbage cans during HLA's 1996 site visit. The unit is otherwise clean with no evidence of leakage and only minor staining. It is separated by a fence from FTO-035 and is north of and adjacent to Wash Rack 4542.

Recommendation. No further action.

5.13.2 FTO-025 – 14th Engineer Battalion Motor Pool

FTO-025 is an approximately 10-foot by 60-foot chainlink SWMU cage southeast of Building 4534 and adjacent to Wash Rack 4529 next to the motor pool's east fence (Plate 6). HLA saw no evidence of a release from the SWMU cage in 1993. The unit is currently empty and inactive and the concrete is free of cracks and stains. The location of the original sandbagged unit seen by AEHA in 1988 and associated with Building 4534 is unknown. The AEHA recommended that soil in the bermed area at FTO-025 by sampled for EP toxic heavy metals, total metals, and VOCs because the unit "displayed evidence of a release . . . resulting in spillage of waste oil to the ground surface" (*AEHA, 1988*). HLA did not observe any evidence of this former unit; however, contaminated soil northwest of Building 4534 was identified and removed under the UST and IAROD programs (*HLA, 1996c*).

Recommendation. No further action.

5.13.3 FTO-026 – 127th Signal Company Motor Pool

FTO-026 is an approximately 10-foot by 15-foot SWMU cage northwest of Building 4548 (Plate 6). The location of the original sandbagged unit seen by the AEHA in 1988 is unknown. The AEHA recommended that the soil in the bermed area of the original SWMU be sampled as described in

Section 5.14.2 above because of evidence of waste oil spillage. EA (*1991*) Boring SB-22-07 was drilled in the vicinity of the current SWMU cage; some metals were detected at low concentrations, but no other analytes were detected.

HLA saw no evidence of spills or releases from the SWMU cage in 1993. The unit is presently empty and inactive.

Recommendation. No further action.

5.13.4 FTO-035 – 3rd Brigade Consolidated Motor Pool

FTO-035 is a 10-foot by 15-foot chainlink SWMU cage northeast of Building 4538 (Plate 6). It stands back-to-back with FTO-005 and is adjacent to and north of Wash Rack 4539. The location of the original sandbagged unit is unknown.

No spillage or releases were seen by HLA when the unit was active in 1993. The unit is presently inactive; no cracks or stains were observed. In April 1996, wooden pallets were stored in the cage.

Recommendation. No further action.

5.13.5 FTO-068 – Building 4492, Auto Craft Shop

Building 4492 is currently used for personal vehicle maintenance by military personnel who remain onsite. HLA observed a portable metal storage locker outside the building (Plate 6) in 1995. Hazardous waste signs were posted on the locker, and two smaller metal storage sheds were present and posted with "Flammable" signs. There was no evidence of these units in 1996. Two outbuildings associated with 4492 may be used for waste storage. One waste oil UST and one waste solvent containing UST (4492.1 and 4492.2, respectively) were formerly located adjacent to Building 4492. The USTs were removed in February 1997 and replaced with a single 1,000-gallon aboveground storage tank (AST) used to store waste oil generated at the Auto Craft Shop.

SWMU FTO-068 (including AST 4492B) is a RCRA generator-only storage area. The unit is inspected monthly by the installation. A RCRA storage permit is not required by the DTSC because all waste is disposed within 90 days of generation. In addition to waste oil, waste currently stored at SWMU FTO-068 include used antifreeze, used fuel and oil filters, used solvent, rags and contaminated dry sweep (*Reese, 2002*).

Recommendation. Continue monthly inspections of the storage unit. When the Auto Craft Shop is closed, remove any remaining waste inventory. Remove the waste oil AST in accordance with county and state guidelines.

5.14 NPL Site 23: 3700 Block Motor Pool Complex

NPL Site 23 is an approximately 19-acre former vehicle maintenance area in the eastern part of the Main Garrison. It is bounded by 1st Street on the north, Engineer Road on the west, the Fort Ord plant nursery on the south, and an unimproved road on the east (Plate 4).

On the basis of site characterization investigation results, no further action was recommended under the CERCLA program for this site (*HLA, 1995h*).

The site characterization report for Site 23 lists three potential SWMUs (*HLA, 1994k*). One is one of the original 58 SWMUs (FTO-054) and one is newly listed SWMU FTO-069. The third is an unbermed

chainlink cage west of Buildings 3767 and 3766; Claire Murdo (*1996)* stated that on the basis of its structure, the cage was not used to store wastes and was therefore not a SWMU.

5.14.1 FTO-054 – 107th Medical Battalion Motor Pool

FTO-054 is an approximately 10-foot by 15-foot chainlink SWMU cage east of Wash Rack 3773 and Building 3772 (Plate 4). The location of the original sandbagged unit associated with this building is unknown. The unit is empty and free of stains. No evidence of spills or releases was observed by HLA in 1993 when the unit was active. The unit is currently empty, inactive, and free of spills, stains, or cracks.

Recommendation. No further action.

5.14.2 FTO-069 – 107th Medical Battalion Motor Pool

Newly listed SWMU FTO-069 is an approximately 13-foot by 13-foot chainlink SWMU cage between Building 3767 and Wash Rack 3768 (Plate 4). The cage is currently inactive and empty with no evidence of potential releases. Vegetation is growing between cracks in the wash pad pavement.

Recommendation. No further action.

5.15 NPL Site 25 (FTO-022) – Former DRMO Site

NPL Site 25, the former DRMO site, is a vacant, unpaved, 11-acre field in the Main Garrison (Plate 5). The site was used for storing decommissioned equipment, including electrical transformers, from 1950 to 1972. Miscellaneous materials such as waste oil, diesel fuel, and possibly solvents may have also been stored onsite. Before 1950, the site served as a prisoner-of-war camp and included officers' quarters, a mess hall, a warehouse complex, and an administrative building. After 1972, the site was periodically used for military training and heavy vehicle/equipment parking.

JMM (*1991c)* drilled and sampled six 20-foot-deep soil borings. Very low concentrations of 4,4'-DDE, 4-4'-DDT, dieldrin, and PCB 1254 were detected (i.e., maximum concentration of 0.88 mg/kg). Cadmium, mercury, and zinc were detected at concentrations above background but below PRGs.

HLA performed a risk assessment using these data. Risk assessment results indicate acceptably low risks to human health (*HLA, 1993b*). The Basewide Ecological Risk Assessment indicates that exposure by ecological receptors to chemicals at Site 25 is expected to be below levels of concern (*HLA, 1995h)*.

HLA observed no evidence of staining, discoloration, or distressed vegetation during its SWMU investigation site visit.

Recommendation. No further action on the basis of the risk assessment results and the site visit in 1995.

5.16 FT-055 (NPL Site 27): U.S. Army Reserve Center Motor Pool

The U.S. Army Reserve Center is an active site immediately south of the entrance to Fritzsche Army Airfield at the intersection of Imjin and Reservation roads (Plate 2). The facility was established in 1982 on previously undeveloped land. The facility motor pool is a storage and maintenance yard for light and heavy vehicles and equipment. FTO-055 is the hazardous waste storage area for the Reserve Center motor pool.

The site characterization investigation included drilling and sampling one 21.5-foot soil boring next to the oil-water separator within the approximately 60-foot by 50-foot asphalt-paved fenced yard where FTO-055 is situated (*HLA, 1994e*). Soil samples were analyzed for metals, VOCs, and petroleum hydrocarbons. No organic chemicals were detected in the samples at concentrations above detection limits with the exception of several common laboratory contaminants at very low concentrations. Some metals were detected; arsenic was detected above its PRG, but below its background level. Screening Risk Evaluation results indicate acceptably low risks to human health and ecological receptors. On the basis of these results, no further action at Site 27 was recommended under the CERCLA program.

FTO-055 is an approximately 15-foot by 20-foot outdoor bermed area with a loading ramp. The unit has a wooden roof, but no walls. During HLA's 1996 site visit the area held approximately ten 55-gallon drums, some of which were empty. No leaks or stains were observed and housekeeping was good. Spill kits, fire extinguishers, and an eye wash station were present, and the fenced area was posted with a "Caution Hazardous Waste" sign. The bermed area drains to the asphalt.

There is an asphalt patch between the oil-water separator and the SWMU structure where the motor pool's former 550-gallon waste oil UST was removed in July 1995; case closure was received from Monterey County in December 1995.

SWMU FTO-055 includes several storage lockers located outside the fenced area, including a sandbagged portable flammable storage locker and a HazMat bin. SWMU FTO-055 is a RCRA generator-only storage area. The unit is inspected monthly by the installation. A RCRA storage permit is not required by the DTSC because all waste is disposed within 90 days of generation.

Recommendation. When the unit is deactivated, properly dispose of the remaining inventory and clean the unit prior to transfer.

5.17 FT-070 (RI/FS Site 31) – East Garrison Dump Site

The East Garrison Dump Site is one of the five RI/FS sites identified at Fort Ord (Plate 2). Work at the site has included a remedial investigation, baseline human health risk assessment, baseline ecological risk assessment, and a feasibility study (*HLA, 1995h*). The site was not identified as a SWMU by AEHA; it has been listed as a SWMU in this report because it was a disposal area.

The dump site is in the southern part of the East Garrison, in and adjacent to a steep ravine approximately 0.2 mile southeast of the intersection of Watkins Gate and Barloy Canyon roads. Debris was apparently primarily disposed of on an approximately 500-foot-long section of the north slope of the ravine.

The dump site was reportedly used in the 1940s and 1950s, although some records indicate disposal occurred as early as the 1930s (*Weston, 1990*). During the 1940s and 1950s, refuse was wholly or partially incinerated in a 500-ton incinerator adjacent to the ravine. The materials disposed of in the dump included incinerated and unincinerated debris including glass, metal, wood, coal, concrete and asphalt chunks, brick and clay tile fragments, and ash.

The selected remedy at Site 31, Former Dump Site (FTO-070), included the excavation and removal of 1,500 cubic yards of soil and incinerated debris containing diesel, dibenzofurans, pesticides, dioxins, and metals (mainly lead) released at the former disposal area (*IT, 1999b*). Remediation of the Site 31 was conducted in compliance with CERCLA, achieving the Remedial Action Objectives defined in the Basewide RI Sites ROD. The Final Site 31 Remedial Action Confirmation Report was submitted to the regulatory agencies in December 1999.

Recommendation. No further action.

5.18 FTO-071 (NPL Site 33): Golf Course Maintenance Area

The first Fort Ord Golf Course was established in the early 1950s (Plate 2). HLA's site characterization investigation evaluated a pesticide mixing area, an unpaved drainage next to the mixing area, and a former storage area at the golf course maintenance facility (NPL Site 33). Samples from eight soil borings were analyzed for herbicides, pesticides, and metals. Results of the screening risk evaluation indicate that although low concentrations of the analytes were detected, the risks to human health are acceptably low under an occupational use scenario. Risks to ecological receptors are also expected to be below levels of concern. On the basis of these results, HLA recommended no further action at the golf course under the CERCLA program.

SWMU FTO-071 consisted of a metal storage locker used to store waste associated with the grounds keeping operations of the golf courses. The storage locker was located north of and adjacent to Building 4110 (golf course maintenance facility) within the Site 33. The locker was positioned on a pallet located on an asphalt surface, locked and posted with warning signs. No staining was visible during the May 1996 site visit. Other lockers nearby store products such as flammable materials and pesticides. Two 500-gallon aboveground fuel tanks are nearby inside a bermed vault. Housekeeping in the area is good. When active, the unit was maintained and inspected as a RCRA generator-only temporary storage site by the installation.

The Fort Ord golf courses were transferred to the City of Seaside in 1997. Although not part of the property transfer, operation of the golf course maintenance facility (which includes Site 33 and former SWMU FTO-071) passed from the government to the City of Seaside at this time. Use of Site 33 by the City of Seaside was subject to the limitations and conditions set forth in the Site 33 Record of Availability (ROA) [*Army, 1996*]. The Army prepared the ROA for Right-of Entry (ROE) to Site 33 allowing the City of Seaside use of the maintenance area for the continued operation of the golf courses. Limitations placed on the use of the property (Site 33) include, a restriction on the mixing of chemicals at the site; a requirement that the City of Seaside and any subcontractor shall comply with the applicable federal, state, and local laws, regulations, and standards that are or may become applicable to activities at Site 33 including the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); a requirement that the City of Seaside shall strictly comply with hazardous waste requirements under RCRA, and its California equivalent; a requirement that the City of Seaside must provide at its own expense hazardous waste management facilities complying with all laws and regulations, and the government's right under the ROE to inspect, upon reasonable notice, Site 33 for compliance with environment, safety, and occupational health laws and regulations.

Recommendation. No further action.

5.19 NPL Site 34: Fritzsche Army Airfield Fueling Facility

Fritzsche Army Airfield was opened in the 1960s. Helicopters and vehicles were cleaned and maintained in the fueling facility. Harding ESE's site characterization investigation during the RI/FS focused on four helicopter wash aprons. Petroleum-contaminated soil at Vehicle Wash Rack 516 will be excavated as an interim action under the IAROD. Remediation of soil contaminated by a fuel leak from an underground storage tank at former Building 511 continues.

Seven SWMUs were present at FAAF. These are described below. Plate 7 shows SWMU locations. Photographs are in Appendix B.

5.19.1 FTO-006 – HHC Cavalry Regiment Motor Pool, Building 527

FTO-006 was an approximately 200-square-foot sandbagged unit southwest of Building 527 (Plate 7). The unit was used for temporary storage of 55-gallon drums containing waste oil, used oil filters, waste antifreeze and transmission fluid, spent solvent, and lube oil (*AEHA, 1988*).

The unit was no longer present in 1993 when Harding ESE performed the SWMU verification study. The former SWMU site is now an approximately 20-foot by 60-foot flat sandy area that is slightly vegetated. Broken sandbags surround the area. The is no evidence of leaks or spills.

Recommendation. No further action.

5.19.2 FTO-039 – DOL Aircraft Maintenance Motor Pool

FTO-039 is an inactive 10-foot by 15-foot chainlink SWMU cage approximately 200 feet southwest of Building 533 (Plate 7). No spillage or other evidence of a release was observed in 1993 (*HLA, 1993c*). The cage is currently empty. No cracks or leaks were seen.

Recommendation. No further action.

5.19.3 FTO-042 – HHC Combat Aviation Brigade Motor Pool

FTO-042 was outside Building 509 but no longer exists. The original sandbagged unit was replaced with a SWMU cage at the north end of Grease Rack 513 (Plate 7), probably during remediation at Building 511 (*Hlebasko, 1995*). No stains, spills, or cracks were observed in the area.

Recommendation. No further action.

5.19.4 FTO-043 – 1/123rd Aviation Regiment, A and B Companies Motor Pool

FTO-043 is an 8-foot by 8-foot concrete pad in a vegetated strip northeast of Building 527 (Plate 7). The pad is surrounded by bollards. AEHA identified this SWMU as one of the motor pool sandbagged units. In the 1993 SWMU verification study photograph of FTO-043, the pad is not bermed and an empty 55-gallon POL waste drum and flammable and combustible materials are stored on the pad. Nothing is currently stored on the pad. Minor rust stains are visible, but otherwise the pad is free of surface damage, stains, or cracks.

Recommendation. No further action.

5.19.5 FTO-045 – 23rd Medical Detachment Motor Pool

FTO-045 is Building 541, an approximately 15-foot by 60-foot chainlink SWMU cage between Buildings 524 and 527 (Plate 7). The unit is inactive. It is divided into three sections and there is minor staining on the floor. Otherwise housekeeping is good. This SWMU is among those identified by AEHA as a sandbagged unit. Two small (approximately 13 feet by 13 feet) corrugated metal sheds that were probably used for flammable material storage are adjacent to and east of the SWMU cage.

Recommendation. No further action.

5.19.6 FTO-046 – 2/9th Cavalry Reconnaissance Flight Maintenance Motor Pool

This unit is no longer in existence. Its former location is questionable. The AEHA identifies it as a sandbagged unit associated with Building 510. Other documents tie it to Building 524 or 527. There is no available evidence to support its location at any of these buildings. There are no signs of releases at any of the possible locations.

Recommendation. No further action.

5.19.7 FTO-047 – 7th Aviation Battalion, C and D Companies Flight Maintenance Motor Pool

North of Building 597 is an empty, inactive four-bay unbermed sheet metal and wood structure adjacent to and west of Wash Rack 516 (Plate 7). On the basis of its location near the wash rack and an aircraft hangar (Building 507), it is SWMU FTO-047. The 1993 site photos show this building as well as a small uncovered bermed area with a raised waste oil storage bin that was likely adjacent to the SWMU building. Unidentified materials were stored on pallets next to the bermed waste oil area. This area no longer has any of these stored materials. There are no signs of a release at either location.

Recommendation. No further action.

5.20 FTO-019 (NPL Site 38) – AAFES Economy Cleaners

The AAFES Cleaners was located in Building 1434. Although this building is within Site 17, it was investigated as a separate NPL site, Site 38 (Plate 5). The facility was operated from the 1940s, when the building was constructed, through base closure in 1994. The three USTs previously located on the north side of the building are believed to have been installed in the 1940s or 1950s. They were used to store Stoddard solvent product. The manifolds of the tanks were connected so that the fill pipe for one tank served as the fill pipe for all the tanks. (*HLA, 1995i*).

The AEHA identified the site as a SWMU, believing that waste solvent was stored in a UST. In 1993, Barbara Schmitt, Fort Ord DEH, told HLA that the UST at the site was used to store only Stoddard solvent product, not waste.

On the basis of Ms. Schmitt's statement and HLA's 1995 Site 38 characterization report, it appears that AEHA erroneously identified the site as a SWMU in its 1988 report.

The three USTs have been removed, one in January 1992, the others in August 1995. The tank excavation area has been backfilled and paved with asphalt. No analytes were detected in confirmation samples collected from the excavations during tank removal.

Recommendation. No further action.

5.21 FTO-072 (NPL Site 41) – Crescent Bluffs Fire Drill Area

Newly listed SWMU FTO-072 (NPL Site 41) is an approximately 1 1/2-acre former firefighter training area on a bluff about 1 mile southeast of the East Garrison (Plate 2). The site comprises four shallow burn pits covering 115 to 900 square feet. The area is reportedly an abandoned rock quarry, and the site is a seasonal wetland and is undeveloped. The site is believed to have been used for fire drill practice in the 1940s and 1950s. A November 1952 letter indicates that crankcase drainings, napalm, gasoline, and

kerosene were ignited and extinguished during a Fire Prevention Week demonstration in October 1952 (*HLA 1996a*).

HLA's site characterization investigation included drilling and sampling eight soil borings and collecting two surface soil samples following wetland delineation. Samples were analyzed for metals, petroleum hydrocarbons, VOCs, SOCs, dioxins, furans, and total organic carbon. Arsenic and beryllium were detected above their PRGs.

On the basis of the site characterization results, it was recommended that soil from three of four shallow burn pits (1 to 3 feet) be removed under the IA ROD process. Approximately 76 cubic yards of soil was removed as part of the Site 41 IA (*HLA, 1997b*). The Site 41 Interim Action Confirmation Report was submitted to the regulatory agencies for approval in February 1997. Agency concurrence that contamination was adequately remediated and no further remedial action was necessary at Site 41 was granted by the EPA April 14, 1997. DTSC concurrence is pending.

Recommendation. No further action.

5.22 FTO-020 – Infectious Waste Incinerator at Silas B. Hayes Hospital (Building 4385)

Infectious waste from the hospital was incinerated onsite and the ash taken offpost to a commercial landfill. From 1978 until the autumn 1992 (*HLA, 1993c*), Fort Ord operated a gas-fired incinerator under Monterey Bay Unified Air Pollution Control District Permit P-1186. The Bayco Industries multiple chamber Model R2B-100 incinerator (Serial No. I-158) had primary and secondary burners and could hold about 10 cubic feet of material. The infectious wastes incinerated included gauze, disposable linens, surgical room waste, and other nonsharp hospital waste. The waste was stored in red bags in infectious waste dumpsters before being incinerated (*AEHA, 1988*).

Air was the only migration pathway identified by the AEHA, which reported an exposure potential of low to none and no evidence of a release.

In 1995, HLA observed that the interior of the unit and the concrete floor around the unit were stained and built-up residue was present on the door. There is no evidence of any release from the unit through the concrete floors as the floor was free of cracks.

Recommendation. No further action.

5.23 FTO-021 – Silver Recovery Unit

Fort Ord operated a silver recovery unit (SRU) in the basement of the Silas B. Hayes Hospital, Building 4385. Silver-containing waste solutions from Fort Ord photography and dental laboratories, the hospital's X-Ray facility, and Fort Hunter Liggett, the Presidio of Monterey, Camp Roberts, and the Consolidated Treatment Medical Clinic were transported to the unit and treated to recover the silver. The SRU was upgraded in the early 1980s from its original configuration to an electrolytic recovery system, and in 1992 to a zero discharge unit. Silver recovery operations ceased in March 1993 and the unit itself was removed and relocated to Fort Lee, Virginia. The bermed cage that housed the unit remains.

The SRU, first listed on Fort Ord's 1987 Part A permit application, was operated as a RCRA interim status unit. In September 2000, the DTSC determined that the Silver recovery unit was no longer regulated under State law and the Army implemented clean closure of the unit (i.e., all hazardous waste removed and any contamination exceeding cleanup goals remediated). Closure of SWMU FTO-021

included the collection of wipe samples from the unit floor and drain and chip samples from the unit floor, wall and tables. Based on the results of closure activities conducted at FTO-021, the unit meets the criteria for clean closure. Details of the closure investigation are presented in the SRU closure report (*Harding ESE, 2002)*.

Recommendation. No further action.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations regarding the solid waste management units at Fort Ord are made on the basis of HLA's site visits in 1995, 1996, and 2001 and review of previous reports:

- No investigative sampling is recommended under the SWMU program.
- Operable Units 1 and 2, the FAAF Fire Drill Area and the Fort Ord Landfills (FTO-001 and FTO-002): Continue/complete site remediation and groundwater monitoring under CERCLA.
- RCRA Interim Status Units: Formal RCRA closure has been granted for the Defense Reutilization and Marketing Office (DRMO) Hazardous Waste Storage Unit (FTO-008). Formal RCRA closure plans for clean closure of the DRMO polychlorinated biphenyl (PCB) Storage Area (FTO-009) and the Explosive Ordnance Demolition Range (FTO-016) have been prepared and subsequent closure should be implemented.
- Sewage Treatment Plants: All sewage sludge has been removed as recommended. No further action.
- RI/FS Site Areas Identified as SWMUs: Under the CERCLA program, all remedial actions have been completed and all Remedial Action Objectives achieved as defined in the Basewide RI Sites ROD (*Army, 1997*) for the following areas:
  - RI/FS Site 12: Cannibalization Area (FTO-007) and Lower Meadow Disposal Area (FTO-060)
  - RI/FS Sites 16/17: Pete's Pond and Pete's Pond Extension (FTO-062) and Site 17 Disposal Area (FTO-065)
  - RI/FS Site 31: East Garrison Dump Site (FTO-070)

  No further action at SWMUs FTO-007, -060, -062, -065, and –070 is necessary.
- Interim Action Areas: No further action. Interim actions have been completed and confirmation reports submitted to the regulatory agencies for the former fire training area at the Fort Ord Fire Station (FTO-014) and the Crescent Bluffs Burn Pit (FTO-072).
- Active Temporary Container Storage Units: Prior to property transfer, properly dispose of remaining inventory and clean the three units (FTO-027, FTO-055, and FTO-068) currently used for waste storage. No further action for SWMU FTO-071.
- AAFES Service Station (FTO-010): Continue monthly inspections of temporary container storage units at this active service station.
- Infectious Waste Incinerator at Hayes Hospital (FTO-020): No further action.
- Silver Recovery Unit (FTO-021): No further action.
- Empty SWMU Cages and Other Inactive Units: No further action. These units are listed in Table 1.

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TABLE

Table 1. Solid Waste Management Unit Summary
Field Investigation and Data Review
Solid Waste Management Units
Ford Ord, California

NPL Site Number	SWMU Site Number	Associated Building	SWMU Name	Unit Type	Recommendations or Comments
Operable Units					
OU 1	FTO-001	-	FAAF Fire Drill Area	Thermal Treatment	Continue groundwater remediation/ monitoring under CERCLA program.
OU 2	FTO-002	-	Fort Ord Landfills	Landfill	Continue groundwater remediation/ monitoring under CERCLA program.
RCRA Interim Status Sites					
Near 29	FTO-008 *	53A	DRMO Hazardous Waste Storage Area	Container Storage / Transfer Point	Closed under RCRA; no further action.
29	FTO-009 *	T-111	DRMO PCB Storage Area	Temporary Container Storage	Formal RCRA closure.
5	FTO-016 *	-	Open Detonation Area (Range 36A)	Thermal Treatment	Formal RCRA closure.
Sewage Treatment Plants					
36	FTO-003	540	FAAF Sewage Treatment Plant	Wastewater Treatment	No further action.
32	FTO-011	145	East Garrison Sewage Treatment Plant	Wastewater Treatment	No further action.
2	FTO-012	2076	Main Garrison Sewage Treatment Plant	Wastewater Treatment	No further action.
1	FTO-059	-	Ord Village Sewage Treatment Plant	Wastewater Treatment	No further action.
RI/FS Sites					
10	FTO-014	4400	Fire Training Area at Fort Ord Fire Station	Thermal Treatment	No further action.
11	FTO-010	4220	AAFES Service Station	Waste POL Storage; Container Storage (2)	Active. Continue monthly inspections.
12	FTO-007	2460	Cannibalization Area	Waste Pile	No further action.
12	FTO-037	2726	DOL Main Automotive Yard	Temporary Container Storage	No further action.
12	FTO-038	2424	DOL General Equipment Maintenance Yard	Temporary Container Storage	No further action.
12	FTO-060	-	Lower Meadow Disposal Area	Landfill	No further action.
14	FTO-004	4885	707th Maintenance Battalion, A,B, and C Company Motor Pools	Temporary Container Storage	No further action.

Table 1. Solid Waste Management Unit Summary
Field Investigation and Data Review
Solid Waste Management Units
Ford Ord, California

NPL Site Number	SWMU Site Number	Associated Building	SWMU Name	Unit Type	Recommendations or Comments
14	FTO-061	4885	Transfer Station South of Building 4885	Temporary Container Storage Lockers (5)	No further action.
15	FTO-015	4891, H482	PCB Storage Area	Temporary Container Storage (2)	No further action.
15	FTO-018	4897	Pesticide Mixing Area	Pest Management	No further action.
16	FTO-036	4900	DOL Heavy Equipment Maintenance Yard	Temporary Container Storage	No further action.
16	FTO-062	-	Pete's Pond and Pete's Pond Extension	Landfill	No further action.
17	FTO-013	1442	Building 1442 Autoclave	Low Temperature Thermal Treatment	No further action.
17	FTO-048	1483	6th/8th Field Artillery Battalion Motor Pool	Temporary Container Storage (2)	No further action.
17	FTO-049	1489	7th/15th Field Artillery Battalion Motor Pool	Temporary Container Storage	No further action.
17	FTO-050	1495	7/7th Air Defense Artillery Motor Pool	Temporary Container Storage	No further action.
17	FTO-051	1489	5/15th Field Artillery Battalion Motor Pool	Temporary Container Storage	No further action.
17	FTO-063	1440	Temporary Container Storage Unit East of Aces Carpentry	Temporary Container Storage	No further action.
17	FTO-064	1458 & 1468	Temporary Container Storage Unit Between Buildings 1458 and 1468	Temporary Container Storage	No further action.
17	FTO-065	1483	Site 17 Disposal Area	Landfill	No further action.
18	FTO-017	1663	TASC Plastics Shop	Temporary Container Storage	No further action.
18	FTO-023	1665	TASC Graphics Shop	Temporary Container Storage	No further action.
18	FTO-040	1672	DOL Temporary Motor Pool	Temporary Container Storage	No further action.
18	FTO-041	1637	590th SS Company Motor Pool	Temporary Container Storage	No further action.

Table 1. Solid Waste Management Unit Summary
Field Investigation and Data Review
Solid Waste Management Units
Ford Ord, California

NPL Site Number	SWMU Site Number	Associated Building	SWMU Name	Unit Type	Recommendations or Comments
18	FTO-044	1697	121st Aviation Battalion, Company E Motor Pool	Temporary Container Storage	No further action.
18	FTO-052	1641	2/62nd ADA B-Battery Motor Pool	Temporary Container Storage (2)	No further action.
18	FTO-053	1697	7th Medical Battalion Motor Pool	Temporary Container Storage	No further action.
18	FTO-056	1681	7th MP Company Motor Pool	Temporary Container Storage	No further action.
18	FTO-057	1686	571st MP Company Motor Pool	Temporary Container Storage	No further action.
18	FTO-058	1656	761st Chemical Company Motor Pool	Temporary Container Storage	No further action.
20	FTO-024	3896, 3899	519th Maintenance Company	Temporary Container Storage (2)	No further action.
20	FTO-066	H381, H382	Temporary Container Storage Units in Former Troop Training Area	Temporary Container Storage (2)	No further action.
20	FTO-067	H3882, H3883	3800 Motor Pool	Temporary Container Storage (2)	No further action.
21	FTO-027	4495	2/9 Reconnaissance Battalion Motor Pool	Temporary Container Storage	Reactivated when FTO-061 was closed. Properly dispose of remaining inventory and clean unit prior to property transfer.
21	FTO-028	4499E	56th Medical Company Motor Pool	Temporary Container Storage	No further action.
21	FTO-029	4499W	9th Regiment HHC Motor Pool	Temporary Container Storage	No further action.
21	FTO-030	4518W	HHC/Air Force Detachment Motor Pool	Temporary Container Storage	No further action.
21	FTO-031	4522	8th Evacuation Hospital Motor Pool	Temporary Container Storage	No further action.

Table 1. Solid Waste Management Unit Summary
Field Investigation and Data Review
Solid Waste Management Units
Ford Ord, California

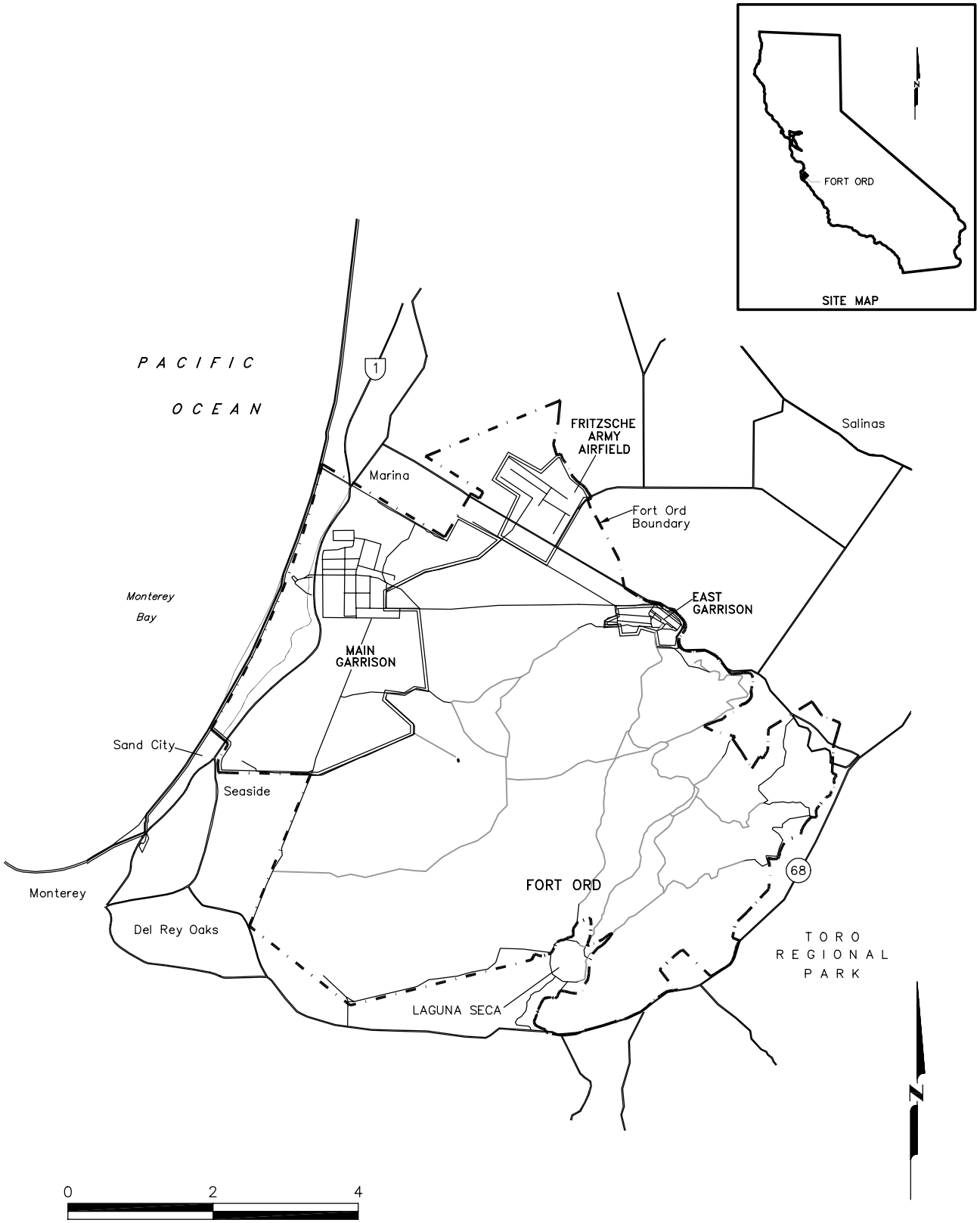
NPL Site Number	SWMU Site Number	Associated Building	SWMU Name	Unit Type	Recommendations or Comments
21	FTO-032	4506E	7th Aviation Battalion, C & D Company Motor Pool	Temporary Container Storage	No further action.
21	FTO-033	4506W	1/23rd Aviation Regiment, A, B, C and Companies Motor Pool	Temporary Container Storage	No further action.
21	FTO-034	4512	2nd Brigade Consolidated Motor Pool	Temporary Container Storage (2)	No further action.
22	FTO-005	4544	13th Engineer Battalion Motor Pool	Temporary Container Storage	No further action.
22	FTO-025	4534	14th Engineer Battalion Motor Pool	Temporary Container Storage	No further action.
22	FTO-026	4548	127th Signal Company Motor Pool	Temporary Container Storage	No further action.
22	FTO-035	4538	3rd Brigade Consolidated Motor Pool	Temporary Container Storage	No further action.
22	FTO-068	4492	Auto Craft Shop	Temporary Container Storage	Active. Continue monthly inspections. Properly dispose of remaining inventory, and clean unit prior to property transfer.
23	FTO-054	3772/3776	107th Medical Battalion	Temporary Container Storage	No further action.
23	FTO-069	3767	107th Medical Battalion Motor Pool	Temporary Container Storage	No further action.
25	FTO-022	-	Former DRMO site	Abandoned Storage Site	No further action.
27	FTO-055	705	U.S. Army Reserve Center Motor Pool	Temporary Container Storage	Active. Continue monthly inspections. Properly dispose of remaining inventory, and clean unit prior to property transfer.
31	FTO-070	-	East Garrison Dump Site	Landfill	No further action.
33	FTO-071	4110	Golf Course Maintenance Area	Temporary Container Storage	Active. Managed by City of Seaside, no further action.

Table 1. Solid Waste Management Unit Summary
Field Investigation and Data Review
Solid Waste Management Units
Ford Ord, California

NPL Site Number	SWMU Site Number	Associated Building	SWMU Name	Unit Type	Recommendations or Comments
34	FTO-006	527	HHC Cavalry Regiment Motor Pool	Temporary Container Storage	No further action.
34	FTO-039	533	DOL Aircraft Maintenance Motor Pool	Temporary Container Storage	No further action.
34	FTO-042	509	HHC Combat Aviation Brigade Motor Pool	Temporary Container Storage	No further action.
34	FTO-043	527	1/123rd Aviation Regiment, A & B Companies Motor Pool	Temporary Container Storage	No further action.
34	FTO-045	541	23rd Medical Detachment Motor Pool	Temporary Container Storage	No further action.
34	FTO-046	510 or 524	2/9th Cavalry Reconnaissance Flight Maintenance Motor Pool	Temporary Container Storage	No further action.
34	FTO-047	507	7th Aviation Battalion, C & D Companies Flight Maintenance Motor Pool	Temporary Container Storage	No further action.
38	FTO-019	1434	AAFES Economy Cleaners	USTs (3)	No further action.
41	FTO-072	-	Crescent Bluffs Fire Drill Area	Thermal Treatment	No further action.
Hospital Incinerator					
-	FTO-020	4385	Infectious Waste Incinerator at Silas B. Hayes Hospital	Incinerator	No further action.
Silver Recovery Unit					
-	FTO-021	4385	Silver Recovery Unit	Recovery Unit	No further action.

* RCRA Interim Status Units.
FAAF Fritzsche Army Air Field.
UST Underground storage tank.

PLATES



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A MACTEC COMPANY

Fort Ord Location Map
Field Investigation and Data Review
Solid Waste Management Units
Fort Ord, California

PLATE
1

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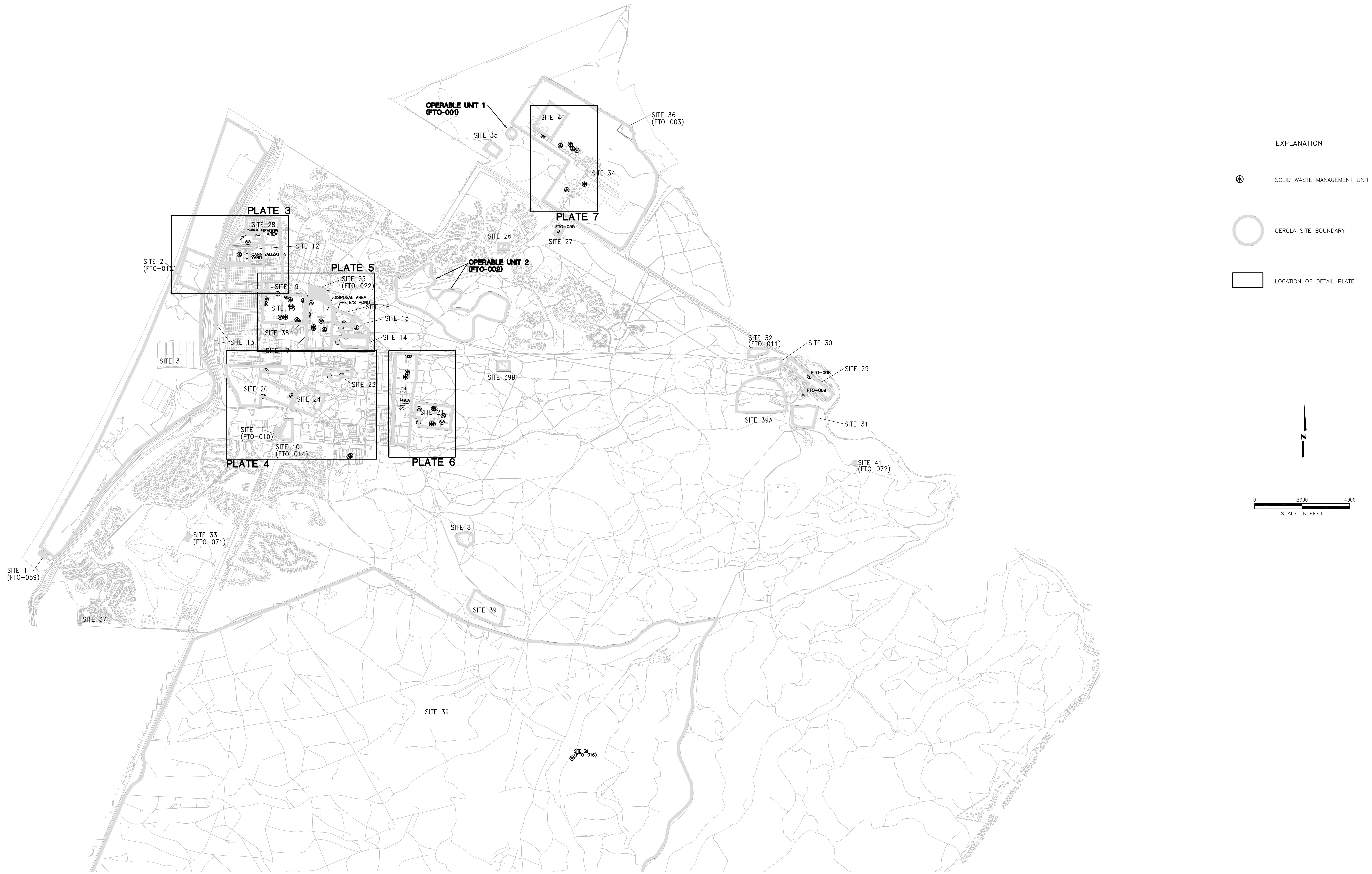


NO.	DATE	REVISIONS	BY	CHK

DRAWN: BWH
ENGINEER:
CHECKED:
DATE:

PROJECT NO: 23366 098312
SCALE: 1"=2000
APPROVED:
DATE:

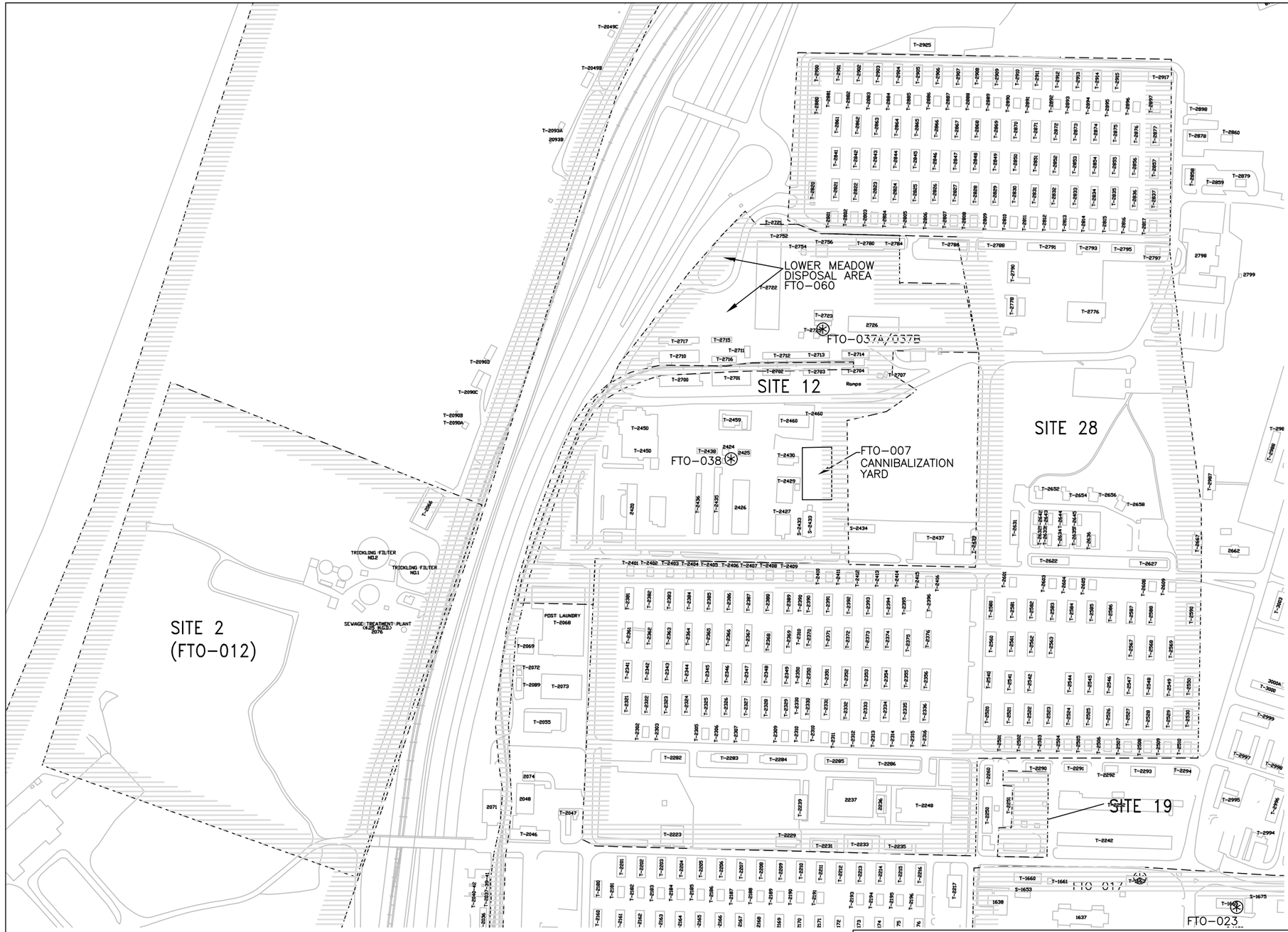
Harding ESE
A MACTEC COMPANY

SWMU SITES

FORT ORD
FORT ORD, CALIFORNIA

LOCATION MAP
FIELD INVESTIGATION AND DATA REVIEW
SOLID WASTE MANAGMENT UNITS

PLATE: **2**
SHEET: **1** OF **1**
REVISION NUMBER: 0
DATE: 08/07/96



EXPLANATION

⊛ 001 SOLID WASTE MANAGEMENT UNIT

CERCLA SITE BOUNDARY

N

0 400 800

SCALE IN FEET

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A MACTEC COMPANY

SWMU LOCATIONS IN SITES 2 AND 12
FIELD INVESTIGATION AND DATA REVIEW
SOLID WASTE MANAGEMENT UNITS
FORT ORD, CALIFORNIA

PLATE 3

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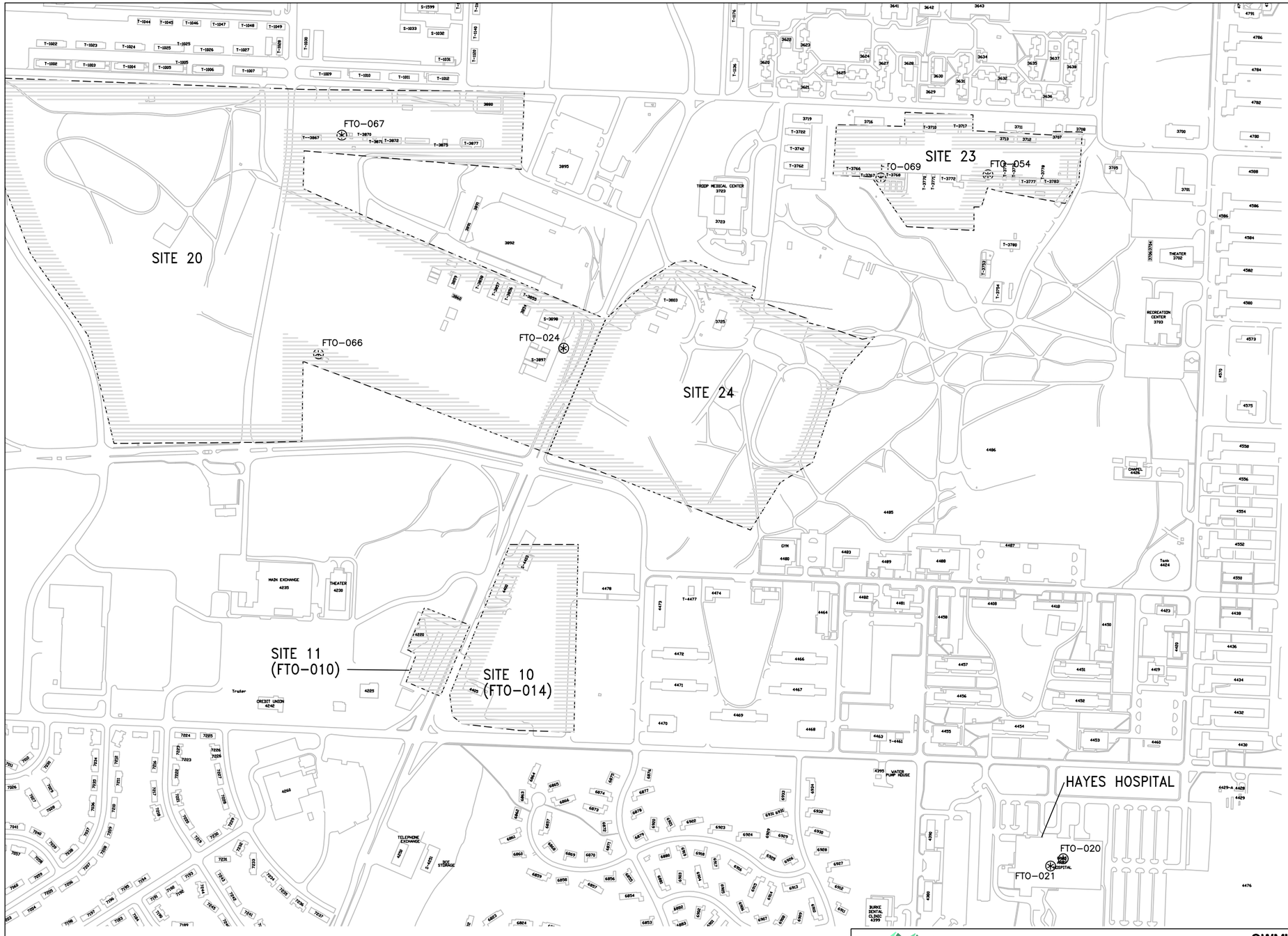

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Harding ESE
A MACTEC COMPANY

SWMU LOCATIONS IN SITES 10, 11, 20, 23, AND 24
FIELD INVESTIGATION AND DATA REVIEW
SOLID WASTE MANAGEMENT UNITS
FORT ORD, CALIFORNIA

PLATE 4

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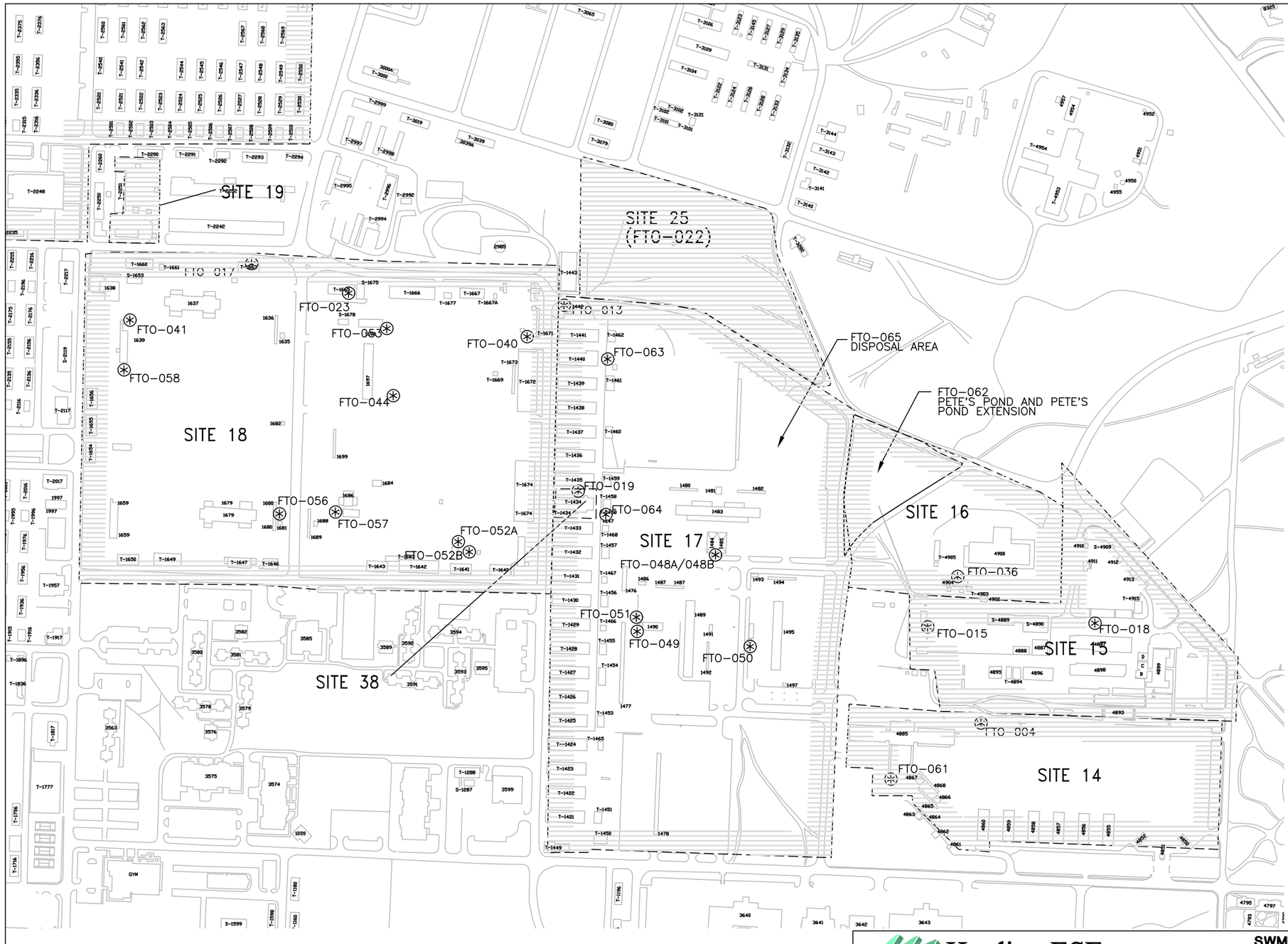

EXPLANATION

001 SOLID WASTE MANAGEMENT UNIT

CERCLA SITE BOUNDARY

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SCALE IN FEET

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Harding ESE
A MACTEC COMPANY

SWMU LOCATIONS IN SITES 14, 15, 16, 17, 18, 25, AND 38
FIELD INVESTIGATION AND DATA REVIEW
SOLID WASTE MANAGEMENT UNITS
FORT ORD, CALIFORNIA

PLATE 5

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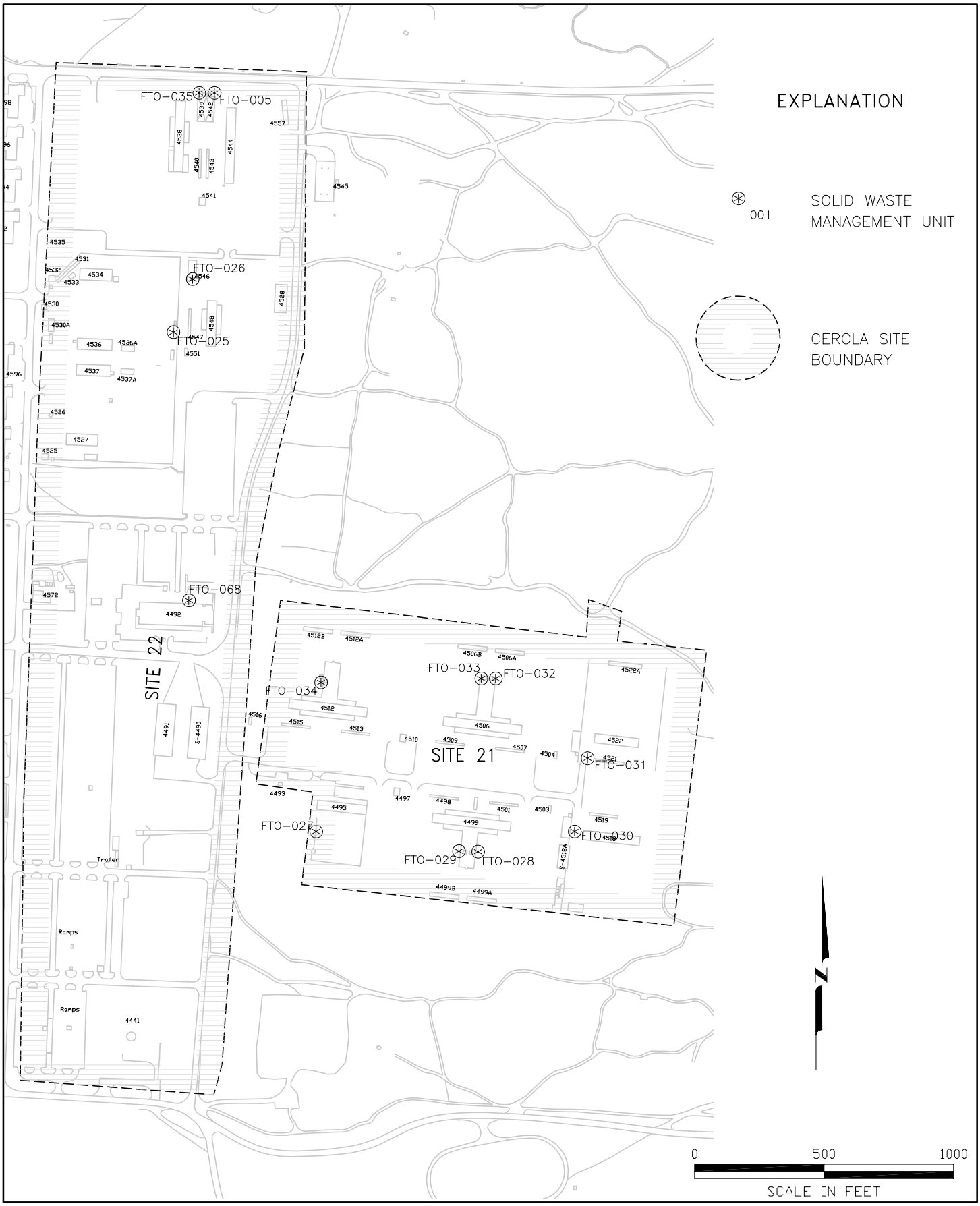

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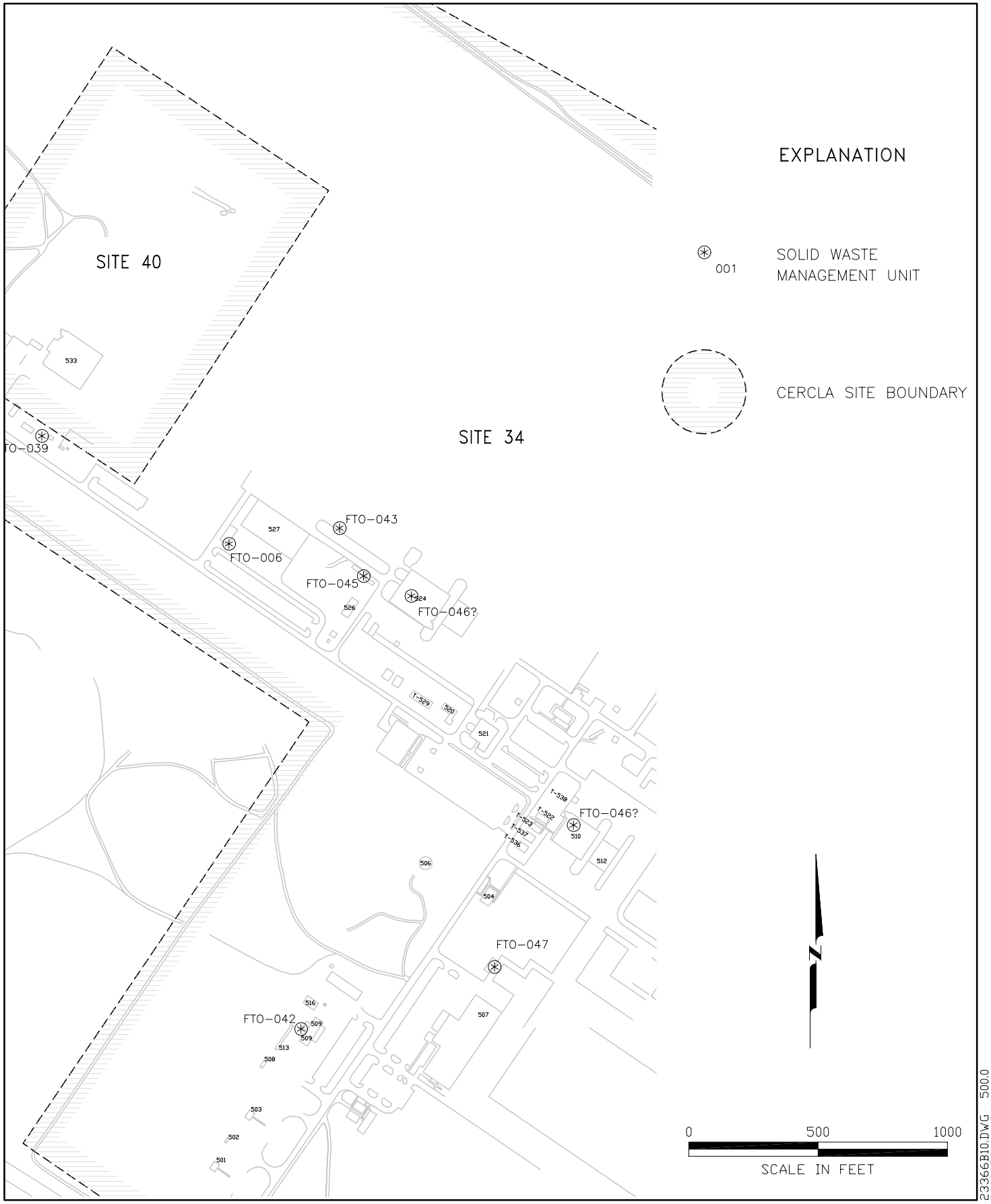
Harding ESE
A MACTEC COMPANY

SWMU LOCATIONS IN SITES 21 AND 22

FIELD INVESTIGATION AND DATA REVIEW
SOLID WASTE MANAGEMENT UNITS
FORT ORD, CALIFORNIA

PLATE
6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
BWH	23366 09872		7/96	



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SWMU LOCATIONS IN SITE 34

PLATE **7**

FIELD INVESTIGATION AND DATA REVIEW
SOLID WASTE MANAGEMENT UNITS
FORT ORD, CALIFORNIA

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
BWH	23366 09872		7/96	

APPENDIX A

EXAMPLE SITE VISIT FORMS

FORT ORD SWMU PUNCH LIST:

DATE:

TIME:

INSPECTOR NAME:

PHOTO #(S):

SWMU NUMBER:

MAP NUMBER:

BUILDING NUMBER:

UNIT NAME:

UNIT CHARACTERISTICS:

Unit Type:

Design Features:

Date of Use: **N/A**

Operating Practices:

Army Operating:

New Tenant Operating:

Vacant/Inactive;

Present Condition and Status:
(Building Demolition, Boards, Tanks, Evidence of Tank Pulls Evidence of Remdiation, Wells, Vegetation, Soil Discoloration, Sumps, Surface Water, Odors)

Housekeeping:

WASTE CHARACTERISTICS:
(IF ANY, DESCRIBE TYPES AND AMOUNTS)

MIGRATION PATHWAYS:
(SOIL, SURFACE WATER, GROUNDWATER, AIR)

EVIDENCE OF RELEASE:

EXPOSURE POTENTIAL:

RECOMMENDATIONS:

NOTES:

General Housekeeping _____

Approximate Dimensions of Unit: _____

Regulatory/Investigation status of Unit: _____

_____

Summary of previous work at Unit: _____

_____

Other Pertinent Site Observations: _____

_____

_____

_____

Evaluation of Release Potential:

Soil: _____

Sediment: _____

Surface Water: _____

Groundwater: _____

Air. _____

Specific Recommendations/Sampling Plan: _____

_____

_____

_____

Photo Log:

Photo No. _____ **Description:** _____

Photo No. _____ **Description:** _____

Photo No. _____ **Description:** _____

Photo No. _____ **Description:** _____

Photo No. _____ **Description:** _____

Photo No. _____ **Description:** _____

Photo No. _____ **Description:** _____

SOLID WASTE MANAGEMENT UNIT FIELD CHECKLIST (SWMU)

Prepared by:_____

Date Prepared:_____

Unit Name:_____

Unit Number: _____

Building Number: _____

Unit Location: _____

_____

General Description of Unit Operation and Site Observations:

_____

_____

_____

_____

_____

_____

_____

_____

Unit Type: _____

Approximate Years of Operation:_____

Types of Wastes Potentially or Currently Used;_____

_____

_____

Current Status of Unit (Active/Inactive//Unknown?)_____

Description of Primary Structures/Equipment : _____

_____

_____

Description of Secondary Containment Structures (if none state none): _____

_____

APPENDIX B

PHOTOGRAPHS OF SWMUs

OU 1 (FTO-001), FAAF Fire Drill Area

OU 2 (FTO-002), Fort Ord Landfills

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PLATE
B1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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RCRA Unit FTO-008, DRMO Hazardous Waste Storage Area

RCRA Unit FTO-009, DRMO PCB Storage (Building T-111)

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PLATE
B2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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RCRA Unit FTO-016, Open Detonation Area (Range 36A)

RCRA Unit FTO-021, Silver Recovery Unit

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PLATE
B3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 1, FTO-059, Ord Village Sewage Treatment Plant

Site 2, FTO-012, Main Garrison Sewage Treatment Plant

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PLATE
B4

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Site 32, FTO-011, East Garrison Sewage Treatment Plant

Site 36, FTO-003, FAAF Sewage Treatment Plant

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B5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 10, FTO-014, Fire Training Area at Fort Ord Fire Station

Site 11, FTO-010, AAFES Service Station, battery and waste storage cages

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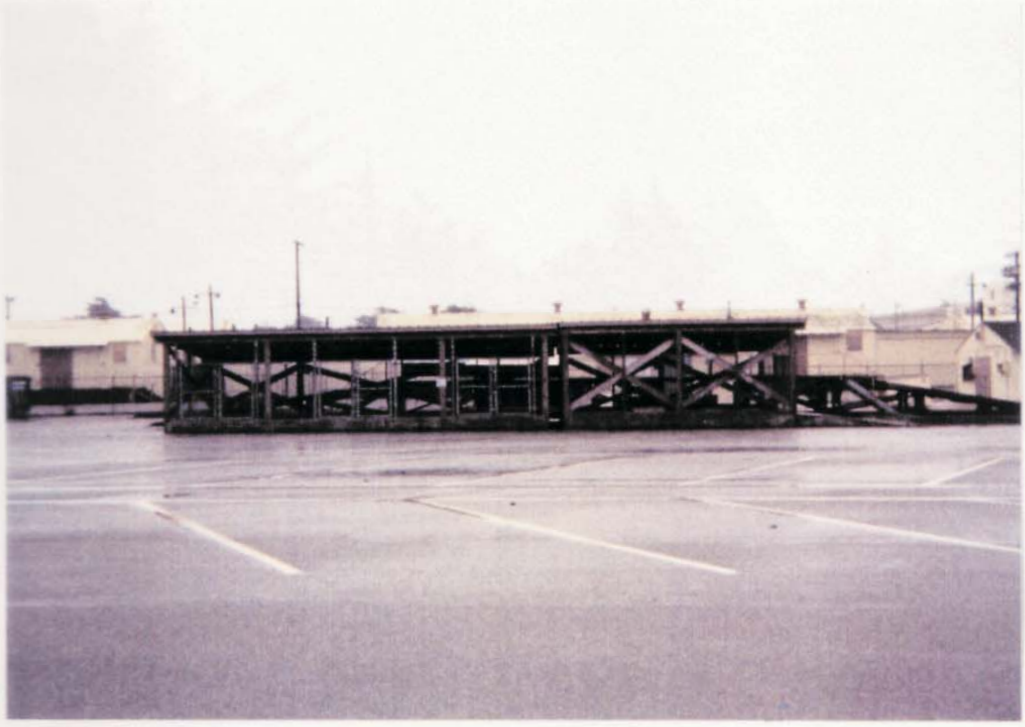
PLATE
B6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
LK	23366 09872		4/02	

Site 12, FTO-007, Cannibalization Area, looking south



Site 12, FTO-037, DOL Main Automotive Yard, looking south

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PLATE
B7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 12, FTO-038, DOL General Equipment Maintenance Yard, looking west

Site 12, FTO-060, Lower Meadow Disposal Area, southeast corner

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PLATE
B8

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 14, FTO-004, 707th Maintenance Battalion, A, B, and C Company Motor Pools

Site 14, FTO-061, Transfer Station South of Building 4885

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PLATE
B9

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 15, FTO-015, PCB Storage Area

Site 15, FTO-015, Hazardous Waste and Equipment Storage Area

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PLATE
B10

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 16, FTO-036, DOL Heavy Equipment Maintenance Yard

Site 16, FTO-062, Pete's Pond, looking east

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B11

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 17, FTO-013, Building 1442 Autoclave

Site 17, FTO-048, 6th/8th Field Artillery Battalion Motor Pool

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PLATE
B12

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 17, FTO-049, 7th/15th Field Artillery Battalion Motor Pool

Site 17, FTO-050, 7/7th Air Defense Artillery Motor Pool

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B13

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 17, FTO-051, 5/15th Field Artillery Battalion Motor Pool

Site 17, FTO-063, Temporary Container Storage Unit East of Aces Carpentry

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B14

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 17, FTO-064, Temporary Container Storage Unit
Between Buildings 1458 and 1468

Site 17, FTO-065, RI/FS Site 17 Disposal Area, from
northwest corner

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PLATE
B15

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 18, FTO-017, TASC Plastics Shop

Site 18, FTO-040, DOL Temporary Motor Pool

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B16

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 18, FTO-041, 590th SS Company Motor Pool

Site 18, FTO-044, 121st Aviation Battalion, Company E
Motor Pool, Former Temporary Container Storage Unit

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PLATE
B17

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 18, FTO-052A, 2/62nd ADA B-Battery Motor Pool

Site 18, FTO-052B, 2/62nd ADA B-Battery Motor Pool

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B18

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 18, FTO-053, 7th Medical Battalion Motor Pool

Site 18, FTO-056, 7th MP Company Motor Pool

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B19

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 18, FTO-057, 751st MP Company Motor Pool, looking east

Site 18, FTO-058, 761st Chemical Company Motor Pool

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PLATE
B20

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 20, FTO-024, 519th Maintenance Company

Site 20, FTO-066, Temporary Container Storage Units in Former Troop Training Area

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B21

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 20, FTO-067, 3800 Motor Pool, looking south

Site 21, FTO-027, 2/9 Reconnaissance Battalion Motor Pool, looking west

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B22

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 21, FTO-030, HHC/Air Force Detachment Motor Pool

Site 21, FTO-031, 8th Evacuation Hospital Motor Pool

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B23

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 21, FTO-032, 7th Aviation Battalion, C & D Company Motor Pool, looking west

Site 21, FTO-033, 1/23rd Aviation Regiment, A, B, C and Companies Motor Pool, looking east

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PLATE
B24

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 21, FTO-034, 2nd Brigade Consolidated Motor Pool, looking east

Site 22, FTO-005, 13th Engineer Battalion Motor Pool, looking west

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B25

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 22, FTO-025, 14th Engineer Battalion Motor Pool, looking east

Site 22, FTO-026, 127th Signal Company Motor Pool, looking west

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B26

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 22, FTO-035, 3rd Brigade Consolidated Motor Pool, looking north

Site 23, FTO-054, 107th Medical Battalion

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PLATE
B27

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 23, FTO-069, 107th Medical Battalion Motor Pool

Site 25, FTO-022, Abandoned DRMO site

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B28

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 27, FTO-055 U.S. Army Reserve Center

Site 31, FTO-070, East Garrison Dump Site

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B29

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 33, FTO-071, Golf Course Maintenance Area

Site 34, FTO-006, HHC Cavalry Regiment Motor Pool

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PLATE
B30

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 34, FTO-0039, DOL Aircraft Maintenance Motor Pool

Site 34, FTO-042, HHC Combat Aviation Brigade Motor Pool

Site 34, FTO-043, 1/123rd Aviation Regiment, A & B Companies Motor Pool

Site 34, FTO-045, 23rd Medical Detachment Motor Pool

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PLATE
B32

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 34, FTO-047, 7th Aviation Battalion, C & D Companies
Flight Maintenance Motor Pool

Site 38, FTO-019, AAFES Economy Cleaners, Former UST

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PLATE
B33

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED
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Site 41, FTO-072, Crescent Bluffs Burn Pit

Hayes Hospital, FTO-020, Infectious Waste Incinerator

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B34

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Solid Waste Management Units
Fort Ord, California

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