

FORA ESCA REMEDIATION PROGRAM

FINAL

Summary of Existing Data Report

Former Fort Ord
Monterey County, California

November 26, 2008

Prepared for:

FORT ORD REUSE AUTHORITY

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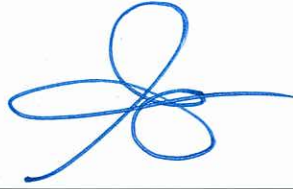
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Former Fort Ord
Monterey County, California



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APPENDIX

A Response to Comments

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ACRONYMS AND ABBREVIATIONS

ACES	Areas Covered by Environmental Services
ACM	asbestos-containing material
AOC	Administrative Order on Consent
ARARs	applicable or relevant and appropriate requirements
Army	United States Department of the Army
ASP	Ammunition Supply Point
bgs	below ground surface
BO	biological opinion
BRA	Basewide Range Assessment
BRAC	Base Realignment and Closure
CBR	Chemical, Biological, and Radiological
CDFG	California Department of Fish and Game
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	CMS Environmental, Inc.
COCs	chemicals of concern
CRUPs	Covenants Restricting the Use of the Property
CSM	Conceptual Site Model
CSUMB	California State University Monterey Bay
CTS	California tiger salamander
DMM	discarded military munitions
DOD	United States Department of Defense
DOJ	United States Department of Justice
DQO	data quality objective
DRO/Monterey	Del Rey Oaks/Monterey
DTSC	Department of Toxic Substances Control
EDC	Economic Development Conveyance
ENRD	Environment and Natural Resources Division
EOD	Explosive Ordnance Disposal
ESA	Endangered Species Act
ESCA	Environmental Services Cooperative Agreement
ESCA RP	Environmental Services Cooperative Agreement Remediation Program
FFA	Federal Facility Agreement
FODIS	Fort Ord Data Integration System
FORA	Fort Ord Reuse Authority
FOSET	Finding of Suitability for Early Transfer
FS	feasibility study
HA	historical area
HCP	Habitat Conservation Plan

Acronyms and Abbreviations

HE	high-explosive
HEAT	high-explosive antitank
HFA	Human Factors Application, Inc.
HMP	Habitat Management Plan
HTW	Hazardous and Toxic Waste
IC Plan	Institutional Controls Implementation Plan
IRP	Installation Restoration Program
ISD	Insufficient Data
km	kilometer
LAW	light antitank weapon
LBP	lead-based paint
LE	low explosive
LFR	LFR Inc.
LUC	land use control
MC	munitions constituents
MCWD	Monterey County Water District
MD	munitions debris
MD-E	expended munitions debris
MD-F	fragmented munitions debris
MEC	Munitions and Explosives of Concern
mg/kg	milligrams per kilogram
mm	millimeter
MMRP	Military Munitions Response Program
MOA	Memorandum of Agreement
MOUT	Military Operations in Urban Terrain
MPPEH	materials potentially presenting an explosive hazard
MR	Munitions Response
MRA	Munitions Response Area
MRS	Munitions Response Site
msl	mean sea level
NCP	National Contingency Plan
NFA ROD	no further remedial action record of decision
NOI	Notice of Intent
NPL	National Priorities List
NRMA	natural resources management area
NTCRA	Non-Time-Critical Removal Action
OESS	Ordnance and Explosives Safety Specialist
PA/SI	Preliminary Assessment/Site Inspection
PBC	Public Benefit Conveyance
PQO	Project Quality Objective

PRG	preliminary remediation goal
PRHRA	Post-Remediation Health Risk Assessment
RACR	Remedial Action Completion Report
RAO	Remedial Action Objectives
RAWS	remote automated weather station
RD/RA	Remedial Design/Remedial Action
RI	remedial investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	record of decision
RQA	Residential Quality Assurance
RRD	range-related debris
RWQCB	Regional Water Quality Control Board
SAA	small arms ammunition
SAS	small arms scrap
SCAs	special case areas
SEDR	Summary of Existing Data Report
SOP	Standard Operating Procedure
SOW	Scope of Work
SS/GS	Site Stats/Grid Stats
TCRA	Time-Critical Removal Action
Track 2 RI/FS	Track 2 Munitions Response RI/FS
TSRS	Technical Specifications and Requirement Statement
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UXO	unexploded ordnance
Westcliffe	Westcliffe Engineers, Inc.
WESTON	Weston Solutions, Inc.

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GLOSSARY

Covenant Deferral Request

A letter along with a supporting information package known as a Covenant Deferral Request (CDR) is assembled by the federal landholding to formally request deferral of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) covenant until all remediation has been accomplished prior to transfer. United States Environmental Protection Agency (U.S. EPA) requires that the information is: 1) of sufficient quality and quantity to support the request for deferral of the CERCLA Covenant; and 2) that it provides a basis for U.S. EPA to make its determination. This information is submitted to U.S. EPA in the form of a CDR.

Deferral period

The period of time that the CERCLA covenant warranting that all remedial action is complete before transfer, is deferred through the Early Transfer Authority.

Early Transfers

The transfer by deed of federal property by United States Department of Defense (DOD) to a nonfederal entity before all remedial actions on the property have been taken. Section 120 (h)(3)(C) of the CERCLA allows Federal agencies to transfer property before all necessary cleanup actions have been taken. This provision, known as early transfer authority, authorizes the deferral of the CERCLA covenant when the findings required by the statute can be made and the response action assurances required by the statute are given. The Governor of the state where the property is located must concur with the deferral request for property not listed on the National Priorities List (NPL). For NPL property, the deferral must be provided by the U.S. EPA with the concurrence of the Governor. Upon approval to defer the covenant, DOD may proceed with the early transfer.

Construction Support

Assistance provided by DOD, Explosive Ordnance Disposal (EOD) or unexploded ordnance (UXO) qualified personnel, and/or by personnel trained and qualified for operations involving chemical agent, regardless of configuration, during intrusive construction activities on property known or suspected to contain UXO, other munitions that may have experienced abnormal environments (e.g., DMM), munitions constituents in high enough concentrations to pose an explosive hazard, or chemical agent, regardless of configuration, to ensure the safety of personnel or resources from any potential explosive or chemical agent hazards.

Discarded Military Munitions (DMM)

Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include UXO, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of consistent with applicable environmental laws and regulations. (10 U.S.C. 2710(e)(2))

Expended

The state of munitions debris (MD) in which the main charge has been expended leaving the inert carrier.

Explosive

Includes items designed to cause damage to personnel or material through explosive force that may be accomplished by bombs, warheads, missiles, projectiles, rockets, antipersonnel and antitank mines, demolition and spotting charges, grenades, torpedoes and depth charges, high explosives and propellants, fuses from practice items, and all similar and related items or components explosive in nature.

Explosive Hazard

A condition where danger exists because explosives are present that may react (e.g., detonate, deflagrate) in a mishap with potential unacceptable effects (e.g., death, injury, damage) to people, property, operational capacity, or the environment.

Explosive Ordnance Disposal (EOD)

The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded ordnance and of other munitions that have become an imposing danger, for example, by damage or deterioration.

Feasibility Study (FS)

An evaluation of potential remedial technologies and treatment options that can be used to clean up a site.

Former Impact Area

The former impact area consists of approximately 8,000 acres in the southwestern portion of the former Fort Ord, bordered by Eucalyptus Road to the north, Barloy Canyon Road to the east, South Boundary Road to the south, and North-South Road to the west.

Institutional Control (IC)

A legal or institutional mechanism that limits access to or use of property, or warns of a hazard. An IC can be imposed by the property owner, such as use restrictions contained in a deed, or by a government, such as a zoning restriction.

Land Use Controls (LUCs)

LUCs are physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property, to manage risks to human health and the environment. Physical mechanisms encompass a variety of engineering remedies to contain or reduce contamination and/or physical barriers to limit access to real property, such as fences or signs.

LFR Team

LFR Inc., Weston Solutions, Inc., and Westcliffe Engineers Inc.

Magnetometer

An instrument used to detect ferromagnetic (iron-containing) objects. Total field magnetometers measure the strength of the earth's natural magnetic field at the magnetic

sensor location. Gradient magnetometers, sensitive to smaller near-surface metal objects, use two sensors to measure the difference in magnetic field strength between the two sensor locations. Vertical or horizontal gradients can be measured.

Material Potentially Presenting an Explosive Hazard (MPPEH)

Material potentially containing explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or material potentially containing a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated munitions production, demilitarization or disposal operations). Excluded from MPPEH are munitions within DOD's established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions.

Memorandum of Agreement (MOA)

“Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxic Substances Control Concerning Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California”

Military Munitions

All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the DOD, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives, and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, other than non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) have been completed. (10 U.S.C. 101(e)(4)(A through C)).

Munitions Response

Response actions, including investigation, removal actions, and remedial actions, to address the explosives safety, human health, or environmental risks presented by unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC), or to support a determination that no removal or remedial action is required..

Military Munitions Response Program (MMRP)

Department of Defense-established program that manages the environmental, health and safety issues presented by munitions of explosives concern.

Mortar

Mortars typically range from approximately 1 inch to 11 inches in diameter or larger, and can be filled with explosives, toxic chemicals, white phosphorus, or illumination flares. Mortars generally have thinner metal casing than projectiles but use the same types of fuzing and stabilization.

MEC Sampling

Performing MEC searches within a site to determine the presence of MEC.

Munitions and Explosives of Concern (MEC)

This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means: (A) UXO, as defined in 10 U.S.C. 101(e)(5); (B) Discarded military munitions (DMM), as defined in 10 U.S.C. 2710(e)(2); or (C) Munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

Munitions Constituents (MC)

Any materials originating from UXO, discarded military munitions (DMM), or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions (10 U.S.C. 2710 (e)(3))

Munitions Debris (MD)

Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.

Munitions Response Area (MRA)

Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former ranges and munitions burial areas. A munitions response area is comprised of one or more munitions response sites.

Munitions Response Site (MRS)

A discrete location within an MRA that is known to require a munitions response.

Ordnance and Explosives (OE)

See MEC.

Projectile

An object projected by an applied force and continuing in motion by its own inertia, as a bullet, bomb, shell, or grenade. Also applied to rockets and guided missiles.

Range

A designated land or water area that is set aside, managed, and used for range activities of the Department of Defense. The term includes firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access, and exclusionary areas. The term also includes airspace areas designated for military use in accordance with regulations and procedures prescribed by the Administrator of the Federal Aviation Administration (10 U.S.C. 101(e)(1)(A) and (B)).

Range Activities

Research, development, testing, and evaluation of military munitions, other ordnance, and weapons systems; and the training of members of the armed forces in the use and handling of military munitions, other ordnance, and weapons systems (10 U.S.C. 101(e)(2)(A) and (B))

Range-Related Debris (RRD)

Debris, other than munitions debris, collected from operational ranges or from former ranges (e.g., target debris, military munitions packaging, and crating material).

Remedial Investigation (RI)

Exploratory inspection conducted at a site to delineate the nature and extent of chemicals, and in this case OE, present at the site.

SiteStats/GridStats (SS/GS)

Programs developed by QuantiTech for the Huntsville Corps of Engineers to predict the density of ordnance on sites with spatially random dispersal of ordnance.

Small Arms Ammunition (SAA)

Ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

Special Case Areas (SCAs)

SCAs were identified by the Army for a variety of reasons, such as dense metallic clutter that prevented digital detection instruments or interference due to nearby metal structure or features. SCAs include historical and current fencing; asphalt/concrete range pads, roads, and walkways; areas under existing structures (i.e., field latrines and range-related structures); berms and culverts; and areas requiring excavation by heavy equipment (i.e., scrape areas).

Surface Removal

Removal of OE from the ground surface by UXO teams using visual identification sometimes aided by magnetometers.

Time-Critical Removal Action (TCRA)

Removal actions where, based on the site evaluation, a determination is made that a removal is appropriate, and that less than six months exists before on-site removal activity must begin (40 CFR 300.5).

Unexploded Ordnance (UXO)

Military munitions that (A) have been primed, fuzed, armed, or otherwise prepared for action; (B) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (C) remain unexploded whether by malfunction, design, or any other cause (10 U.S.C. 101(e)(5)(A) through (C)).

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1.0 INTRODUCTION

This Summary of Existing Data Report (SEDR) was prepared by LFR Inc. (LFR) on behalf of the Fort Ord Reuse Authority (FORA) in partial compliance with an Administrative Order on Consent (AOC), which addresses cleanup of portions of the former Fort Ord in Monterey County, California. LFR has been supported in this effort by Weston Solutions, Inc. (Weston) and Westcliffe Engineers, Inc. (Westcliffe). The AOC was entered into voluntarily by the United States Environmental Protection Agency (U.S. EPA) Region 9, the Department of Toxic Substances Control (DTSC), FORA, and the United States Department of Justice (DOJ) Environment and Natural Resources Division (ENRD) on December 20, 2006 (U.S. EPA Region 9 CERCLA Docket No. R9-2007-03). This AOC is issued under the authority vested in the President of the United States by Sections 104, 106, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. §§ 9604, 9606, and 9622.

1.1 Purpose

As defined under Task 2 of the AOC, a SEDR is required for the purpose of summarizing the investigations, removal actions, after action reports, and incidents related to Hazardous and Toxic Waste (HTW) and Munitions and Explosives of Concern (MEC), and anticipated future uses of the Munitions Response Areas (MRAs) subject to the AOC. This report will be used to focus the remedial investigation (RI) planning efforts.

The SEDR provides a site overview, evaluation of existing data, identification of data gaps, Conceptual Site Model (CSM) including an initial assessment of risks, and proposed future use for each MRA. The SEDR also presents conclusions and recommendations for further actions. Generally, the SEDR conclusions identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to remedial investigation (RI)

The SEDR recommendations present a conceptual path to closure for each MRA that requires additional data collection or response actions.

Specifically, information presented in this SEDR includes:

- A brief description of the history and nature of waste handling and military munitions used;
- A description of known hazardous substances, including military munitions that are, or had been, suspected of being on particular parcels;

Section 1 - Introduction

- A description of pathways of concern for MEC and other hazardous substances, and potential receptors;
- A description of current and future human population and environmental targets;
- Area-specific CSMs;
- An evaluation of whether any existing Non-Time-Critical Removal Action (NTCRA) may be applicable to the MEC removal scheme for each MRA;
- Recommendations for next steps, including any proposed NTCRA removal actions; and
- A discussion of the MRAs, the boundary of each MRA, and the cleanup schedule for each MRA.

1.2 Report Organization

The SEDR is comprised of 13 sections organized to present the required AOC information. Sections 1.0 and 2.0 present the introduction and background of the Fort Ord Cleanup Program. Section 3.0 presents each MRA that falls within the AOC jurisdiction. Sections 4.0 through 12.0 present the CSMs, initial assessment of risks, and conclusions and recommendations for each MRA. Section 13.0 presents the proposed program implementation, including a prioritized grouping of the MRAs, project and data quality objectives (DQOs), and a tentative milestone schedule. Section 14.0 concludes this document with a reference list.

1.3 Information Sources

Information used in the preparation of this report was obtained from the Fort Ord Administrative Record, located at the Base Realignment and Closure (BRAC) office on the former Fort Ord; the Fort Ord Data Integration System (FODIS) website (www.fodis.net); and the Fort Ord cleanup website (www.fortordcleanup.com). Additional information was obtained from discussions with the U.S. EPA and DTSC.

2.0 BACKGROUND

The former Fort Ord is located 80 miles south of San Francisco and occupies approximately 28,000 acres adjacent to Monterey Bay and the cities of Marina, Seaside, Sand City, Del Rey Oaks, and Monterey (Figure 2.1-1). State Highway 1 crosses the western portion of the former Fort Ord, separating the beachfront from most of the installation. Laguna Seca Recreational Area and Toro Regional Park border the former Fort Ord to the south and southeast, respectively, as do several small communities, such as Toro Park Estates and San Benancio.

2.1 Former Fort Ord History

In 1917, the United States Department of the Army (Army) bought a portion of the now closed Main Garrison and East Garrison and nearby lands on the eastern side of the former Fort Ord to use as a maneuver and training ground for field artillery and cavalry troops stationed at the Presidio of Monterey. Prior to acquisition by the Army, the land was in agricultural use. No permanent improvements were constructed until the late 1930s. In the 1940s, more land was purchased to expand the development of the Main Garrison area and the beach range area was given to the Army. With up to 15,000 active duty military personnel and 5,100 civilians working on site during its active history, the former Fort Ord Garrison areas resembled a mid-sized city, with accompanying family housing, medical facilities, warehouses, office buildings, industrial complexes, and gas stations. In 1991, the base was selected for closure under the BRAC authority and officially closed in September 1994.

Until formal closure, Fort Ord was used to train Army infantry, cavalry, and field artillery units. In support of the training of soldiers, military munitions were used at the ranges throughout the former Fort Ord. As a result of the training activities, a wide variety of conventional MEC (related to infantry and artillery training) have been encountered in areas throughout the former Fort Ord. Most of the MEC encountered have been either unexploded ordnance (UXO) or discarded military munitions (DMM).

2.2 Cleanup Program Under the Army

The former Fort Ord was placed on the National Priorities List (NPL) in 1990, primarily because of chemical contamination in soil and groundwater that resulted from past Army occupation. To oversee the cleanup of the base, the Army, DTSC, the Central Coast Regional Water Quality Control Board (RWQCB), and U.S. EPA entered into a Federal Facility Agreement (FFA). One of the purposes of the FFA was to ensure that the environmental impacts associated with past and present activities at the former Fort Ord were thoroughly investigated and appropriate remedial action taken as necessary to protect the public health and the environment. In accordance with the FFA, the Army was designated as the lead agency under CERCLA for conducting environmental investigations, making cleanup decisions, and taking cleanup actions at the former Fort Ord. The U.S. EPA was designated as the lead regulatory agency for the cleanup while the DTSC and RWQCB are supporting agencies.

Section 2 – Background

Since the BRAC listing and closure of Fort Ord, cleanup operations have been performed to address the presence of MEC and to prepare Fort Ord property for transfer to federal, state, and local agencies and the surrounding Monterey County communities. The Army conducted a number of MEC survey and clearance activities, including geophysical surveys. The Army performed its activities pursuant to the President of the United States' authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580 and in compliance with the process set out in CERCLA Section 120.

In November 1998, the Army agreed to evaluate MEC at the former Fort Ord and perform a basewide Munitions Response (MR) Remedial Investigation/Feasibility Study (RI/FS) consistent with CERCLA. The basewide MR RI/FS program addressed MEC hazards on the former Fort Ord and evaluated past removal actions as well as recommended future remedial actions deemed necessary to protect human health and the environment under future uses. In April 2000, an agreement was signed between the Army, U.S. EPA, and DTSC to evaluate MEC at the former Fort Ord subject to the provisions of the FFA. The signatories agreed that the FFA provided the appropriate framework and process to address the Army's MEC activities. The FFA established schedules for performing RIs and feasibility studies (FSS), and required that remedial actions be completed expeditiously.

The Army's approach to categorizing areas within the former Fort Ord includes track groupings consisting of Track 0 through Track 3. Specifically, track definitions are as follows:

- Track 0: Areas that contain no evidence of MEC and have never been suspected of having been used for military munitions-related activities.
- Track 1: Sites where military munitions were suspected to have been used but, based on results, the sites fall into one of three categories: 1) sites with no evidence to indicate that military munitions were used; 2) sites used for training but military munitions used do not pose an explosive hazard; or 3) sites used for training but military munitions potentially remaining do not pose an unacceptable risk.
- Track 2: Sites where MEC were present and MEC removal has been conducted.
- Track 3: Sites where MEC are known or suspected but investigations have not been initiated or completed.

In addition, to remain consistent with the federal Endangered Species Act (ESA), the Army has completed consultations with the United States Fish and Wildlife Service (USFWS) on the Army's predisposal actions, including cleanup of MEC. These consultations have resulted in biological opinions (BOs) that include endangered species incidental take permits. These permits allow impacts to and incidental take of listed species during MEC cleanup activities, but require mitigation measures to be implemented during the MEC cleanup activities to reduce and minimize impacts to the protected species and their habitats.

2.3 Early Transfer of Property and Environmental Services Cooperative Agreement

The transfer of a portion of the former Fort Ord, pursuant to CERCLA Section 120(h)(3)(C), was requested by FORA in a letter dated May 18, 2005. Under CERCLA Section 120(h)(3), the United States is required to provide a covenant in deeds conveying the property warranting that all remedial action necessary to protect human health and the environment has been taken before the date of transfer. For a federal facility listed on the NPL, CERCLA Section 120(h)(3)(C) allows the U.S. EPA Administrator, with concurrence of the Governor of the State, to defer the CERCLA covenant requirement. These types of transfers under CERCLA Section 120(h)(3)(C) are typically called “Early Transfers,” in which the United States provides the warranty after transfer of the property when all of the response actions necessary to protect human health and the environment have been taken. The period between the transfer of title and the making of this final warranty is known as the “deferral period.” Early transfers allow productive reuse of the property through access while final remediation work is being conducted.

The U.S. EPA Administrator, with the concurrence of the governor of the state in which the property is located, may defer the CERCLA warranty requirement if the property is determined to be suitable for transfer. In addition, United States Department of Defense (DOD) and Army policy require that the Military Department proposing to transfer property prepare a Finding of Suitability for Early Transfer (FOSET). This FOSET will be submitted as part of the Covenant Deferral Request, in which the Army will seek approval by the U.S. EPA Administrator and concurrence by the governor of the state of the Early Transfer.

On March 31, 2007, the Army and FORA entered into an Environmental Services Cooperative Agreement (ESCA) to provide MEC remediation services during the deferral period, thereby allowing the Army to transfer approximately 3,340 acres of property and the responsibility of removing MEC to FORA as an Economic Development Conveyance (EDC). In accordance with the ESCA, FORA is responsible for addressing all response actions for the property except for those responsibilities retained by the Army. To accomplish this effort, FORA entered into an agreement with LFR, teamed with Weston and Westcliffe (collectively “the LFR Team”), to assist in the completion of the MEC cleanup activities in accordance with the ESCA and the AOC. During the ESCA Remediation Program (ESCA RP), FORA is responsible for administrative and management program elements, while the LFR Team conducts the MEC cleanup work under FORA oversight.

2.4 FORA ESCA Remediation Program

The purpose of the ESCA RP is to conduct the characterization, assessment of risk of explosive hazards, FS, remediation alternatives analysis, and performance of remediation of hazardous substances, including but not limited to MEC, which pose unacceptable risk to human health and the environment. A primary benefit of the ESCA RP is to facilitate completion of these activities in a manner that is more expeditious than could be performed by the Army.

Section 2 – Background

The primary objective of the ESCA RP is to complete a timely cleanup of the property in accordance with the ESCA and AOC, while promoting and enhancing the public health and safety of current and future users of the property. In addition, the ESCA RP allows remediation activities to be integrated with community reuse objectives, such as the construction of street improvements and backbone utility infrastructure.

2.5 Governing Documents

The ESCA, which was entered into by the Army and FORA in March 2007, allows the Army to transfer as an EDC approximately 3,340 acres of property and the responsibility of removing MEC to FORA. Under the terms of the ESCA, the Army provides FORA with funds to conduct munitions remediation work, obtain environmental insurance to cover remedial activities, and reimburse regulators for their oversight of the program. In accordance with the ESCA, FORA is responsible for addressing all property response actions except Army-retained responsibility.

In response to the Army transferring responsibility for cleanup to FORA, FORA has entered into the AOC with the regulatory agencies. The AOC governs the preparation and performance by FORA of environmental services, including: potential removal actions, RIs and FSs, remedial designs and remedial actions for contaminants present on portions of the property, and reimbursement for future response costs incurred by the U.S. EPA and DTSC in connection with such CERCLA response actions. Under the AOC, FORA will also be responsible for providing information to the public explaining its activities that are being performed at the former Fort Ord in accordance with the AOC.

To accomplish this effort, FORA entered into an agreement with the LFR Team to assist in the completion of the MEC remediation activities in accordance with the ESCA and other guiding documents. Under this agreement, FORA is responsible for administrative oversight and management elements of the ESCA RP, while the LFR Team conducts the MEC remediation.

The following agreements address the responsibilities of the regulatory agencies, Army, and FORA to address response actions for the ESCA RP:

- **“Administrative Order on Consent for Cleanup of Portions of the Former Fort Ord”**: The AOC was entered into by FORA, the U.S. EPA, the DTSC, and the DOJ ENRD on December 20, 2006 and outlines the process to remediate the Areas Covered by Environmental Services (ACES) to achieve regulatory closure and thereby satisfy the Army’s CERCLA obligations.
- **Environmental Services Cooperative Agreement**: The Army and FORA entered into an ESCA, by which the Army will provide funds for FORA to conduct all response actions for the property and obtain regulatory closure, except for those responsibilities retained by the Army. The ESCA was entered into between the Army and FORA on March 31, 2007.
- **Federal Facility Agreement Amendment**: The FFA was amended and signed by the Army, U.S. EPA, and DTSC on July 26, 2007, defining FORA’s assumption of the

Army's cleanup responsibilities, except for those retained by the Army. The FFA Amendment also provides that the Army and/or U.S. EPA will continue to be responsible for the selection of response actions for the ESCA RP in accordance with CERCLA Section 120(e)(4)(A). In the event the U.S. EPA, in consultation with the DTSC, determines FORA is in default, the Army will complete the response actions in accordance with the terms and conditions of the FFA and the FFA Amendment.

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3.0 SITE OVERVIEW

3.1 Areas Covered by Environmental Services

As defined by the ESCA, the Army prepared a Technical Specifications and Requirement Statement (TSRS) to identify the general specifications for the environmental services conducted by FORA under the ESCA RP. This includes providing environmental services for the identification, characterization, and removal of MEC, addressing environmental scheduling and regulatory issues, and assuming liability and responsibility for regulatory closure of the applicable portions of the ACES. The ACES are comprised of approximately 3,380 total acres of land that are generally spread across the former Fort Ord Army base in the areas surrounding the former inland range area (former impact area) and contain various MEC (Figure 3.1-1).

The overlaying land use jurisdictions for the ACES include the cities of Seaside, Del Rey Oaks, and Monterey, as well as Monterey County. California State University Monterey Bay (CSUMB), Monterey Regional Parks, and Monterey Peninsula College are also intended recipients of ESCA RP parcels under the FOSET. Detailed descriptions of the nine MRAs within the ACES are provided in Sections 4.0 through 12.0, which include:

- Seaside MRA;
- Parker Flats MRA;
- CSUMB MRA;
- Development North MRA;
- Interim Action Ranges MRA;
- Military Operations in Urban Terrain (MOUT) Site MRA;
- Laguna Seca MRA;
- Del Rey Oaks (DRO)/Monterey MRA; and
- East Garrison MRA.

3.2 Conceptual Site Models

The CSMs detail each MRA and its environment based on existing information. Data from a number of sources have been collected, integrated, and summarized into tables and figures. These data have been combined into the following groups or profiles:

- **Facility Profile** – location, physical boundaries, parcel numbers, historical and existing information, facility features, and administrative controls
- **Physical Profile** – topography, vegetation, and geological features

Section 3 – Site Overview

- **Release Profile** – investigation and removal history, location and extent of MEC, materials potentially presenting an explosive hazard (MPPEH) and munitions debris (MD), and HTW history and conditions
- **Land Use and Exposure Profile** – cultural resources, current and future land use, and potential receptors
- **Ecological Profile** – biological resources and threatened and endangered species

Each CSM section concludes with discussions on the following for each MRA:

- **Pathway Analysis** – exposure pathways to include sources, access, receptors and receptor activities, evaluation of current and future potentially complete/incomplete pathways for each activity, and initial assessment of risks
- **Conclusions and Recommendations** – pathway to closure

4.0 SEASIDE MRA CONCEPTUAL SITE MODEL

The Seaside MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Seaside MRA are located at the end of Section 4.0.

4.1 Seaside MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

4.1.1 Boundaries and Access

The Seaside MRA is located in the southwestern portion of the former Fort Ord, bordered by the City of Seaside and General Jim Moore Boulevard to the west, the former impact area to the east, Eucalyptus Road to the north, and additional former Fort Ord property to the south (Figure 4.1-1). The Seaside MRA is wholly contained within the jurisdictional boundaries of the City of Seaside.

The Seaside MRA encompasses approximately 419 acres and contains the following four United States Army Corps of Engineers (USACE) property transfer parcels: E23.1, E23.2, E24, and E34 (Table 4.1-1 and Figure 4.1-1).

The Seaside MRA is fenced along the eastern side of General Jim Moore Boulevard and the southern side of Eucalyptus Road, restricting access to most of the MRA and the former impact area to the east and south, respectively (Figure 4.1-1). The narrow area west of General Jim Moore Boulevard is within the MRA but access is not restricted. Use of Eucalyptus Road is restricted by road barriers marked with “road closed” signs located at the intersection of General Jim Moore Boulevard and Eucalyptus Road to the west and at the intersection of Parker Flats Road and Eucalyptus Road to the east. A number of other paved and unpaved roads and dirt trails are located throughout the Seaside MRA (Figure 4.1-1). Detailed information on roadways and access is provided in Table 4.1-2.

4.1.2 Structures and Utilities

The Seaside MRA contains a number of structures and utilities, including 21 existing structures that supported former military activities (Army 2007; Figure 4.1-1). Detailed information concerning location, size, description of structures, presence of asbestos-containing material (ACM) and/or lead-based paint (LBP), if evaluated, and year constructed is provided in Table 4.1-3.

The MRA is not currently served by utilities, such as water and sewer lines. However, a partially aboveground and partially underground line for aquifer recharge water is located along the western boundary of the MRA parallel to General Jim Moore Boulevard. An

Section 4 – Seaside MRA Conceptual Site Model

abandoned underground communication line that was installed by the Army is reported to be present immediately east of General Jim Moore Boulevard. The exact location of the abandoned communication line could not be confirmed based on a review of available information. A major utility right-of-way for an existing overhead, high-power transmission line and an overhead electrical line runs through the MRA, parallel to General Jim Moore Boulevard (Figure 4.1-1). More detailed information on utilities within the MRA is provided in Table 4.1-2.

4.1.3 Historical Military Use

Figure 4.1-2 shows the locations of known firing ranges and training areas within the MRA. Table 4.1-4 summarizes the historical military uses of these areas within the Seaside MRA. To facilitate previous MEC investigations and removal activities, these locations were divided into four Munitions Response Sites (MRSs), which generally correspond to the four USACE property transfer parcels (Table 4.1-1), except for the narrow area west of General Jim Moore Boulevard, which was not included within the MRS boundaries associated with the MRA. The MRS boundaries are shown on Figure 4.1-3. The MRSs were designated as MRS-15 SEA 1 through MRS-15 SEA 4 and have been collectively referred to as MRS-15 SEA 1-4 (Parsons 2006b).

Initial use of the Seaside MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II -era military munitions have been removed during previous Army response actions within the Seaside MRA. These munitions included Livens projectiles, Stokes mortars, and 37 millimeter (mm) and 75mm projectiles. Cavalry and artillery troops stationed at the Presidio of Monterey, along with infantry troops stationed at the Presidio of San Francisco, reportedly conducted training activities in the vicinity of the Seaside MRA, although the exact location is not known.

By 1945, 18 firing ranges and training sites were established within the boundaries of the 8,000-acre multi-range area, which was the area around the perimeter of the former impact area. The Seaside MRA lies on the westernmost part of the former multi-range area. The Seaside MRA contained the former firing points and some of the former targets associated with the following training areas:

- Small arms ammunition (SAA) training - Ranges 18, 19, 20, 21, 22, 23, 46, and 59
- Non-firing target range training - Old Range 22 and Range 23M
- Mortar and antitank training – Range 48
- Booby trap training - Range 50

According to the known configuration of the ranges, weapons were fired to the east and southeast from these firing points toward the center of the impact area (Figure 4.1-2). It is expected that munitions activity associated with these ranges would have occurred within the range fans associated with the firing points. A munitions activity is intended to include

military training activities at or near the range that involve the use or handling of military munitions.

4.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Seaside MRA, including land use covenants, city ordinances, FORA resolutions, a Memorandum of Agreement (MOA) between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 4.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

4.2 Seaside MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

4.2.1 Topography and Geology

The terrain of the Seaside MRA varies from flat to moderately rolling hills. The elevation ranges from approximately 210 to approximately 520 feet mean sea level (msl) with 2 to 15 percent slopes (Figure 4.2-1). Old dune deposits up to 250 feet thick cover most of the area. Table 4.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the Seaside MRA. Surface soil conditions at the MRA are predominantly weathered dune sand (Figure 4.2-1), which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys.

4.2.2 Vegetation

Vegetation consists primarily of maritime chaparral with patches of non-native grassland and scattered stands of coastal and inland coast live oak woodlands (Table 4.2-2 and Figure 4.2-2; USACE/Jones & Stokes 1992). Poison oak is known to be prevalent in most areas of the MRA. In 2003, as part of the Army's Time-Critical Removal Action (TCRA) for MEC, 398 acres of the Seaside MRA vegetation were cut to make the surface safe and accessible for MEC removal crews. The maritime chaparral was cut to a 6-inch height, and the oak trees were pruned to shoulder height to allow access below the tree canopies. Additional vegetation removal occurred in support of NTCRA. Much of the native vegetation has been reestablished.

Section 4 – Seaside MRA Conceptual Site Model**4.2.3 Surface Water and Groundwater**

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells within and adjacent to the Seaside MRA, some of which have been abandoned (Figure 4.2-1). The Seaside MRA overlies the Seaside Groundwater Basin, which is structurally complex and divided into several sub-basins. Groundwater is generally encountered at a depth greater than 100 feet below ground surface (bgs) and is not expected to influence geophysical surveys conducted for MEC remediation activities.

No significant surface-water features or delineated wetlands are reported to be present in the MRA; however, two aquatic features are known to exist to the south and southeast of the MRA.

4.3 Seaside MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

4.3.1 Investigation and Removal History

Numerous investigations and removal actions were performed by the Army in the Seaside MRA, which included:

- Field Latrine Investigation from March to November 1997 (USA 2001f)
- MEC Sampling in Small Arms Ranges (OE-15A Grid Sampling) from October to November 1997 (USA 2000a)
- MEC Sampling (OE-15B Grid Sampling) from October 1997 to February 1998 (USA 2000d)
- Impact Area Grid Sampling from March to August 1999 (USA 2001m)
- MEC Removal-Impact Area Roads and Trails from March 1997 to March 1998 (USA 2001d)
- MEC Removal-Blue Line Fuel Break from May to June 1998 (USA 2001p)
- MEC Removal to Support Lead-Contaminated Soil Remediation at Ranges 19, 21, 22, and 23 from April 1997 to June 1999 (USA 2001k)
- MEC Removal to Support Lead-Contaminated Soil Remediation at Range 46 from April to August 1999 (USA 2001k)
- Impact Area Fuel Break Maintenance in 2001 (Parsons 2001)
- TCRA – Vegetation and Surface MEC Removal from December 2001 to March 2002 (Parsons 2006b)

- NTCRA and Phase I Geophysical Operations – 4-foot Removal Action from March 2002 to March 2004 (Parsons 2006b)

The investigation and sampling efforts are summarized in Table 4.3-1. The removal actions are summarized in Table 4.3-2. During the removal actions, burial pits containing MEC were discovered. Additional information on burial pits is provided in the following subsection, and Tables 4.3-2 and 4.3-3 provide detailed information on the specific types of MEC recovered from these burial pits. The results of the removal actions with respect to MEC and MD are summarized in Table 4.3-4 and are shown on Figures 4.3-1, 4.3-2, and 4.3-3. These actions resulted in complete MEC removal to a depth of 4 feet, with the exception of 35 acres identified by the Army as special case areas (SCAs) and a narrow area west of General Jim Moore Boulevard, which was outside the western boundaries of MRS-15 SEA 1 and MRS-15 SEA 2 (Figure 4.3-4). Because the Army's investigation activities did not include the narrow area west of General Jim Moore Boulevard, the status of MEC in this area represents a data gap. Additional information on the SCAs is provided in the following subsection.

Burial Pits

During the removal actions, seven burial pits containing MEC were discovered (Figure 4.3-2). Of the MEC found during the removal actions, 131 of the items and 1 pound of bulk high explosives (HEs) were located in the seven burial pits. Table 4.3-3 provides more detailed information on the specific types of MEC recovered from the burial pits.

Special Case Areas

During the Army's NTCRA and Phase I Geophysical Operations at the Seaside MRA, approximately 35 acres of land were designated as SCAs either because the areas were inaccessible due to surface obstructions or because surface and near-surface features interfered with the signal for the digital geophysical instrumentation, making it difficult to distinguish individual anomalies. The SCAs are shown on Figure 4.3-4 and include:

- Existing Site Fence Area
- Original Fence Line
- Asphalt and Concrete
- Backhoe Excavations
- Excavations requiring Heavy Equipment
- Berms and Retaining Walls
- Structures and Latrines
- Range 46 Weather Station
- Debris Piles

Section 4 – Seaside MRA Conceptual Site Model

4.3.2 Types of MEC Recovered and Hazard Classification

Table 4.3-4 includes a summary of MEC recovered from the Seaside MRA and associated hazard classification scores. All MEC removed from the Seaside MRA were identified and assigned a hazard classification, except for ordnance components and bulk explosives. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Seaside MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

4.3.3 Location of MEC and MD

Figures 4.3-1, 4.3-2, and 4.3-3 show the distribution of MEC and MD recovered to date from within the Seaside MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the Seaside MRA is provided in Table 4.3-5 and included:

- 370 UXO items
- 164 DMM items
- 56,524 pounds of MD (includes expended munitions debris [MD-E] and fragmented munitions debris [MD-F] if weights were documented)

The largest concentrations of MEC were located in MRS-15 SEA 4 between Ranges 18 and 46 in the northern portion of the MRA and in MRS-15 SEA 1 in the area of Range 23 and Watkins Gate Road in the southern portion of the MRA (Figure 4.3-2). MEC were also recovered from several discrete locations as shown on Figure 4.3-2.

The Military Munitions Response Program (MMRP) database indicates that the majority of the MEC recovered from the Seaside MRA were found on the surface, within 6 inches bgs, or in seven burial pits. Figure 4.3-5 shows the distribution of MEC recovered at specified depth intervals and does not include MEC recovered from the burial pits.

Recovered MD (total pounds per grid) in the Seaside MRA is shown on Figure 4.3-3. The majority of the grids contained less than 100 pounds of MD. A majority of the grids that contained more than 100 pounds of MD were concentrated in the southwestern portion of Ranges 19, 20, and 59 and in the southern and western portions of Ranges 23 and 23M, respectively. A portion of the MD identified on Figure 4.3-3 includes small arms scrap (SAS) but not SAA. It should be noted that soil containing small arms and possibly MD was removed from the Seaside MRA (Ranges 18, 19, 21, and 46) as part of the lead-contaminated soil remediation for the Installation Restoration Program (IRP) Site 39. The debris removed as part of the IRP Site 39 program was not likely recorded in the MMRP database and is, therefore, not captured as part of this analysis of MD data.

4.3.4 HTW History and Conditions

A Basewide Range Assessment (BRA) was conducted by the Army to evaluate the potential presence of chemicals of concern (COCs) at known or suspected small arms ranges, multi-use ranges, and military munitions training areas within the former Fort Ord (Shaw/MACTEC 2006). The areas were identified as historical areas (HAs). The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination, or should be considered for remediation/habitat mapping related to COCs.

Table 4.3-6 summarizes the findings of the BRA investigation activities with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007). The Seaside MRA is also part of IRP Site 39 at the former Fort Ord. Previous soil remediation activities were conducted as part of the Site 39 program, which has an existing Record of Decision (ROD). In an effort to facilitate the closure of Site 39 Seaside Parcels with respect to risks related to residual metals in soil, a Draft Post-Remediation Health Risk Assessment (PRHRA) has been prepared on behalf of the Army for the Seaside MRA Parcels. The results indicate that the residual metals concentrations in soil do not pose an unacceptable risk to human health and the environment within the Seaside MRA Parcels and that a residential restriction due to residual metals concentrations in soil is not necessary on Ranges 18, 19, 21, and 46. The results of the PRHRA are presented in the “Draft Post-Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C,” prepared by Shaw/MACTEC in November 2007 (Shaw/MACTEC 2007b).

4.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issues:

- The CERCLA process must be completed for the Seaside MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD;

Section 4 – Seaside MRA Conceptual Site Model

- MEC removal action in the SCAs must be completed in accordance with the Army's approved removal action work plan or other agency-approved work plan;
- Additional quality assurance and MEC removal, if necessary, must be completed in areas proposed for residential development within the Seaside MRA.

4.4 Seaside MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

4.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Seaside MRA is located in the southwestern portion of the former Fort Ord in an area designated as having no archaeological sensitivity.

Actions to be taken at the Seaside MRA will be in compliance with the Programmatic Agreement among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

4.4.2 Current Land Use

The Seaside MRA is currently undeveloped, with the exception of General Jim Moore Boulevard, Eucalyptus Road, and a major utility corridor for the high-power transmission line that runs along General Jim Moore Boulevard (Figure 4.1-1). Residual structures that supported training activities at the MRA have been abandoned or are scheduled for demolition.

For the area immediately west of General Jim Moore Boulevard, which is within the MRA but outside of the MRSs, there is a newly installed aquifer recharge water line adjacent to the border with the City of Seaside that is partially aboveground and partially underground. This is a temporary line that does not require access on a routine basis. The area west of General Jim Moore Boulevard is not restricted for access by any control measure, such as fencing.

The area immediately east of General Jim Moore Boulevard and immediately south of Eucalyptus Road has restricted access via the existing site fence. Although infrequent, trespassing has occurred through this area. Along the eastern border of the MRA with the former impact area, a borderland development buffer area was established in the Habitat Management Plan (HMP) along the interface with the natural resources management area

(NRMA) designated as habitat reserve. The setback requirements for the borderland buffer were defined in the Draft Habitat Conservation Plan (HCP) as being 200 feet wide, which must be managed and maintained as prescribed.

Interim uses for this MRA may also include staging of helicopters in support of Army burn activities.

4.4.3 Reasonably Foreseeable Future Land Use

Table 4.4-1 and Figure 4.4-1 identify the proposed uses of the MRA by parcel. It is important to note that the development land use category encompasses infrastructure activities, such as roadway and utility corridor construction, as well as commercial/retail facilities, parks, and borderland activities.

As shown in the Base Reuse Plan, this area is predominantly planned for residential reuse. To facilitate reuse, infrastructure improvements, such as utilities and roadways, are required as described in the previous paragraph. A public park is planned for the southern portion of the Seaside MRA (Figure 4.4-1).

4.4.4 Potential Human Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons residing in the area conducting surface and subsurface activities) – future
- Recreational users (persons biking or on foot) – future

4.5 Seaside MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 4.5-1.

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As discussed in Section 4.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the Seaside MRA as development (which includes residential reuse) with a borderland development buffer area along the interface with an NRMA designated as habitat reserve (Figure 4.5-1). The NRMA interface separates the development category land within the Seaside MRA from the adjacent habitat reserve area of the former impact area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP during MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

4.5.1 Major Plant Communities and Ecological Habitats

Vegetation consists primarily of maritime chaparral with patches of non-native grassland and scattered stands of coastal and inland coast live oak woodlands (Table 4.2-2 and Figure 4.2-2; USACE/Jones & Stokes 1992). Poison oak is known to be prevalent in most areas of the MRA.

4.5.2 Threatened and Endangered Species

The USFWS final Biological Opinion for the Disposal and Reuse of Fort Ord (USFWS BO) required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for the former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to the USFWS BO dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Plant species identified at the former Fort Ord that are either threatened or endangered include Contra Costa goldfields (*Lasthenia conjugens*; endangered), sand gilia (*Gilia tenuiflora* ssp. *Arenaria*; endangered), and Monterey spineflower (*Chorizanthe pungens* var. *pungens*; threatened).

In 2004, the California tiger salamander (CTS; *Ambystoma californiense*) was identified as a threatened species. CTS may be found as far as 2 kilometers (km) from aquatic breeding habitats. As shown on Figure 4.5-1, the CTS may be found in MRS-15 SEA 1 and MRS-15 SEA 2 as these two MRSs are within 2 km of aquatic features that may provide habitat for the CTS.

The Seaside MRA is identified within the HMP as requiring special management for the boundaries between development areas and the NRMA. The requirements have both interim and long-term maintenance implications. As presented in the HMP, with the exception of boundary management requirements, the Seaside MRA is available for development without restrictions although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.

4.5.3 Other Communities and Species of Concern

Dominant vegetation in the Seaside MRA consists of maritime chaparral with patches of non-native grassland. The maritime chaparral consists of sclerophyllous (hard-leaved) shrub communities within a live oak woodland (coastal coast and inland coast) region that is best developed on sandy soils within the summer fog zone. This type of chaparral is considered rare by the California Department of Fish and Game (CDFG) and is declining statewide. Development has now limited a majority of this community type in the Monterey Bay Area to undeveloped portions of the former Fort Ord. As identified in the HMP, a number of species could be found on the Seaside MRA, as identified by parcel in Table 4.5-2. The following species of concern to the State of California are identified in the HMP as having possible occurrence in the Seaside MRA: seaside bird's beak (*Cordylanthus rigidus ssp. Littoralis*), toro manzanita (*Arctostaphylos montereyensis*), sandmat manzanita (*Arctostaphylos pumila*), Monterey ceanothus (*Ceanothus cuneatus var. rigidus*), Eastwood's ericameria (*Ericameria fasciculata*), and coast wallflower (*erysimum ammophilum*).

4.6 Seaside MRA Pathway Analysis

As discussed in Section 4.3.4, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

4.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Seaside MRA using the information gathered in the CSM profiles. Exposure pathways include a source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of previous removal actions by the Army. Exposure pathways for the Seaside MRA are presented on Figure 4.6-1 and discussed below.

Section 4 – Seaside MRA Conceptual Site Model*Source*

Source areas within the Seaside MRA were addressed during the Army's previous removal actions, with the exception of the SCAs (Figure 4.3-4). The historical source areas within the Seaside MRA are shown on Figure 4.1-3, and recovered MEC and MD from these areas are shown on Figures 4.3-1 through 4.3-3. The sources include firing points, target areas, and range safety fans for military weapons training activities and troop training/maneuver areas. There are no known source areas outside of MRS-15 SEA 1-4 to the west of General Jim Moore Boulevard.

Figure 4.6-2 illustrates the most likely release mechanisms for MEC being found in the Seaside MRA, which include:

- Mishandling/Loss, Abandonment, and Burial (Military Weapons Training)
- Direct and Indirect Firing and Thrown (Military Weapons Training)
- Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access to the SCAs and historical source areas is restricted by the fence around MRS-15 SEA 1-4, located east of General Jim Moore Boulevard and south of Eucalyptus Road. Access to the area west of General Jim Moore Boulevard is unrestricted.

Receptor / Activity

Table 4.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade.

4.6.2 Exposure Pathway Analysis

As discussed above, Figure 4.6-1 graphically presents the exposure pathways analysis for the Seaside MRA. The graphic shows the current and future potentially incomplete and potentially complete pathways for activities in the Seaside MRA.

A small risk of MEC exposure remains to current and future receptors during intrusive activities (i.e., digging). There is also a potential risk of MEC exposure within the hillside west of General Jim Moore Boulevard (Figure 4.3-4) because the information available to date does not appear to be sufficient to conclude presence or absence of MEC in this area.

4.7 Seaside MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a

potential for human health risk associated with residual (or potentially present) MEC in the Seaside MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the Seaside MRA are consistent with the historical use as a weapons and troop training area. However, data gaps, uncertainties, and/or open regulatory issues have been identified and must be addressed prior to receiving regulatory closure and implementing the planned reuse of the MRA. Therefore, the Seaside MRA falls into two of the categories: 1) response action is necessary, and 2) additional data are required to fill data gaps. Based on the existing data for the Seaside MRA, the following recommendations are suggested:

- Response Action - Complete the Army's NTCRA to mitigate risk related to potential MEC in the SCAs.
- Collection of additional data to fill data gaps
 - Collect data sufficient to support the MEC RI on the hillside west of General Jim Moore Boulevard
 - Conduct a Residential Quality Assurance (RQA) Pilot Study to assess the potential for risk from undetected MEC in future residential areas.
- Proceed with Documentation - Prepare the RI/FS and subsequent ROD documentation.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

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Table 4.1-1
Seaside MRA - Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
E24	198	MRS-15 SEA 1
E34	97	MRS-15 SEA 2
E23.1	48	MRS-15 SEA 3
E23.2	76	MRS-15 SEA 4
MRA TOTAL	419	

Note: Acreages for USACE Parcels E24 and E34 are slightly larger than their corresponding MRSs.

Table 4.1-2
Seaside MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> • General Jim Moore Boulevard is an active two-lane roadway running in a north/south direction through the MRA and is identified as a major roadway corridor. • Eucalyptus Road is a closed two-lane roadway running in an east/west direction along the northern boundary of the MRA that historically allowed access from General Jim Moore Boulevard to the inland portions of the former Fort Ord. • Watkins Gate Road is a secondary paved roadway that extends to the east through the MRA and into the former impact area. • Other roadways (paved or unpaved) that cross the MRA include Broadway Avenue, Evolution Road, Austin Road, and Pipeline Road (not shown on figures).
Structures and Utilities	<ul style="list-style-type: none"> • Twenty-one structures, which supported former range activities, exist at the MRA. The MRA is not currently served by water and sewer lines. • For the area immediately west of General Jim Moore Boulevard, which is within the MRA but outside of the MRSs, there is a newly installed aquifer recharge water line adjacent to the border with the City of Seaside that is partially aboveground and partially below ground. This is a temporary line that does not require access on a routine basis. • An abandoned underground communication line that was previously installed by the Army is reported to be present immediately to the east of General Jim Moore Boulevard; however, the exact location could not be confirmed based on available information. • A 100-foot-wide right-of-way runs through the MRA parallel to General Jim Moore Boulevard and north of Eucalyptus Road. This right-of-way was granted to Pacific Gas and Electric Company by the Army. The right-of-way contains high voltage (80 kilovolt) electrical wires supported by towers and low voltage (30 and 15 kilovolt) electrical wires supported by standard wooden poles. The low voltage wires are reportedly no longer active. There are additional wires on the wooden poles for data/communication purposes. No known easement has been granted for these activities.
Fencing and Access	<ul style="list-style-type: none"> • Access to the area east of General Jim Moore Boulevard is restricted by four-strand barbed-wire fencing reinforced with concertina, locked chain-link gates with concertina on the bottom to block the access roads into MRS-15 SEA 1 and MRS-15 SEA 2, and warning signs posted along the fencing. • Access to the area west of General Jim Moore Boulevard is unrestricted. • Access to the area south of Eucalyptus Road is restricted by four-strand barbed-wire fencing reinforced with concertina and locked chain-link gates with concertina on the bottom to block the access roads into MRS-15 SEA 3 and MRS-15 SEA 4. • Vehicular access to Eucalyptus Road is restricted by barriers marked with “Road Closed” signs (at the General Jim Moore Boulevard/Eucalyptus Road and Parker Flats Road/Eucalyptus Road intersections).

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Table 4.1-3
Seaside MRA - Existing Structures and Buildings

Parcel Number	Facility Number	Area (square footage)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E24	R9232	436	Range Support Building	Unknown	Unknown	Unknown
E24	R9230	410	Field Range Latrines	Unknown	NO	1984
E24	3908	419	Range House	Unknown	YES	1968
E24	R9221	307	Observation Tower	Not surveyed	Unknown	Unknown
E24	R9220	419	Field Range Latrines	No ACM	NO	1985
E34	8312	453	Observation Tower	No ACM	YES	1958
E34	R9190	1,155	Field Range Latrines	Rated 6 to 13	NO	1984
E23.2	R9181	189	Field Range Latrines	No ACM	NO	1984
E23.2	R9483	190	Field Range Latrines	Rated 6 to 13	NO	1984
E23.2	8302	121	Observation Tower	No ACM	YES	1959
E23.1	8304	659	Observation Tower	No ACM	YES	1963
E23.2	R9180	149	Field Range Latrines	Rated 6 to 13	NO	1984
E23.2	8301B	89	Range Support Building	No ACM	Unknown	Unknown
E23.2	8301A	452	Range Support Building	No ACM	Unknown	Unknown
E23.2	R9482	185	Field Range Latrines	No ACM	NO	1984
E23.2	3940	424	Covered Training Area	No ACM	NO	1989
E23.2	3939	1,388	Covered Training Area	No ACM	YES	1968
E23.2	3941	456	Ammunition Magazine	Rated 6 to 13	YES	1950
E23.2	R9460	463	Range Support Building	No ACM	NO	1984
E23.2	3983	73,490	Combat Pistol Range	Not surveyed	YES	1968
E23.2	R9463	186	Field Range Latrines	Unknown	NO	1984

Table 4.1-4
Seaside MRA – Historical Military Use

Location	Description
Range 18	<ul style="list-style-type: none"> Used as a small arms firing range at the time of closure. Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds were used or projectiles found on this range. A historical Range 18, shown on a 1961 training facilities map, is roughly coincident with the current position of Range 18.
Range 19	<ul style="list-style-type: none"> Range 19 is shown on maps dating back to 1956. Use of the range is documented as a firing range from 1973 to present. Some type of training with small arms took place in the 1940s and possibly early 1950s.
Range 20	<ul style="list-style-type: none"> Used as a 10 meter machine gun and 25 meter rifle range at the time of closure. Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds were used or projectiles found on this range.
Range 21	<ul style="list-style-type: none"> Used as a 10 meter machine gun and 25 meter rifle range at the time of closure. Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds were used or projectiles found on this range.
Range 22 and Old Range 22	<ul style="list-style-type: none"> Used as a 50-caliber machine gun range at the time of closure. Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds and 106mm recoilless rifle rounds were also used or projectiles found on this range. In addition, M48 series 50-caliber spotter-tracer projectiles (A574) that are used to check the aim of the 106mm recoilless rifle may also be present on the range. Another Range 22, which was roughly parallel to General Jim Moore Boulevard, was shown on range control maps at the time of closure. It was decommissioned in the past and labeled as “non-firing” on numerous historical maps. According to reviewed documents, it was an identified target detection range (a non-firing range, use of live ammunition was not authorized). This decommissioned Range 22 is labeled as “Old Range 22” on applicable maps in this report.
Range 23	<ul style="list-style-type: none"> Used as a squad attack range at the time of closure. Past records indicate that 5.56mm and 7.62mm machine gun rounds, 40mm HE projectiles, and claymore mine components (electrical firing devices) were used or projectiles found on this range. A 1961 training facilities map indicates an automatic rifle Table VIII (automatic rifle training), and a 1964 map shows a Range 23. Both ranges are roughly coincident with the current position of Range 23.
Range 23M	<ul style="list-style-type: none"> Used as a non-firing training area for laser-aimed Dragon anti-armor weapons. Some Dragon missiles and 4.2-inch mortar fragments have been found on the range.
Range 46	<ul style="list-style-type: none"> Used as a small arms range from the late-1950s up to the time of closure. Firing point located within MRS-15 SEA 4 with target sites located downrange to the southeast in front of a berm. Records and field investigations indicate that the military munitions at this range were restricted to small arms (pistols and rifles).

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Table 4.1-4
Seaside MRA – Historical Military Use

Location	Description
Range 48	<ul style="list-style-type: none"> • Used as a light antitank weapon (LAW) range at the time of base closure. • The firing point located within MRS-15 SEA 4 with target locations located downrange to the southeast. • Records show range was in use since the 1940s. • Used for weapons familiarization training, and as a sniper range, mortar range, and machine gun range. • Records and recent field investigations indicate the following military munitions used or found in this range: <ul style="list-style-type: none"> – fragmentation hand grenades; – practice rifle grenades; – practice mines, including claymore and antipersonnel, and AT types; – Dragon-guided and high-explosive antitank (HEAT) missiles; – mortars, including HE, illumination, target practice, and white phosphorous types; – projectiles including HE, HEAT, illumination, practice, smoke, and subcaliber types; – HEAT, incendiary, practice, and subcaliber rockets illumination signals; and small arms.
Range 50	<ul style="list-style-type: none"> • Identified as a Booby Trap training area in 1945.
Range 59	<ul style="list-style-type: none"> • Shown on a 1956 training facilities map, indicating that a range labeled M1 Table XI (M1 rifle training) existed in MRS-15 SEA 2. • A 1967 training facilities map shows a Range 59 that is roughly coincident with that area. Range 59 appears to have been decommissioned in the past and is not shown on range maps at the time of base closure.

References: USACE 1997a and Parsons 2006b

Table 4.1-5
Seaside MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> As identified in the FOSET, Covenants Restricting the Use of the Property (CRUPs) have been imposed on the Seaside MRA parcels (Army 2007). These CRUPs are defined in the “Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxic Substances Control Concerning Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California.” These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging/Excavation	<ul style="list-style-type: none"> City of Seaside Ordinance No. 259 amending the municipal code referred to as Chapter 15.34. The ordinance prohibits excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> The MOA between FORA and the jurisdictions for the purpose of defining the terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. The MOA establishes FORA’s ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA property during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	<ul style="list-style-type: none"> Since the release of the HMP, a number of BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. Future MEC work is required to be consistent with the applicable conservation measures.

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Table 4.2-1
Seaside MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary, but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • The MRA includes deposits from the Paso Robles Formation and sand and gravel deposits of Aromas Sandstone.
Topography and Soils	<ul style="list-style-type: none"> • Terrain varies from flat to moderately rolling with 2 to 15 percent slopes. • Elevation ranges from approximately 210 to approximately 520 feet msl. • Soils consist predominantly of Baywood Sand with 2 to 15 percent slopes. • Soils formed by Pleistocene-age dune deposits (Baywood Sand) that may be up to 250 feet thick with Arnold Santa Ynez Complex sand deposits, which are older but similar in composition, to the east. The Baywood Sand deposits cover the entire MRA. • Mature plant communities largely stabilize these widespread, unconsolidated dune deposits.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 4.2-2
Seaside MRA – Vegetation

MRS Identifier	USACE Parcel Number	Vegetation
MRS-15 SEA 1	E24	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral. Coast live oak woodland strands are scattered throughout the MRS.
MRS-15 SEA 2	E34	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral
MRS-15 SEA 3	E23.1	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral. A coast live oak woodland strand is located in the northwestern portion of the MRS, and individual coast live oaks are scattered throughout the MRS.
MRS-15 SEA 4	E23.2	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral. A coast live oak woodland strand is located in the northwestern portion of the MRS, and individual coast live oaks are scattered throughout the MRS.

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Table 4.3-1
Seaside MRA – Investigation and Sampling

Activity	Summary
Field Latrine Investigation	<ul style="list-style-type: none"> From March to November 1997, removal work was performed on 52 of the approximately 132 field latrines scattered throughout the former Fort Ord because MEC may have been discarded in the latrines. Two field latrines located in MRS-15 SEA 1 were investigated, but no MEC were encountered (USA 2001f).
MEC Sampling in Small Arms Ranges (OE-15A Grid Sampling)	<ul style="list-style-type: none"> From October to November 1997, 20 100-foot by 100-foot grids located in Site OE-15A were sampled to determine the need and scope of future removal actions. Site OE-15A consisted of those areas within the range fans of Small Arms Ranges 18, 19, 21, 39, and 46. Five of the 20 sample grids were placed within the boundaries of the Seaside MRA. MRS-15 SEA 2 contained one grid in Range 19 (Grid G1); MRS-15 SEA 4 contained three grids in Range 18 (Grids G1, G2, and G3) and one grid in Range 46 (Grid G1). Schonstedt magnetometers were used to investigate 100 percent of each sample grid. All anomalies detected were investigated to depth and resolved (USA 2000a).
MEC Sampling (OE-15B Grid Sampling)	<ul style="list-style-type: none"> From October 1997 to February 1998, 41 100-foot by 100-foot grids located in OE-15B were sampled to determine the need and scope of future removal actions and establish the types and distribution of MEC in the impact area. Of the 41 sample grids, six were located within the boundaries of the Seaside MRA; five grids (G16, G18, G19, G20, and G37) were located in MRS-15 SEA 1; and one grid (G21) was located in MRS-15 SEA 2. Schonstedt magnetometers were used to investigate 100 percent of each sample grid (USA 2000d).
Impact Area Grid Sampling	<ul style="list-style-type: none"> Between March and August 1999, 213 100-foot by 100-foot grids in MRS-MOCO.2, MRS-15 SEA 1-4, MRS-DRO.2, and MRS-MOCO.1 were sampled to determine the need and scope of future removal actions. One hundred fifty-five sample grids were placed in MRS-15 SEA 1-4, and 100 percent of each grid was investigated with Schonstedt magnetometer (USA 2001m).

Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
MEC Removal – Impact Areas Roads and Trails	<ul style="list-style-type: none"> From March 1997 to March 1998, vegetation clearance operations and a 4-foot removal conducted with Schonstedt magnetometers were performed on eight range roads and 32 dirt trails in the former impact area to facilitate travel for field activities. Six of the roads (Winchester, Range 23, Hangfire, Tracer, Canister, and Broadway) were located in the Seaside MRA. MEC items were removed from grids on Winchester Road, Hangfire Road, and Range 23 Access Road located in MRS-15 SEA 1 (USA 2001d).
MEC Removal – Blue Line Fuel Break Reestablishment	<ul style="list-style-type: none"> Between May and June 1998, vegetation clearance operations and a 4-foot removal (with Schonstedt magnetometers) were performed on the 30-foot-wide, approximately 6-mile-long fuel break (the Blue Line) that extends west along the southern border of MRS-MOCO.2 and MRS-15 SEA 3–4 and then bends south along the eastern boundaries of MRS-15 SEA 1–2, MRS-DRO.1–2, MRS-MOCO.1, and MRS-46. This work was performed to reestablish the fuel break as part of the wildfire safety and control program in the former impact area. MRS-15 SEA 1–4 contained 133 contiguous sections (grids) of this fuel break (USA 2001p).
MEC Removal to Support Lead-Contaminated Soil Remediation – Ranges 19, 21, 22, and 23	<ul style="list-style-type: none"> From April 1997 to June 1999, 4-foot removal operations with Schonstedt magnetometers were conducted in Ranges 19, 21, 22, and 23 to support efforts to remediate spent SAA and lead-contaminated soil and to provide safe access routes for personnel and equipment into the areas (USA 2001k). In Ranges 19, removal operations were completed on nine access road sections and 23 target boxes to prepare the target boxes for the lead remediation work. No MEC were encountered during this operation. In Range 21, removal operations were performed on, in front of, and behind a berm to prepare the area for the lead remediation work. The removal work in front of the berm was stopped because the excessive anomalies in the area interfered with the Schonstedt. The removal operations on and behind the berm were successfully completed. No MEC were encountered. In Range 22, removal operations were planned to prepare the area for the lead remediation work; however, they were cancelled because it was determined that there was insufficient lead contamination to warrant remediation operations. In Range 23, removal operations were completed on an access road into the range before operations were cancelled because it was determined that there was insufficient lead contamination to warrant remediation operations. Three MEC items were found on the access road before work was stopped (a 22mm subcaliber M744 projectile, a practice 3-inch Stokes trench mortar, and a practice 40mm M781 cartridge).
MEC Removal to Support Lead – Contaminated Soil Remediation – Range 46	<ul style="list-style-type: none"> From April to August 1999, 4-foot operations with Schonstedt magnetometers were conducted on 26 grids around Range 46 to support efforts to remediate spent SAA and lead-contaminated soil around the range’s firing line (USA 2001k). Of the 26 cleared grids, all or a portion of 23 were located in MRS-SEA 4. During this work, no MEC were encountered.
Impact Area Fuel Break	<ul style="list-style-type: none"> To prevent and control wildfires in the former impact area, maintenance work was conducted in 2001 on old roads, trails, and fuel breaks in the impact area used during military training activities. Surface removals were conducted on the 15-foot sides of

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Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
Maintenance	<p>each fuel break, and a 4-foot removal (with deeper excavations approved by the USACE Ordnance and Explosives Safety Specialist [OESS]) was performed with Schonstedt magnetometers on some of the fuel breaks' 15- to 20-foot-wide centers. Five of the reestablished fuel breaks had sections that were within MRS-15 SEA 1-4: Austin Road, General Jim Moore Road (North and South), Broadway Road (West), Watkins Gate Road, and Nowhere Road (Parsons 2001).</p>
TCRA	<ul style="list-style-type: none"> • During December 2001 to March 2002, a TCRA was completed over the surface of MRS SEA.1-4 (this action was done separately under an Action Memorandum, which describes the decision for conducting the TCRA). The TCRA was done to address the imminent threat posed to human health (public safety) or welfare or the environment posed by the presence of MEC on the surface on MRS-SEA 1-4 (Parsons 2006b). • To make the surface safe and accessible for UXO removal crews, the predominantly maritime chaparral vegetation covering MRS-15 SEA 1-4 was cut. UXO teams visually searched the surface with the aid of Schonstedt magnetometers to help detect items that might be under debris. • All surface items that were observed or detected with a Schonstedt were removed.
NTCRA & Geophysical Operations	<ul style="list-style-type: none"> • During March 2002 to March 2004, an NTCRA and 100 percent digital geophysical survey were performed at the MRA. The NTCRA was performed on five distinct removal areas within the MRA that were determined based on the results of the previous investigations (portions of MRS-15 SEA 1-4 adjacent to the removal areas were also subjected to the NTRCA if MEC were found near the removal area boundaries). The NTCRA was performed by the Army to address the threat to human health (public safety) or the welfare or the environment posed by the presence of MEC of MRS-15 SEA 1-4 (Parsons 2006b). • A 100 percent digital geophysical survey was also conducted by the Army on all remaining portions of the site not covered by the NTCRA. The 100 percent digital geophysical survey was conducted to confirm the previous sampling work done. Prior to the geophysical survey, approximately 87 acres of vegetation in three areas were re-cut in fall 2003. • The geophysical operations specified in the Army's approved MRS-15 SEA 1-4 Site-Specific Work Plan were completed in all accessible portions (about 91 percent) of MRS-15 SEA 1-4 to the maximum capacity of the technologies and instruments used. Analog and digital ordnance detection instruments were used over all accessible portions of MRS-15 SEA 1-4 to locate subsurface anomalies, and all detected anomalies were resolved.
NTCRA Burial Pits	<ul style="list-style-type: none"> • During the NTCRA and Phase I Geophysical Operations, seven burial pits containing MEC were discovered (Parsons 2006b). • The MEC recovered from the seven burial pits consisted of 105 M10 series hand grenade fuzes, 17 ordnance components, three MKII practice hand grenades, and six 3-inch MK1 practice mortar (Table 4.3-3). • Military munitions recovered from other burial pits (containing MD) included 80 SAA and 22 items determined to be MD-E consisting mostly of expended 3-inch and 4-inch MK1 practice mortars. • All MEC items found below 8 inches and 86 percent of all items found in MRS-15 SEA 3 were located in a single burial pit.

Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
NTCRA Special Case Areas	<ul style="list-style-type: none"> <li>• During the NTCRA and Phase I Geophysical Operations, approximately 35 acres of land were inaccessible or near-surface sources of interference prevented the digital geophysical instruments from being able to distinguish individual anomalies (Parsons 2006b). These areas were categorized by the Army as SCAs, and include the following: <li>• Existing Site Fence Area The metallic site fence and associated chain-link access gates to the MRSs along General Jim Moore Boulevard and Eucalyptus Road interfered with the geophysical instruments in areas within 5 to 15 feet of the fence. <li>• Original Fence Line The original fence line area is located 10 to 15 feet inside the boundaries for MRS-SEA 1-3, just east of General Jim Moore Boulevard. The original fence, which consisted of concertina, was removed, and electromagnet operations were performed over the area to collect metal debris associated with the deteriorating fencing. Following the electromagnetic operations, the digital instrument response was saturated in the immediate area of the original fence line because the soil surface was magnetized due to the electromagnetic operations. As a result, this area could not be geophysically surveyed for the presence of military munitions. <li>• Asphalt and Concrete The asphalt range roads extending from General Jim Moore Boulevard and Eucalyptus Road into the Seaside MRA and the adjacent asphalt/concrete range pads made the surface inaccessible to the geophysical instruments at the time of the investigation. There are also several range structures (e.g., range towers, break areas, etc.) on top of the asphalt and culverts in the subsurface near the asphalt roads. <li>• Backhoe Excavations Approximately 350 locations require backhoe excavations. These include areas where backhoe excavations were started but not completed due to budgetary constraints and areas containing buried cable/wire, grounding rods, range markers, reinforced concrete, and wood. <li>• Heavy Equipment Excavations Approximately 40 locations require excavation with heavy equipment. These include concrete bunkers, fighting positions, flag/utility poles, target boxes, tie downs, utility poles, and wooden stairs. <li>• Berms There are several berms in the Seaside MRA, some of which are reinforced with wooden retaining walls. The metal connectors of the retaining walls prevented geophysical surveys from being conducted in some of the areas near the berms, and the material in the berms was too thick to effectively detect military munitions. <li>• Structures/Latrines There are several structures and latrines in the Seaside MRA. The surface underneath the structures and latrines was inaccessible, and the immediate areas around these buildings could not be surveyed because of interference. <li>• Range 46 Weather Station

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Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
	<p>A remote automated weather station (RAWS) was situated on Range 46 during previous removal actions at the Seaside MRA and has since been removed. The ground surface underneath the former RAWS was inaccessible, and the immediate areas around the RAWS could not be geophysically surveyed because of interference.</p> <ul style="list-style-type: none"><li>• Debris Piles <p>There are several locations where debris was piled that were inaccessible to the geophysical operations.</p>

Table 4.3-3
Seaside MRA – Burial Pits Containing MEC

Site	Grid	Pit No. *	Type	Description	Qty	Depth (inches bgs)
MRS-SEA 1	B1B8D5		UXO	Projectile, 3-inch, mortar, HE, MK I	5	20
	B1B8F7		UXO	Ordnance components	17	18
	B1C7G7		UXO	Projectile, 3-inch, mortar, practice, MK I	1	48
MRS-SEA 2	B1F9F3		UXO	Bulk, HE (Model Unknown)	1 pound	24
MRS-SEA 3	B2I1I9	1	DMM	Fuze, grenade, hand, M10 series	7	8
		2	UXO	Fuze, grenade, hand, M10 series	98	16
MRS-SEA 4	C2A3D0		UXO	Grenade, hand, practice, MK II	3	4

Note: * If more than one pit was found in a grid.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

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Table 4.3-4
Seaside MRA – Types of MEC Removed and Hazard Classification

Location	MEC Item	UXO	DMM	Hazard Classification
MRS-15 SEA 1	Cap, blasting, electric, M6	0	4	1
	Cartridge, 40mm, practice, M781	0	20	1
	Fuze, grenade, hand, M10 series	0	86	1
	Fuze, grenade, hand, practice, M205 series	0	2	1
	Fuze, grenade, hand, practice, M228	2	3	1
	Fuze, projectile, combination, M1907	1	0	1
	Fuze, projectile, point detonating, M48 series	1	0	2
	Fuze, trench mortar, point detonating, MK VI	1	0	2
	Grenade, hand, fragmentation, MK II	1	0	3
	Grenade, hand, incendiary, TH3, AN-M14	1	0	1
	Grenade, hand, riot, CS, M7A3	1	0	1
	Grenade, hand, smoke, M18 series	5	0	1
	Ordnance Components	19	0	NS
	Projectile, 22mm, subcaliber, practice, M744	1	0	1
	Projectile, 37mm, low explosive, MK I	3	0	3
	Projectile, 3inch, trench mortar, practice, MK I (Stokes)	28	0	1
	Projectile, 40mm, parachute, illumination, M583 series	1	0	1
	Projectile, 4inch, mortar, screening smoke, FM (Stokes)	6	0	3
	Projectile, 4inch, mortar, smoke, HC (Stokes)	4	0	2
	Projectile, 4inch, trench mortar, practice, MK I (Stokes)	5	0	1
	Projectile, 4inch, trench mortar, smoke, white phosphorous, MK I (Stokes)	1	0	3
	Projectile, 75mm, high explosive, MK I	1	0	3
	Projectile, 75mm, Shrapnel, MK I	6	0	3
	Projector, Livens, screening smoke, FM	2	0	3
	Rocket, 35mm, subcaliber, practice, M73	1	0	1
	Signal, ground, rifle, parachute, M17 series	2	0	1
	Signal, illumination, M187	1	0	1
	Simulator, grenade, hand, M116A1	1	0	2
MRS TOTAL		95	115	
MRS-15 SEA 2	Bulk, high explosive (model unknown) – 1 pound *	0	0	NS
	Fuze, grenade, hand, M10 series	0	2	1
	Fuze, grenade, hand, practice, M205 series	0	2	1
	Grenade, hand, smoke, M18 series	1	0	1
	Projectile, 3inch, trench mortar, practice, MK I (Stokes)	6	0	1
	Signal, illumination, ground, M125 series	1	0	2
MRS TOTAL		8	4	
MRS-15 SEA 3	Cap, blasting, electric, M6	0	1	1
	Fuze, grenade, hand, M10 series	98	10	1
	Fuze, grenade, hand, practice, M205 series	2	0	1
	Fuze, grenade, hand, practice, M228	0	4	1

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Location	MEC Item	UXO	DMM	Hazard Classification
	Grenade, rifle, smoke, M22 series	1	0	1
	Projectile, 37mm, high explosive, MK II	1	0	1
	Projectile, 37mm, low explosive, MK I	1	0	3
	Rocket, 3.5inch, practice, M29 series	1	0	0
	Rocket, 35mm, subcaliber, practice, M73	2	0	1
	Signal, ground, rifle, parachute, M17 series	1	0	1
	Signal, illumination, ground, M21A1	1	0	1
MRS TOTAL		108	15	
MRS-15 SEA 4	Activator, mine, antitank, practice, M1	0	1	1
	Cap, blasting, non-electric, M7	0	1	1
	Cartridge, ignition, M2 series	39	3	1
	Flare, surface, trip, M49 series	3	0	1
	Fuze, grenade, hand, M10 series	2	12	1
	Fuze, grenade, hand, practice, M228	1	11	1
	Fuze, mine, antitank, practice, M604	0	1	1
	Fuze, mine, combination, M6A1	0	1	1
	Fuze, projectile, point detonating, M503 series	1	0	2
	Grenade, hand, fragmentation, MK II	3	0	3
	Grenade, hand, practice, M30	22	0	1
	Grenade, hand, practice, MK II	32	0	1
	Grenade, hand, smoke, M18 series	1	0	1
	Grenade, rifle, smoke, M22 series	15	0	1
	Mine, antitank, practice, M1	1	0	1
	Ordnance Components	7	0	NS
	Pot, 10lb, smoke, HC, screening, M1	3	0	1
	Primer, igniter tube, M57	2	0	1
	Projectile, 3inch, Hotchkiss	1	0	3
	Projectile, 40mm, high explosive, M386	1	0	3
	Projectile, 57mm, high explosive, M306 series	14	0	3
	Projectile, 60mm, mortar, high explosive, M49 series	2	0	3
	Projectile, 75mm, Shrapnel, MK I	2	0	3
	Projectile, 81mm mortar, high explosive M43 series	1	0	3
	Rocket, 35mm, subcaliber, practice, M73	4	0	1
	Signal, illumination, ground, M125 series	1	0	2
	Simulator, flash artillery, M110	1	0	1
MRS TOTAL		159	30	
SEASIDE MRA TOTAL		370	164	

Notes: NS = Not Specified.

* = MMRP database identified item as UXO with a quantity of zero.

Reference: Fort Ord MMRP Database.

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

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Table 4.3-5
Seaside MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	370 items
DMM	164 items
MD	56,524 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> The largest concentrations of MEC were located in MRS-15 SEA 4 between Ranges 18 and 46 in the northern portion of the MRA and in MRS-15 SEA 1 in the area of Range 23 and Watkins Gate Road in the southern portion of the MRA. MEC were also recovered from several discrete locations. The majority of the grids contained less than 100 pounds of MD. A majority of the grids that contained more than 100 pounds of MD were concentrated in the southwestern portion of Ranges 19, 20, and 59 and in the southern and western portions of Ranges 23 and 23M, respectively.
Vertical Extent	<ul style="list-style-type: none"> The MMRP database indicates that the majority of the MEC recovered from the Seaside MRA were found on the surface, within 6 inches bgs, or in seven burial pits.

Table 4.3-6
Seaside MRA – HTW History and Conditions

Location	Summary
MRS-SEA 1 (Parcel E24)	<ul style="list-style-type: none"> • Remediation at IRP Site 39, Range 21 (HA-21D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 9,600 cubic yards of affected soil. The average lead concentration of soil remaining in place following remedial activities at Range 21 was 35 milligrams per kilogram (mg/kg). Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to munitions constituents (MC) was recommended for HA-21D under the BRA. • The evaluation of HA-112 (MRS-15 SEA 01) included a literature search, a review of the information gathered during the munitions response at the MRA, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the MRA, and no further action related to MC was recommended under the BRA. • The assessment of HA-22D (Range 22) included site reconnaissance and site investigation soil sampling for MC. Site reconnaissance identified targets and areas with concentrations of spent SAA. Soil sample results indicated that lead concentrations were below the Fort Ord maximum background concentration and copper concentrations were below screening levels and under the U.S. EPA residential preliminary remediation goal (PRG). No further action related to MC was recommended for HA-22D under the BRA. • The assessment of HA-23D (Range 23) included site reconnaissance and site investigation soil sampling for MC. Site reconnaissance identified some areas with concentrations of spent SAA. Soil sample results indicated that the lead concentrations were below screening levels under the U.S. EPA Region IX PRG in four of five samples collected. No further action related to MC was recommended for HA-23D under the BRA.
MRS-SEA 2 (Parcel E34)	<ul style="list-style-type: none"> • Remediation at IRP Site 39 Range 19 (HA-19D) was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 1,400 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-19D under the BRA. • The evaluation of HA-113 (MRS-15 SEA 02) included a literature search, review of the information gathered during the munitions response at the MRA, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the MRA, and no further action related to MC is recommended under the BRA. • The assessment of HA-20D (Range 20) included site reconnaissance and site investigation soil sampling for MC. Soil sample results indicated that metals concentrations were below the Fort Ord maximum background concentrations and no further action related to MC was recommended for HA-20D under the BRA. • The evaluation of HA-59D (Range M1) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed, and no further action related to MC was recommended for HA-59D under the BRA.
MRS-SEA 3 (Parcel E23.1)	<ul style="list-style-type: none"> • Remediation at IRP Site 39, Range 18 (HA-18D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 24,900 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-18D under the BRA. • The evaluation of HA-114 (MRS-15 SEA 03) included a literature search and review of

Section 4 – Seaside MRA Conceptual Site Model

Table 4.3-6
Seaside MRA – HTW History and Conditions

Location	Summary
	<p>the information gathered during the munitions response at the site. Based on the limited number of items identified during the munitions response, no further action related to MC was recommended for HA-114 under the BRA.</p>
<p>MRS-SEA 4 (Parcel E23.2)</p>	<ul style="list-style-type: none"> • Remediation at IRP Site 39, Ranges 18 and 46 (HA-18D and HA-46D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action at Range 18 included the removal of approximately 24,900 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-18D under the BRA. • The remedial action at Range 46 included the removal of approximately 3,900 cubic yards of affected soil. The average lead concentration of soil remaining in place following remedial activities at Range 46 was 26 mg/kg. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-46D under the BRA. • The assessment of HA-48D (Range 48) included site reconnaissance and site investigation soil sampling for MC. Soil sample results indicated that metals concentrations exceeded the Fort Ord maximum background concentrations, but were below cleanup levels. Because sample results were below cleanup levels, no further action related to MC was recommended for HA-48D under the BRA. • The evaluation of HA-115 (MRS-15 SEA 04) included a literature search, review of the information gathered during the munitions response at the site, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the site, and no further action related to MC is recommended under the BRA. • The evaluation of HA-50D (Booby Trap Range) included a literature search and reconnaissance of the site. Blank casings, 50-caliber links, and concrete debris were found. No targets, fighting positions, or other MEC-related items were observed, and no further action related to MC was recommended for HA-50D under the BRA.

Reference: Army 2007

Table 4.4-1
Seaside MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreeage
E24	MRS-15 SEA 1	Development	Residential - Single Family	108
E24	MRS-15 SEA 1	Development	Road and Inland Range Buffer	74
E24	MRS-15 SEA 1	Development	Residential - Single Family	16
E34	MRS-15 SEA 2	Development	Residential - Single Family	48
E34	MRS-15 SEA 2	Development	Road and Inland Range Buffer	40
E34	MRS-15 SEA 2	Development	Residential - Single Family	9
E23.1	MRS-15 SEA 3	Development	Residential - Single Family	42
E23.1	MRS-15 SEA 3	Development	Road and Inland Range Buffer	6
E23.2	MRS-15 SEA 4	Development	Residential - Single Family	65
E23.2	MRS-15 SEA 4	Development	Inland Range Buffer	11
MRA TOTAL				419

Table 4.5-1
Seaside MRA – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • Dominant vegetation in the area is central maritime chaparral with patches of non-native grassland. Central maritime chaparral consists of variable sclerophyllous (hard-leaved) shrub communities within a scrub-live oak forest region that is best developed on sandy soils within the summer fog zone. This type of chaparral is considered rare by the CDFG and is declining statewide. Development has now limited the majority of this community type in the Monterey Bay Area to undeveloped portions of Fort Ord. As identified in the HMP, a number of species could be found on the Seaside MRA.
Habitat Management Plan/ Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development and habitat reserve with borderland development areas along an NRMA interface (Figure 4.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and minimize impacts to listed species. • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the U. S. FWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP. For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA. • Since April 1997, a number of BOs have been issued that are relevant to MEC remediation activities (USFWS 1999, 2002, 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Table 4.5-1
Seaside MRA – Ecological Information

Type	Summary
Threatened and Endangered Species	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Plant species identified at the former Fort Ord that are either threatened or endangered include Contra Costa goldfields (endangered), sand gilia (endangered), and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 4.5-2, it is possible the CTS may be found in the MRS-15 SEA 1 and MRS-15 SEA 2 as they lie within 2 km of an aquatic feature that is likely to have a presence of CTS. • Seaside MRA is identified within the HMP to require special management for the boundaries between developed areas and the NRMA. The requirements have both interim and long-term maintenance implications. As presented in the HMP, with the exception of boundary management requirements, the Seaside MRA is available for development without restrictions although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.

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Table 4.5-2
Seaside MRA - HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E24	Development (includes residential and a borderland buffer along the NRMA Interface)	sand gilia; Monterey spineflower; Seaside Bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, coast wallflower; California black legless lizard; California tiger salamander
E34	Development (includes residential and a borderland buffer along the NRMA Interface)	sand gilia; Monterey spineflower; sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, California black legless lizard; California tiger salamander
E23.1	Development (includes residential and a borderland buffer along the NRMA Interface)	sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, California black legless lizard
E23.2	Development (includes residential and a borderland buffer along the NRMA Interface)	Monterey spineflower; sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, California black legless lizard

Reference: USACE 1997b

Table 4.6-1
Seaside MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓

5.0 PARKER FLATS MRA CONCEPTUAL SITE MODEL

The Parker Flats MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Parker Flats MRA are located at the end of Section 5.0.

The Army completed a Track 2 Munitions Response RI/FS (“Track 2 RI/FS”) for a portion of the Parker Flats MRA (MACTEC 2006). For the purpose of this CSM, the Parker Flats MRA is divided into two parts: Parker Flats MRA Phase I and Parker Flats MRA Phase II (Figure 5.1-1). The area included in the Track 2 RI/FS is referred to in this document as the Parker Flats MRA Phase I, which has a Proposed Plan and a pending ROD. The proposed remedy for the Parker Flats MRA Phase I is land use controls (LUCs). Five-year reviews would also be required for this area. The Parker Flats MRA Phase II portion is addressed in this CSM.

5.1 Parker Flats MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

5.1.1 Boundaries and Access

The Parker Flats MRA is located in the central portion of the former Fort Ord, bordered by the CSUMB MRA and the Development North MRA to the north, the Interim Action MRA to the south, CSUMB campus property to the west, and additional former Fort Ord property to the east and southeast (Figure 5.1-1). The Parker Flats MRA is contained within the jurisdictional boundaries of the City of Seaside and the County of Monterey.

The Parker Flats MRA (Phase I and Phase II areas) encompasses approximately 1,180 acres and fully contains USACE property transfer parcels E18.1.1, E18.1.2, E18.1.3, E18.4, E19a.1, E19a.2, E19a.5, E20c.2, E21b.3, L20.18, L23.2, and L32.1, and portions of USACE property transfer parcels E19a.3 and E19a.4 (Table 5.1-1 and Figure 5.1-1). The remaining portions of USACE property transfer parcels E19a.3 and E19a.4 are contained in the Development North MRA (Section 7.1.1). The area completed under the Phase I activities was approximately 698 acres; the remaining approximately 482 acres were included under the Phase II activities (Table 5.1-1).

Gigling Road is located along a portion of the northern boundary of the MRA. The western portion of Gigling Road is an active roadway with vehicle traffic on a daily basis and is a major roadway of the FORA transportation network. Eucalyptus Road crosses the southern portion of the MRA and is restricted by road barriers marked with “road closed” signs located at the intersection of General Jim Moore Boulevard and Eucalyptus Road to the west and at the intersection of Parker Flats Road and Eucalyptus Road to the east. Watkins Gate Road also borders a portion of the eastern boundary of the MRA. Parker Flats Road crosses through

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the central portion of the MRA. A number of unpaved roadways and dirt trails are located throughout the MRA (Figure 5.1-1).

The Parker Flats MRA is primarily open land; there are no fences and only limited gates and barricades that restrict access to the property, except for the four-strand barbed-wire fencing reinforced with concertina wire and locked chain-link gates along the southern side of Eucalyptus Road, restricting access to a small portion of the MRA and the former impact area to the south (Figure 5.1-1). “U.S. Government Property-No Trespassing” and “Danger-Explosives Area” warning signs are posted along the fence line and locked gates. Detailed information on roadways and access is provided in Table 5.1-2.

5.1.2 Structure and Utilities

The Parker Flats MRA contains several existing structures and buildings associated with the previous use of the area (Figure 5.1-1; Army 2007). Detailed information concerning location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 5.1-3.

Several utilities extend onto or cross the Parker Flats MRA. Telephone, electrical, and water lines cross the southwestern portion of the MRA along or near Eucalyptus Road. A high-powered transmission line crosses the entire MRA in a northeast to southwest direction. Several utilities (water, storm drain, natural gas, telephone, sewer, and electrical) also extend into the MRA in the northwestern portion of the MRA along the boundary with CSUMB (Figure 5.1-1). More detailed information on utilities within the MRA is provided in Table 5.1-2.

5.1.3 Historical Military Use

Initial use of the Parker Flats MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II-era military munitions have been removed during previous Army response actions within the Parker Flats MRA. Because the northern portion of the Parker Flats MRA (north of Gigling Road) prior to 1940 was privately owned agricultural land, it is unlikely that this area was used for military training until after this time.

Figure 5.1-2 shows the locations of known firing ranges and training sites within the MRA. Table 5.1-4 summarizes the historical military uses of these areas within the Parker Flats MRA. To facilitate previous MEC investigations and removal activities, the historical use areas were divided into MRSs.

The MRSs within the Parker Flats MRA Phase I included MRS-3, MRS-4B, MRS-13B, MRS-27A (portion), MRS-27B (portion), MRS-27G (portion), MRS-37, MRS-40, MRS-50, MRS-50EXP, MRS-52, MRS-53, MRS-53EXP, MRS-54EDC, and MRS-55 (Table 5.1-1 and Figure 5.1-3). The northern portion of the Parker Flats MRA Phase I is comprised entirely of MRS-13B (Practice Mortar Range), and is separated from the southern portion of the Parker

Flats MRA Phase I by an area that has not been fully investigated for the presence of MEC (Figure 5.1-3).

The MRSs within the Parker Flats MRA Phase II include MRS-4A, MRS-27A (portion), MRS-27B (portion), MRS-27C, MRS-44EDC/PBC, and MRS-15MOCO.2 (Table 5.1-1 and Figure 5.1-3). The historical use of the Parker Flats MRA Phase II areas was for troop training and maneuvers.

Historical uses for specific MRSs in the Parker Flats MRA Phase II include:

- MRS-4A - former Chemical, Biological, and Radiological (CBR) Training Area
- MRS-27A (Training Site 1), MRS-27B (Training Site 2), and MRS-27C (Training Site 3) - overnight bivouac areas
- MRS-15MOCO.2 - Firing lines for Ranges 44 and 45 (antitank weapons and 40mm grenade ranges, respectively)
- MRS-44EDC and MRS-44PBC - Actual historical use is unknown; evidence of military weapons and troop training.

Table 5.1-4 identifies the historical military uses of the MRSs within the Parker Flats MRA.

5.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Parker Flats MRA, including land use covenants, city and county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 5.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

5.2 Parker Flats MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

5.2.1 Topography and Geology

The terrain of the Parker Flats MRA is primarily rolling hills with moderate to steep slopes. The elevation ranges from approximately 280 to approximately 490 feet msl with 2 to 15 percent slopes (Figure 5.2-1). The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. The primary soil type present in the Parker Flats MRA is Oceano Loamy Sand with smaller areas of Arnold-Santa Ynez complex and Baywood Sand (Figure

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5.2-1). Soil conditions at the MRA consist predominantly of weathered dune sand, which provides a relatively good environment for conducting geophysical surveys including electromagnetic and magnetic surveys. Table 5.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the MRA.

5.2.2 Vegetation

Vegetation in the Parker Flats MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub (Table 5.2-2 and Figure 5.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area. As part of the Army's removal actions for MEC, vegetation was cut to make the surface safe and accessible for MEC removal crews. In 2005, FORA, under the supervision of the Army, performed a prescribed burn on 147 acres of the Parker Flats MRA.

5.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the Parker Flats MRA. The Seaside and Salinas Groundwater Basins are the main hydrogeologic units that underlie the MRA. The depth to groundwater is estimated to be greater than 100 feet bgs. One known groundwater monitoring well is located in the northwestern portion of the MRA in the Phase I area, and two groundwater monitoring wells are located northwest of the MRA (Figure 5.2-1). The occurrence of groundwater beneath the MRA is not expected to influence geophysical surveys conducted for MEC remediation activities.

There are no aquatic features (i.e., vernal pools, ponds) or delineated wetlands reported to be present on the Parker Flats MRA; however, several aquatic feature are present to the east and southeast of the MRA (Figure 5.2-2).

5.3 Parker Flats MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

5.3.1 Investigation and Removal History

Previous work in the Parker Flats MRA includes site investigations, sampling investigations, and removal actions. Details of information on the investigations within the Parker Flats MRA Phase I were documented in the Parker Flats RI/FS (MACTEC 2006). The evaluation of the Parker Flats MRA Phase I area is complete. A ROD is pending for the Phase I area. Figures 5.3-1 through 5.3-3 show the results of investigations and removal actions by identifying the location of MEC and MD previously removed from the Parker Flats MRA.

Following is a summary of previous site investigations and removal actions conducted by the Army within the Parker Flats MRA Phase II:

MRS-4A

- Sampling investigation of six grids from 1993 to 1994 (HFA 1994)
- Site Stats/Grid Stats (SS/GS) sampling and removal at six 100-foot by 200-foot grids in November 1997 (USA 2000b)
- 100 percent 4-foot ordnance and explosives (OE) removal at 38 100-foot by 100-foot grids in February 1998 (USA 2000b)

MRS-27A, MRS-27B, and MRS-27C

- Preliminary Assessment/Site Inspection (PA/SI) in 1996 (USACE 1997a)
- 4-foot OE removal performed between September 1998 and December 2000 on 5 acres of 27A overlapping with the site OE-53 expansion area (USA 2001i)
- 4-foot OE removal performed between March and October 1999 on 4 acres of 27A and 3.5 acres of 27B overlapping with the site OE-55 expansion area (USA 2001n)
- Visual surface removal in accessible areas from 2001 to 2002 (Parsons 2002a and 2002c)

MRS-44 EDC and MRS-44PBC

- SS/GS sampling at 12 100-foot by 200-foot grids from May 26 to July 13, 1998 (USA 2001o)
- 100 percent grid sampling at 22 100-foot by 100-foot grids in the EDC in 1999 (USA 2001o)
- 100 percent grid sampling at 13 100-foot by 100-foot grids in the Public Benefit Conveyance (PBC) in 1999 (USA 2001o)
- 100 percent 4-foot removal action at 83 complete and partial grids in MRS-44 PBC only from September to December 2000 (USA 2001o)
- Visual surface removal in accessible areas of the northern portion of MRS-44EDC from 2001 to 2002 (Parsons 2002a and 2002c)

MRS-15MOCO.2

- 100 percent grid sampling at 20 100-foot by 100-foot grids from March to August 1999 (USA 2001m)
- Fuel break maintenance at 35 15-foot by 100-foot grids in 2001 (USA 2001p)
- Surface TCRA at Ranges 43-48 from August to December 2001 (Parsons 2002b)
- Prescribed burn preparatory action at Ranges 43-48 from August to October 2002 (Parsons 2004a)

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- NTCRA Phase I from July to November 2003, which included an analog removal to depth at 98 100-foot by 100-foot complete grids and 97 partial grids and digital geophysical surveys in accessible portions of Notice of Intent (NOI) areas and identified SCA (Parsons 2004b)
- MRS Ranges 43-48 and MRS-MOCO.2 – Removal of selected range-related debris (RRD) between October and December 2004 to facilitate ongoing or future munitions responses on portions of the site made inaccessible by RRD. No MEC were found in MRS-MOCO.2 (Parsons 2005)
- NTCRA Phase II, which included analog removal, digital geophysical mapping, and MEC removal to depth from January to December 2005 (Parsons 2006d)

In addition, a visual surface removal was conducted in accessible areas that covered the majority of the Parker Flats MRA Phase II. Several sampling grids shown on Figure 5.3-1 have also been investigated in the Phase II area (Parsons 2002a and 2002c).

These investigations and removal actions are summarized in Tables 5.3-1 and 5.3-2. Table 5.3-3 includes a list of MEC found within the individual MRS that are within Parker Flats MRA Phase I and Phase II, and MEC and MD are shown on Figures 5.3-1, 5.3-2, and 5.3-3.

5.3.2 Types of MEC Recovered and Hazard Classification

Table 5.3-3 includes a summary of MEC recovered from the Parker Flats MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Parker Flats MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

5.3.3 Location of MEC and MD

Figures 5.3-1, 5.3-2, and 5.3-3 show the distribution of MEC and MD within the Parker Flats MRA (Phase I and Phase II). A summary of the MEC and MD encountered during previous investigations and removal actions in the Parker Flats MRA Phase II only is provided in Table 5.3-4 and included:

- 365 UXO items
- 569 DMM items
- 1 Insufficient Data (ISD) item (potential MEC that could not be classified as either UXO or DMM)
- 11,734 pounds MD (includes MD-E and MD-F items if weights were documented)

Figures 5.3-2 and 5.3-3 show the patterns and concentrations of recovered MEC and MD in the Parker Flats MRA. Significant amounts of MEC and MD were encountered during previous investigations throughout the Parker Flats MRA Phase I. The largest concentrations of MEC were located in the central and southern portions of the Phase I area and in MRS-15MOCO.2. A significant amount of MEC was also recovered from the north central portion of MRS-13B.

Recovered MD (total pounds per grid) in the Parker Flats MRA is shown on Figure 5.3-3. The majority of the grids along the boundaries of previous investigations and removal actions contained less than 10 pounds of MD per grid. Many of those boundary grids contained no MD. A portion of the MD identified on Figures 5.3-1 and 5.3-3 includes SAS but not SAA.

The MMRP database indicates that the majority of the MEC items recovered from the Parker Flats MRA were located between 0 and 24 inches bgs, or in the many burial pits found in the Phase I area. Figure 5.3-4 shows the distribution of MEC recovered at specified depth intervals.

5.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 5.3-5 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the FOSET, all identified HTW issues have been addressed and no further action was recommended (Army 2007).

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5.3.5 Regulatory Status

Work completed to date has been documented in after action reports (Section 5.3.1), which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issues:

- The CERCLA process must be completed for the Parker Flats MRA Phase II, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD.
- Additional quality assurance and MEC removal, if necessary, must be completed in areas proposed for residential development within the MRA.

5.4 Parker Flats MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

5.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Parker Flats MRA is located in the central portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the CSUMB MRA will be in compliance with the Programmatic Agreement among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

5.4.2 Current Land Use

The current uses for the MRA include open land. There are residual structures that were in support of the training at the MRA, but these have been abandoned. Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers. There is also evidence of trespasser activity and illegal dumping.

5.4.3 Reasonably Foreseeable Future Land Use

Table 5.4-1 and Figure 5.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is planned for residential, development with borderland interface, and habitat reserve. It is important to note that general development land use category encompasses infrastructure activities, such as roadway and utility construction as

well as commercial/retail, parks, borderland activities, a horse park, and the State Central Coast Veterans Cemetery.

5.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons conducting surface and subsurface activities) – future
- Recreational Users (persons biking and on foot) – future

5.5 Parker Flats MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 5.5-1.

As discussed in Section 5.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the Parker Flats MRA as development (including residential) and habitat reserve with borderland development areas along an NRMA interface (Figure 5.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For

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borderland areas, FORA will follow best management practices while conducting MEC activities to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

5.5.1 Major Plant Communities and Ecological Habitats

Vegetation in the Parker Flats MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub (Table 5.2-2 and Figure 5.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area.

5.5.2 Threatened and Endangered Species

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BOs and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Threatened or endangered plant species identified as having possible occurrence in the Parker Flats MRA include sand gilia (endangered) and Monterey spineflower (threatened).

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 5.5-1, it is possible the CTS may be found in the Parker Flats MRA as the majority of the MRA is within 2 km of aquatic features that may provide breeding habitat for the CTS.

5.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the Parker Flats MRA, which have been identified in Table 5.5-2 by parcel. The vegetation on the MRA consists primarily of native oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub. The following species are identified in the HMP as having possible occurrence in the Parker Flats MRA: toro manzanita, sandmat manzanita, Hooker's manzanita, seaside bird's beak, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, and Monterey ornate shrew.

5.6 Parker Flats MRA Pathway Analysis

As discussed in Sections 5.3.4 and 5.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

5.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Parker Flats MRA using the information gathered in the CSM profiles. The likelihood of exposure, however, has been significantly reduced as a result of the Army's previous surface and subsurface removal actions. Exposure pathways for the Parker Flats MRA are presented on Figure 5.6-1 and discussed below.

Source

Source areas within the Parker Flats MRA were addressed during the Army's previous removal actions. The historical source areas within the Parker Flats MRA are shown on Figure 5.1-3, and recovered MEC and MD from the MRA are shown on Figures 5.3-1, 5.3-2, and 5.3-3. The source areas include troop training and maneuver areas. It is anticipated that the areas showing no MEC or MD data, having undergone surface removal, would contain similar types of MEC in the subsurface as found in adjacent areas. Areas where subsurface investigations are not complete are considered data gaps.

Figure 5.6-2 illustrates the most likely release mechanisms for MEC being found in the Parker Flats MRA, which included:

- Firing, Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access is mostly unrestricted to the Parker Flats MRA Phase II with the exception of MRS-15MOCO.2, which is restricted by the fence around the impact area.

Receptor / Activity

Table 5.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade. The activities of the five current and six future surface receptors would result in potential exposure on the ground surface. The activities of three current receptors and four future receptors would result in a potential subsurface exposure in the Parker Flats

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MRA Phase II areas where subsurface activities would be expected and subsurface removal actions have not occurred.

5.6.2 Exposure Pathway Analysis

As discussed above, Figure 5.6-1 graphically presents the exposure pathways analysis for the Parker Flats MRA.

There remains a risk of MEC exposure to current and future receptors during surface and intrusive activities. The risk of surface exposure was greatly reduced as a result of surface removal actions. Those surface removal actions focused on accessible areas; therefore, MEC may be present on the surface.

All current and future receptors anticipated to conduct subsurface activities would be at risk of exposure in areas having no history of subsurface MEC removal actions.

5.7 Parker Flats MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the Parker Flats MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The evaluation of the Parker Flats MRA Phase I area is complete. A ROD is pending for the Phase I area. Remedial action will be implemented after the ROD is issued.

The MEC encountered within the Parker Flats MRA are consistent with the historical use as a troop training area. However, data gaps, uncertainties, and/or open regulatory issues have been identified and must be addressed prior to receiving regulatory closure and implementing the planned reuse of the MRA. Therefore, the Parker Flats MRA falls into one of the categories, which is additional data are required to fill data gaps. Based on the information as presented in the CSM for the Parker Flats MRA, the recommendations are:

- Collection of additional data to fill data gaps:
 - Collect data sufficient to support the MEC remedial investigation in all areas where limited data are available. It is not anticipated that collection of additional data is required in MRS-15MOCO.2, MRS-44PBC, and MRS-4A.
 - Conduct an RQA Pilot Study to assess the potential for risk from undetected MEC in future residential areas after MEC investigation is completed in those areas.
- Proceed with Documentation – Prepare RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

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Table 5.1-1
 Parker Flats MRA – Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)			MRS Identifier
	Phase I	Phase II	Total	
E18.1.1	63	37*	100	MRS-44 EDC, MRS-50
E18.1.2	65*	13*	78	MRS-40, MRS-44 EDC, MRS-50
E18.1.3	0	40*	40	MRS-4A
E18.4	1	1*	2	MRS-4A
E19a.1	6	66*	72	MRS-4A, MRS-50, MRS-53
E19a.2	1	72*	73	MRS-27A, MRS-27B
E19a.3	188	75*	263	MRS-13B, MRS-27A, MRS-4B, MRS-53, MRS-55
E19a.4	144	94*	238	MRS-27B, MRS-27C, MRS-3, MRS-37, MRS-52, MRS-53, MRS-54, MRS-55
E19a.5	227	0	227	MRS-50, MRS-53, MRS-27G
E20c.2	0	34	34	MRS-44 EDC
E21b.3	0	32	32	MRS-15MOCO.2
L20.18	0	7*	7	MRS-44
L23.2	0	11	11	MRS-44 PBC
L32.1	3		3	MRS-13B
MRA TOTAL	698	482	1,180	

Note: * Indicates that a portion of the acreage is not designated as an MRS.

Table 5.1-2
Parker Flats MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> • Gigling Road is located along a portion of the northern boundary of the MRA, and only the western portion is an active roadway with vehicle traffic on a daily basis and is a major roadway of the FORA transportation network. • Eucalyptus Road crosses the southern portion of the MRA • Watkins Gate Road also borders a portion of the eastern boundary of the MRA. • Parker Flats Road crosses through the central portion of the MRA. • A number of unpaved roadways and dirt trails are located throughout the MRA.
Structures and Utilities	<ul style="list-style-type: none"> • The MRA includes a rappelling tower, a CBR training facility, several latrines, two support buildings, air transportation mock-ups, enlisted barracks, a gas chamber, and an observation tower. • Telephone, electrical, and water lines cross the southwestern portion of the MRA along or near Eucalyptus Road. • A high-powered transmission line crosses the entire MRA in a northeast to southwest direction. • Several utilities (water, storm drain, natural gas, telephone, sewer, and electrical) also extend into the MRA in the northwestern portion of the MRA along the boundary with CSUMB.
Fencing and Access	<ul style="list-style-type: none"> • The MRA is primarily open land, and there are no fences, gates, or barricades that restrict access to the property except for the four-strand barbed-wire fencing reinforced with concertina wire and locked chain-link gates along the southern side of Eucalyptus Road, restricting access to a small portion of the MRA and the former impact area to the south. • “U.S. Government Property-No Trespassing” and “Danger-Explosives Area” warning signs are posted along the fence line and locked gates. • Eucalyptus Road is restricted by road barriers marked with “road closed” signs located at the intersection of General Jim Moore Boulevard and Eucalyptus Road to the west and at the intersection of Parker Flats Road and Eucalyptus Road to the east.

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Table 5.1-3
Parker Flats MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
Phase I Area						
E18.1.1	4B52	81	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.3	4A52	207	Field Range Latrines	Not Surveyed	Unknown	Unknown
E19a.3	4B74	96	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	3984	1,364	Gas Chamber	No ACM	No	1984
E19a.4	4A44	174	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	4A22	179	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.5	4A29	179	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	4A30	295	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	4A35	404	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.5	4B50	180	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.5	4A64	101	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	3949	21,372	Air Trans Mock-Up	No ACM	Yes	1976
E19a.5	3949A	2,921	Air Trans Mock-Up	No ACM	Unknown	Unknown
E19a.5	3949B	958	Air Trans Mock-Up	No ACM	Unknown	Unknown
E19a.5	3953B	42	Observation Tower	No ACM	Yes	1951
L32.1	H441	185	Fence Wall	Not Surveyed	Unknown	Unknown
Phase II Area						
E18.1.3	4386	7,332	Enlisted Barracks	Rated 6 to 13	Yes	1974
E18.1.3	4387	7,233	Enlisted Barracks	Rated 6 to 13	Yes	1974
E18.1.3	4476	74,167	Softball Field	Not Surveyed	No	1978
E18.4	4475	0	Water Tower	No ACM	Yes	1964
E19a.2	4B57	165	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.2	4B58	165	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.2	4B60	165	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	2028A	0	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.3	4A34	176	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	4B56	174	Field Range Latrines	Not Surveyed	Unknown	Unknown
E19a.3	4B77	147	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	3950	305	Rappelling Tower	Not Surveyed	No	1981
E19a.4	4A26	165	Field Range Latrines	No ACM	Unknown	Unknown
E19a.4	4A27	165	Field Range Latrines	No ACM	Unknown	Unknown

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Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E19a.4	4A60	380	Field Range Latrines	No ACM	Unknown	Unknown
E19a.4	R391	96	Re-Locatable Building	Not Surveyed	Unknown	Unknown
E19a.4	R392	467	Re-Locatable Building	Not Surveyed	Unknown	Unknown
E19a.4	R393	300	Re-Locatable Building	Not Surveyed	Unknown	Unknown
E21b.3	3991	243	Covered Training Area	Unknown	Unknown	Unknown
E21b.3	R9441	161	Field Range Latrines	No ACM	No	1984

Section 5 – Parker Flats MRA Conceptual Site Model

Table 5.1-4
 Parker Flats MRA Phase II – Historical Military Use

Location	Description
General Vicinity	<ul style="list-style-type: none"> • The historical use of the Parker Flats MRA Phase II areas was for troop training and maneuvers. • 1940s training areas include portions of training areas G-1, G-2, H-1, and P. • 1950s training areas are assigned to 1st Brigade, 2nd Infantry, 3rd Brigade, 10th Infantry, 11th Infantry, and “RFP.” • 1950s and 1960s maps indicate “1000’ MTR RNG,” “PTA,” “Map Reading,” and “MTR SQ.” • “MTR SQ” appears in several locations of the northern portions of Parker Flats MRA Phase II. • “Sinkhole Practice Mortar Range” appears in the southern portion of MRS-13B.
MRS-4A	<ul style="list-style-type: none"> • A portion of MRS-4A was a former CBR Training Area. • This training area appears on historical maps (Fort Ord Training Areas & Facilities) July 15, 1957 and January 10, 1958.
MRS-27A (TS-1), MRS-27B (TS-2), MRS-27C (TS-3)	<ul style="list-style-type: none"> • Areas were part of a group of 25 training sites designated as Site OE-27 in the Revised Archive Search Report (USACE 1997a). • Training areas that were used as overnight bivouac areas. • These areas were labeled on a historical training area map called the Beardsley Map, date unknown.
MRS-44EDC/PBC	<ul style="list-style-type: none"> • Located in the area to the north of the former impact area. • The boundaries of these areas were identified when an ordnance safety specialist discovered 37mm HE fragmentation and a 37mm rotating band during a site visit for an adjacent site.
MRS-15MOCO.2	<ul style="list-style-type: none"> • Located within the boundary of the former impact area and contains the firing lines for Ranges 44 and 45. • Range 44 was used for firing of antitank weapons. • Range 45 was a 40mm grenade range.

Table 5.1-5
Parker Flats MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. Due to Fort Ord’s former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007). The CRUPs are defined in the “Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California.” These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> City of Seaside Ordinance No. 259 amending the municipal code referred to as Chapter 15.34 and Monterey County Ordinance 16.10. These ordinances prohibit excavation, digging, development or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. MOA establishes FORA’s ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	<ul style="list-style-type: none"> Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. Future MEC work is required to be consistent with the applicable conservation measures.

Section 5 – Parker Flats MRA Conceptual Site Model

Table 5.2-1
Parker Flats MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	<ul style="list-style-type: none"> • Terrain consists of rolling hills with moderate to steep slopes. • Elevation ranges from approximately 280 to 490 feet msl with 2 to 15 percent slopes. • The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. • The primary soil type present in the MRA is Oceano Loamy Sand with 2 to 15 percent slopes with smaller areas of Arnold-Santa Ynez Complex and Baywood Sand.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 5.2-2
Parker Flats MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
E18.1.1	MRS-44 EDC, MRS-50	Coastal coast live oak woodland, coastal scrub, and maritime chaparral
E18.1.2	MRS-40, MRS-44 EDC, MRS-50	Coastal coast live oak woodland and maritime chaparral
E18.1.3	MRS-4A	Coastal coast live oak woodland and coastal scrub
E18.4	MRS-4A	Coastal coast live oak woodland and coastal scrub
E19a.1	MRS-4A, MRS-50, MRS-53	Coastal coast live oak woodland, coastal scrub, and maritime chaparral
E19a.2	MRS-27A, MRS-27B	Coastal coast live oak woodland
E19a.3	MRS-13B, MRS-27A, MRS-4B, MRS-53, MRS-55	Coastal coast live oak woodland, maritime chaparral, and grassland
E19a.4	MRS-27B, MRS-27C, MRS-3, MRS-37, MRS-52, MRS-53, MRS-54, MRS-55	Coastal coast live oak woodland and maritime chaparral
E19a.5	MRS-50, MRS-53, MRS-27G	Coastal coast live oak woodland, maritime chaparral, and grassland
E20c.2	MRS-44 EDC	Maritime chaparral
E21b.3	MRS-15MOCO.2	Maritime chaparral
L20.18	MRS-44	Maritime chaparral
L23.2	MRS-44 PBC	Maritime chaparral
L32.1	MRS-13B	Coastal coast live oak woodland

Reference: USACE/Jones & Stokes 1992

Please note: As part of the Army's removal actions for MEC on the Parker Flats MRA, vegetation was cut to make the surface safe and accessible for MEC removal crews. In 2005, FORA, under the supervision of the Army, performed a prescribed burn on 147 acres of the Parker Flats MRA.

Section 5 – Parker Flats MRA Conceptual Site Model

Table 5.3-1
 Parker Flats MRA Phase II – Investigation and Sampling Activities

Activity	Summary
MRS-4A	<ul style="list-style-type: none"> • Sampling Investigation - Between 1993 and 1994, six grids were sampled in the vicinity of MRS-4A and no MEC were found (HFA 1994). • SS/GS Sampling and Removal - In November 1997, SS/GS sampling was used to investigate six 100-foot by 200-foot grids (USA 2000b).
MRS-27A, B, C	<ul style="list-style-type: none"> • PA/SI - In 1996, a USACE UXO Safety Specialist conducted a munitions response (site walk) that included MRS-27A, B, and C as part of a PA/SI (USACE 1997a).
MRS-44EDC	<ul style="list-style-type: none"> • SS/GS Sampling - Between May and July 1998, SS/GS sampling was performed on 12 100-foot by 200-foot grids in the EDC parcel (USA 2001o).
MRS-44EDC/44PBC	<ul style="list-style-type: none"> • 100 Percent Grid Sampling - In 1999, 100 percent grid sampling was conducted in the EDC and PBC parcels. Thirteen 100-foot by 100-foot sampling grids were placed throughout the PBC parcel. In the EDC parcel, 22 100-foot by 100-foot sampling grids were placed to the west of the PBC boundary (USA 2001o).
MRS-15MOCO.2	<ul style="list-style-type: none"> • 100 Percent Grid Sampling - In 1999, 20 100-foot by 100-foot sample grids were investigated in MRS-15MOCO.2 to determine the need and scope of future removal actions. The sample grids were located along the perimeter of the former impact area in areas behind firing ranges or between range fans (USA 2001m).

Table 5.3-2
Parker Flats MRA Phase II – Removal Activities

Activity	Summary
MRS-4A and Expansion Grids	<ul style="list-style-type: none"> • 100 Percent 4-foot MEC Removal Action - In February 1998, a 100 percent removal action was conducted to a depth of 4 feet in 38 100-foot by 100-foot grids and partial grids. A few of the grids contained several rat's nests. Trash pits were excavated using a backhoe (USA 2000b). • 100 Percent 4-foot MEC Removal Action - In August 2000, a 100 percent removal action was conducted to a depth of 4 feet in several 100-foot by 100-foot expansion grids and partial expansion grids. MEC were encountered in some of these expansion grids and consisted primarily of hand grenades, rifle grenades, and grenade fuzes (Fort Ord MMRP Database).
MRS-44PBC	<ul style="list-style-type: none"> • 100 Percent 4-foot MEC Removal Action - Between September 1998 and December 2000, a 4-foot MEC removal action was conducted in 83 complete and partial grids (USA 2001o).
MRS-15MOCO.2	<ul style="list-style-type: none"> • Fuel Break Maintenance - In 2001, the fuel breaks system in the former impact area was reestablished as part of the fire safety and control program in the area. Vegetation and surface removal work was performed on 150 contiguous 15-foot by 100-foot grids along the southern side of Eucalyptus Road. Thirty-five of the grids were in MRS-15MOCO.2. No MEC items were found during the fuel break work (USA 2001p). • Ranges 43-48 Surface TCRA - Between August and December 2001, a surface TCRA was performed over the former Ranges 43-48 area (which included a portion of MRS-MOCO.2) to remove MEC, MD, and RRD from the surface of the site's open and accessible areas (Parsons 2002b). • Ranges 43-48 Prescribed Burn Preparatory Action - Between August and October 2002, fire prevention and control work were accomplished in preparation for the Ranges 43-48 prescribed burn. This preparatory action entailed moving tires; cutting vegetation around structures, removing utility poles; clearing brush; removing/pruning trees and performing fire prevention work. During the preparatory work, no MEC were encountered (Parsons 2004a). • NTCRA (Phases I) - Between July and November 2003, an NTCRA was conducted in MRS-15MOCO.2. Ninety-eight 100-foot by 100-foot grids and 97 partial grids were selected for analog removal to depth. The majority of the MEC found were hand grenade fuzes recovered from burial pits discovered 30 and 60 inches bgs. Digital geophysical surveys were conducted over all accessible portions of the MRS-MOCO.2 NOI removal areas to map and document the post-analog removal site conditions and accurately locate and identify any geophysical anomalies potentially representing MEC in the subsurface. This operation identified areas of obstructions/interferences such as asphalt, and material from the Range 45 pad, or telephone poles as SCA (Parsons 2004b). • MRS Ranges 43-48 and MRS-MOCO.2 – Removal of selected RRD between October and December 2004 to facilitate ongoing or future munitions responses on portions of the site made inaccessible by RRD. No MEC were found in MRS-MOCO.2 (Parsons 2005). • NTCRA (Phase II) - Between January and December 2005, a Phase II removal action was conducted in SCAs identified during the Phase I Removal Action. The SCAs were the focus of Phase II activities for those portions of the site that compromised instrument performance or technician safety during the Phase I field activities. Phase II activities included analog removal, digital geophysical mapping, and MEC removal to depth (Parsons 2006d).

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Table 5.3-2
 Parker Flats MRA Phase II – Removal Activities

Activity	Summary
<p>Northern Portions of MRS-27A, B, and C, and 'No Data' Areas</p>	<ul style="list-style-type: none"> Between December 2001 and February 2002, a TCRA was conducted in accessible areas of the Parker Flats MRA Phase II including MRS-27A, B, C, and MRS-4A. Also included were the "No Data" areas north of MRS-44EDC and the large "No Data" area north of the largest Parker Flats MRA Phase I area (Figure 5.3-1). The areas having undergone previous removal actions were not included in this removal action. Field crews walked open areas and trails, visually searching for MEC and MD. MEC and MD encountered were removed or destroyed (Parsons 2002a).

Table 5.3-3
Parker Flats MRA Phase II – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Cap, blasting, electric, M6	3	1	0	1
Cartridge case, 40mm (projectile removed/case in tact)	0	1	0	1
Cartridge, 40mm, practice, M781	0	4	0	1
Cartridge, grenade, auxiliary, M7	8	0	0	1
Charge, 0.25lbs, demolition, TNT	0	1	0	2
Charge, nitrostarch, 0.25lb *	0	0	0	2
Cord, detonating	1	1	0	NS
Flare, aircraft, parachute, M9A1	1	0	0	2
Flare, surface, trip, M49 series	3	0	0	1
Fuze, grenade, hand, M10 series	0	443	0	1
Fuze, grenade, hand, M204 series	0	2	0	1
Fuze, grenade, hand, practice, M205 series	228	104	0	1
Fuze, grenade, hand, practice, M228	17	10	0	1
Fuze, projectile, combination, M1907	1	0	0	1
Fuze, projectile, point detonating, M48 series	1	0	0	2
Grenade, hand, fragmentation, MK II	1	0	0	3
Grenade, hand, Illumination, MK I	8	0	0	1
Grenade, hand, practice, M69	1	0	0	1
Grenade, hand, practice, MK II	12	0	0	1
Grenade, hand, smoke, M18 series	12	0	0	1
Grenade, rifle, antitank, M9 series	1	0	0	3
Grenade, rifle, smoke, M22 series	0	2	0	1
Pot, 2.5lb, smoke, HC, screening, M1	1	0	0	1
Primer, ignition, percussion, M82	8	0	0	1
Projectile, 22mm, subcaliber, practice, M744	10	0	0	1
Projectile, 40mm, cluster, white star, M585	1	0	0	1
Projectile, 40mm, high explosive, M406	2	0	0	3
Projectile, 40mm, parachute, illumination, M583 series	1	0	0	1
Projectile, 57mm, high explosive, M306 series	1	0	0	3
Projectile, 60mm, mortar, illumination, M83 series	1	0	0	2
Projectile, 75mm, high explosive, MK I	2	0	0	3

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Table 5.3-3

Parker Flats MRA Phase II – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Projectile, 75mm, Shrapnel, MK I	3	0	0	3
Propellant, 60mm, wafers, mortar	2	0	0	1
Pyrotechnic mixture, illumination	7	0	0	1
Rocket, 35mm, subcaliber, practice, M73	7	0	0	1
Signal, ground, rifle, parachute, M17 series	1	0	0	1
Signal, illumination, aircraft, AN-M37 series	3	0	0	1
Signal, illumination, ground, M125 series	7	0	0	2
Simulator, projectile, airburst, M74 series	4	0	0	1
Simulator, projectile, ground burst, M115A2	6	0	0	2
HE, 40mm (Model Unknown)	0	0	1	NS
MRA TOTAL	365	569	1	

Notes: NS – Not Specified

* - MMRP database identified items as UXO with a quantity of zero.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 5.3-4
Parker Flats MRA Phase II – Summary of Recovered MEC and MD

Type	Summary
UXO	365 items
DMM	569 items
ISD	1 item (MPPEH that could not be classified as UXO, DMM, or MD)
MD	11,734 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> Significant amounts of MEC and MD were encountered during previous investigations throughout the Parker Flats MRA Phase I. The largest concentrations of MEC were located in the central and southern portions of the Phase I area and in MRS-15MOCO.2. A significant amount of MEC was also recovered from the north-central portion of MRS-13B. The majority of the grids along the boundaries of previous investigations and removal actions contained less than 10 pounds of MD per grid. Many of those boundary grids contained no MD. A portion of the MD identified includes SAS but not SAA.
Vertical Extent	<ul style="list-style-type: none"> The MMRP database indicates that the majority of the MEC items recovered from the Parker Flats MRA were located between 0 and 24 inches bgs, or in the many burial pits found in the Phase I areas.

Section 5 – Parker Flats MRA Conceptual Site Model

Table 5.3-5
Parker Flats MRA – HTW History and Conditions

Type	Summary
HA-92 (MRS-3)	<ul style="list-style-type: none"> The evaluation of HA-92 (MRS-3) included site reconnaissance and site investigation soil sampling. Soil sample results indicated that low levels of metals, motor oil, diesel, and one semivolatile compound were detected. No explosive compounds were detected. Because sample results were below cleanup levels, no further action related to chemical contamination was recommended for HA-92 under the BRA.
HA-93 (MRS-4A)	<ul style="list-style-type: none"> The evaluation of HA-93 (MRS-4A) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed, and no further action related to chemical contamination was recommended for HA-93 under the BRA.
HA-94 (MRS-4B)	<ul style="list-style-type: none"> The evaluation of HA-94 (MRS-4B) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No evidence of a range, MEC-related items, concentrations of spent SAA, or soil contamination was observed, and no further action related to chemical contamination was recommended for HA-94 under the BRA.
HA-103 (MRS-13B)	<ul style="list-style-type: none"> The evaluation of HA-103 (MRS-13B) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, fighting positions, or other MEC-related items were observed. The site does contain RRD including trash pits.
HA-133 (MRS-27A)	<ul style="list-style-type: none"> The evaluation of HA-133 (MRS-27A) included a literature search and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed. Several fighting positions were mapped. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-133 under the BRA.
HA-134 (MRS-27B)	<ul style="list-style-type: none"> The evaluation of HA-134 (MRS-27B) included a literature search and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed. Several fighting positions were mapped. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-134 under the BRA.
HA-135 (MRS-27C)	<ul style="list-style-type: none"> The evaluation of HA-135 (MRS-27C) included a literature search and reconnaissance of the site. No targets or range features were observed. Several fighting positions were mapped. An expended smoke grenade (MD) was found in one of the fighting positions. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-135 under the BRA.
HA-139 (MRS-27G)	<ul style="list-style-type: none"> The evaluation of HA-139 (MRS-27G) included a literature search and reconnaissance of the site. An expended signal flare was found within the portion of HA-139 that lies within the parcel. One fighting position was also observed. No targets, spent ammunition, or range features were observed. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-139 under the BRA.
HA-168 (MRS-37)	<ul style="list-style-type: none"> The evaluation of HA-168 (MRS-37) included site reconnaissance, review of the information gathered during the munitions response, and site investigation soil sampling. No explosive compounds were detected. Based on these results, no further action related to chemical contamination was recommended for HA-168 under the BRA.

Table 5.3-5
Parker Flats MRA – HTW History and Conditions

Type	Summary
HA-170 (MRS-40)	<ul style="list-style-type: none"> The assessment of HA-170 (MRS-40) included site reconnaissance and evaluation of soil samples collected at adjacent HA-180. Soil samples were collected to evaluate whether explosive residue was present in an area where high numbers of military munitions were found. Based on the results of the reconnaissance and results of sampling at HA-180, no further action related to chemical contamination was recommended for HA-170 under the BRA.
HA-174 (MRS-44 EDC and MRS-44 PBC)	<ul style="list-style-type: none"> The evaluation of HA-174 (MRS-44PBC and MRS-44EDC) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and sampling for MC. Several blank SAA casings and one expended 75mm projectile casing were found. Surface soil samples were collected to evaluate whether MC were present in areas where high numbers of military munitions were found. Because no explosive-related compounds were detected and metals concentrations were below Fort Ord background levels, no further action related to chemical contamination was recommended under the BRA.
HA-180 (MRS-50 and MRS-50 EXP)	<ul style="list-style-type: none"> The evaluation of HA-180 (MRS-50 and MRS-50EXP) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and site investigation sampling. Surface soil samples were collected to evaluate whether explosive residue was present in an area where high numbers of military munitions were found. Because no explosive-related compounds were detected and metals concentrations were below Fort Ord background levels, no further action related to chemical contamination was recommended under the BRA.
HA-182 (MRS-52)	<ul style="list-style-type: none"> The evaluation of HA-182 (MRS-52) included a literature search and reconnaissance of the site. Based on the site reconnaissance and sample results from adjacent areas where a high number of military munitions items were removed, no further action related to chemical contamination was recommended for HA-185 under the BRA.
HA-183 (MRS-53)	<ul style="list-style-type: none"> The evaluation of HA-183 (MRS-53) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and site investigation sampling. Soil sample results indicated that low levels of metals, motor oil, and diesel were detected. No explosive compounds were detected. Because sample results were below cleanup levels, no further action related to chemical contamination was recommended for HA-183 under the BRA.
HA-184 (MRS-54EDC)	<ul style="list-style-type: none"> The evaluation of HA-184 (MRS-54EDC) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No evidence of targets or range features was found; however, 21 fighting positions were observed. Because no evidence of a range or concentrated areas of military munitions were found at this site, no further action related to chemical contamination was recommended for HA-184 under the BRA.
HA-185 (MRS-55)	<ul style="list-style-type: none"> The evaluation of HA-185 (MRS-55) included site reconnaissance, review of the information gathered during the munitions response, and site investigation soil sampling. No explosive compounds were detected. Based on these results, no further action related to chemical contamination was recommended for HA-185 under the BRA.

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Table 5.3-5
 Parker Flats MRA – HTW History and Conditions

Type	Summary
Miscellaneous	<ul style="list-style-type: none"> • There is no evidence that non-munitions-related hazardous substances were stored, released, or disposed of on parcels in Parker Flats that include all or portions of MRS-4A, MRS-13B, MRS-27A, MRS-27B, MRS-27G, MRS-37, MRS-40, MRS-44EDC, MRS-44PBC, MRS-50, MRS-50EXP, MRS-53, MRS-53EXP, and MRS-55. • Hazardous substances were stored for one year or more, released or disposed of on parcels in Parker Flats that include all or portions of MRS-3, MRS-37, MRS-52, MRS-53EXP, MRS-54EDC, MRS-27B, and MRS-27C in excess of reportable quantities specified in 40 CFR Part 373. All hazardous substance storage operations have been terminated on these parcels.

Reference: Army 2007

Table 5.4-1
Parker Flats MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
E18.1.1	MRS-50	Development	Cemetery	40
	MRS-50	Development	Residential	23
	MRS-44 EDC	Development	Cemetery	5
	No related MRS	Development	Cemetery	23.6
	No related MRS	Development	Residential and Cemetery Uses	8.4
E18.1.2	MRS-40, MRS-50	Development	Cemetery	61
	MRS-44 EDC	Development	Cemetery	12
	No related MRS	Development	Cemetery	3
	No related MRS	Development	Residential	2
E18.1.3	MRS-4A	Development	Residential – Single Family	1
	No related MRS	Development	Residential – Single Family	39
E18.4	MRS-4A	Development	Residential – Single Family	2
E19a.1	MRS-4A, MRS-50, MRS-53	Development	Residential – Single Family	6
	No related MRS	Development	Residential – Single Family	66
E19a.2	MRS-27A, MRS-27B	Habitat	Reserve – Horse Park Footprint. Equestrian Trails Required. Oak Woodland Habitat.	72
	MRS-13B	Habitat	Reserve – Horse Park Footprint. Equestrian Trails Required. Oak Woodland Habitat.	1
E19a.3	MRS-13B	Development	Commercial – Horse Park – Structures, Parking, Arena	98
	MRS-27A	Development	Commercial – Horse Park – Structures, Parking, Arena	75
	MRS-4B, MRS-27A, MRS-53, MRS-55	Development	Commercial – Horse Park – Structures, Parking, Arena	90
E19a.4	MRS-27B, MRS-27C	Habitat	Reserve – Equestrian Access	94
	MRS-3, MRS-37, MRS-52, MRS-53, MRS-54, MRS-55	Habitat	Reserve – Equestrian Access	144
E19a.5	MRS-50, MRS-53	Development	Institutional – MPC Education Use – Driving Track, Structures, Parking	215
	MRS-27G	Development	Institutional – MPC Educational Uses – Driving Track, Structures, Parking	6

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Table 5.4-1
 Parker Flats MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
	MRS-50, MRS-53	Development	Residential	6
E20c.2	MRS-44 EDC	Development	Residential – Single Family	34
E21b.3	MRS-15MOCO.2	Development	MPC – Educational Use, Structures, Parking	32
L20.18	MRS-44	Development	Roadway	7
L23.2	MRS-44 PBC	Development	Institutional – MPC Education Use – Structures, Parking	11
L32.1	MRS-13B	Development	Light Industrial/Office – Infill Development	3
MRA - TOTAL				1,180

Table 5.5-1
Parker Flats MRA – Ecological Information

Type	Summary
<p>Biological</p>	<ul style="list-style-type: none"> • Dominant vegetation in the area is coastal coast live oak woodland with smaller areas of maritime chaparral and grassland. These biological communities are described below: <ul style="list-style-type: none"> • Coast Live Oak Woodland and Savanna - The live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodlands include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall’s woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oaks, but probably make little use of the coastal oaks because the tightly spaced branches discourage them from entering the tree canopies. • Maritime chaparral is one of the dominant vegetation type within Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus, and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake. • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and ripgut brome are the most common grassland community within the Plan Area. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman’s kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel.
<p>Habitat Management Plan / Biological Opinions</p>	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development (including residential) and habitat reserve with borderland development areas adjacent to the NRMA interface. The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require

Section 5 – Parker Flats MRA Conceptual Site Model

Table 5.5-1
Parker Flats MRA – Ecological Information

Type	Summary
	<p>implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.</p> <ul style="list-style-type: none"> • The HMP identified principal management categories. The MRA is identified as development (including residential) with borderlands interface and habitat reserve. These principal management categories are defined as: <ul style="list-style-type: none"> • Development - lands in which no management restrictions are contained under the HMP. Some plans for salvage of biological resources for these parcels may be specified. • Habitat Reserve – land in which no development is allowed. Management goals for the area are conservation and enhancement of threatened and endangered species. • Borderland Development Area – land abutting the NRMA that is slated for development. Management of these lands includes no restrictions except along the development/reserve interface. • FORA will implement the mitigation requirements during MEC activities identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). • Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.
Threatened and Endangered Species	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Threatened or endangered plant species identified as having possible occurrence in the Parker Flats MRA include sand gilia (endangered) and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of the Parker Flats MRA is located within 2 km of an aquatic feature in which CTS may be present.

Table 5.5-2
Parker Flats MRA – HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E18.1.1	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
E18.1.2	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
E18.1.3	Development	Monterey spineflower, Monterey ceanothus, California black legless lizard, Monterey ornate shrew
E18.4	Development	Monterey spineflower, Monterey ornate shrew
E19a.1	Development	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.2	Habitat Reserve	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.3	Development (includes a borderland buffer along the NRMA Interface)	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.4	Habitat Reserve	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.5	Development (includes a borderland buffer along the NRMA Interface)	Sand gilia, Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E20c.2	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
E21b.3	Development (includes a borderland buffer along the NRMA Interface)	Monterey spineflower, Seaside bird's beak, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, California tiger salamander
L20.18	Development	Monterey spineflower, Seaside bird's beak, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
L23.2	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus
L32.1	Development	Monterey spineflower, sandmat manzanita, Monterey ornate shrew

Reference: USACE 1997b

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Table 5.6-1
 Parker Flats MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓

6.0 CSUMB MRA CONCEPTUAL SITE MODEL

The CSUMB MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the CSUMB MRA are located at the end of Section 6.0.

6.1 CSUMB MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

6.1.1 Boundaries and Access

The CSUMB MRA is located in the north-central portion of the former Fort Ord, bordered by Inter-Garrison Road to the north, the Development North MRA to the east and southeast, Parker Flats MRA to the south, and CSUMB campus property to the west and southwest (Figure 6.1-1). The CSUMB MRA is wholly contained within the jurisdictional boundaries of Monterey County.

The CSUMB MRA encompasses approximately 333 acres and contains USACE property transfer parcel S1.3.2 (Table 6.1-1 and Figure 6.1-1).

Access to the CSUMB MRA is not restricted by fencing or road barricades. Inter-Garrison Road, located immediately north of the MRA, is an active roadway with daily vehicle traffic. This is a major roadway of the FORA transportation network. A number of unpaved roadways and dirt trails are located throughout the MRA (Figure 6.1-1). Detailed information on roadways and access is provided in Table 6.1-2.

6.1.2 Structure and Utilities

The CSUMB MRA contains two buildings (Figure 6.1-1; Army 2007). Detailed information concerning location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 6.1-3.

The CSUMB MRA is not served by any utilities. However, a telephone line, electrical line, high-powered transmission line, storm-drain line, and natural gas line extend onto or cross a portion of the MRA in various locations (Figure 6.1-1). Three short storm-drain lines also extend onto the MRA from the CSUMB campus property located to the southwest. More detailed information on utilities within the MRA is provided in Table 6.1-2.

6.1.3 Historical Military Use

Initial use of the CSUMB MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. No training maps from this time period have been found, and no pre-World War II-era military munitions have been removed during previous Army response actions within the CSUMB MRA. Because the area north of Gigling Road (prior to 1940) was privately owned agricultural land, it is unlikely that this area was used for military training until after this time.

Figure 6.1-2 shows the locations of known training areas within the MRA. Table 6.1-4 summarizes the historical military uses of these areas within the CSUMB MRA.

The Archives Search Report indicated that the type of training that occurred in the vicinity of the CSUMB MRA was unknown, but was probably related to troop maneuvers (USACE 1997a). This is consistent with historical maps that indicate the following activities in the area:

- Mine and Booby-Trap Training
- Mine Field Practice
- Chemical, Biological, Radiological Training
- Tactical Training
- Practice Mortar Range

Previously, to facilitate MEC investigations and removal activities, the area was divided into MRSs. The MRSs were identified through a review of Fort Ord records (USACE 1997a). The MRA is comprised of MRS-31, which encompasses MRS-04C, MRS-07, MRS-08, and MRS-18, and MRS-13C, which is located along the southern border of the MRA (Figure 6.1-3). The MRS boundaries generally correspond to the boundaries of Parcel S1.3.2.

6.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the CSUMB MRA, including land use covenants, county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 6.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

6.2 CSUMB MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

6.2.1 Topography and Geology

The terrain of the CSUMB MRA is primarily rolling hills. The elevation ranges from approximately 240 feet msl to approximately 375 feet msl with 2 to 15 percent slopes (Figure 6.2-1). The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. The primary soil type present in the CSUMB MRA is Oceano Loamy Sand (Figures 6.2-1). Soil conditions at the MRA consist predominantly of weathered dune sand, which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys. Table 6.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the MRA.

6.2.2 Vegetation

Vegetation in the CSUMB MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral and grassland (Table 6.2-2 and Figure 6.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area.

6.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the CSUMB MRA. The Salinas Groundwater Basin is the main hydrogeologic unit that underlies the MRA. The depth to groundwater is estimated to be greater than 100 feet bgs. There are no known wells within the boundaries of the MRA; however, several monitoring wells are located to the southwest, west, and north of the MRA (Figure 6.2-1). The occurrence of groundwater beneath the MRA is not expected to influence geophysical surveys conducted for MEC remediation activities.

There are no surface-water features or delineated wetlands reported to be present on the CSUMB MRA; however, an aquatic feature (i.e., vernal pool, pond) is known to exist to the southeast of the MRA.

6.3 CSUMB MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

6.3.1 Investigation and Removal History

Numerous investigation and removal operations were performed by the Army in the CSUMB MRA, which included:

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- Sampling at MRS-04C, MRS-07, MRS-08, and MRS-18 in 1994 (HFA 1994)
- 3-foot Removal Action in the western portion of MRS-31 in 1994 (HFA 1994)
- 4-foot Removal Action at MRS-31 in approximately 70 acres (Site CSU) in 1994 (UXB 1995d) and in approximately 6 acres (Site HFA/CSU) in 1995 (UXB 1995e)
- 4-foot Removal Action at MRS-13C in 1997 (USA 2000e)

These investigations and removal actions are summarized in Table 6.3-1. No burial pits were reported in the MMRP database. However, an after action report indicates that burial pits containing training devices were removed from this area (HFA 1994). The results of these investigations and removal actions with respect to the types of MEC recovered are summarized in Table 6.3-2, and MEC and MD are shown on Figures 6.3-1, 6.3-2, and 6.3-3.

The types of MEC and MD found in the CSUMB MRA are consistent with use as a training and maneuver area. There was no evidence of a mortar impact area associated with the Practice Mortar Range, and there was not evidence of tear gas or chemical agent identification sets associated with the CBR training area.

6.3.2 Types of MEC Recovered and Hazard Classification

Table 6.3-2 includes a summary of MEC recovered from the CSUMB MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the CSUMB MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

6.3.3 Location of MEC and MD

Figures 6.3-1, 6.3-2, and 6.3-3 show the location of MEC and MD previously removed from the CSUMB MRA. A summary of the MEC and MD encountered during previous

investigations and removal actions in the CSUMB MRA is provided in Table 6.3-3 and included:

- 190 UXO items
- 1 DMM item
- 1,362 ISD items (MPPEH that could not be classified as UXO, DMM, or MD)
- 19,590 pounds of MD (includes MD-E and MD-F items if weights were documented)

The majority of munitions items listed in the MMRP database are classified as ISD. This term was created to identify munitions items that could not be definitively classified as MEC or MD. Where there was some uncertainty, the item was classified as ISD.

The majority of munitions items recovered from the MRA were in the low-lying areas (Figures 6.2-1 and 6.3-1). The majority of the items were related to mine and booby trap training with a scattering of items consistent with the types of training that occurred in the Parker Flats MRA Phase I to the south.

The majority of the MD reported during previous removal actions were in the easternmost portion of the MRA, with most grids containing 10 or more pounds of MD (Figure 6.3-3). MD was likely encountered in the western portion of the MRA, but not documented, during previous investigations. Nearly all of the grids in the western portion of MRS-31 indicate that no MD was encountered. The MD identified on Figures 6.3-1 and 6.3-3 includes SAS but not SAA.

All of the MEC removed from the MRA were located within 4 feet bgs. The majority of the MEC items were reportedly encountered on the surface; however, it is suspected that the exact depth of items was not documented. Figure 6.3-4 shows the distribution of MEC recovered at specified depth intervals.

6.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges, and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Additionally, IRP Site 39B (Inter-Garrison Site) is located within the CSUMB MRA. The interim action at IRP Site 39B included the excavation and removal of approximately 164 cubic yards of soil mixed with debris from two locations. The soil contained semivolatile organic compounds and total petroleum hydrocarbons. Post-remediation evaluation indicated that no further threat to human health or the environment is expected and no further

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investigation or remediation was recommended. The U.S. EPA and the DTSC concurred that no further action was necessary at Site 39B (Army 2007).

Table 6.3-5 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the draft FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007).

6.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issues:

- The CERCLA process must be completed for the CSUMB MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD.
- Additional quality assurance and MEC removal, if necessary, must be completed in areas proposed for residential development within the MRA.

6.4 CSUMB MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

6.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The CSUMB MRA is located in the north-central portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the CSUMB MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

6.4.2 Current Land Use

The current use of the MRA includes habitat. There are residual structures that were in support of the training at the MRA, but these have been abandoned. Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers. There is also evidence of trespasser activity and illegal dumping.

6.4.3 Reasonably Foreseeable Future Land Use

Table 6.4-1 and Figure 6.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is planned for development and habitat reuse. It is important to note that the general development land use category encompasses infrastructure activities such as roadway and utility construction as well as commercial/retail, parks, and borderland activities.

6.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons residing in the area conducting surface and subsurface activities) – future
- Recreational Users (persons biking and on foot) – future

6.5 CSUMB MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 6.5-1.

As discussed in Section 6.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the CSUMB MRA as development with borderland development areas along an NRMA interface (Figure 6.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

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FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

6.5.1 Major Plant Communities and Ecological Habitats

Vegetation in the CSUMB MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral and grassland. Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area.

6.5.2 Threatened and Endangered Species

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BOs and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the CSUMB MRA.

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 6.5-1, it is possible the CTS may be found in the CSUMB MRA as the MRA is within 2 km of aquatic features that may provide breeding habitat for the CTS.

6.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the CSUMB MRA, which have been identified in Table 6.5-2 by parcel. The vegetation on the MRA consists primarily of native woodland oaks and grasslands. The following species are identified in the HMP as having possible occurrence in the CSUMB MRA: California black legless lizard and the Monterey ornate shrew.

6.6 CSUMB MRA Pathway Analysis

As discussed in Sections 6.3.4 and 6.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army; based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

6.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the CSUMB MRA using the information gathered in the CSM profiles. Exposure pathways include a source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of previous removal actions by the Army. Exposure pathways for the CSUMB MRA are presented on Figure 6.6-1 and discussed below.

Source

Source areas within the CSUMB MRA were addressed during the Army's previous removal actions. The historical source areas within the CSUMB MRA are shown on Figure 6.1-3, and recovered MEC and MD from the MRA are shown on Figures 6.3-1, 6.3-2, and 6.3-3. The source areas include troop training and maneuver areas.

Figure 6.6-2 illustrates the most likely release mechanisms for MEC being found in the CSUMB MRA, which included:

- Firing, Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access to the CSUMB MRA is not restricted by fencing or road barricades.

Receptor / Activity

Table 6.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade. The activities of all identified human receptors should not result in exposure to residual MEC during surface and intrusive activities, because a removal action was conducted in the entire area and the majority of the items removed from the MRA were not penetrating.

6.6.2 Exposure Pathway Analysis

As discussed above, Figure 6.6-1 graphically presents the exposure pathways analysis for the CSUMB MRA. The graphic shows that the current and future pathways for activities in the CSUMB MRA are all incomplete. Considering the historical use and variety of MEC encountered, it is likely that the MEC items previously removed from the MRA were intentionally placed, lost, or abandoned.

There remain uncertainties in the data regarding MD and MEC items encountered in the central and western portions of MRS-31. Items considered “live” at the time of data collection may have been DMM or MD, and the exact location and depth of items were not documented. As a result of this uncertainty, most of the MEC items in this area were identified as ISD. Also, MD data for this area may not be complete in the MMRP database or were not documented at the time of the removal actions conducted by the Army.

6.7 CSUMB MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army; based on the Army’s evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the CSUMB MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the CSUMB MRA are consistent with the historical use as a troop training area. However, data gaps, uncertainties, and/or open regulatory issues have been identified and must be addressed prior to receiving regulatory closure and implementing the planned reuse of the MRA. Therefore, the CSUMB MRA falls into the category of proceed to RI. Based on the information as presented in the CSM for CSUMB MRA, the recommendation is:

- Proceed with Documentation – Prepare RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

Table 6.1-1
CSUMB MRA –Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
S1.3.2 (western portion)	50	MRS-13C and MRS-31 (includes MRS-7)
S1.3.2 (eastern portion)	283	MRS-13C and MRS-31 (includes MRS-04C, MRS-08, and MRS-18)
MRA TOTAL	333	

Table 6.1-2
CSUMB MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> Inter-Garrison Road, located immediately to the north of the MRA, is an active roadway with vehicle traffic on a daily basis. This is a major roadway of the FORA transportation network. A number of unpaved roadways and dirt trails are located throughout the MRA.
Structures and Utilities	<ul style="list-style-type: none"> MRA is not served by any utilities. A telephone line, electrical line, high-powered transmission line, storm-drain line, and natural gas line extend onto or cross a portion of the MRA in various locations. Three short storm-drain lines also extend onto the MRA from the CSUMB campus property located to the southwest.
Fencing and Access	<ul style="list-style-type: none"> No fencing or barriers are present on the MRA and, therefore, the MRA is accessible to day users. No trespassing and warning signs are posted intermittently along Inter-Garrison Road.

Table 6.1-3
CSUMB MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
S.1.3.2	4545	165	Gas Station Building	rated 6 to 13	YES	1977
S.1.3.2	4B13	175	Field Latrines	rated 6 to 13	Unknown	Unknown

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Table 6.1-4
CSUMB MRA – Historical Military Use

Location	Description
<p>MRS-31 (includes MRS-04C, MRS-07, MRS-08, and MRS-18)</p>	<ul style="list-style-type: none"> • Historical maps indicate that this area was used for training and maneuvers including mine and booby trap training. troop training and maneuver area. • A CBR training area appears on 1957 and 1958 maps (USACE 1997a). • Mine and booby trap training areas appear on 1956 and 1957 maps (USACE 1997a). • Mine training might have included the use of practice mines. Based on practices described in field manuals, it is likely that, during training, the trainees would learn to mark practice mine locations as well as perform practice mine removal operations. (Shaw/MACTEC 2006). • Firing devices would be associated with Booby Trap training. These firing devices contain no energetic materials (e.g., pyrotechnic charges), unless the coupling base is attached (Shaw/MACTEC 2006). • It is possible that CBR training may have included tear gas agents and hand grenades containing tear gas agents. It is possible that Chemical Agent Identification Sets were used at CBR training areas (Shaw/MACTEC 2006).
<p>MRS-13C</p>	<ul style="list-style-type: none"> • Historical maps indicate that this area was used for Tactical Training, Mortar Squares (Non-Firing Mortar Training), and Practice Mortar Training (USACE 1997a). • Tactical Training areas are found within training and maneuver areas. A training and maneuver area may have included using the area for squad patrol. Combat patrols would include the use of blank SAA, and possibly pyrotechnics and smoke-producing items (e.g. signal, flares, and smoke grenades) (Shaw/MACTEC 2006). • Fort Ord training facilities maps indicate that bleachers were present at the practice mortar range. Munitions found to the south (in the Parker Flats MRA Phase I) are consistent with mortar training (Shaw/MACTEC 2006).

Table 6.1-5
CSUMB MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007) The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> Monterey County Ordinance 16.10 prohibits excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. MOA establishes FORA's ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	<ul style="list-style-type: none"> Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. Future MEC work is required to be consistent with the applicable conservation measures.

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Table 6.2-1
CSUMB MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	<ul style="list-style-type: none"> • Terrain consists of rolling hills. • Elevation ranges from approximately 240 to 370 feet msl with 2 to 15 percent slopes. • The surface soils are characterized as eolian (sand dune) and terrace (river deposits); which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. • The primary soil type present in the MRA is Oceano Loamy Sand with 2 to 15 percent slopes.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 6.2-2
CSUMB MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
S1.3.2 (western portion)	MRS-13C and MRS-31 (includes MRS-7)	Coastal coast live oak woodland
S1.3.2 (eastern portion)	MRS-13C and MRS-31 (includes MRS-04C, MRS-08, and MRS-18)	Coastal coast live oak woodland, maritime chaparral, and grassland

Reference: USACE/Jones & Stokes 1992

Table 6.3-1
CSUMB MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
MRS-13C	<ul style="list-style-type: none"> Based on the results of munitions response investigations conducted at adjacent locations in 1994, a munitions response removal to a depth of 4 feet was conducted over the entire MRS in 1997 (USA 2000e).
MRS-31	<ul style="list-style-type: none"> Initial investigations at MRS-04C, MRS-07, MRS-08, and MRS-18, within MRS-31, were conducted in 1994 (HFA 1994). Based on the results, 3-foot and 4-foot removals were conducted throughout the MRS. The 3-foot removal action was conducted in the western three quarters of the MRS, identified as the CSU Footprint by HFA (HFA 1994). The 4-foot removal action was conducted in two areas: the eastern portion of the MRS (nearly 70 acres identified as Site CSU by UXB) (UXB 1995d) and the north-central portion of the MRS in CSU Footprint (approximately 6 acres identified as Site HFA/CSU) (UXB 1995e).

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Table 6.3-2
CSUMB MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
106mm Recoilless Training Round (Projectile, Fuze, and Canister) (Model Unknown)	0	0	1	0
3.5-inch Rocket (Model Unknown)	0	0	1	0
40mm Airburst Flare (Model Unknown)	0	0	2	0
40mm Base Fuze (Model Unknown)	0	0	1	0
40mm Flare (Model Unknown)	0	0	3	0
40mm Flare Pistol (Model Unknown)	0	0	3	0
40mm Illuminating (Model Unknown)	0	0	5	0
40mm Illuminating M58 (Model Unknown)	0	0	1	0
40mm Pistol Flare (Model Unknown)	0	0	1	0
40mm Signal Ground Flare (Model Unknown)	0	0	1	0
40mm Smoke (Model Unknown)	0	0	2	0
40mm, Illuminating (Star only) (Model Unknown)	0	0	1	0
60mm Illuminating (Model Unknown)	0	0	12	0
81mm, M3, Prop Charge (Model Unknown)	0	0	1	0
Activator, mine, antitank, practice, M1	0	0	7	1
Air Illuminating (Slap Flare) (Model Unknown)	0	0	1	0
Aircraft Signal (Model Unknown)	0	0	1	0
Base Compound (Model Unknown)	0	0	1	0
Base, coupling, firing device	2	0	2	1
Bulk, HE (model unknown) *	0	0	0	NS
Cap, blasting, electric, M6	19	0	25	1
Cap, blasting, non-electric, M7	1	0	0	1
Cart M3 (Model Unknown)	0	0	60	0
Cart M6 (Model Unknown)	0	0	18	0
Cart M7 (Model Unknown)	0	0	50	0
Charge, 0.25 pound, demolition, TNT	1	0	0	2
Charge, 0.5 pound, demolition, TNT	77	0	26	2
Compound Slag and OEW (Model Unknown) *	0	0	0	0
Dragon Simulators (Model Unknown)	0	0	2	0
Electrical, Booby Trap, Simulators (Model Unknown)	0	0	1	0
Firing Device, M10 (Model Unknown)	0	0	5	0

Table 6.3-2
CSUMB MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Firing Device, M57 (Model Unknown)	0	0	1	0
Firing device, multi-option, M142	0	0	1	1
Firing device, pull friction, M2	0	0	6	1
Firing device, pull, M1	0	0	62	1
Firing device, release, M1	0	0	2	1
Firing device, release, M5	2	0	84	1
Firing device, tension and release, M3	0	0	38	1
Flare Motor (Model Unknown)	0	0	8	0
Flare Part (Model Unknown)	0	0	1	0
Flare Rocket Motor (Model Unknown)	0	0	41	0
Flare Signal (Model Unknown)	0	0	1	0
Flare, parachute, trip, M48	1	0	11	2
Flare, Signal, M18A1 (Model Unknown)	0	0	44	0
Flare, surface, trip, M49 series	3	0	31	1
Flash Bang (Model Unknown)	0	0	1	0
Flash, Bang, M47 (Model Unknown)	0	0	2	0
Frag Bomb Fuze (Model Unknown) *	0	0	0	0
Fuze, grenade (model unknown)	0	0	39	1
Fuze, grenade, hand, M10 series	2	0	10	1
Fuze, grenade, hand, practice, M205 series	0	0	74	1
Fuze, grenade, hand, practice, M228	1	0	3	1
Fuze, M12 (Model Unknown)	0	0	3	0
Fuze, mine, antitank, practice, M604	0	0	15	1
Fuze, mine, combination, M10 series	0	0	4	1
Fuzes (Model Unknown)	0	0	14	0
Grenade, hand, fragmentation, MK II	0	0	4	3
Grenade, hand, Illumination, MK I	2	0	21	1
Grenade, hand, incendiary, TH3, AN-M14	0	0	1	1
Grenade, Hand, Practice (Model Unknown)	0	0	1	0
Grenade, hand, practice, M21	0	0	1	1
Grenade, hand, practice, M30	0	0	4	1

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Table 6.3-2
CSUMB MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Grenade, hand, practice, MK II	3	0	14	1
Grenade, hand, riot, CS, M7A3	1	0	13	1
Grenade, hand, riot, CS-1, ABC-M25A2	0	0	2	1
Grenade, hand, smoke, HC, AN-M8	0	0	4	1
Grenade, hand, smoke, M18 series	4	0	36	1
Grenade, hand, smoke, WP, M15	0	0	2	3
Grenade, M33, Practice, WP (Model Unknown)	0	0	1	0
Grenade, rifle, antitank, practice, M11 series	0	0	6	0
Grenade, Rifle, Flare (Model Unknown)	0	0	10	0
Grenade, rifle, smoke (model unknown)	0	0	3	3
Grenade, rifle, smoke, M22 series	18	0	0	1
Grenade, rifle, smoke, M23 series	1	0	3	1
Grenade, rifle, smoke, WP, M19A1	1	0	3	3
Grenades Simulator (Model Unknown)	0	0	2	0
HE (Model Unknown) *	0	0	0	0
Igniter, time fuse, blasting, M60	0	0	1	1
Illuminating Grenade (Model Unknown)	0	0	7	0
Illuminating Material Flash Ground (Model Unknown)	0	0	7	0
M1 Rifle Smoke Partial (Model Unknown)	0	0	1	0
M2 Practice Mine (Model Unknown)	0	0	2	0
M8 Electric Cap (Model Unknown)	0	0	1	0
Material Flash Sound (Model Unknown)	0	0	13	0
Mine, antipersonnel, practice, M2A1B1	0	0	11	1
Mine, antipersonnel, practice, M68 (claymore)	0	0	6	0
Mine, antipersonnel, practice, M8 series	0	0	8	1
Mine, antitank, practice (model unknown)	0	0	9	1
Mine, antitank, practice, M1	2	0	0	1
Mine, antitank, practice, M10	0	0	1	1
Mine, antitank, practice, M12 series	0	0	9	1
Mine, antitank, practice, M1A1	0	0	2	1
Mine, antitank, practice, M20	0	0	11	1

Table 6.3-2
CSUMB MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
MK2 Grenade (Model Unknown)	0	0	1	0
MK2 Hand Grenade (Model Unknown)	0	0	1	0
Ordnance Components	4	0	1	NS
Parachute Flare Rocket Motor (Model Unknown)	0	0	105	0
Pistol Flare (Model Unknown)	0	0	1	0
Pot, 2.5 pounds, smoke, HC, screening, M1	0	0	1	1
Practice Grenade (Model Unknown)	0	0	3	0
Practice Grenade Red Filler (Model Unknown)	0	0	1	0
Primer (Model Unknown) *	0	0	0	0
Primer, Percussion (Model Unknown)	0	0	7	0
Projectile, 105mm, with Fuze (Model Unknown)	0	0	1	0
Projectile, 20mm, TPT (Model Unknown)	0	0	1	0
Projectile, 22mm, subcaliber, practice, M744	2	0	0	1
Projectile, 37mm (Model Unknown)	0	0	1	0
Projectile, 37mm, armor piercing tracer, M80	1	0	1	0
Projectile, 40mm, parachute, illumination, M583 series	0	0	2	1
Projectile, 40mm, parachute, star, M662	1	0	1	1
Projectile, 40mm, practice, M382	2	0	0	1
Projectile, with Fuze MK2/Mod12, 1.1-inch (Model Unknown)	0	0	1	0
Pull Flare Device (Model Unknown)	0	0	2	0
Pyrotechnic mixture, illumination	0	0	3	1
Pyrotechnic mixture, smoke	1	0	9	1
Rifle Flare (Model Unknown)	0	0	2	0
Rifle Grenade Detonation (Model Unknown)	0	0	6	0
Rifle Grenade Illumination (Model Unknown)	0	0	1	0
Rifle Grenade Red Smoke (Model Unknown)	0	0	2	0
Rifle Grenades (Model Unknown)	0	0	16	0
Rocket, 2.36-inch, high explosive antitank, M6	0	0	2	3
Rocket, 2.36-inch, practice, M7	0	0	5	0
Rocket, 3.5-inch, practice, M29 series	0	0	5	0
Rocket, 35mm, subcaliber, practice, M73	0	0	6	1

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Table 6.3-2
CSUMB MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Signal Flash Sound (Model Unknown)	0	0	10	0
Signal, Illumination (Model Unknown)	0	0	5	0
Signal, illumination, aircraft, AN-M37 series	2	0	0	1
Signal, illumination, comet 1260	0	0	5	1
Signal, illumination, ground, M125 series	19	0	21	2
Signal, illumination, ground, parachute, rifle, M19 series	0	1	2	1
Signal, smoke, ground, M62 series	0	0	1	1
Simulator, detonation, explosive, M80	0	0	2	1
Simulator, explosive booby trap, flash, M117	0	0	1	1
Simulator, flash artillery, M110	0	0	1	1
Simulator, grenade, hand, M116A1	0	0	12	2
Simulator, launching, antitank guided missile and rocket, M22	5	0	3	1
Simulator, projectile, airburst, M74 series	11	0	40	1
Slap Flare Motors (Model Unknown)	0	0	29	0
Slap Flare Tail Assembly (Model Unknown)	0	0	35	0
Smoke Grenade (Model Unknown)	0	0	10	0
Smoke Grenade Fuze (Model Unknown)	0	0	1	0
Smoke Pot (Model Unknown)	0	0	4	0
Smoke Rifle (Model Unknown)	0	0	1	0
Smoke, Grenade, Incendiary (Model Unknown)	0	0	1	0
Squib, Electric	1	0	31	1
Tow Spotting Charge (Model Unknown)	0	0	1	0
Trip Flare (Model Unknown)	0	0	8	0
MRA TOTAL	190	1	1,362	

Note: NS – Not Specified

* - MMRP database identified item as either UXO or ISD with a quantity of zero.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 6.3-3
CSUMB MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	190 items
DMM	1 item
ISD	1,362 items (potential MEC that could not be classified as either MEC or MD)
MD	19,590 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> The majority of the MD reported during previous removal actions were in the easternmost portion of the MRA, with most grids containing 10 or more pounds of MD (Figure 6.3-3). MD was likely encountered in the western portion of the MRA, but not documented, during previous investigations. Nearly all of the grids in the western portion of MRS-31 indicate that no MD was encountered. The MD identified on Figures 6.3-1 and 6.3-3 includes SAS but not SAA.
Vertical Extent	<ul style="list-style-type: none"> All of the MEC items removed from the MRA were located within 4 feet bgs, with the MMRP database indicating that a majority of the MEC items encountered on the surface. Figure 6.3-4 shows the distribution of MEC recovered at specified depth intervals. No burial pits were reported in the MMRP database. However, an after action report indicates that burial pits containing training devices were removed from this area (HFA 1994).

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Table 6.3-4
CSUMB MRA – HTW History and Conditions

Type	Summary
HA-104 (MRS-13C)	<ul style="list-style-type: none"> The evaluation of HA-104 (MRS-13C) included a literature search, review of the information gathered during the munitions response, and site reconnaissance. Blank SAA casings and two expended signal flares were found, but no evidence of targets or range features were observed. Based on the review of the historical information and site reconnaissance, no further action related to MC was recommended for HA-104 under the BRA (Army 2007).
HA-161 and HA-161A-D (MRS-31)	<ul style="list-style-type: none"> The evaluation of HA-161 (MRS-13C) and HA-161 A-D (MRS-04C, MRS-07, MRS-08, and MRS-18) included a literature search, review of the information gathered during the munitions response, and site reconnaissance. Blank SAA casings, three MD items (expended pyrotechnics), several fighting positions, trash pits, and range-related debris were observed during the reconnaissance. HA-92 (MRS-03) located to the south showed similar concentrations of MEC and numbers of trash pits during munitions response. Soil samples collected from HA-92 showed that concentrations of metals, total petroleum hydrocarbons, and semivolatile organic compounds were below action levels. Based on the review of the historical information and site reconnaissance and sampling results at HA-92, no further action related to MC was recommended for HA-161 and HA-161 A-D under the BRA (Army 2007).
IRP 39B	<ul style="list-style-type: none"> IRP Site 39B (Inter-Garrison Site) is located within the CSUMB MRA. The interim action at IRP Site 39B included the excavation and removal of approximately 164 cubic yards of soil mixed with debris from two locations. The soil contained semivolatile organic compounds and total petroleum hydrocarbons. Post-remediation evaluation indicated that no further threat to human health or the environment is expected and no further investigation or remediation was recommended. The U.S. EPA and the DTSC concurred that no further action was necessary at Site 39B (Army 2007).

Table 6.4-1
CSUMB MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
S1.3.2 (western portion)	MRS-7, MRS-13C, MRS-31	Residential	Single Family	50
S1.3.2 (eastern portion)	MRS-04C, MRS-08, MRS-13C, MRS-18, MRS-31	Habitat	Open Space – Natural Landscape/Oak Groves	283
MRA - TOTAL				333

Table 6.5-1
CSUMB – Ecological Information

Type	Summary
<p>Biological</p>	<ul style="list-style-type: none"> • Dominant vegetation in the area is coastal coast live oak woodland with smaller areas of maritime chaparral and grassland. These biological communities are described below: <ul style="list-style-type: none"> • Coast Live Oak Woodland and Savanna - The live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodland include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall’s woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oak woodland, but probably make little use of the coastal oak woodland because the tightly spaced branches discourage them from entering the tree canopies. • Maritime chaparral is one of the dominant vegetation types within former Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus, and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake. • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and ripgut brome are the most common grassland community within the former Fort Ord. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman’s kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel.
<p>Habitat Management Plan / Biological Opinions</p>	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army has elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development with borderland development areas along the western portion of the MRA designated for residential reuse, and along portions of the southern and eastern boundaries adjacent to the NRMA interface. The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and

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Table 6.5-1
CSUMB – Ecological Information

Type	Summary
	<p>habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.</p> <ul style="list-style-type: none"> • The HMP identified principal management categories. The CSUMB MRA is identified as development (including residential) and borderlands interface. These principal management categories are defined as: <ul style="list-style-type: none"> • Development - lands in which no management restrictions are contained under the HMP. Some plans for salvage of biological resources for these parcels may be specified. • Borderland Development Area – lands abutting the NRMA that are slated for development. Management of these lands includes no restrictions except along the development/reserve interface. • FORA will implement the mitigation requirements for MEC activities identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. • Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.
<p>Threatened and Endangered Species</p>	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the CSUMB MRA. • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of the CSUMB MRA is located within 2 km of an aquatic feature in which CTS may be present.

Table 6.5-2
CSUMB MRA – HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
S1.3.2 (western portion)	Development	Monterey spineflower; California black legless lizard; Monterey ornate shrew
S1.3.2 (eastern portion)	Development (includes a borderland buffer in the southeastern corner of the parcel along the NRMA Interface)	Monterey spineflower; California black legless lizard; Monterey ornate shrew; California tiger salamander

Reference: USACE 1997b

Table 6.6-1
CSUMB MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓

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7.0 DEVELOPMENT NORTH MRA CONCEPTUAL SITE MODEL

The Development North MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Development North MRA are located at the end of Section 7.0.

7.1 Development North MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

7.1.1 Boundaries and Access

The Development North MRA is located in the north-central portion of the former Fort Ord, bordered by Inter-Garrison Road to the north, the CSUMB MRA to the west, Gigling Road and the Parker Flats MRA to the southwest, and a portion of Watkins Gate Road and additional former Fort Ord property to the south and east (Figure 7.1-1). The Development North MRA is wholly contained within the jurisdictional boundaries of County of Monterey.

The Development North MRA encompasses approximately 506 acres and fully contains USACE property transfer parcels L5.7 and L20.2.1 and portions of USACE property transfer parcels E19a.3 and E19a.4 (Table 7.1-1 and Figure 7.1-1). The remaining portions of USACE property transfer parcels E19a.3 and E19a.4 are contained in the Parker Flats MRA (Section 5.1.1).

Inter-Garrison Road, located along the northern boundary of the MRA, and Gigling Road, located along a portion of the southern boundary of the MRA, are active roadways with vehicle traffic on a daily basis. These are major roadways of the FORA transportation network. Watkins Gate Road also borders a portion of the southern boundary of the MRA and crosses through the southeastern portion of the MRA. A number of unpaved roadways and dirt trails are located throughout the MRA (Figure 7.1-1). The Development North MRA is open land, and no fences, gates, or barricades restrict access to the property. Detailed information on roadways and access is provided in Table 7.1-2.

7.1.2 Structure and Utilities

The Development North MRA contains four existing buildings (Figure 7.1-1; Army 2007). Detailed information concerning location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 7.1-3. A water tower is located in the southeastern portion of the MRA, but is not included as part of the FORA ESCA property transfer (Shaw/MACTEC 2006).

The Development North MRA is not served by any utilities. However, telephone, electrical line, high-powered transmission, and natural gas lines extend across portions of the MRA in

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various locations (Figure 7.1-1). A water line oriented in a north-south direction enters the MRA from the northern boundary and extends to the water tower located in the southeastern portion of the MRA. More detailed information on utilities within the MRA is provided in Table 7.1-2.

7.1.3 Historical Military Use

Initial use of the Development North MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. No training maps from this time period have been found, and no pre-World War II-era military munitions have been removed during previous Army response actions within the Development North MRA.

Figure 7.1-2 shows the locations of known training sites within the MRA. Table 7.1-4 summarizes the historical military uses of these areas within the Development North MRA.

The Archives Search Report and historical training facilities maps indicate that the Development North MRA was used for troop training and maneuvers, including combat ranges and bivouac areas. The specific type of training that would have occurred in the combat ranges is unknown.

To facilitate previous MEC investigations and removal activities, the historical use areas were divided into MRSs. The MRA is comprised of five MRSs (Table 7.1.1 and Figure 7.1-3). The Development North MRA also includes property that is not part of any MRS (Figure 7.1-3).

The MRSs were identified through a review of Fort Ord records and included the following historical use areas (USACE 1997a and Army 2006):

- MRS-27E - Combat Range, Bivouac Area, and Troop Training Area
- MRS-27F - Combat Range, Bivouac Area, and Troop Training Area
- MRS-45 - Troop Training Area
- MRS-57 - Combat Range and Troop Training Area
- MRS-59 - Combat Range and Troop Training Area

7.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Development North MRA, including land use covenants, county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 7.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

7.2 Development North MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

7.2.1 Topography and Geology

The terrain of the Development North MRA is primarily rolling hills. The elevation ranges from approximately 210 to approximately 370 feet msl with 2 to 15 percent slopes (Figure 7.2-1). The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. The primary soil type present in the Development North MRA is Oceano Loamy Sand (Figure 7.2-1). Soil conditions at the MRA consist predominantly of weathered dune sand, which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys. Table 7.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the MRA.

7.2.2 Vegetation

Vegetation in the Development North MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral and grassland (Table 7.2-2 and Figure 7.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area.

7.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the Development North MRA. The Salinas Groundwater Basin is the main hydrogeologic unit that underlies the MRA. The depth to groundwater is estimated to be greater than 100 feet bgs. One known monitoring well is located in the northeastern portion of the MRA, and several monitoring wells are located to the northwest of the MRA (Figure 7.2-1). The occurrence of groundwater beneath the MRA is not expected to influence geophysical surveys conducted for MEC remediation activities.

No surface-water features or delineated wetlands are reported to be present on the Development North MRA; however, several aquatic features (i.e., vernal pools, ponds) are present to the south and southeast of the MRA (Figure 7.2-2).

7.3 Development North MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

7.3.1 Investigation and Removal History

Numerous investigation and removal operations were performed by the Army in the Development North MRA, which included:

- PA/SI at MRS-27E and MRS-27F in January 1996 and at MRS-59 in February 1996 (USACE 1997a)
- SS/GS sampling of 86 100-foot by 200-foot grids to a depth of 4 feet at MRS-45 between May and July 1997 (USA 2001h)
- TCRAs and visual surface searches at MRS-45 and MRS-57 between December 2001 and February 2002 (Parsons 2002c)
- Several field latrines investigated for MEC between March and November 1997 (USA 2001f)

These investigations and removal actions are summarized in Table 7.3-1. During the removal actions, no known burial pits containing MEC were encountered or documented in the MRA. The results of these investigations and removal actions with respect to the types of MEC recovered are summarized in Table 7.3-2, and MEC and MD are shown on Figures 7.3-1, 7.3-2, and 7.3-3. The types of MEC and MD found in the Development North MRA are consistent with use as a training and maneuver area.

7.3.2 Types of MEC Recovered and Hazard Classification

Table 7.3-2 includes a summary of MEC recovered from the Development North MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Development North MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

7.3.3 Location of MEC and MD

Figures 7.3-1, 7.3-2, and 7.3-3 show the location of MEC and MD previously removed from the Development North MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the Development North MRA is provided in Table 7.3-3 and included:

- 7 UXO items
- 12 ISD items (MPPEH that could not be classified as UXO, DMM, or MD)
- 2,224 pounds of MD (includes MD-E and MD-F items if weights were documented)

The MEC items encountered during previous removal actions were located near the western and southern boundaries with the CSUMB MRA and in the northeastern corner of the Development North MRA, where three UXO items were encountered in one location (Figure 7.3-2). The weight of MD found in individual sampling grids ranged from zero to greater than 100 pounds (Figures 7.3-1 and 7.3-3). The grids in the northern portion of the MRA contained the majority of the MD, with the exception of a number of grids bordering the CSUMB MRA to the east. The MD identified on Figures 7.3-1 and 7.3-3 include SAS but not SAA.

The MMRP database indicates that the majority of the MEC removed from the MRA were located on the surface. Figure 7.3-4 shows the distribution of MEC recovered at specified depth intervals.

7.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 7.3-4 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007).

7.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issue:

Section 7 – Development North MRA Conceptual Site Model

- The CERCLA process must be completed for the Development North MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD.

7.4 Development North MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

7.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Development North MRA is located in the north-central portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the CSUMB MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

7.4.2 Current Land Use

The current uses for the MRA include habitat. There are residual structures that were in support of the training at the MRA, but these have been abandoned. Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers. There is also evidence of trespasser activity and illegal dumping.

7.4.3 Reasonably Foreseeable Future Land Use

Table 7.4-1 and Figure 7.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is planned for development (i.e., residential and school site), habitat reserve with borderland interface, and habitat reuse, which includes habitat reserve and habitat corridor. It is important to note that the general development land use category encompasses infrastructure activities such as roadway and utility construction as well as commercial/retail, parks, and borderland activities.

7.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) – current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons conducting surface and subsurface activities) – future
- Recreational Users (persons biking and on foot) – future

7.5 Development North MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 7.5-1.

As discussed in Section 7.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the Development North MRA as development (including residential/school site), habitat reserve with borderland development areas along an NRMA interface, and habitat corridor (Figure 7.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

7.5.1 Major Plant Communities and Ecological Habitats

Vegetation in the Development North MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral and grassland (Table 7.2-2 and Figure 7.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area.

7.5.2 Threatened and Endangered Species and Critical Habitat

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BOs and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Threatened or endangered plant species identified as having possible occurrence in the Development North MRA include sand gilia (endangered) and Monterey spineflower (threatened). A portion of the Development North MRA has been designated as critical habitat for the Monterey spineflower by the USFWS.

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 7.5-1, it is possible the CTS may be found in the Development North MRA because the MRA is within 2 km of aquatic features that may provide breeding habitat for the CTS.

7.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the Development North MRA, which have been identified in Table 7.5-2 by parcel. The vegetation on the MRA consists primarily of native oak woodland with smaller areas of maritime chaparral and grassland. The following species are identified in the HMP as having possible occurrence in the Development North MRA: sandmat manzanita, California black legless lizard, and Monterey ornate shrew.

7.6 Development North MRA Pathway Analysis

As discussed in Sections 7.3.4 and 7.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

7.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Development North MRA using the information gathered in the CSM profiles. Exposure pathways for the Development North MRA are presented on Figure 7.6-1 and discussed below.

Source

Source areas within the Development North MRA were addressed during the Army's previous removal actions. The historical source areas within the Development North MRA are shown on Figure 7.1-3, and recovered MEC and MD from the MRA are shown on Figures 7.3-1, 7.3-2, and 7.3-3. The source areas include troop training and maneuver areas.

Figure 7.6-2 illustrates the most likely release mechanisms for MEC being found in the Development North MRA, which included:

- Firing, Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

The Development North MRA is not restricted by fencing or road barricades.

Receptor / Activity

Table 7.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade.

7.6.2 Exposure Pathway Analysis

As discussed above, Figure 7.6-1 graphically presents the exposure pathways analysis for the Development North MRA. The graphic shows the current and future potentially incomplete and potentially complete pathways for activities in the Development North MRA.

A small risk of MEC exposure remains to current and future receptors during surface and intrusive activities. The risk of surface exposure was greatly reduced as a result of surface removal actions in accessible areas of the MRA, and there is a low expectation of finding subsurface MEC in the majority of the MRA. Surface removal was not conducted in the southeastern portion of the MRA containing MRS-27E, MRS-27F, and MRS-59 because MEC were not expected to be present. All current and future receptors anticipated to conduct subsurface activities would be at risk of exposure. The risk is greater in areas planned for residential and development reuse because subsurface activities would be more intense and greater amounts of MEC would be anticipated in those areas. That expectation is based on the result of previous investigations and removal actions within and adjacent to the MRA.

7.7 Development North MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potential present) MEC in the Development North MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the Development North MRA are consistent with the historical use as a troop training area. Based on the information as presented in the CSM, the Development North MRA falls into the category of proceed to RI; therefore, the recommendation is:

- Proceed with Documentation – Prepare RI/FS and subsequent

The proposed pathway to regulatory closure incorporating the above recommendation is presented in Section 13.0 of this SEDR.

Table 7.1-1
Development North MRA –Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
E19a.3	45	MRS-45
E19a.4	134	MRS-45
L5.7	73	MRS-45
L20.2.1	254	MRS-27E, MRS-27F, MRS-45, MRS-57, MRS-59
MRA TOTAL	506	

Table 7.1-2
Development North MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> • Inter-Garrison Road, located along the northern boundary of the MRA, and Gigling Road, located along a portion of the southern boundary of the MRA, are active roadways with daily vehicle traffic. These are major roadways of the FORA transportation network. • Watkins Gate Road also borders a portion of the southern boundary of the MRA and crosses through the southeastern portion of the MRA. • A number of unpaved roadways and dirt trails are located throughout the MRA.
Structures and Utilities	<ul style="list-style-type: none"> • The MRA contains four existing buildings, which are all field range latrines. • A water tower is located in the southeastern portion of the MRA, but is not included as part of the FORA ESCA property transfer. • The MRA is not served by any utilities. • Telephone, electrical line, high-powered transmission, and natural gas lines extend across portions of the MRA in various locations. • A water line oriented in a north-south direction enters the MRA from the northern boundary and extends to the water tower located in the southeastern portion of the MRA.
Fencing and Access	<ul style="list-style-type: none"> • The MRA is open land, and no fences, gates, or barricades restrict access to the property.

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Table 7.1-3
 Development North MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E19a.4	4B38	179	Field Range Latrines	unknown	Unknown	Unknown
L20.2.1	4A49	189	Field Range Latrines	unknown	Unknown	Unknown
L20.2.1	4A18	182	Field Range Latrines	no ACM	Unknown	Unknown
L20.2.1	4B65A	181	Field Range Latrines	unknown	Unknown	Unknown

Table 7.1-4
Development North MRA – Historical Military Use

Location	Description
<p>MRS-27E (Training Site 5) and MRS-27F (Training Site 6)</p>	<ul style="list-style-type: none"> • An area identified as “Combat Ranges 1 and 2,” which includes this MRS area, is shown on a 1945 Training Facilities map. The specific type of training that occurred in that area is unknown (Army 2006). • A Basic Information Fire Break map from the fire department’s 1960 scrap book indicates that this MRS is in an “area of unusual hazard and possible live DUD area” (USACE 1997a). • This MRS is identified as a former training site located in an area identified as Bivouac on a 1964 training map (USACE 1997a). • On 1976 through 1987 ranges and training maps, this MRS is identified as Training Site 5 (USACE 1997a). • As defined in the Fort Ord Regulations, a training site is a training facility located within a training area and used as an overnight bivouac area (Army 2006).
<p>MRS-45</p>	<ul style="list-style-type: none"> • The 1945 training facilities map indicates that this MRS is within the area identified as “E-South.” The specific type of training that occurred in that area is unknown (Army 2006). • 1950s training maps indicate that an area including this MRS was a training area for the 11th Infantry in 1951, the 3rd Brigade in 1957, and the 1st Brigade in 1958. Maps show the area with names Bench Mark Blanco Training Area and Tactical Training Area. MRS-45 was identified as a Tactical Training Area (USACE 1997a). • Appears to be a training area for the 1st Brigade in 1968 (USACE 1997a).
<p>MRS-57 and MRS-59</p>	<ul style="list-style-type: none"> • An area identified as “Combat Ranges 1 and 2,” which included this MRS, was shown on a 1945 training facilities map (Army 2006). • 1950s training maps indicate that an area including this MRS was a training area for the 11th Infantry in 1951 and the 3rd Brigade in 1957 and 1958 (USACE 1997a). • A Basic Information Fire Break map from the fire department’s 1960 scrap book indicates that this is in an “area of unusual hazard and possible live DUD area” (USACE 1997a). • MRS appeared to be in an area used for Tactical Training in 1965 and a training area for the 3rd Brigade in 1968 (USACE 1997a).

Section 7 – Development North MRA Conceptual Site Model

Table 7.1-5
Development North MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> • To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. • Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007). • The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." • These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> • Monterey County Ordinance 16.10 prohibits excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> • An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> • MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. • MOA establishes FORA's ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> • The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions/ Critical Habitat	<ul style="list-style-type: none"> • Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. • A portion of the Development North MRA has been designated as critical habitat for the Monterey spineflower by the USFWS. • Future MEC work is required to be consistent with the applicable conservation measures.

Table 7.2-1
Development North MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	<ul style="list-style-type: none"> • Terrain consists of rolling hills. • Elevation ranges from approximately 210 to 370 feet msl with 2 to 15 percent slopes. • The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. • The primary soil type present in the MRA is Oceano Loamy Sand with 2 to 15 percent slopes.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Section 7 – Development North MRA Conceptual Site Model

Table 7.2-2
Development North MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
E19a.3	MRS-45	Coastal coast live oak woodland with smaller areas of maritime chaparral and grassland
E19a.4	MRS-45	Coastal coast live oak woodland with smaller areas of grassland
L5.7	MRS-45	Coastal coast live oak woodland with smaller areas of grassland
L20.2.1	MRS-27E, MRS-27F, MRS-45, MRS-57, MRS-59	Coastal coast live oak woodland with smaller areas of grassland

Reference: USACE/Jones & Stokes 1992

Table 7.3-1
Development North MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
MRS-27E	<ul style="list-style-type: none"> In January 1996, a USACE UXO Safety Specialist conducted a munitions response (site walk) that included MRS-27E as part of a PA/SI (USACE 1997a). MD including expended flares and illumination signals were found. No evidence of other types of training or use as an impact area was observed.
MRS-27F	<ul style="list-style-type: none"> In January 1996, a USACE UXO Safety Specialist conducted a munitions response (site walk) that included MRS-27F as part of a PA/SI (USACE 1997a). Expended pyrotechnics items and two pieces of mortar fragments from the incomplete detonation of a 60mm mortar were found in MRS-59. The two pieces of mortar fragments were found to the southwest of MRS-27F, on the far western side of MRS-59. The specific location of the expended pyrotechnics was not identified. Additionally, a review of Range Control files (DUD Records) included the incomplete entry for an item reportedly located within Training Site 6. No other information in the entry was provided (Army 2007).
MRS-45	<ul style="list-style-type: none"> Between May and July 1997, SS/GS sampling was conducted on 86 100-foot by 200-foot grids to a depth of 4 feet (USA 2001h). With the exception of an HE hand grenade fragment and two grids containing unknown fragments, no evidence of HE munitions was encountered and all MEC and MD removed from MRS-45 were pyrotechnic or training in nature (USA 2001h). Between December 2001 and February 2002, a TCRA was conducted in MRS-45. Field crews walked open areas and trails, visually searching for MEC and MD. MEC and MD encountered were removed or destroyed (Parsons 2002c).
MRS-57	<ul style="list-style-type: none"> In January 1996, a USACE UXO Safety Specialist conducted a munitions response (site walk) that included MRS-57 as part of a PA/SI (USACE 1997a). Expended flare and signals were found during the site walk. Four expended smoke grenades were found on a dirt road adjacent to MRS-57 during a munitions response (investigation) completed in October 1999 (Army 2007).
MRS-59	<ul style="list-style-type: none"> In January 1996, a USACE UXO Safety Specialist conducted a munitions response (site walk) in an area within MRS-59 as part of a PA/SI (USACE 1997a). The site walk occurred in an area south of the portion of MRS-59 located within the Development North MRA. MD (expended pyrotechnics) and two fragments from the incomplete detonation of a 60mm mortar were found; the location appears to be south of the portion of MRS-59 that is located within the Development North MRA. No evidence of the use of 2.36-inch rockets reportedly used at MRS-59 was observed.
Field Latrines	<ul style="list-style-type: none"> Between March and November 1997, the ground beneath several field latrines in the Development North MRA was investigated and “cleared” of MEC (USA 2001h).

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Table 7.3-2
Development North MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Cap, blasting, electric, M6	0	0	1	1
Flare, parachute, trip, M48	0	0	1	2
Flare, surface, trip, M49 series	0	0	1	1
Fuze, grenade (model unknown)	0	0	1	1
Grenade, hand, illumination, MK I	0	0	1	1
Grenade, hand, practice, MK II	0	0	2	1
Grenade, hand, riot, CS, M7A3	0	0	1	1
Grenade, hand, smoke, M18 series	1	0	0	1
Mine, antitank, practice, M10	3	0	0	1
Pot, 10 pounds, smoke, HC, screening, M1	1	0	0	1
Pyrotechnic mixture, illumination (0.5 pound) *	0	0	0	1
Signal, illumination, ground, M131	1	0	0	2
Signal, illumination, ground, M21A1	1	0	0	1
Simulator, projectile, airburst, M74 series	0	0	2	1
Unknown DUD (Model Unknown)	0	0	1	0
AP Mine Practice M2 (Model Unknown)	0	0	1	0
MRA TOTAL	7	0	12	

Note: * MMRP database identified item as ISD with a quantity of zero.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 7.3-3
Development North MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	7 items
ISD	12 items (MPPEH that could not be classified as UXO, DMM, or MD)
MD	2,224 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> The MEC items encountered during previous removal actions were located near the western and southern boundaries with the CSUMB MRA and in the northeastern corner of the Development North MRA, where three UXO items were encountered in one location. The weight of MD found in individual sampling grids ranged from zero to greater than 100 pounds. The grids in the northern portion of the MRA contained the majority of the MD, with the exception of a number of grids bordering the CSUMB MRA to the east.
Vertical Extent	<ul style="list-style-type: none"> The MMRP database indicates that the majority of MEC items encountered were on the ground surface.

Section 7 – Development North MRA Conceptual Site Model

Table 7.3-4
Development North MRA – HTW History and Conditions

Type	Summary
HA-137 (MRS-27E)	<ul style="list-style-type: none"> The evaluation of HA-137 (MRS-27E) included a literature search and site reconnaissance. No SAA, fighting positions, or MEC-related items were observed. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-137 under the BRA.
HA-138 (MRS-27F)	<ul style="list-style-type: none"> The evaluation of HA-138 (MRS-27F) included a literature search and site reconnaissance. No SAA, fighting positions, or MEC-related items were observed. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-138 under the BRA.
HA-175 (MRS-45)	<ul style="list-style-type: none"> The evaluation of HA-175 (MRS-45) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No evidence of SAA, targets, or MEC-related items was observed. Several fighting positions were observed. Because no evidence of a range or concentrated areas of military munitions was found at this site, no further action related to chemical contamination was recommended for HA-175 under the BRA.
HA-187 (MRS-57)	<ul style="list-style-type: none"> The evaluation of HA-187 (MRS-57) included a literature search and reconnaissance of the site. Blank casings, a signal flare, and two ammunition boxes were found during the site visit. No other military munitions-related items, fighting positions, or targets were observed. Because no target locations or concentrated areas of military munitions were found at the site, no further action related to MC was recommended for HA-187 under the BRA.
HA-189 (MRS-59)	<ul style="list-style-type: none"> The evaluation of HA-189 (MRS-59) included a literature search and site reconnaissance. No evidence of SAA, targets, or MEC-related items was observed; however, one fighting position was located. Access to the southern portion of HA-189 was limited to trails and roads due to dense vegetation. Because no target locations or concentrated areas of military munitions were found at this site, no further action related to MC was recommended for HA-189 under the BRA.

Reference: Army 2007

Table 7.4-1
Development North MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
E19a.3	MRS-45	Development	Commercial / Horse Park	45
E19a.4	MRS-45	Habitat	Reserve	134
L5.7	MRS-45	Development	Public Middle School	68
	MRS-45	Development	School Buffer	5
L20.2.1	MRS-45	Habitat	Habitat Corridor	142
	MRS-57	Habitat	Habitat Corridor	22
	MRS-27E	Habitat	Habitat Corridor	29
	MRS-27F, MRS-59	Habitat	Habitat Corridor	6
	No related MRS	Habitat	Habitat Corridor	55
MRA - TOTAL				506

Section 7 – Development North MRA Conceptual Site Model

Table 7.5-1
Development North – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • Dominant vegetation in the area is coastal coast live oak woodland with smaller areas of maritime chaparral and grassland. These biological communities are described below: <ul style="list-style-type: none"> • Coast Live Oak Woodland and Savanna - The live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodland include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall's woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oaks, but probably make little use of the coastal oaks because the tightly spaced branches discourage them from entering the tree canopies. • Maritime chaparral is one of the dominant vegetation types within former Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus, and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake. • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and ripgut brome are the most common grassland community within the former Fort Ord. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman's kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel.
Habitat Management Plan / Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as habitat reserve, habitat corridor, and development with borderland development areas along the western portion of the MRA designated for residential reuse, and along portions of the southern and eastern boundaries adjacent to the NRMA interface. The NRMA separates the development category land from the

Table 7.5-1
Development North – Ecological Information

Type	Summary
	<p>adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.</p> <ul style="list-style-type: none"> • The HMP identified principal management categories. The Development North MRA is identified as development (including residential) with borderlands interface, habitat reserve, and habitat corridor. These principal management categories are defined as: <ul style="list-style-type: none"> • Development - lands in which no management restrictions are contained under the HMP. Some plans for salvage of biological resources for these parcels may be specified. • Habitat Reserve – land in which no development is allowed. Management goals for the area are conservation and enhancement of threatened and endangered species. • Borderland Development Area – land abutting the NRMA that is slated for development. Management of these lands includes no restrictions except along the development/reserve interface. • Habitat Corridor – land between major reserve areas. These lands are to be managed to promote connections between conservation areas. • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). • Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.
<p>Threatened and Endangered Species/ Critical Habitat</p>	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Threatened or endangered plant species identified as having possible occurrence in the Development North MRA include sand gilia (endangered) and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of the Development North MRA is located within 1 km of an aquatic feature in which CTS may be present. • A portion of the Development North MRA has been designated as Critical Habitat for the Monterey spineflower.

Section 7 – Development North MRA Conceptual Site Model

Table 7.5-2
Development North MRA – HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E19a.3	Development (includes a borderland buffer in the eastern portion of the parcel along the NRMA Interface)	Monterey spineflower; sandmat manzanita; California black legless lizard; Monterey ornate shrew; California tiger salamander
E19a.4	Habitat Reserve	Monterey spineflower; sandmat manzanita; California black legless lizard; Monterey ornate shrew; California tiger salamander
L5.7	Development (includes a borderland buffer in the southern portion of the parcel along the NRMA Interface)	Monterey spineflower; Monterey ornate shrew; California tiger salamander
L20.2.1	Habitat Corridor/Recreation	sand gilia; Monterey spineflower; sandmat manzanita, Monterey ornate shrew; California tiger salamander

Reference: USACE 1997b

Table 7.6-1
Development North MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓

8.0 INTERIM ACTION RANGES MRA CONCEPTUAL SITE MODEL

The Interim Action Ranges MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Interim Action Ranges MRA are located at the end of Section 8.0.

8.1 Interim Action Ranges MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

8.1.1 Boundaries and Access

The Interim Action Ranges MRA is located in the north-central portion of the former Fort Ord, within the boundary of the former impact area. The Interim Action Ranges MRA is bordered by the Parker Flats MRA to the north, the Seaside MRA to the east, and the former impact area to the southeast, south, and southwest (Figure 8.1-1). The Interim Action Ranges MRA is contained within the jurisdictional boundaries of the City of Seaside and Monterey County.

The Interim Action Ranges MRA encompasses approximately 231 acres and fully contains the following five USACE property transfer parcels: E38, E39, E40, E41, and E42 (Table 8.1-1 and Figure 8.1-1).

Access into the Interim Action Ranges MRA is along Eucalyptus Road to the north, which is a roadway currently closed to vehicle traffic. Access to Eucalyptus Road is restricted by barriers (at the General Jim Moore Boulevard/Eucalyptus Road and Parker Flats Road/Eucalyptus Road intersections) and barricades marked with “road closed” signs (at the Parker Flats Cutoff/Eucalyptus Road intersection). Eucalyptus Road will serve as a major roadway of the FORA transportation network following road improvement construction.

Eucalyptus Road is bound by four-strand barbed-wire fencing reinforced with concertina wire, with locked chain-link gates and concertina wire to restrict access into the MRA. Warning signs indicating “U.S. Government Property-No Trespassing” and “Danger-Explosives Area” are posted along the fence line and locked gates. A number of unpaved roadways and dirt trails located throughout the MRA (Figure 8.1-1). Detailed information on roadways and access is provided in Table 8.1-2.

8.1.2 Structure and Utilities

The Interim Action Ranges MRA contains three existing buildings or structures (Figure 8.1-1; Army 2007). Detailed information concerning location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 8.1-3.

Section 8 – Interim Action Ranges MRA Conceptual Site Model

The Interim Action Ranges MRA is not served by any utilities. However, a water line crosses the northeastern corner of the MRA (Figure 8.1-1). More detailed information on utilities within the MRA is provided in Table 8.1-2.

8.1.3 Historical Military Use

Initial use of the Interim Action Ranges MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II-era military munitions have been removed during previous Army response actions within the Interim Action Ranges MRA.

Figure 8.1-2 shows the locations of known firing ranges and training sites within the MRA. Table 8.1-4 summarizes the historical military uses of these areas within the Interim Action Ranges MRA. The Interim Action Range MRA contains the firing points for Ranges 43, 44, 45, 46, 47, and 48. It is expected that munitions activity within the Interim Action Ranges MRA occurred within the firing points on the ranges previously used for weapons training activities. The firing points for the ranges are located along the northern portion of the MRA. Historical ranges usage is summarized as follows:

- Range 43 - Platoon live-fire course, mortar training
- Range 44 - Antitank weapons
- Range 45 - Grenade Launcher
- Range 46 - Small Arms
- Range 47 - 40mm Grenades
- Range 48: Weapons familiarization, sniper, mortar, machine gun

To facilitate previous MEC investigations and removal activities, the historical use areas were designated as MRS 43-48 (Table 8.1.1 and Figure 8.1-3). The MRS was identified through a review of Fort Ord records (USACE 1997a). Table 8.1-4 identifies the historical military uses of the Interim Action Ranges MRA.

8.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Interim Action Ranges MRA, including land use covenants, city and county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 8.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

8.2 Interim Action Ranges MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

8.2.1 Topography and Geology

The terrain of the Interim Action Ranges MRA is relatively flat. The elevation ranges from approximately 370 to approximately 530 feet msl with 2 to 15 percent slopes (Figure 8.2-1). The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. The primary soil type present in the Interim Action Ranges MRA is Arnold-Santa Ynez Complex with Baywood Sand in the northwestern portion of the MRA (Figure 8.2-1). Soil conditions at the MRA consist predominantly of weathered dune sand, which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys. Table 8.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the MRA.

8.2.2 Vegetation

Vegetation in the Interim Action Ranges MRA consists primarily of maritime chaparral (Table 8.2-2 and Figure 8.2-2; USACE/Jones & Stokes 1992). Before the prescribed burn in 2003, most of the Interim Action Ranges MRA was covered by dense, 4- to 5-foot-tall maritime chaparral. Patches of annual grassland habitats exist along the western and southern boundaries of the MRA. There are areas within the MRA that are overgrown with poison oak.

8.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the Interim Action Ranges MRA. The Interim Action Ranges MRA overlies the Seaside groundwater basin, which is structurally complex and divided into several sub-basins. The depth to groundwater is estimated to be greater than 100 feet bgs. No wells are located within the MRA. The occurrence of groundwater beneath the MRA is not expected to influence geophysical surveys conducted for MEC remediation activities.

Reportedly, no surface-water features or delineated wetlands are present on the Interim Action Ranges MRA; however, an aquatic feature is present over 4,500 feet to the east-southeast of the MRA.

8.3 Interim Action Ranges MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

8.3.1 Investigation and Removal History

Previous work in the Interim Action Ranges MRA includes grid sampling, Ordnance and Explosives (OE) support for the establishment of trails and fuel breaks, limited surface removal, a surface TCRA, OE support for the prescribed burn, and removal actions. The following describes the investigation and removal operations performed by the Army in the Interim Action Ranges MRA:

- Range 44 Trail Sampling – 4-foot grid sampling and MEC removal at 11 15-foot by 100-foot grids in April 1997 (USA 2001d)
- Range 44 Subsurface Removal – 4-foot MEC removal at two 100-foot by 100-foot grids in April 1997 (USA 2001k and Parsons 2007)
- Range 44 Grid Sampling – grid sampling at one 100-foot by 100-foot grid in August 1997 (Parsons 2007)
- Range 44 Special Case Area Surface Removal – surface removal of any MEC, non MEC-like MD, or general metallic debris items greater than 2 inches in any dimension encountered within accessible areas from March 19-30, 2007 (Shaw 2007)
- OE-15A Grid Sampling (Range 46) – 100 percent sampling to a depth of 4 feet at three 100-foot by 100-foot grids in October 1997 (USA 2000a)
- OE-15B Grid Sampling – 100 percent sampling to a depth of 4 feet at two 100-foot by 100-foot grids in October 1997 (USA 2000d)
- Evolution Road Fuel Break Reestablishment – 4-foot MEC removal at 53 15-foot by 100-foot grids from November 1997 to January 1998 (USA 2001p)
- Blue Line Fuel Break Establishment – 4-foot MEC removal at 56 100-foot by 30-foot grids from May to June 1998 (USA 2001p)
- Impact Area Grid Sampling – 100 percent grid sampling and 4-foot MEC removal at six 100-foot by 100-foot grids from March to August 1999 (USA 2000a)
- Range 46 Lead-Contamination Soil Remediation Project – Grid sampling and 4-foot MEC removal to support efforts to remediate spent SAA and lead contamination at nine 100-foot by 100-foot grids from April to August 1999 (Parsons 2007)
- Range 45 Safety Surface Removal – Surface removal conducted in response to trespassing incidents at 11 100-foot by 100-foot grids from April to October 1999 (Parsons 2007)

- Impact Area Fuel Break Maintenance – Surface and subsurface removals conducted to establish fuel breaks at 62 45-foot by 100-foot grids, 52 30-foot by 100-foot grids, and 89 15-foot by 100-foot grids from February to August 2001 (Parsons 2006a)
- Surface Time Critical Removal Action in Visible Areas at 37 1,000-foot by 1,000-foot grids from August to December 2001 (Parsons 2002b)
- MRS-Ranges 43-48 Interim Action – Visual surface removal from November 2003 to February 2004 (Parsons 2007)
- Analog removal to depth at 1,261 100-foot by 100-foot grids from December 2003 to July 2005 (Parsons 2007)
- Range 45 sifting and sorting operations – Sifting and sorting in 14-acre area to a depth of 2 feet and Range 45 pad deconstruction from May to October 2005 (USA 2001q)
- Range 45 analog removal and digital geophysical mapping – Range 45 scraped areas at eight 100-foot by 100-foot grids from October to November 2005 (USA 2001q)
- Range 43-48 digital mapping and excavation operations – Accessible areas subject to analog removal included 1,249 100-foot by 100-foot grids from July 2004 to November 2005 (Parsons 2007)
- The Interim Action at Ranges 43-48 designated several areas as Special Case Areas or non-completed areas. Subsurface removal was not completed due to high concentration of debris/anomalies and other reasons (Parsons 2007)
- Preparatory Action – Fire preparation and control work was completed between August and October 2002 in preparation for the Ranges 43-48 prescribed burn (Parsons 2004a)
- Prescribed Burn – A prescribed burn was conducted in October 2003 on Ranges 43-48 to clear vegetation from the ranges so that MEC removal teams could safely operate geophysical detection instruments over the site. The prescribed burn cleared approximately 95 percent of the vegetation covering the site, revealing numerous MEC previously hidden by the brush (Parsons 2004a)

These investigations, sampling, and removal actions are summarized in Table 8.3-1. During the removal actions, 20 burial pits containing MEC were discovered in the MRA (Figure 8.3-2). Table 8.3-2 provides more detail on the specific types of MEC recovered from these burial pits. The results of these investigations and removal actions with respect to the types of MEC recovered are summarized in Table 8.3-3, and MEC and MD are shown on Figures 8.3-1, 8.3-2, and 8.3-3.

8.3.2 Types of MEC Recovered and Hazard Classification

Table 8.3-3 includes a summary of MEC recovered from the Interim Action Ranges MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

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Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Interim Action Ranges MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

8.3.3 Location of MEC and MD

Figures 8.3-1, 8.3-2, and 8.3-3 show the location of MEC and MD previously removed from the Interim Action Ranges MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the Interim Action Ranges MRA is provided in Table 8.3-4 and included:

- 10,165 UXO items
- 84 DMM items
- 125 ISD items (MPPEH that could not be classified as UXO, DMM, or MD)
- 196,996 pounds of MD (includes MD-E and MD-F items if weights were documented)

The greatest concentrations of MEC and MD were encountered in the vicinity of Ranges 44 and 45. The MEC found during sifting operations in Range 45 are not shown on Figure 8.3-1, but are included in Table 8.3-3. The weight of MD ranges from zero to greater than 100 pounds per grid. The MD collected during sifting operations at Range 45 are not shown on Figure 8.3-1. Additional research is needed to verify whether the grids showing that no MD was found in a grid are an accurate representation of data. It appears that these zero MD grids are in areas where no subsurface removal actions have been accomplished. The MD identified on Figures 8.3-1 and 8.3-3 includes SAS but not SAA. Approximately 227 acres of the MRA were designated as SCAs or non-completed areas as shown on Figure 8.3-4.

The MMRP database indicates that the majority of the MEC removed from the MRA were located on the surface; however, this observation may not include subsurface MEC removed during the Range 44 sifting operations. Figure 8.3-5 shows the distribution of MEC recovered at specified depth intervals.

8.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 8.3-5 summarizes the findings of the BRA with respect to HTW for each range. Based on the BRA, further evaluation was recommended for HA-43 (Range 43) and HA-44 (Range 44) based upon the presence of munitions constituents (lead and/or HMX) detected in soil samples. Ranges 43 and 44 will be remediated by the Army in accordance with the “Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0” (Shaw/MACTEC 2008). No further action has been recommended for the other HAs identified within this MRA (Army 2007).

8.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issue:

- The CERCLA process must be completed for the Interim Action Ranges MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD

8.4 Interim Action Ranges MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

8.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Interim Action Ranges MRA is located in the north-central portion of the former Fort Ord in an area designated as having low to no archaeological sensitivity.

Actions to be taken at the Interim Action Ranges MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on

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Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

8.4.2 Current Land Use

The current uses for the MRA include habitat. There are residual structures that were in support of the training at the MRA, but these have been abandoned. There is also evidence of trespasser activity and illegal dumping.

8.4.3 Reasonably Foreseeable Future Land Use

Table 8.4-1 and Figure 8.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is planned for development with borderland interface and habitat reserve. It is important to note that the general development land use category encompasses infrastructure activities such as roadway and utility construction as well as commercial/retail, parks, and borderland activities.

8.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) – current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Recreational Users (persons biking or on foot) - future

8.5 Interim Action Ranges MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 8.5-1.

As discussed in Section 8.3.4, COCs related to HTW have been previously addressed or will be addressed by the Army. Therefore, potential exposure of ecological receptors to the

primary risk factors have been mitigated or will be mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the Interim Action Ranges MRA as development with borderland interface areas along an NRMA interface and habitat reserve (Figure 8.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

8.5.1 Major Plant Communities and Ecological Habitats

Vegetation in the Interim Action Ranges MRA consists primarily of maritime chaparral (Table 8.2-2 and Figure 8.2-2; USACE/Jones & Stokes 1992). Before the prescribed burn, most of the Interim Action Ranges MRA was covered by dense, 4- to 5-foot-tall maritime chaparral. Patches of annual grassland habitats exist along the western and southern boundaries of the MRA. There are areas within the MRA that are overgrown with poison oak.

8.5.2 Threatened and Endangered Species and Critical Habitat

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BOs and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Threatened or endangered plant species identified as having possible occurrence in the Interim Action Ranges MRA include sand gilia (endangered) and Monterey spineflower (threatened). A portion of the Interim Action Ranges MRA has been designated as critical habitat for the Monterey spineflower by the USFWS.

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In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 8.5-1, it is possible the CTS may be found in the Interim Action Ranges MRA as the MRA is within 2 km of aquatic features (i.e., vernal pools, ponds) that may provide habitat for the CTS.

8.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the Interim Action Ranges MRA, which have been identified in Table 8.5-2 by parcel. The vegetation on the MRA consists primarily of maritime chaparral. The following species are identified in the HMP as having possible occurrence in the Interim Action Ranges MRA: sandmat manzanita and California linderiella.

8.6 Interim Action Ranges MRA Pathway Analysis

Per the discussion in Sections 8.3.4 and 8.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army; based on the Army's evaluation, further action relative to the COCs is required for Ranges 43 and 44. These remedial actions will be conducted by the Army in accordance with the "Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0" (Shaw/MACTEC 2008) and not under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

8.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Interim Action Ranges MRA using the information gathered in the CSM profiles. Exposure pathways for the Interim Action Ranges MRA are presented on Figure 8.6-1 and discussed below.

Source

Source areas within the Interim Action Ranges MRA were addressed during the Army's previous removal actions, with the exception of SCAs and non-completed areas (Figure 8.3-4). The historical source areas within the Interim Action Ranges MRA are shown on Figure 8.1-3, and recovered MEC and MD from the MRA are shown on Figures 8.3-1, 8.3-2, and 8.3-3. The source areas include firing points, target areas, and range safety fans for military weapons training and troop training and maneuver areas. It is anticipated that SCAs and non-completed areas would contain types of MEC similar to those found in adjacent areas.

Figure 8.6-2 illustrates the most likely release mechanisms for MEC being found in the Interim Action Ranges MRA, which included:

- Mishandling/Loss, Abandonment, or Burial (Military Weapons Training)

- Direct Firing (Military Weapons Training)
- Indirect Firing (Military Weapons Training)
- Thrown (Military Weapons Training)
- Firing, Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

The Interim Action Ranges MRA is restricted by barded-wire fencing surrounding the former impact area and road barricades along Eucalyptus Road.

Receptor / Activity

Table 8.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade. The risk is greatest in areas having no history of subsurface MEC removal actions.

8.6.2 Exposure Pathway Analysis

As discussed above, Figure 8.6-1 graphically presents the exposure pathways analysis for the Interim Action Ranges MRA. The graphic shows the current and future potentially incomplete and potentially complete pathways for activities in the Interim Action Ranges MRA.

There remains a risk of MEC exposure to current and future receptors during intrusive activities. The risk of surface exposure was greatly reduced as a result of surface removal actions and sifting operations. Three current and three future receptors anticipated to conduct subsurface activities would be at risk of exposure. This pathway could be complete if subsurface activities occur in the SCAs and non-completed areas. The SCAs and non-completed areas are in the area designated as habitat; therefore, it is less likely that the receptors would conduct subsurface activities in those areas, although some lighter intensity intrusive activities may be required occasionally (e.g., biologists driving stakes as part of the biological monitoring requirements in habitat areas per the HMP).

8.7 Interim Action Ranges MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been or will be evaluated by the Army. No further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the Interim Action Ranges MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

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- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the Interim Action Ranges MRA are consistent with the historical use as a military weapons training and troop training area. Army has conducted removal actions over the majority of the MRA. The Interim Action Ranges MRA falls into the category of proceed to RI. Based on the information presented in the CSM for the Interim Action Ranges MRA, the recommendation is:

- Proceed with Documentation – Prepare RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendation is presented in Section 13.0 of this SEDR.

Table 8.1-1

Interim Action Ranges MRA –Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
E38	18	MRS-Ranges 43-48
E39	166	MRS-Ranges 43-48
E40	25	MRS-Ranges 43-48
E41	9	MRS-Ranges 43-48
E42	13	MRS-Ranges 43-48
MRA TOTAL	231	

Table 8.1-2

Interim Action Ranges MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> Access into the MRA is along Eucalyptus Road to the north, which is a roadway currently closed to vehicle traffic. Eucalyptus Road will serve as a major roadway of the FORA transportation network following road improvement construction. There are a number of unpaved roadway and dirt trails located throughout the MRA.
Structures and Utilities	<ul style="list-style-type: none"> The MRA contains three existing buildings and structures, which include an observation tower, range support building at Range 45, and field latrines. The MRA is not served by any utilities. A water line crosses the northeastern corner of the MRA
Fencing and Access	<ul style="list-style-type: none"> Access to Eucalyptus road is restricted by barriers (at the General Jim Moore Boulevard/Eucalyptus Road and Parker Flats Road/Eucalyptus Road intersections) and barricades marked with “road closed” signs (at the Parker Flats Cutoff/Eucalyptus Road intersection). The MRA is located within the former impact area which is surrounded by barded-wire fencing to restrict access to the property.

Table 8.1-3

Interim Action Ranges MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E40	2A41	435	Building, Range 45	Unknown	Unknown	Unknown
E40	3917	95	Observation Tower	Unknown	YES	1956
E40	R9451	171	Field Range Latrines	Unknown	NO	1984

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Table 8.1-4
Interim Action Ranges MRA – Historical Military Use

Location	Description
Range 43	<ul style="list-style-type: none"> • Range used as a platoon live-fire course and mortar training. • Items found or used on the range included: <ul style="list-style-type: none"> • Grenades (hand, fragmentation) • Mortars (4.2-inch, HE, WP; 60mm, target practice, illumination; 81mm HE, WP, TP, illumination) • Projectiles (37mm, LE; 40mm grenade launcher, smoke, practice; 57mm, HE; 75mm, HE, shrapnel; 105mm smoke, HE; 155mm smoke) • Rockets (66mm, LAW) • SAA
Range 44	<ul style="list-style-type: none"> • Range used for antitank weapons. • Items found or used on the range included: <ul style="list-style-type: none"> • Mines (antipersonnel, practice) • Missiles (Dragon guided; practice and HEAT) • Projectiles (37mm armor-piercing; 40mm, grenade, HE, practice; 84mm, HEAT; 90mm, recoilless rifle, HEAT) • Rockets (35mm LAW, subcaliber; 66mm LAW, HEAT; 66mm incendiary)
Range 45	<ul style="list-style-type: none"> • Range used for grenade launchers. • Items found or used on the range included: <ul style="list-style-type: none"> • Grenades (hand, illumination, smoke, practice) • Mortars (60mm, HE, practice) • Mines (antipersonnel, practice) • Projectiles (14.5mm and 22mm subcaliber; 40mm grenade, practice, HE, smoke, illumination) • Rockets (35mm subcaliber; 66mm LAW (HEAT from Range 44); 66mm incendiary)
Range 46	<ul style="list-style-type: none"> • Range used for small arms. • Items found or used on the range included small arms (pistols and rifles).
Range 47	<ul style="list-style-type: none"> • Range used for grenade training. • Items found or used on the range included grenades (40mm, HE).
Range 48	<ul style="list-style-type: none"> • Range used for weapons familiarization, sniper, mortar, and machine gun grenade launchers. • Items found or used on the range included: <ul style="list-style-type: none"> • Grenades (hand, fragmentation; rifle, practice) • Mines (antitank, practice; antipersonnel, practice) • Missiles (Dragon guided, HEAT) • Mortars (4.2-inch, HE; 60mm, HE, TP, illumination; 81mm, HE, WP, TP, illumination) • Projectiles (22mm subcaliber; 40mm grenade launcher, HE; 57mm, HE; 75mm, HE;

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Location	Description
	<p>84mm, practice, HEAT; 105mm HE, smoke, illuminating; 155mm, smoke)</p> <ul style="list-style-type: none"><li>• Rockets (2.36-inch, practice; 3.5-inch, practice; 35mm subcaliber, practice; 66mm LAW HEAT; 66mm incendiary)<li>• Signal (illumination)<li>• Small arms

References: USACE 1997a and Parsons 2007

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Table 8.1-5
Interim Action Ranges MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007) The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> City of Seaside Ordinance No. 259 amending the municipal code referred to as Chapter 15.34 and Monterey County Ordinance 16.10. These ordinances prohibit excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. MOA establishes FORA's ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> This MRA is identified as development with borderlands interface and habitat reserve. The requirements for the borderlands interface have both short and long-term requirements. Interim requirements include the maintenance of firebreaks and vehicle barriers where appropriate. Long-term requirements apply as development occurs. Except for the habitat reserve and borderland interface parcels, the MRA is available for development once the future regulatory requirements have been completed. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).

Table 8.1-5
Interim Action Ranges MRA – Administrative Controls

Type	Description
Biological Opinions/ Critical Habitat	<ul style="list-style-type: none">• Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities.• A portion of the Interim Action Ranges MRA has been designated as critical habitat for the Monterey spineflower.• Future MEC work is required to be consistent with the applicable conservation measures.

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Table 8.2-1
Interim Action Ranges MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	<ul style="list-style-type: none"> • Terrain of the MRA is relatively flat. • Elevation ranges from approximately 370 to 530 feet msl with 2 to 15 percent slopes. • The surface soils are characterized as eolian (sand dune) and terrace (river deposits); which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. • The primary soil type present in the MRA is Arnold-Santa Ynez Complex with a smaller area of Baywood Sand with 2 to 15 percent slopes in the northeastern portion of the MRA.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 8.2-2
Interim Action Ranges MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
E38	MRS-Ranges 43-48	Maritime Chaparral
E39	MRS-Ranges 43-48	Maritime Chaparral
E40	MRS-Ranges 43-48	Maritime Chaparral
E41	MRS-Ranges 43-48	Maritime Chaparral
E42	MRS-Ranges 43-48	Maritime Chaparral

Reference: USACE/Jones & Stokes 1992

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Table 8.3-1
Interim Action Ranges MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
Range 44	<ul style="list-style-type: none"> • Trail Sampling (April 1997) - Grid sampling was conducted with Schonstedt magnetometers to a 4-foot depth on a 15-foot-wide trail. The trail linked approximately 5-acres in and around Range 44. During the establishment of the Range 44 trail, no MEC was encountered (USA 2001d). • Range 44 Grid Subsurface Removal (April 1997) - A 4-foot removal was conducted with Schonstedt magnetometers on two 100-foot-by-100-foot grids in Range 44 (grids 05A and 05B) (USA 2001k and Parsons 2007). • Range 44 Grid Sampling (August 1997) - Sampling was performed on a grid in Range 44 that contained a target. No MEC items or munitions debris were encountered during this sampling activity (Parsons 2007). • Range 44 Special Case Area Surface Removal (March 2007) – Surface removal of any MEC, non-MEC-like MD, or general metallic debris items greater than 2 inches in any dimension encountered within accessible areas (Shaw 2007)
Range 45	<ul style="list-style-type: none"> • April and October 1999, a surface removal was performed on Range 45 as an immediate safety action in response to trespassing incidents that occurred at Range 44 and Range 45 (USA 2001q and Parsons 2007).
Range 46	<ul style="list-style-type: none"> • Between April and August 1999, a 4-foot analog removal operation was conducted on nine grids around Range 46 to support efforts to remediate spent SAA and lead-contaminated soil around the firing line. Of the 27 cleared grids, all or a portion of nine were located on the border of MRS-SEA.4 and Ranges 43-48 (Grids 23AP, 23AQ, 23AR, 23AS, 22AO, 22AP, 22AR, and 22AS) (Parsons 2007). No MEC were found on the grids.
Ranges 43-48	<ul style="list-style-type: none"> • The Army determined that Ranges 43-48 warranted an interim action because of their proximity and increased accessibility to the public, the threat of trespassing, and most importantly, the highly dangerous MEC on or near the surface of the ranges. The interim action entailed a geophysical survey including analog removal and mapping post-removal conditions between November 2003 and December 2005 (Parsons 2007). • A visual surface search was conducted in the Range 43-48 area to search for MEC, munitions debris and range-related debris (2 inches or larger) (Parsons 2007). • The analog removal was conducted in two phases: 1) range target removal and target path clearance; and 2) analog removal to depth on 1,251 grids (Parsons 2007). • The recommended cleanup solution for Range 45 involved scraping the top 2 feet of soil and sifting operations on a 14-acre area. The sorting operation produced 1,086 MEC (40mm HE projectiles, practice 35mm rockets, hand grenades) and 3,432 MD-E items. A total of 139,259 pounds of MD and RRD was recovered during the sifting operation (Parsons 2007). • Digital mapping, reacquisition and excavation operations in the Range 45 grids (that had been under the 2-foot layer of soil that was scraped/sifted). The Range 45 pad asphalt and base was removed after sifting operations completed and analog and digital removal operations were conducted on approximately 1.7 acres in 8 grids of the Range 45 pad area (Parsons 2007). • Approximately 227 acres of the removal area were designated as SCAs or non-completed areas. Figure 8.3-4 shows the location of SCAs and non-completed areas (Parsons 2007).

Table 8.3-1
Interim Action Ranges MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
Evolution Road Fuel Break Re-establishment	<ul style="list-style-type: none"> November 1997 to January 1998 - Fuels breaks inside the former impact area were reestablished as part of a wildfire safety and control program. Vegetation clearance operations and a 4-foot analog removal were conducted to re-establish the fuel breaks (USA 2001p). Fifty-three contiguous 15-foot by 100-foot grids of the Evolution Road fuel break (originally called Maverick Road) form the western boundary of Ranges 43-48 (USA 2001p).
OE-15A Grid Sampling (Range 46)	<ul style="list-style-type: none"> October 1997 – 100 percent grid sampling to a depth of 4 feet at three 100-foot by 100-foot grids (USA 2000a). No UXO found. Expended 40mm practice grenades and 3.5-inch practice rockets found on surface in Grid #1. Grid #2 contained four large burial pits with 86 expended 3.5-inch practice rockets.
OE-15B Grid Sampling	<ul style="list-style-type: none"> October 1997 – 100 percent sampling to a depth of 4 feet at two 100-foot by 100-foot grids (USA 2000d). Two MEC items (M222 Dragon guided missile and 81mm M68 training projectile) were found in Grid G14. No MEC were found in Grid G13.
Blue Line Fuel Break Establishment	<ul style="list-style-type: none"> Between May and June 1998, as part of the former impact area wildfire safety and control program, vegetation clearance operations and a 4-foot removal with Schonstedt magnetometers were conducted along the 30-foot wide, 6-mile long fuel break that runs along the interior of the former impact area (USA 2001p).
Impact Area	<ul style="list-style-type: none"> Between March and August 1999, 213 100-foot by 100-foot grids in MRS-MOCO.2, MRS-SEA.1-4, MRS-DRO.2, and MRS-MOCO.1 were sampled to determine the need and scope of future removal actions. Six sample grids (G-6, G-13, G-20, G-22, G-24, and G-26) were placed in the 25-acre southern section of MRS-MOCO.2, which is inside the Ranges 43-48 sites. A 100 percent of each grid was investigated with the Schonstedt magnetometer (USA 2000a and 2001m)
Impact Area Fuel Break Maintenance	<ul style="list-style-type: none"> In 2001, 47 miles of old roads, trails, and fuel breaks that had been used regularly during military training activities were restored to divide the former impact area into fire-defensible polygons. Surface removals were conducted on the 15-foot-wide sides of each fuel break, and a 4-foot removal (with deeper excavations approved by the USACE OESS) was performed with Schonstedts on some of the fuel breaks grid centers (Parsons 2006a). The present fuel break roads surrounding Ranges 43-48 were established during the maintenance work. A 15-foot-wide, surface cleared fuel break was placed along the interior of the paved Eucalyptus road, inside the former Impact area. The 45-foot-wide Orion Road and Broadway Avenue fuels breaks (collectively referred to as Pipeline Road at the time) were established, as a subsurface removal was conducted on the 25-foot-wide centers of the dirt roads and a surface removal was performed on the 15-foot-wide sides. For Evolution Road, a 30-foot-wide surface cleared fuel break was added to the inside of the 15-foot-wide, subsurface cleared fuel break established in 1997 to 1998 (Parsons 2006a).
Surface Time-Critical Removal Action	<ul style="list-style-type: none"> Between August and December 2001, a TCRA was performed over the former Ranges 43-48 site to remove MEC, munitions debris, and RRD from the surface of the site's open and accessible areas (Parsons 2002b) Vegetation was not disturbed during this action. The surface TRCA was required to

Section 8 – Interim Action Ranges MRA Conceptual Site Model

Table 8.3-1
Interim Action Ranges MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
	address the imminent threat to public safety posed by the site's accessibility and proximity to the public, the types and quantities of MEC known to be present on the site, and the site's susceptibility to trespassing.
Preparatory Action	<ul style="list-style-type: none"> Between August and October 2002, fire preparation and control work was completed in preparation for the Ranges 43-48 prescribed burn (Parsons 2004a). The preparatory action entailed removing or relocating debris on the site such as tires, wooden structures, and utility poles; cutting vegetation around structures and utility poles that were not removed; cutting the brush and pruning/removing trees around the site perimeter; and performing fire prevention work around the Fitch Park housing area.
Prescribed Burn	<ul style="list-style-type: none"> In October 2003, a prescribed burn was conducted on Ranges 43-48. The vegetation needed to be cleared from the ranges so MEC removal teams could safely operate geophysical detection instruments over the site and locate and destroy MEC. The prescribed burn cleared the vegetation from approximately 95 percent of the site, revealing numerous MEC previously hidden by the brush (Parsons 2004a).

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Table 8.3-2
Interim Action Ranges MRA – Burial Pits Containing MEC

Location	Grid	Pit No. *	Type	Item Description	Qty	Depth (inches bgs)	
Ranges 43-48	B2J8G8		UXO	Projectile, 22mm, subcaliber, practice, M744	1	12	
			UXO	Rocket, 35mm, subcaliber, practice, M73	3	12	
			UXO	Rocket motors, M222/M223 (Dragon)	3	12	
		B2J7I0		UXO	Ordnance components	2	15
	C2A8C8	1		DMM	Propellant, 60mm, wafers, mortar	1	48
				UXO	Ordnance components	10	48
				UXO	Fuze, projectile, PD, M48 series	4	48
				UXO	Rocket, 35mm, subcaliber, practice, M73	1	48
				DMM	Cartridge, 75mm, blank, M337	1	48
		2		UXO	Projectile, 20mm, HE, M56A3	1	8
				UXO	Projectile, 37mm, LE, MK II	2	8
				UXO	Projectile, 81mm, mortar, HE, M374 series	1	8
				UXO	Fuze, projectile, TSQ, M55	11	8
		3		UXO	Fuze, projectile, TSQ, M55	3	2
		4		UXO	Fuze, trench mortar, PD, MK VI	1	5
		5		UXO	Rocket, 66mm, HEAT, M72 series	1	12
		6		UXO	Rocket, 35mm, subcaliber, practice, M73	4	8
		C2A9G6		UXO	Fuze, grenade, hand, M10 series	13	5
		C2A9H6		DMM	Fuze, grenade, hand, practice, M205 series	25	12
	C2A8H3			UXO	Grenade, hand, illuminating, MK I	3	36
				UXO	Grenade, rifle, smoke, WP, M19A1	1	36
				UXO	Rocket motors, M222/M223 (Dragon)	1	36
				UXO	Pyrotechnic mixture, illuminating	1	36
	C2A7I0		UXO	Simulator, projectile, airburst, M74 series	6	24	
	C2A8		DMM	Rocket, 35mm, practice, subcaliber, M73	1	0	
C2A8I4			UXO	Grenade, hand, illuminating, MK I	8	36	
			UXO	Ordnance components	2	36	
	C2A8J3		UXO	Projectile, 60mm, mortar, illuminating, M83 series	1	12	
	C2B9B7		UXO	Ordnance components	4	48	
	C2B8B0		UXO	Simulator, projectile, airburst, M74 series	3	48	

Section 8 – Interim Action Ranges MRA Conceptual Site Model

Table 8.3-2
Interim Action Ranges MRA – Burial Pits Containing MEC

Location	Grid	Pit No. *	Type	Item Description	Qty	Depth (inches bgs)
	C2B8E8		UXO	Flare, surface, trip, M49 series	2	18
			UXO	Grenade, hand, illuminating, MK I	1	18
	MRS-15 RNG 45		UXO	Projectile, 40mm, HE, M381	1	0
	MRS-15 EDCBND_FB 06 S		DMM	Rocket, 35mm, practice, subcaliber, M73	7	6
			DMM	Rocket, 35mm, practice, subcaliber, M73	14	12

Note: * - If more than one found in grid.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 8.3-3
Interim Action Ranges MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
40MM (Model Unknown)	0	0	1	NS
75MM (Model Unknown)	0	0	2	NS
Box Of Fuzes (Model Unknown)	0	0	1	NS
Cap, blasting, electric, M6	0	1	0	1
Cartridge case, 40mm (projectile removed/case intact)	1	1	0	1
Cartridge, 20mm, target practice, M204	1	0	0	1
Cartridge, 20mm, TP-T, M220	0	2	0	NS
Cartridge, 40mm, practice, M382	0	1	0	1
Cartridge, 40mm, practice, M781	0	19	0	1
Cartridge, 75mm, blank, M337	0	1	0	2
Cartridge, ignition, M2 series	6	0	0	1
Charge, 0.25lbs, demolition, TNT	1	0	0	2
Explosive, bulk, HE	6	2	0	NS
Firing device, pressure, M1A1	1	0	0	1
Firing device, release, M1	1	0	0	1
Flare, parachute, trip, M48	1	0	0	2
Flare, surface, trip, M49 series	42	0	0	1
Fuze, bomb, nose, M103	2	0	0	2
Fuze, grenade, hand, M10 series	91	2	0	1
Fuze, grenade, hand, M204 series	0	2	0	1
Fuze, grenade, hand, practice, M205 series	1	25	0	1
Fuze, grenade, hand, practice, M228	0	1	0	1
Fuze, mine, antitank, practice, M604	1	0	0	1
Fuze, projectile, combination, M1907	2	0	0	1
Fuze, projectile, mechanical time super quick, M772	1	0	0	1
Fuze, projectile, point detonating, M46	1	0	0	2
Fuze, projectile, point detonating, M47	1	0	0	2
Fuze, projectile, point detonating, M48 series	14	0	0	2
Fuze, projectile, point detonating, M503 series	2	0	0	2
Fuze, projectile, point detonating, M52 series	2	0	0	2
Fuze, projectile, point detonating, M524 series	1	0	0	2

Section 8 – Interim Action Ranges MRA Conceptual Site Model

Table 8.3-3

Interim Action Ranges MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Fuze, projectile, point detonating, M53 series	2	0	0	2
Fuze, projectile, point detonating, M557	1	0	0	2
Fuze, projectile, powder train time fuze, M84 series	1	0	0	2
Fuze, projectile, time (fixed), M65	1	0	0	2
Fuze, projectile, time super quick, M548	1	0	0	2
Fuze, projectile, time super quick, M55	14	0	0	2
Fuze, trench mortar, point detonating, MK VI	2	0	0	2
Grenade, hand, fragmentation, M67	3	0	1	3
Grenade, hand, fragmentation, MK II	2	0	0	3
Grenade, hand, Illumination, MK I	24	0	0	1
Grenade, hand, practice, M69	1	0	0	1
Grenade, hand, practice, MK II	3	0	0	1
Grenade, hand, smoke, commercial (model unknown) (civilian)	1	0	0	1
Grenade, hand, smoke, HC, AN-M8	3	0	0	1
Grenade, hand, smoke, M18 series	4	0	0	1
Grenade, hand, smoke, white phosphorous, M15	4	0	0	3
Grenade, rifle, antitank, M9 series	1	0	0	3
Grenade, rifle, smoke, white phosphorous, M19A1	5	0	0	3
Grenades, HE, 40MM, M550 (Model Unknown)	0	0	3	NS
HE, 40MM, M550 (Model Unknown)	0	0	2	NS
HE-T, 20MM (Model Unknown)	0	0	1	NS
Missile, guided, high explosive antitank, M222 (Dragon)	1	0	0	3
Missile, guided, practice, M231 (Dragon)	19	0	0	1
Ordnance Components	312	1	0	NS
Parachute, Green Star (Model Unknown)	0	0	1	NS
Primer, igniter tube, M5	1	0	0	1
Primer, igniter tube, M57	2	0	0	1
Projectile, 105mm, high explosive, M1	2	0	0	3
Projectile, 105mm, illumination, M314 series	2	0	0	2
Projectile, 14.5mm, subcaliber, practice, M181 series	78	0	0	1
Projectile, 155mm, high explosive, MK 1	1	0	0	3

Table 8.3-3
Interim Action Ranges MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Projectile, 155mm, Smoke, BE, M116 series	3	0	0	2
Projectile, 20mm, high explosive incendiary, M56A3	2	0	0	3
Projectile, 20mm, target practice, M204	2	0	0	0
Projectile, 22mm, subcaliber, practice, M744	1,467	0	0	1
Projectile, 25mm, subcaliber, M379	1	0	0	1
Projectile, 37mm, high explosive, M54	2	0	0	3
Projectile, 37mm, low explosive, MK I	3	0	0	3
Projectile, 37mm, low explosive, MK II	2	0	0	3
Projectile, 37mm, target practice, M63 MOD1	1	0	0	2
Projectile, 4.2inch, mortar, high explosive, M3 series	3	0	0	3
Projectile, 4.2inch, mortar, smoke, white phosphorous, M328 series	2	0	0	3
Projectile, 40mm, cluster, white star, M585	2	0	4	1
Projectile, 40mm, CS, M651	6	0	0	1
Projectile, 40mm, high explosive dual-purpose, M430	12	0	1	3
Projectile, 40mm, high explosive dual-purpose, M433	7	0	0	3
Projectile, 40mm, high explosive, M381	147	0	18	3
Projectile, 40mm, high explosive, M383	28	0	0	3
Projectile, 40mm, high explosive, M384	13	0	0	3
Projectile, 40mm, high explosive, M386	9	0	0	3
Projectile, 40mm, high explosive, M397	12	0	0	3
Projectile, 155mm, Smoke, BE, M116 series	3	0	0	2
Projectile, 40mm, high explosive, M406	31	0	0	3
Projectile, 40mm, high explosive, M441	1	0	0	3
Projectile, 40mm, parachute, illumination, M583 series	6	0	0	1
Projectile, 40mm, parachute, star, M662	3	0	0	1
Projectile, 40mm, Practice, (model unknown)	6	0	0	2
Projectile, 40mm, practice, M382	6	0	0	1
Projectile, 40mm, practice, M407A1	49	0	0	1
Projectile, 40mm, smoke, M680 series	5	0	0	1
Projectile, 40mm, smoke, M713 series	32	0	7	1
Projectile, 50mm, Mortar, Type89, Japanese NI	4	0	0	3

Section 8 – Interim Action Ranges MRA Conceptual Site Model

Table 8.3-3

Interim Action Ranges MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Projectile, 57mm, high explosive antitank, M307	2	0	0	3
Projectile, 57mm, high explosive, M306 series	108	0	1	3
Projectile, 57mm, target practice, M306 series	1	0	0	1
Projectile, 60mm, mortar, high explosive, M49 series	59	0	0	3
Projectile, 60mm, mortar, high explosive, M720	4	0	0	3
Projectile, 60mm, mortar, illumination, M721	3	0	0	2
Projectile, 60mm, mortar, illumination, M83 series	26	0	0	2
Projectile, 60mm, mortar, practice, M50 series	3	0	0	2
Projectile, 75mm, high explosive, M309	5	0	0	3
Projectile, 75mm, high explosive, M41A1	1	0	0	3
Projectile, 75mm, high explosive, M48	10	0	0	3
Projectile, 75mm, high explosive, MK I	2	0	0	3
Projectile, 75mm, Shrapnel, MK I	4	0	0	3
Projectile, 76mm, high explosive, M352	5	0	0	3
Projectile, 81mm, mortar (model unknown)	0	0	1	3
Projectile, 81mm, mortar, Flare Shell, T-23	2	0	0	1
Projectile, 81mm, mortar, high explosive, M362	4	0	0	3
Projectile, 81mm, mortar, high explosive, M374 series	3	0	0	3
Projectile, 81mm, mortar, high explosive, M43 series	18	0	0	3
Projectile, 81mm, mortar, high explosive, M56	1	0	0	3
Projectile, 81mm, mortar, illumination, M301 series	10	0	0	2
Projectile, 81mm, mortar, illumination, M853A1	1	0	0	2
Projectile, 81mm, mortar, practice, M43 series	1	0	0	2
Projectile, 81mm, mortar, smoke, white phosphorous, M375 series	1	0	0	3
Projectile, 81mm, mortar, smoke, white phosphorous, M57 series	1	0	0	3
Projectile, 84mm, high explosive antitank, M136 series (AT-4)	111	0	13	3
Projectile, 90mm, high explosive antitank, M348	8	0	1	3
Projectile, 90mm, high explosive antitank, M371A1	13	0	0	3
Projectile, HE, 40MM, M550 (Model Unknown)	0	0	1	NS

Table 8.3-3
Interim Action Ranges MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Propellant, 60mm, wafers, mortar	0	1	0	1
Pyrotechnic mixture, illumination	13	0	0	1
Pyrotechnic mixture, smoke	14	0	0	1
Rifle, Grenade, HE, 40MM, M550 (Model Unknown)	0	0	1	NS
Rocket motors, M222/M223 (DRAGON)	87	0	0	1
Rocket, 3.5inch, high explosive antitank, M28 series	1	0	0	3
Rocket, 3.5inch, practice, M29 series	0	0	1	0
Rocket, 35mm, subcaliber, practice, M73	6,663	25	30	1
Rocket, 66mm, high explosive antitank, M72 series	305	0	27	3
Rocket, 66mm, incendiary, TPA, M74	98	0	6	3
Signal, ground, rifle, parachute, M17 series	2	0	0	1
Signal, illumination, AN-M43 series	1	0	0	1
Signal, illumination, ground, M125 series	8	0	0	2
Signal, illumination, ground, M126 series	5	0	0	2
Signal, illumination, ground, parachute, rifle, M19 series	1	0	0	1
Signal, illumination, M187	2	0	0	1
Signal, illumination, M51A1	1	0	0	1
Signal, smoke, ground, M166 series	1	0	0	1
Simulator, flash artillery, M110	1	0	0	1
Simulator, launching, antitank guided missile and rocket, M22	1	0	0	1
Simulator, projectile, airburst, M74 series	17	0	0	1
STAR, 40MM (Model Unknown)	0	0	1	NS
MRA TOTAL	10,165	84	125	

Note: NS – Not Specified

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

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Table 8.3-4
Interim Action Ranges MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	10,165 items
DMM	84 items
ISD	125 items (MPPEH that could not be classified as UXO, DMM, or MD)
MD	196,996 pounds of MD (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> The greatest concentrations of MEC and MD were encountered in the vicinity of Ranges 44 and 45. The MEC and MD found during sifting operations in Range 45 is not shown on Figure 8.3-1, but is included in Table 8.3-3. The MD collected during sifting operation at Range 45 is not shown on Figure 8.3-1. Additional research is needed to verify if the grids showing that no MD was found in a grid is an accurate representation of data. It appears that these zero MD grids are in areas where no subsurface removal actions have been accomplished. Approximately 227 acres of the MRA were designated as SCAs or non-completed areas as shown on Figure 8.3-4.
Vertical Extent	<ul style="list-style-type: none"> The majority of the MEC removed from the MRA were located on the surface; however, this observation may not include subsurface MEC items removed during the Range 45 sifting operations.

Table 8.3-5
Interim Action Ranges MRA – HTW History and Conditions

Type	Summary
Range 43	<ul style="list-style-type: none"> The evaluation of HA-43 (Range 43) included a literature search, review of the information gathered during the munitions response at the site, site reconnaissance and investigation sampling. Sampling results identified lead above ecological risk screening levels. Based on the presence of lead in soil it was recommended in the BRA that an evaluation of remedial alternatives be conducted in the Small Arm Ammunition Feasibility Study.
Range 44	<ul style="list-style-type: none"> HA-44 (Range 44) MC was detected at during sampling conducted as part of the basewide RI/FS. Site reconnaissance and investigation sampling were performed under the BRA. Elevated concentrations of the explosive compound HMX and lead were detected during BRA sampling. Based on the presence of HMX and lead in soil it was recommended in the BRA that HA-44 be evaluated for potential remediation of MC.
Range 45	<ul style="list-style-type: none"> The evaluation of HA-45 (Range 45) included a literature search, and sampling conducted during the base wide RI/FS. Site reconnaissance and investigation sampling were performed under the BRA. Because no explosive residues or elevated metals concentrations were found, no further action related to MC at HA-45 was recommended under the BRA.
Range 46	<ul style="list-style-type: none"> The evaluation of HA-46H (Range 46) included a literature search, site reconnaissance, and investigation sampling. Surface soil samples were collected to evaluate whether explosive residue or metals were present in areas where high numbers of military munitions or SAA were found. Because no explosive residues or elevated metals concentrations were found, no further action related to MC was recommended under the BRA.
Range 47	<ul style="list-style-type: none"> The evaluation of HA-47 (Range 47) included a literature search and review of the information gathered during the munitions response (MEC removal) at MRS-Ranges 43-48. Surface soil samples were collected to evaluate whether explosive residue or metals were present in areas where high numbers of military munitions or SAA were found. Because no explosive residues or elevated metals concentrations were found, no further action related to MC was recommended under the BRA.

Reference: Army 2007

Section 8 – Interim Action Ranges MRA Conceptual Site Model

Table 8.4-1
Interim Action Ranges MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
E38	MRS-Ranges 43-48	Habitat	Reserve - MPC	18
E39	MRS-Ranges 43-48	Habitat	Reserve - MPC Firing Range Buffer	166
E40	MRS-Ranges 43-48	Development	MPC Rifle Range	19
	MRS-Ranges 43-48	Development	MPC Rifle Range	6
E41	MRS-Ranges 43-48	Habitat	Reserve - MPC	9
E42	MRS-Ranges 43-48	Habitat	Reserve - MPC	13
MRA - TOTAL				231

Table 8.5-1
Interim Action Ranges MRA – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • Dominant vegetation in the area is maritime chaparral. This biological community is described below: <ul style="list-style-type: none"> ◦ Maritime chaparral is one of the dominant vegetation type within Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occur in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk and western rattlesnake.
Habitat Management Plan / Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that a habitat management plan be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years following MEC removal to document habitat conditions. Since the inception of the MEC removal program the Army had elected to augment the monitoring program, where feasible to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development with borderland development along portions of the boundaries adjacent to the NRMA interface. The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to insure compliance with the ESA and to minimize impacts to listed species. • The HMP identified principal management categories. The Interim Action Ranges MRA is identified as development with borderlands interface and habitat reserve. These principal management categories are defined as: <ul style="list-style-type: none"> ◦ Development - lands in which no management restrictions are contained under the HMP although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA. Some plans for salvage of biological resources for these parcels may be specified. ◦ Habitat Reserve – land in which no development is allowed. Management goals for the area are conservation and enhancement of threatened and endangered species. ◦ Borderland Development Area – land abutting the Natural Resources Management Area that is slated for development. Management of these lands includes no restrictions except along the development/reserve interface.

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Table 8.5-1
Interim Action Ranges MRA – Ecological Information

Type	Summary
	<ul style="list-style-type: none"> • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). • Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.
<p>Threatened and Endangered Species/ Critical Habitat</p>	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife and native biological communities that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Threatened or endangered plant species identified as having possible occurrence in the Interim Action Ranges MRA include sand gilia (endangered) and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of the Interim Action Ranges MRA is located within 2 km of an aquatic feature in which CTS may be present. • A portion of the Interim Action Ranges MRA has been designated as Critical Habitat for the Monterey spineflower.

Table 8.5-2
Interim Action Ranges MRA – HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E38	Habitat Reserve	sand gilia; Monterey spineflower; Seaside bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; coast wallflower; Hooker's manzanita; California linderiella; California red-legged frog; California black legless lizard; Monterey ornate shrew
E39	Habitat Reserve	sand gilia; Monterey spineflower; Seaside bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; coast wallflower; Hooker's manzanita; California linderiella; California red-legged frog; California black legless lizard; California tiger salamander; Monterey ornate shrew
E40	Development (includes a borderland buffer along the NRMA Interface)	Monterey spineflower; Seaside bird's beak; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; California tiger salamander; California black legless lizard
E41	Habitat Reserve	sand gilia; Monterey spineflower; Seaside bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; coast wallflower; Hooker's manzanita; California linderiella; California red-legged frog; California black legless lizard; Monterey ornate shrew
E42	Habitat Reserve	Monterey spineflower; Seaside bird's beak; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; California tiger salamander; California black legless lizard

Reference: USACE 1997b

Table 8.6-1
Interim Action Ranges MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Recreational Users				✓	✓	✓

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9.0 MOUT SITE MRA CONCEPTUAL SITE MODEL

The MOUT Site MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the MOUT Site MRA are located at the end of Section 9.0.

9.1 MOUT Site MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

9.1.1 Boundaries and Access

The MOUT Site MRA is located in the central portion of the former Fort Ord within the northeastern portion of the former impact area. The MRA includes the MOUT training area and a portion of Barloy Canyon Road located along the eastern boundary of the former impact area (Figure 9.1-1). The MOUT Site MRA is wholly contained within the jurisdictional boundaries of Monterey County.

The MOUT Site MRA encompasses approximately 61 acres and contains the following two USACE property transfer parcels: F1.7.2 and L20.8 (Table 9.1-1 and Figure 9.1-1).

Access to the MOUT Site MRA is currently restricted to the public by four-strand barbed-wire fencing with concertina along Eucalyptus Road to the north, and locked gates/barricades with concertina and warning signs across Barloy Canyon Road at the intersection with Eucalyptus Road. There is no fencing around the MOUT training area portion of the MRA; however, the MOUT training area is located within the former impact area, which is surrounded by four-strand barbed-wire fencing. Detailed information on roadways and access is provided in Table 9.1-2.

9.1.2 Structures and Utilities

The MOUT training area portion of the MRA (Parcel F1.7.2) includes 42 buildings and structures and a pistol range (Figure 9.1-1). An observation tower, range support building, and field latrine are the only unused structures on the MRA. Detailed information concerning location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 9.1-3. There are no commercial businesses or full-time inhabitants within 4,000 feet of the MRA.

The MOUT training area (Parcel F1.7.2) is not served by water, sewer, storm, gas, or electrical utility systems. A telephone line enters the MOUT training area at the northwestern boundary (Figure 9.1-1).

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The Barloy Canyon Road portion of the MOUT Site MRA (Parcel L20.8) does not have utilities. East of the Barloy Canyon Road, an electrical line runs in a north to south direction. The electrical line crosses from the eastern side to the western side of Barloy Canyon Road approximately one mile south of the intersection with Eucalyptus Road (Figure 9.1-1). More detailed information on utilities within the MRA is provided in Table 9.1-2.

9.1.3 Historical Military Use

Initial use of the area including the MOUT Site MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. No training maps from this time period have been found, and no pre-World War II-era military munitions have been encountered during previous Army response actions within the MOUT Site MRA.

Figure 9.1-2 shows the locations of known firing ranges and training sites in the vicinity of the MRA. To facilitate previous MEC investigation and removal activities, the MOUT training area was designated as MRS-28, which corresponds to USACE Parcel F1.7.2 (Table 9.1-1). The Barloy Canyon Road portion of the MRA borders a former military training area to the east, and also a part of the eastern boundary of the former impact area. USACE Parcel L20.8 passes through one of the former training sites (MRS-270). The two MRSs are shown on Figure 9.1-3.

A summary of the historical military use for each MRS is provided in Table 9.1-4. The primary historical military use within MRS-28 was for infantry training in an urban setting. Historical maps indicate a history of close combat training (USACE 1997a). The historical use of MRS-270 and the unfenced area east of Barloy Canyon Road included bivouac, troop maneuver, and subcaliber artillery training (USACE 1997a).

9.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the MRA, including land use covenants, county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in detail in Table 9.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MOUT Site MRA.

9.2 MOUT Site MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

9.2.1 Topography and Geology

The terrain of the MOUT Site MRA is characterized as rugged terrain with slopes ranging from 15 to 50 percent. The elevation ranges from approximately 260 feet msl to approximately 420 feet msl in the MOUT training area and from approximately 200 feet msl to approximately 480 feet msl in the Barloy Canyon Road portion of the MRA (Figure 9.2-1). The geology includes alluvial fan and flood deposits for the Paso Robles Formation, and sand and gravel deposits of Aromas Formation. Surface soil conditions in the MOUT Site MRA are predominantly weathered dune sand (Figure 9.2-1), which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys. Table 9.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the MRA.

9.2.2 Vegetation

The vegetation of the MOUT Site MRA consists primarily of inland coast live oak woodland and grassland with smaller areas of maritime chaparral (Figure 9.2-2 and Table 9.2-2; USACE/Jones & Stokes 1992). The MRA is characterized by dense vegetation except for the MOUT training area, which is developed with training facilities and buildings. A number of sampling and removal actions have been performed at the MOUT training area that required vegetation removal. Given the terrain, the vegetation removal was performed predominantly through manual practices, although a significant portion of the MRA was burned during an accidental fire that occurred in July 2003. During past field activities, the presence of poison oak was noted in the area.

9.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the MOUT Site MRA. The Seaside Groundwater Basin is the main hydrogeologic structure that underlies the MRA. The depth to groundwater is estimated to be greater than 100 feet bgs and is not expected to influence geophysical surveys conducted for MEC remediation activities. No water supply wells or groundwater monitoring wells are identified in the area.

A number of aquatic features (i.e., vernal pools, ponds) are located within 800 feet (approximately 500 meters) of the MOUT training area and the southern end of Barloy Canyon Road (Figure 9.2-2).

9.3 MOUT Site MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

9.3.1 Investigation and Removal History

Numerous investigations and removal actions were conducted by the Army in the MOUT Site MRA, which included:

MRS-27O:

- Site Inspection in March 1996 (USACE 1997a)
- TCRA (Visual Surface) and Military Munitions Reconnaissance from October to November 2003 (Shaw 2005).

MRS-28:

- 4-foot 100 Percent Grid Sampling of 16 Grids from March to September 1998 (USA 2001c)
- SS/GS Sampling of 13 100-foot by 200-foot Grids from March to September 1998 (USA 2001c)
- TCRA (Visual Surface) and Military Munitions Reconnaissance from November to December 2003 (Shaw 2005).

In addition, a portion of Barloy Canyon Road and areas immediately adjacent to the road were investigated as part of the TCRA (surface reconnaissance) following the 2003 Eucalyptus Fire (Shaw 2005).

These investigations and removal actions are summarized in Table 9.3-1. During the removal actions, two burial pits containing MEC were discovered in the northern portion of MRS-28. Table 9.3-2 provides more detailed information on the specific types of MEC recovered from these burial pits. The results of these investigations and removal actions with respect to MEC and MD are summarized in Table 9.3-3 and are shown on Figures 9.3-1, 9.3-2, and 9.3-3.

9.3.2 Types of MEC Recovered and Hazard Classification

Table 9.3-3 includes a summary of MEC recovered from the MOUT Site MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the MOUT Site MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

9.3.3 Location of MEC and MD

Figures 9.3-1, 9.3-2, and 9.3-3 show the location of MEC and MD previously removed from the MOUT Site MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the MOUT Site MRA is provided in Table 9.3-4 and included:

- 53 UXO items
- 59 DMM items
- 22,110 pounds of MD (includes MD-E and MD-F items if weights were documented)

The MMRP database indicates that the greatest concentrations of MEC and MD were encountered in the southern portion of MRS-28. The majority of MEC in MRS-28 was consistent with troop maneuver and close combat training, with the exception of a single high-explosive mortar. MEC consistent with use as a troop maneuver area were encountered east of Barloy Canyon Road, and high concentrations of subcaliber artillery simulators were encountered west of the southern end of Barloy Canyon Road, as expected. In addition, MEC consisting of 40 grenade fuzes and 16 mine fuzes were found in two separate burial pits (Figure 9.3-2).

Most of the investigated grids within MRS-28 contained less than 10 pounds of MD; however, the majority of the MRS only had visual surface removal. The highest concentration of MD by weight was encountered in the southern portion of the MOUT training area (Figure 9.3-3). A portion of the MD identified on Figures 9.3-1 and 9.3-3 includes SAS but not SAA.

All MEC and MD encountered and removed during previous removal operations were located within the 4-foot removal depth. The majority of MEC and MD removed was located

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within 0 to 24 inches bgs. Figure 9.3-4 shows the distribution of MEC recovered at specified depth intervals and does not include MEC recovered from the burial pits.

9.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges, multi-use ranges, and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 9.3-5 summarizes the findings of the BRA investigation activities with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HA-158 (MRS-28) because the area was still in active use (Army 2007). However, MRS-28 is also part of IRP Site 39 at the former Fort Ord. Previous soil remediation activities were conducted as part of the Site 39 program, which has an existing ROD.

In 2003, four buildings at the MOUT training area (Parcel F1.7.2) were burned during the Eucalyptus Road Fire. Previous surveys showed that three of the four structures had ACM. In 2004, the Army performed soil sampling within the footprints of the former buildings and adjacent areas to determine whether the soil contained asbestos or lead. No detectible asbestos was found to be present, and no further action was required. The soil did contain concentrations of lead, which was identified as requiring notification prior to transfer or lease (Shaw 2004b).

9.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issue:

- The CERCLA process must be completed for the MOUT Site MRA including development of an RI/FS, development of a Proposed Plan, and completion of a ROD

9.4 MOUT Site MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

9.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The MOUT Site MRA is located in the central portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the MOUT Site MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

9.4.2 Current Land Use

This MOUT Site MRA includes the MOUT training area (Parcel F1.7.2) and a portion of Barloy Canyon Road (Parcel L20.8). The MOUT training area consists of a mock city that is currently used for tactical training of military, federal, and local law enforcement agencies. To the east of the MOUT training area is Barloy Canyon Road, which is used as a controlled roadway to periodically access the Laguna Seca Raceway events.

9.4.3 Reasonably Foreseeable Future Land Use

Table 9.4-1 and Figure 9.4-1 identify the proposed uses of the MRA by parcel. As shown in the Base Reuse Plan, the parcels in the MOUT Site MRA are scheduled for development. It is important to note that the development land use category encompasses infrastructure activities, such as roadway and utility corridor construction.

The MOUT training area (Parcel F1.7.2) is expected to continue being used as a tactical training area for law enforcement agencies. The Barloy Canyon portion of the MOUT Site MRA is likely to be improved and opened as a transportation corridor. To facilitate reuse, infrastructure improvements, such as utilities and roadways, are required.

9.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future

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- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future

9.5 MOUT Site MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 9.5-1.

As discussed in Section 9.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the MOUT Site MRA as development without restriction (Figure 9.5-1). Nearby NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

9.5.1 Major Plant Communities and Ecological Habitats

The vegetation of the MOUT Site MRA consists primarily of inland coast live oak woodland and grassland with smaller areas of maritime chaparral (Figure 9.2-2; USACE/Jones & Stokes 1992). The MRA is characterized by dense vegetation except for the MOUT training area, which is developed with training facilities and buildings. During past field activities, the presence of poison oak was noted in the area.

9.5.2 Threatened and Endangered Species

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Future MEC remediation is required to be consistent with the applicable conservation measures.

Threatened or endangered plant species identified as having possible occurrence in the MOUT Site MRA include sand gilia (endangered) and Monterey spineflower (threatened).

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Figure 9.5-1 shows the MOUT Site MRA with respect to various aquatic features. The MOUT Site MRA may have a presence of CTS because the MRA is located within 500 meters of two aquatic features, one of which was identified as suitable breeding habitat and the other which was identified as a known CTS breeding site in 2004.

9.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species that could be found on the MOUT Site MRA have been identified in Table 9.5-1 by parcel. The following species are identified in the HMP as having possible occurrence in the MOUT Site MRA: toro manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, and Monterey ornate shrew.

9.6 MOUT Site MRA Pathway Analysis

As discussed in Sections 9.3.4 and 9.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army; based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA Remediation Program. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

9.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the MOUT Site MRA using the information gathered in the CSM profiles. Exposure pathways include source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of the Army's previous surface removal actions and subsurface sampling actions. Exposure pathways for the MOUT Site MRA are presented on Figure 9.6-1 and discussed below.

Source

Source areas within the MOUT Site MRA were partially addressed during the Army's previous sampling and removal actions. The historical source areas within the MOUT Site MRA are shown on Figure 9.1-3, and recovered MEC and MD from these areas are shown on Figures 9.3-1, 9.3-2, and 9.3-3. The sources include firing points, target areas, and range safety fans for military weapons training activities and troop training/maneuver areas.

Figure 9.6-2 illustrates the most likely release mechanisms of MEC being found in the MOUT Site MRA, which include:

- Mishandling/Loss, Abandonment, and Burial (Military Weapons Training)
- Direct and Indirect Firing and Thrown (Military Weapons Training)
- Firing, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access to the MOUT training area and Barloy Canyon Road is restricted to authorized users.

Receptor / Activity

Table 9.6-1 identifies the receptors and exposure media as Ground Surface and Below Grade.

9.6.2 Exposure Pathway Analysis

As discussed above, Figure 9.6-1 graphically presents the exposure pathways analysis for the MOUT Site MRA. The graphic shows the current and future potentially incomplete and potentially complete pathways for activities in the MOUT Site MRA. A small risk of MEC exposure to current and future receptors remains during intrusive activities in the MOUT training area (MRS-28) and along Barloy Canyon Road. The risk of MEC exposure to current and future receptors during surface activities along Barloy Canyon Road is unlikely; however, this will receive further consideration.

9.7 MOUT Site MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the MOUT Site MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the MOUT Site MRA are consistent with the historical uses, including weapons and troop training, bivouac, and troop maneuvers. Therefore, the MOUT Site MRA falls into the category of proceed to RI. Based on the existing data for the MOUT Site MRA, the recommendation is:

- Proceed with Documentation – Prepare the RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

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Table 9.1-1
MOUT Site MRA – Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
F1.7.2	54	MRS-28
L20.8	7	MRS-27O
MRA TOTAL	61	

Note: The northern portion of USACE Parcel L20.8 passes through MRS-27O, and the southern portion of the parcel is adjacent to MRS-14D.

Table 9.1-2
MOUT Site MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> Eucalyptus Road is a closed two-lane roadway that provides restricted access to the MOUT Site MRA from the north. Barloy Canyon Road (Parcel L20.8) is east of the MOUT training area (Parcel F1.7.2). Internal to the MOUT training area, a number of dirt and paved roads are present. Additionally, there are a number of dirt trails within the MRA.
Structures and Utilities	<ul style="list-style-type: none"> No utility systems (water, wastewater, electrical, gas, or storm drainage) are found in either Parcel F1.7.2 or L20.8. A telephone line enters Parcel F1.7.2 at the northwestern border and terminates at Building 613. East of the Barloy Canyon Road, an electrical line runs in a north to south direction. The electrical line crosses from the eastern side to the western side of Barloy Canyon just over a mile south of the intersection with Eucalyptus Road.
Fencing and Access	<ul style="list-style-type: none"> Access is restricted by four-strand barbed-wire fencing with concertina along Eucalyptus Road and locked gates/barricades with concertina and warning signs across Barloy Canyon Road. There is no fencing around the MOUT training area itself; however, the MOUT training area is located within the former impact area, which is surrounded by four-strand barbed-wire fencing.

Table 9.1-3
MOUT Site MRA – Existing Structures and Buildings

USACE Parcel Number	Facility Number	Area (square footage)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
F1.7.2	628	1,659	MOUT Range	no ACM	NO	1986
F1.7.2	627	2,214	MOUT Range	no ACM	NO	1986
F1.7.2	829	200	Observation Tower	no ACM	YES	1969
F1.7.2	826	200	Combat Pistol Range	no ACM	YES	1969
F1.7.2	R9521	172	Field Range Latrines	unknown	NO	1984
F1.7.2	624A	5,106	MOUT Range	unknown	unknown	unknown
F1.7.2	623	1,383	MOUT Range	no ACM	NO	1986
F1.7.2	622	18,701	MOUT Range	no ACM	NO	1986
F1.7.2	621B	724	Field Range Latrines	no ACM	NO	1986
F1.7.2	624	2,027	Helipad	unknown	NO	1990
F1.7.2	613	3,868	Range Support Building	unknown	NO	1986
F1.7.2	601	2,436	MOUT Range	no ACM	NO	1986
F1.7.2	632	516	Range Support Building	unknown	unknown	unknown
F1.7.2	610B	2,023	MOUT Range	no ACM	NO	1986
F1.7.2	615	1,430	MOUT Range	no ACM	NO	1986
F1.7.2	609A	2,085	MOUT Range	no ACM	NO	1986
F1.7.2	633	1,010	Covered Training Area	unknown	unknown	unknown
F1.7.2	610A	2,120	MOUT Range	no ACM	NO	1986
F1.7.2	608A	3,039	MOUT Range	no ACM	NO	1986
F1.7.2	609B	2,310	MOUT Range	no ACM	NO	1986
F1.7.2	617	2,407	MOUT Range	no ACM	NO	1986
F1.7.2	619D	992	MOUT Range	no ACM	NO	1986
F1.7.2	620D	520	MOUT Range	no ACM	NO	1986
F1.7.2	611A	1,834	MOUT Range	no ACM	NO	1986
F1.7.2	612	508	MOUT Range	no ACM	NO	1986
F1.7.2	618	725	MOUT Range	no ACM	NO	1986
F1.7.2	620C	615	MOUT Range	no ACM	NO	1986
F1.7.2	619C	1,014	MOUT Range	no ACM	NO	1986
F1.7.2	621A	1,038	Field Range Latrines	no ACM	NO	1986
F1.7.2	605	3,567	MOUT Range	no ACM	NO	1986

Section 9 – MOUT Site MRA Conceptual Site Model

Table 9.1-3
MOUT Site MRA – Existing Structures and Buildings

USACE Parcel Number	Facility Number	Area (square footage)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
F1.7.2	611B	1,855	MOUT Range	no ACM	NO	1986
F1.7.2	607A	3,044	MOUT Range	no ACM	NO	1986
F1.7.2	608B	3,297	MOUT Range	no ACM	NO	1986
F1.7.2	606	3,694	MOUT Range	no ACM	NO	1986
F1.7.2	604B	2,541	MOUT Range	no ACM	NO	1986
F1.7.2	619B	1,046	MOUT Range	no ACM	NO	1986
F1.7.2	607B	2,782	MOUT Range	no ACM	NO	1986
F1.7.2	604A	2,540	MOUT Range	no ACM	NO	1986
F1.7.2	620B	398	MOUT Range	no ACM	NO	1986
F1.7.2	603	2,222	MOUT Range	no ACM	NO	1986
F1.7.2	620A	478	MOUT Range	no ACM	NO	1986
F1.7.2	619A	925	MOUT Range	no ACM	NO	1986
F1.7.2	616	975	MOUT Range	no ACM	NO	1986
F1.7.2	614	3,822	MOUT Range	no ACM	NO	1986

Table 9.1-4
MOUT Site MRA – Historical Military Use

Location	Prior Use	Description
Unknown	EOD Training Area	The area of Site MRS 28 may have been used as an Explosive Ordnance Disposal (EOD) training area (USACE 1997a).
Unknown		The MOUT Site MRA reportedly contained a lot of ordnance, including torpedoes that were removed from the site. The type of torpedoes was not specified, but it is suspected that they were Bangalore Torpedoes. There are reports of 40mm high-explosive grenades and bazooka rounds being fired into Wildcat Canyon, somewhere south of Impossible City (USACE 1997a).
Impossible City	Operations in Urban Center Training	Located in the northeastern portion of MRS-28 and was used for training infantry to operate within an urban setting. Several buildings within the city were small arms live-fire sites (USACE 1997a).
Tire House	High-Explosive Hand Grenades	A structure made from sand-filled tires where live fire of small arms and the use of high-explosive hand grenades were authorized (USACE 1997a).
Hand Grenade	Unknown	Maps from the 1950s show several grenade training areas in the vicinity of MRS-28 (USACE 1997a).
Combat in Cities	Unknown	Maps from the 1950s indicate a Combat in Cities Range (USACE 1997a).
Rocket Launcher	Unknown	Maps from the 1950s indicate a Rocket Launcher Range (USACE 1997a).
Range 35	Quick Kill Range	A 1973 Standard Operating Procedure (SOP) showed Range 35 as a quick kill range with up to 20 firing locations (MACTEC 2007). Authorized weapons were the M16 and M14 rifles. In 1977, Range 35 was listed as an indirect fire subcaliber range. Based on a review of 1964-1972 training maps, it appears that the area may have also been used as a rocket launcher range. After 1977, the range was listed as either “inactive” or as the “MOUT.”
Range 35 A	Combat Pistol Range	Used as a combat pistol range from at least 1972 (USACE 1997a). Information from September 1980 through October 1992 indicated that the range had six small arms firing lanes and was authorized for 38 and 45 caliber pistol fire (MACTEC 2007).
Range 74	Mock-Up Village	Shown as a mock-up village in the 1940s and 1950s (USACE 1997a).
Range 147, TS-15 (MRS-270)	Training Site	Identified as a former training site (USACE 1997a). As defined in the Fort Ord Regulations, a training site is a training facility located within a training area and used as an overnight bivouac area. The area is identified as Bivouac L on a 1964 training map. On 1976 through 1987 ranges and training maps, the site is identified as Training Site 15.

Section 9 – MOUT Site MRA Conceptual Site Model

Table 9.1-4
MOUT Site MRA – Historical Military Use

Location	Prior Use	Description
Adjacent to Barloy Canyon Road		
P-5 (MRS-14D)	Subcaliber Artillery Impact Area	A 1956 map shows a subcaliber artillery training area in this area identified as P-5. According to the Archives Search Report, this area was used from approximately 1972 through 1992 for subcaliber artillery training (USACE 1997a).
Training Area	Division Artillery Training	The area east of Barloy Canyon Road was labeled Division Artillery training area on 1950s maps (USACE 1997a).

Table 9.1-5
MOUT Site MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> • To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. • Due to Fort Ord's former use as a military installation, the property may contain MEC and a risk remains of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property, provided the CRUPs are adhered to (Army 2007). • The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." • These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> • Monterey County Ordinance 16.10 prohibits excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> • An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> • The MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. • The MOA establishes FORA's ownership during MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> • The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	<ul style="list-style-type: none"> • Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. • Future MEC work is required to be consistent with the applicable conservation measures.

Section 9 – MOUT Site MRA Conceptual Site Model

Table 9.2-1
MOUT Site MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present..
Topography and Soils	<ul style="list-style-type: none"> • Terrain is characterized as rugged with slopes ranging from 15 to 50 percent. • Elevation ranges from approximately 260 feet msl to approximately 420 feet msl in the MOUT training area and from approximately 200 feet msl to approximately 480 feet msl in the Barloy Canyon Road portion of the MRA. • Soils consist predominantly of Arnold Loamy Sand with 15 to 50 percent slopes, Aquic Xerofluvents, and Arnold Loamy Sand with 9 to 15 percent slopes. Smaller areas of the MRA consist of dissected Xerothents, Santa Ynez Fine Sandy Loam with 15 to 30 percent slopes, and Baywood Sand with 2 to 15 percent slopes.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 9.2.2
MOUT Site MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
F1.7.2	MRS-28	Inland coast live oak woodland, grassland, and maritime chaparral
L20.8	MRS-270	Inland coast live oak woodland, grassland, maritime chaparral, coast live oak savanna, and ice plant mats surrounding the roadway.

Reference: USACE/Jones & Stokes 1992

Table 9.3-1
MOUT Site MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
MRS-270	<ul style="list-style-type: none"> In March 1996, a USACE OESS performed a site inspection and found expended small arms blanks and expended pyrotechnic items (USACE 1997a). From approximately October to November 2003, a visual surface TCRA and military munitions reconnaissance was conducted to remove MEC greater than 2 inches in size following an accidental fire in the area (Eucalyptus Fire Area) (Shaw 2005).
MRS-28	<ul style="list-style-type: none"> From March to September 1998, 100 percent grid sampling was conducted in 16 grids to a depth of 4 feet in the northeastern and southwestern portions of the MRS. Additionally, SS/GS sampling operations were conducted in 13 100-foot by 200-foot grids in the central portion of the MRS (USA 2001c). From approximately November to December 2003, a visual surface TCRA and military munitions reconnaissance was conducted to remove MEC greater than 2 inches in size following an accidental fire in the area (Eucalyptus Fire Area) (Shaw 2005).

Table 9.3-2
MOUT Site MRA – Burial Pits Containing MEC

Location	Grid	Type	Item Description	Qty	Depth (inches bgs)
MRS-28	B3I9C0	DMM	Fuze, Mine, Combination, M10 (M10A1, M10A2)	16	10
	B3I9C4	DMM	Fuze, Grenade, Hand, M10 Series, M10A3	40	10

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

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Table 9.3-3
MOUT Site MRA – Types of MEC Removed and Hazard Classification

MEC Items	UXO	DMM	ISD	Hazard Classification
Cartridge, ignition, M2 series	0	1	0	1
Flare, surface, trip, M49 series	1	0	0	1
Fuze, grenade, hand, M10 series	0	40	0	1
Fuze, grenade, hand, M204 series	6	1	0	1
Fuze, grenade, hand, practice, M205 series	3	0	0	1
Fuze, grenade, hand, practice, M228	0	1	0	1
Fuze, mine, combination, M10 series	0	16	0	1
Grenade, hand, fragmentation, M67	3	0	0	3
Grenade, hand, fragmentation, MK II	1	0	0	3
Grenade, hand, practice, M21	5	0	0	1
Grenade, hand, practice, M62	1	0	0	1
Grenade, hand, practice, M69	2	0	0	1
Grenade, hand, practice, MK II	2	0	0	1
Grenade, hand, smoke, M18 series	7	0	0	1
Grenade, hand, smoke, M48	7	0	0	1
Grenade, rifle, antitank, M9 series	1	0	0	3
Projectile, 22mm, subcaliber, practice, M744	1	0	0	1
Projectile, 40mm, high explosive, M381	1	0	0	3
Projectile, 40mm, parachute, illumination, M583 series	1	0	0	1
Projectile, 81mm, mortar, high explosive, M43 series	1	0	0	3
Rocket, 3.5 inch, practice, M29 series	1	0	0	0
Signal, illumination, ground, M125 series	1	0	0	2
Simulator, blast, stinger, civilian, M15	2	0	0	2
Simulator, explosive booby trap, flash, M117	2	0	0	1
Simulator, flash artillery, M110	1	0	0	1
Simulator, grenade, hand, M116A1	1	0	0	2
Simulator, projectile, airburst, M74 series	1	0	0	1
Simulator, projectile, ground burst, M115A2	1	0	0	2
MRA TOTAL	53	59	0	

Reference: Fort Ord MMRP Database.

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 9.3-4
MOUT Site MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	53 items
DMM	59 items
MD	22,110 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> The greatest concentrations of MEC and MD were encountered in the southern portion of MRS-28. The majority of MEC in MRS-28 were consistent with troop maneuver and close combat training with the exception of a single high-explosive mortar. MEC consistent with use as a troop maneuver area were encountered east of Barloy Canyon Road, and a high concentration of subcaliber artillery simulators were encountered, as expected, southeast of Barloy Canyon Road.
Vertical Extent	<ul style="list-style-type: none"> The MMRP database indicates that all MEC and MD encountered and removed during previous removal operations were located within the 4-foot removal depth. The majority of MEC and MD removed were located within 0 to 24 inches bgs. Figure 9.3-4 shows the distribution of MEC recovered at specified depth intervals and does not include MEC recovered from the burial pits. The majority of MEC were found during the visual surface TCRA. Forty grenade fuzes and 16 mine fuzes were found in two separate burial pits.

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Table 9.3-5
MOUT Site MRA – HTW History and Conditions

Type	Summary
MRS-28	<ul style="list-style-type: none"> In 2003, four buildings at the MOUT training area (Parcel F1.7.2) were burned during the Eucalyptus Fire. Previous surveys showed that three of the four structures had ACM. In 2004, the Army performed soil sampling within the footprints of the former buildings and adjacent areas to determine whether the soil contained asbestos or lead. The findings were documented in accordance with the approved sampling and analysis plan (Shaw 2004a). Based on the analytical results, it was concluded that no detectible asbestos was present and no further action was required. The soil did contain concentrations of lead; therefore, the property recipient is required to be notified of the lead-affected soil prior to transfer or lease (Shaw 2004b). The evaluation of HA-158 (MRS-28) included a literature search and reconnaissance of the site. SAA was found, including live blanks and expended blank casings. Additionally, MEC and MD were observed. This site is still active as a training area for tactical training of military, federal, and local law enforcement agencies. Because this site is still active, no further investigation for MC is recommended under the BRA (Shaw/MACTEC 2006; Army 2007). At HA-35A (Combat Pistol Range), there has been release of lead, copper, and antimony associated with SAA uses. However, the Army concluded that, since the range continues to be active, no action related to MC is recommended (Shaw/MACTEC 2006; Army 2007).
MRS-270	<ul style="list-style-type: none"> The evaluation of HA-147 (MRS-270) included a literature search and site reconnaissance. Expended blank casings were found during the site visit; however, no MEC or MD were identified. Because no evidence of range or soil contamination was found, and only expended pyrotechnics were identified, no further action related to MC was recommended for HA-147 under the BRA (Shaw/MACTEC 2006; Army 2007).

Table 9.4-1
MOUT Site MRA- Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
F1.7.2	MRS-28	Development	Law Enforcement Use, Homeland Security Training, Fenced-Off Training Areas	54
L20.8	No Related MRS	Development	Roadway	7
MRA TOTAL				61

Table 9.5-1
MOUT Site MRA – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • The dominant vegetation is characterized as oak woodlands and grasslands with smaller areas of maritime chaparral, which are described below. • Maritime chaparral is one of the dominant vegetation types at former Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus, and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake. • Coast Live Oak Woodland and Savanna - The coast live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodlands include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall's woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oaks, but probably make little use of the coastal oaks because the tightly spaced branches discourage them from entering the tree canopies. • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and riggut brome are the most common grassland communities. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman's kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel.
Habitat Management Plan / Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b).

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Table 9.5-1
MOUT Site MRA – Ecological Information

Type	Summary
	<ul style="list-style-type: none"> • Since April 1997, a number of BOs have been issued that are relevant to the anticipated removal activities at the former Fort Ord (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures. • The HMP identified principal management categories. The MOUT Site MRA is defined as development, which is identified as a parcel in which no management restrictions are contained under the HMP. Some plans for salvage of biological resources for these parcels may be specified.
Threatened and Endangered Species	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Threatened or endangered plant species identified as having possible occurrence in the MOUT Site MRA include sand gilia (endangered) and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. The MOUT Site MRA may have a presence of CTS because the MRA is located within 500 meters of two aquatic features, one of which was identified as suitable breeding habitat and the other which was identified as a known CTS breeding site in 2004.

Table 9.5-2
MOUT Site MRA - HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
L20.8	Development	Toro manzanita, Monterey ceanothus, Eastwood's ericameria; Monterey ornate shrew
F1.7.2	Development	Toro manzanita; Monterey ceanothus; Eastwood's ericameria; Hooker's manzanita; Monterey ornate shrew

Reference: USACE 1997b

Table 9.6-1
MOUT Site MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓

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10.0 LAGUNA SECA MRA CONCEPTUAL SITE MODEL

The Laguna Seca MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Laguna Seca MRA are located at the end of Section 10.0.

10.1 Laguna Seca MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

10.1.1 Boundaries and Access

The Laguna Seca MRA is located in the southeastern portion of the former Fort Ord adjacent to the Laguna Seca Raceway (Figure 10.1-1). The MRA is bordered by Barloy Canyon Road and the former impact area to the west, South Boundary Road and Laguna Seca Raceway to the south, and additional former Fort Ord property to the east and north. The Laguna Seca MRA is wholly contained within the jurisdictional boundaries of Monterey County.

The MRA encompasses approximately 276 acres and contains the following six USACE property transfer parcels: L20.3.1, L20.3.2, L20.5.1, L20.5.2, L20.5.3, and L20.5.4 (Table 10.1-1 and Figure 10.1-1).

Access into Laguna Seca MRA is currently restricted by fencing, barricades, gates, and warning signs. Locked gates and barricades across South Boundary Road restrict access to the MRA from the south. Barricades across Barloy Canyon Road at the intersection with Eucalyptus Road restrict access into the MRA from the north. The western side of the Laguna Seca MRA, along Barloy Canyon Road, is bounded by barbed-wire fencing. The eastern boundary of the MRA is not restricted by fencing. Warning and no trespassing signs are posted on the gates, barriers, and fencing.

South Boundary Road and Barloy Canyon Road are not usually open to vehicle traffic; however, the roadways are opened to controlled vehicle traffic during events at the Laguna Seca Raceway. There are also several dirt roads and trails throughout the Laguna Seca MRA (Figure 10.1-1). Detailed information on roadways and access is provided in Table 10.1-2.

10.1.2 Structures and Utilities

The only structure located within the Laguna Seca MRA is a field latrine on the western edge of the MRA (Figure 10.1-1; Army 2007). Detailed information concerning location, size, description of the structure, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 10.1-3. A few structures exist within the Laguna Seca Raceway property located to the south of the MRA. The southwestern portion of the MRA (Parcels L20.3.1 and L20.3.2) is used as an overflow parking lot for raceway events.

Section 10 – Laguna Seca MRA Conceptual Site Model

The Laguna Seca MRA is not served by water, sewer, or storm drain utility systems. An overhead electrical line runs through the Laguna Seca MRA along Barloy Canyon Road and South Boundary Road (Figure 10.1-1). More detailed information on utilities within the MRA is provided in Table 10.1-2.

10.1.3 Historical Military Use

Initial use of the Laguna Seca MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II-era military munitions have been removed during previous Army response actions within the Laguna Seca MRA.

Figure 10.1-2 shows the locations of known firing ranges and training sites in the vicinity of the MRA. The vicinity of Laguna Seca MRA was identified as a training area on historical maps for the 1st Brigade and Division Artillery. A review of available documentation indicated the potential presence of 7- and 8-inch naval rounds within the MRA (USACE 1997a). To facilitate previous MEC investigations and removal activities, the MRA was divided into four MRS, which generally correspond to the six USACE parcels within the Laguna Seca MRA (Table 10.1-1). The four MRSs were designated as MRS-14A, MRS-29, MRS-30, and MRS-47 and are shown on Figure 10.1-3.

A summary of the historical military use for each MRS within the Laguna Seca MRA is provided in Table 10.1-4.

10.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Laguna Seca MRA, including land use covenants, county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in detail in Table 10.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the Laguna Seca MRA.

10.2 Laguna Seca MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

10.2.1 Topography and Geology

The terrain of the Laguna Seca MRA varies from flat to very steep terrain with slopes ranging from 15 to 50 percent. The elevation ranges from approximately 470 feet msl in the northern

portion of the MRA to approximately 950 feet msl in the southern portion of the MRA (Figure 10.2-1). The geology includes deposits from the Paso Robles Formation and sand and gravel deposits of Aromas Sandstone. Surface soil conditions in the Laguna Seca MRA are predominantly weathered dune sand (Figure 10.2-1), which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys. Table 10.2-1 provides more detailed information on the geology of the former Fort Ord and soil encountered within the MRA.

10.2.2 Vegetation

The vegetation of the Laguna Seca MRA consists primarily of grassland and maritime chaparral. Smaller areas of coast live oak woodland, coast live oak savanna, and coastal scrub are also present (Table 10.2-2 and Figure 10.2-2; USACE/Jones & Stokes 1992). The MRA is characterized as open grassland and dense vegetation. A number of sampling and removal actions have been performed at the Laguna Seca MRA, which required vegetation removal. Vegetation removal has been performed with prescribed burning and both manual and mechanical methods. During past field activities, the presence of poison oak was noted in the MRA.

10.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of one monitoring well adjacent to the Laguna Seca MRA (Figure 10.2-1). The Seaside Groundwater Basin is the main hydrogeologic structure that underlies the Laguna Seca MRA. The depth to groundwater is estimated to be greater than 100 feet and is not expected to influence geophysical surveys conducted for MEC remediation activities.

A number of aquatic features (i.e., vernal pools, ponds) are located within 1,600 feet (approximately 500 meters) of the Laguna Seca MRA (Figure 10.2-2).

10.3 Laguna Seca MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

10.3.1 Investigation and Removal History

Numerous investigations and removal actions were conducted by the Army in the Laguna Seca MRA, which included:

MRS-14A:

- Removal Action to Support Proposed Laguna Seca Raceway Parking on 50 acres from 1993 to 1994 (HFA 1994)

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- 100 Percent Grid Sampling on 86 grids (10 percent of 193 acres) (UXB 1995c)
- 4-foot Removal Action on 427 grids and 1-foot Removal Action on 384 grids from June 1997 to April 1998 (USA 2001b)

MRS-29:

- Random Sampling – Converted to 100 percent Removal Action that was 53 percent completed (69 grids) from June to August 1995 (UXB 1995a)
- 4-foot Removal Action at 125 grids, including grids cleared by UXB, from February to July 1998 (USA 2000f)

MRS-30:

- 4-foot Removal Action from June to August 1995 (UXB 1995b)
- 30 feet to 40 feet of fill material were placed over most of MRS-30 in support of construction activities associated with the expansion of Laguna Seca Raceway Turn 11 (Army 2007)

MRS-47:

- Sampling Investigation at three grids in January 1994 (HFA 1994)
- 3-foot Removal Action Roads and Trails Southern and Western Perimeter on 39 grids in July 1994 (USA 2000c)
- 100 percent 4-foot Sampling Investigation at 32 Grids from July to September 1996 (USA 2000c)
- 4-foot Removal Action on 79 Acres from February to June 1997 (USA 2000c)

These investigation and removal actions are summarized in Table 10.3-1. It was reported that six 100-foot by 100-foot grids were omitted from the removal action at MRS-14A because of accessibility issues (i.e., steep grade, heavy brush, or deep ravine) (USA 2001b). During the removal actions, one burial pit containing MEC related to troop training was encountered in MRS-14A. Table 10.3-2 provides more detailed information on the specific types of MEC recovered from the burial pit. The results of these investigations and removal actions with respect to MEC and MD are summarized in Table 10.3-3 and are shown on Figures 10.3-1, 10.3-2, and 10.3-3.

10.3.2 Types of MEC Recovered and Hazard Classification

Table 10.3-3 includes a summary of MEC recovered from the Laguna Seca MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Laguna Seca MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

10.3.3 Location of MEC and MD

Figures 10.3-1, 10.3-2, and 10.3-3 show the location of MEC and MD previously removed from the Laguna Seca MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the Laguna Seca MRA is provided in Table 10.3-4 and included:

- 320 UXO items
- 1 DMM item
- 1 ISD item (MPPEH that could not be classified as UXO, DMM, or MD)
- 10,903 pounds of MD (includes MD-E and MD-F items if weights were documented)

The MMRP database indicates that the majority of MEC were found in the north-westernmost portion of MRS-47 (Figure 10.3-2). A small concentration of MEC was located in the southern portion of MRS-47, and individual MEC items were found along Barloy Canyon Road. A large number of MEC were also found outside of the MRA boundary to the northeast (Figure 10.3-2).

The MMRP database does not indicate that MD was found in most of the investigated grids within MRS-14A and MRS-30. A small percentage of the grids in these two MRSs and most of the grids in MRS-29 and MRS-47 contained up to 100 pounds of MD. Most of the MD (by weight) was recovered from MRS-47, especially in the northern portion of the MRS. A portion of the MD identified on Figures 10.3-1 and 10.3-3 includes SAS but not SAA.

All MEC and MD encountered and removed during previous removal operations were located within the 4-foot removal depth. The majority of MEC and MD removed was located within 0 to 24 inches bgs. Figure 10.3-4 shows the distribution of MEC recovered at specified depth intervals and does not include MEC recovered from the burial pit.

10.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges, multi-use ranges, and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas were identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 10.3-5 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007). However, MRS-47 is also part of IRP Site 39 at the former Fort Ord. Previous soil remediation activities were conducted as part of the Site 39 program, which has an existing ROD.

10.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issue:

- The CERCLA process must be completed for the Laguna Seca MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD

10.4 Laguna Seca MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

10.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Laguna Seca MRA is located in the southern portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the Laguna Seca MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

10.4.2 Current Land Use

The current uses for the Laguna Seca MRA are associated with Laguna Seca Raceway events. These include parking, staging, and event-related roadway access along Barloy Canyon Road and South Boundary Road.

10.4.3 Reasonably Foreseeable Future Land Use

Table 10.4-1 and Figure 10.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is predominantly planned for development reuse. These future uses continue to be associated with open space/recreation and maintained grasslands for overflow parking during Laguna Seca Raceway events. In addition, a roadway easement for a future bypass of Highway 68 is identified as a possible future use.

10.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) – current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Recreational Users (persons biking or on foot) – future

10.5 Laguna Seca MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 10.5-1.

As discussed in Section 10.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

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The HMP identifies the Laguna Seca MRA as development with reserve or development with restrictions (Figure 10.5-1). This is defined as lands slated for development that contain inholdings of reserve or require specific restrictions to protect biological resources values; management of reserve inholdings must match that for habitat reserves, while management in development areas must proceed with certain specific restrictions identified in the HMP. Nearby NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

Threatened or endangered plant species identified as having possible occurrence in the Laguna Seca MRA include sand gilia (endangered) and Monterey spineflower (threatened). A portion of the Laguna Seca MRA has been designated as critical habitat for the Monterey spineflower by the USFWS.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b).

10.5.1 Major Plant Communities and Ecological Habitats

The vegetation of the Laguna Seca MRA consists primarily of grassland and maritime chaparral. Smaller areas of coast live oak woodland, coast live oak savanna, and coastal scrub are also present (Table 10.2-2 and Figure 10.2-2; USACE/Jones & Stokes 1992). The MRA is characterized as open grassland and dense vegetation. During past field activities, the presence of poison oak was noted in the area.

10.5.2 Threatened and Endangered Species

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BO dated prior to issuance of the HMP in April 1997. Future MEC remediation is required to be consistent with the applicable conservation measures.

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. The Laguna Seca MRA may have a presence of CTS because the MRA is located within 500 meters of several aquatic features (Figure 10.5-1).

10.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the Laguna Seca MRA, which have been identified in Table 10.5-2 by parcel. The following species are identified in the HMP as having possible occurrence in the Laguna Seca MRA: toro manzanita, sandmat manzanita, Hooker's manzanita, Monterey ceanothus, California linderiella, California red-legged frog, and Monterey ornate shrew.

10.6 Laguna Seca MRA Pathway Analysis

As discussed in Sections 10.3.4 and 10.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human and ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis for residual human health risk from MEC that are potentially present.

10.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Laguna Seca MRA using the information gathered in the CSM profiles. Exposure pathways include a source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of previous surface and subsurface removal actions by the Army. Exposure pathways for the Laguna Seca MRA are presented on Figure 10.6-1 and discussed below.

Source

Source areas within the Laguna Seca MRA were addressed during the Army's previous removal actions except for omitted inaccessible grids in MRS-14A. The historical source areas within the Laguna Seca MRA are shown on Figure 10.1-3 and recovered MEC and MD from these areas are shown on Figures 10.3-1, 10.3-2, and 10.3-3. The sources include target areas for military weapons training activities at MRS-30 and MRS-47 and troop training/maneuver areas at MRS-14A and MRS-29.

Figure 10.6-2 illustrates the most likely release mechanisms for MEC being found in the Laguna Seca MRA, which include:

- Direct and Indirect Firing and Thrown (Military Weapons Training)
- Firing, Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access to MRS-47 is restricted by the fence around the former impact area. Access to MRS-14A, MRS-29, and MRS-30 is restricted. Laguna Seca Raceway has a current lease for the use of the Laguna Seca MRA parcels.

Receptor / Activity

Table 10.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade.

10.6.2 Exposure Pathway Analysis

As discussed above, Figure 10.6-1 graphically presents the exposure pathways analysis for the Laguna Seca MRA. The graphic shows that current and future pathways are all incomplete for the anticipated activities in the Laguna Seca MRA.

The omitted six grids in MRS-14A, where removal actions were not complete due to access issues (Figures 10.3-1 and 10.3-3), are not considered a potential pathway, but will receive future consideration.

10.7 Laguna Seca MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the Laguna Seca MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered at the Laguna Seca MRA are consistent with the historical military use as a weapons and troop training area. Therefore, the Laguna Seca MRA falls into the category, of proceed to RI. Based on the existing data for Laguna Seca MRA, the recommendation is:

- Proceed with Documentation – Prepare the RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

Table 10.1-1

Laguna Seca MRA – Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
L20.3.1	44	MRS-47
L20.3.2	36	MRS-30, MRS-47
L20.5.1	131	MRS-14A
L20.5.2	55	MRS-14A, MRS-29
L20.5.3	1.7	MRS-29
L20.5.4	0.5	MRS-30
MRA TOTAL	276.2	

Table 10.1-2

Laguna Seca MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> Barloy Canyon Road and South Boundary Road border the MRA to the west and south, respectively. Vehicle traffic on these roadways is associated with Laguna Seca Raceway events, otherwise the roadways are not open. There are several dirt roads and trails throughout the MRA. Other roadways (paved or unpaved) that cross or border the MRA include Impossible Canyon Road located to the west and Pilarcitos Canyon Road located to the east (not shown on figures).
Structures and Utilities	<ul style="list-style-type: none"> The MRA is not served by water, sewer, or storm drain utility systems. An overhead electrical line runs through the MRA along Barloy Canyon Road and South Boundary Road.
Fencing and Access	<ul style="list-style-type: none"> Access into Laguna Seca MRA is restricted by fencing, barricades, gates, and warning signs. Locked gates and barricades across South Boundary Road restrict access to the MRA from the south. Barricades across Barloy Canyon Road at the intersection with Eucalyptus Road restrict access into the MRA from the north. The western side of the Laguna Seca MRA, along Barloy Canyon Road, is bounded by barbed-wire fencing. The eastern boundary of the MRA is not restricted by fencing.

Table 10.1-3
Laguna Seca MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square footage)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
L20.3.1	4B21	727	Field Range Latrines	unknown	unknown	unknown

Table 10.1-4
Laguna Seca MRA – Historical Military Use

Location	Description
MRS-14A	<ul style="list-style-type: none"> The MRS was identified as part of the Pilarcitos Canyon and Lookout Ridge Area (Lookout Ridge II) (USACE 1997a) The MRS was suspected of containing 7- and 8-inch naval gun rounds that overshot the former impact area (USACE 1997a). Historical maps show a mortar position and a “Lookout Ridge Training Area” in this MRS that was identified as part of the 1st Brigade and Division Artillery Training Area (USACE 1997a).
MRS-29	<ul style="list-style-type: none"> The MRS was identified on historical maps as part of the 1st Brigade and Division Artillery Training Area (USACE 1997a).
MRS-30	<ul style="list-style-type: none"> The MRS was located inside the multi-range area (i.e., former impact area) and identified on historical maps as being within the Division Artillery Training Area and adjacent to the Wolf Hill Training Area (USACE 1997a).
MRS-47	<ul style="list-style-type: none"> The MRS was located within the multi-range area (i.e., former impact area) and identified as the Wolf Hill Training Area, and as being within the Division Artillery Training Area on historical maps (USACE 1997a).

Table 10.1-5
Laguna Seca MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> • To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. • Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property, provided the CRUPs are adhered to (Army 2007). • The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on The Former Fort Ord, Monterey County, California." • These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> • Monterey County Ordinance (16.10) prohibits excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> • An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> • The MOA between FORA and the jurisdictions for the purpose of defining the terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. • The MOA establishes FORA's ownership during MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> • The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions/ Critical Habitat	<ul style="list-style-type: none"> • Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. • A portion of the Laguna Seca MRA has been designated as critical habitat for the Monterey spineflower by the USFWS. • Future MEC work is required to be consistent with the applicable conservation measures.

Table 10.2-1
Laguna Seca MRA – Geology and Soils

	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	<ul style="list-style-type: none"> • Terrain varies from flat to very steep slopes. • Elevation ranges from approximately 470 feet msl to approximately 950 feet msl. • Soils consist predominantly of the following Santa Ynez Fine Sandy Loam with 15 to 30 percent slopes, Arnold-Santa Ynez Complex, Xerothents (Dissected), and Arnold Loamy Sand with 15 to 50 percent slopes.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 10.2.2
Laguna Seca MRA – Vegetation

MRS Identifier	USACE Parcel Number	Vegetation
MRS-47	L20.3.1	Maritime chaparral and a small area of ice plant mats
MRS-30, MRS-47	L20.3.2	Maritime chaparral
MRS-14A	L20.5.1	Grassland, oak woodland, coast live oak savanna, and a small area of ice plant mats
MRS-14A, MRS-29	L20.5.2	Grassland, oak woodland, and coastal scrub
MRS-29	L20.5.3	Grassland and coastal scrub
MRS-30	L20.5.4	Maritime chaparral

Reference: USACE/Jones & Stokes 1992

Table 10.3-1
Laguna Seca MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
MRS-14A	<ul style="list-style-type: none"> • Also known as Lookout Ridge II or LOR2. • During 1993 to 1994, a 3-foot removal action was conducted on 50 acres by Human Factors Application, Inc. (HFA) to support the proposed Laguna Seca Raceway parking area (HFA 1994). • In 1995, approximately 86 randomly placed 100-foot by 100-foot grids were 100 percent sampled to a depth of 4 feet by UXB (UXB 1995c). • From June 11, 1997 to April 9, 1998, a 4-foot removal action was conducted on 98 acres and a 1-foot removal action was conducted by USA on 95 acres. The 1-foot removal action was conducted in areas planned for use as habitat reserves. The 4-foot removal action was conducted in areas planned for development (parking). The area where the 4-foot removal was performed included the area previously cleared to 3 feet in 1993 and 1994. Six grids were omitted from the removal action (two grids located on a steep grade and covered with heavy brush and four grids located on a very steep grade and partially in a deep ravine) (USA 2001b).
MRS-29	<ul style="list-style-type: none"> • A random sampling of the MRS-29 (also known as Laguna Seca Bus Turnaround) was started by UXB on June 18, 1995. On July 22, 1995, the sampling operation was converted to a 100 percent surface and subsurface removal action. On August 17, 1995, the removal action was stopped only after 53 percent of the action was completed (UXB 1995a). • From June 26 to July 10, 1997, a 4-foot removal action was completed by USA on two of the original acres planned for removal action in 1995. From February 5 to July 5, 1998, a 4-foot removal action was performed over the remaining acres in the MRS. Areas included in the 1995 removal actions were also included in this effort (USA 2000f).
MRS-30	<ul style="list-style-type: none"> • From June 12 to August 9, 1995, a 4-foot removal action was conducted on MRS-30 (also known as Laguna Seca Turn 11 Expansion or LST11) by UXB (UXB 1995b). • Following completion of the munitions response, approximately 30 to 40 feet of fill material were placed over most of MRS-30 in support of construction activities associated with the expansion of the Laguna Seca Raceway Turn 11 (Army 2007).
MRS-47	<ul style="list-style-type: none"> • On January 6 1994, three grids were sampled within MRS-47 (also known as OE-47 or Wolf Hill) by HFA (HFA 1994). • From July 7, 1994 to July 12, 1995, a 3-foot removal action was conducted on roads and fire breaks to provide safe access for the fire department on the southern and western perimeters of the MRS by UXB (USA 2000c). • From July 29 to September 17, 1996, a 100 percent sampling effort was conducted on 32 grids to a depth of 4 feet by CMS Environmental, Inc. (CMS) (USA 2000c). • From February 6 to June 6, 1997, a 4-foot removal action was conducted over the entire 79-acre MRS by USA, including areas where 3-foot removals were previously conducted (USA 2000c).

Table 10.3-2
Laguna Seca MRA – Burial Pits Containing MEC

Site	Grid	Type	Description	Qty	Depth (inches bgs)
MRS-14A	B3A018	UXO	Pyrotechnic Mixture	5	4
		UXO	Grenade, Rifle, Smoke, Green, Red, Violet, or Yellow, Streamer, M23 & M23A1	5	4
		DMM	Signal, Illumination, Ground, Parachute, White Star, M127A1	1	4

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 10.3-3
Laguna Seca MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Cap, blasting, electric, M6	185	0	0	1
Cartridge, 20mm, high explosive incendiary, M210	1	0	0	3
Cartridge, 40mm, practice, M781	1	0	0	1
Flare, surface, trip, M49 series	5	0	0	1
Fuze, chemical, mine, antitank, M600	1	0	0	0
Fuze, grenade, hand, M204 series	1	0	0	1
Fuze, grenade, hand, M213	2	0	0	1
Fuze, grenade, hand, practice, M205 series	12	0	0	1
Fuze, grenade, hand, practice, M228	1	0	0	1
Grenade, hand, practice, MK II	1	0	0	1
Grenade, hand, smoke, HC, AN-M8	4	0	0	1
Grenade, hand, smoke, M18 series	4	0	0	1
Grenade, rifle, smoke, M22 series	6	0	1	1
Grenade, rifle, smoke, M23 series	6	0	0	1
Pot, 2.5lb, smoke, HC, screening, M1	1	0	0	1
Primer, igniter tube, M57	1	0	0	1
Projectile, 37mm, armor piercing tracer, M51 series	4	0	0	0
Projectile, 3-inch, trench mortar, practice, MK I (Stokes)	14	0	0	1
Projectile, 4.2-inch, mortar, high explosive, M3 series	4	0	0	3
Projectile, 40mm, high explosive tracer, M677	1	0	0	3
Projectile, 40mm, high explosive, M381	1	0	0	3
Projectile, 40mm, practice, M385	1	0	0	0
Projectile, 57mm, HEAT, M307	1	0	0	3
Projectile, 75mm, high explosive (model unknown)	1	0	0	3
Projectile, 75mm, high explosive, MK I	7	0	0	3
Projectile, 81mm, mortar, high explosive, M43 series	22	0	0	3
Projectile, 81mm, mortar, illumination, M301 series	1	0	0	2
Projectile, 81mm, mortar, illumination (model unknown)	1	0	0	0
Projectile, 81mm, mortar, practice, M43 series	1	0	0	2
Propellant, 60mm, wafers, mortar	1	0	0	1
Pyrotechnic mixture, illumination	5	0	0	1
Rocket, 2.36-inch, HEAT, M6	1	0	0	3

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MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Signal, illumination, AN-M43 series	9	0	0	1
Signal, illumination, ground, M125 series	5	0	0	2
Signal, illumination, ground, M126 series	5	1	0	2
Signal, smoke, ground, M62 series	2	0	0	1
Simulator, projectile, ground burst, M115A2	1	0	0	2
MRA TOTAL	320	1	1	

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 10.3-4
Laguna Seca MRA –Summary of Recovered MEC and MD

Type	Summary
UXO	320 items
DMM	1 item
ISD	1 item (MPPEH that could not be classified as UXO ,DMM, or MD)
MD	10,903 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> • The most MEC were found in the northwesternmost portion of MRS-47. • A small concentration of MEC was located in the southern portion of MRS-47, with individual MEC items found along Barloy Canyon Road to the east. • A large number of MEC were also found outside of the MRA boundary to the northeast. • The MMRP database does not indicate that MD was found in most of the investigated grids within MRS-14A and MRS-30. A small percentage of the grids in these two MRSs and most of the grids in MRS-29 and MRS-47 contained up to 100 pounds of MD. • MRS-47 contained the most MD by weight, especially in the northern portion of the MRS. • A portion of the MD includes SAS but not SAA.
Vertical Extent	<ul style="list-style-type: none"> • All MEC and MD encountered and removed during previous removal operations were located within the removal depth. The majority of MEC and MD removed was located within 0 to 24 inches bgs. • One burial pit was encountered in MRS-14A that contained MEC.
Movement	<ul style="list-style-type: none"> • During a 1997 removal action in MRS-29, sweep teams encountered several trash pits. The trash pits were excavated using hand tools because the terrain was too steep and the ground too soft for a backhoe to gain access. No MEC were found during the removal action. Soil erosion was possibly a factor in the disposition of some of the MEC, because of the non-penetrating types of munitions found at MRS-29 (USA 2000f).

Table 10.3-5
Laguna Seca MRA – HTW History and Conditions

Location	Summary
MRS-14A	<ul style="list-style-type: none"> The evaluation of HA-105 (MRS-14A) included a literature search, review of information gathered during the munitions response, and limited site reconnaissance. The reconnaissance identified one possible target and several debris piles; however, no evidence of small arms firing ranges was identified and no further action related to MC at HA-105 was recommended under the BRA.
MRS-29	<ul style="list-style-type: none"> The evaluation of HA-159 (MRS-29) included a literature search, review of information gathered during the munitions response, and site reconnaissance. No SAA, military munitions, fighting positions, evidence of targets, or range features were found. No further action related to MC at HA-159 was recommended under the BRA.
MRS-30	<ul style="list-style-type: none"> The evaluation of HA-160 (MRS-30) included a literature search and review of information gathered during the munitions response. Because no SAA firing ranges were present at MRS-30 and because fill was placed over most of the site during expansion of Laguna Seca Raceway, no further action related to MC was recommended at HA-160 under the BRA.
MRS-47	<ul style="list-style-type: none"> The evaluation of HA-177 (MRS-47) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and sampling for MC. Explosive compounds were detected at HA-177 during sampling. Additional soil samples were collected under the BRA in 2005. No explosive compounds were detected during this follow-up sampling. Based on the low concentrations detected, this site will be evaluated as a no further action site under the ROD.

Reference: Army 2007

Table 10.4-1
Laguna Seca MRA- Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
L20.3.1	MRS-47	Development with Reserve Areas or Development with Restrictions	Restricted – Parking/Easement for Highway Bypass	44
L20.3.2	MRS-30	Development with Reserve Areas or Development with Restrictions	Restricted – Parking/Expansion of Laguna Seca, Track and/or Parking	36
L20.5.1	MRS-14A	Development with Reserve Areas or Development with Restrictions	Restricted – Parking	131
L20.5.2	MRS-14A, MRS-29	Development with Reserve Areas or Development with Restrictions	Restricted – Parking/Easement for Highway Bypass	55
L20.5.3	MRS-29	Development with Reserve Areas or Development with Restrictions	Restricted – Parking/Expansion of Laguna Seca, Track and/or Parking	1.7
L20.5.4	MRS-30	Development with Reserve Areas or Development with Restrictions	Restricted – Parking/Expansion of Laguna Seca, Track and/or Parking	0.5
MRA TOTAL				276.2

Table 10.5-1
Laguna Seca MRA – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • The MRA is characterized by open grassland and dense vegetation. • A number of sampling and removal actions have been performed at the Laguna Seca MRA that required vegetation removal. Vegetation removal has been performed by prescribed burning and with both manual and mechanical methods. • During past field activities, the presence of poison oak was noted in the area. • The vegetation of the Laguna Seca MRA varies from grasslands, maritime chaparral, and coastal scrub. Smaller areas of oak woodland and coast live oak savanna are also present. These biological communities are described below: • Maritime chaparral is one of the dominant vegetation types within former Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus, and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake. • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and riggut brome are the most common grassland community within the MRA. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman’s kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel. • Coastal Scrub - Coastal scrub occurs near the coast on sandy soils and on inland hills on shallow soils. The vegetation is characterized by sparse to dense cover of soft-leaved, low-stature shrubs such as coyote brush, California sagebrush, and black sage. Wildlife species using this habitat are similar to those species expected in the maritime chaparral. • Coast Live Oak Woodland and Savanna - The coast live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodlands include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall’s woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oaks, but probably make little use of the coastal oaks because the tightly spaced branches discourage them from entering the tree canopies.
Habitat Management Plan / Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to

Table 10.5-1
Laguna Seca MRA – Ecological Information

Type	Summary
	<p>augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria.</p> <ul style="list-style-type: none"> • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). • Since April 1997, three BOs have been issued that are relevant to the anticipated removal activities at the former Fort Ord (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures. • The HMP identified principal management categories. The Laguna Seca MRA is identified as development with restrictions. This is defined as lands slated for development that contain inholdings of reserve or require specific restrictions to protect biological resources values; management of reserve inholdings must match that for habitat reserves, while management in development areas must proceed with certain specific restrictions identified in the HMP.
<p>Threatened and Endangered Species / Critical Habitat</p>	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of Laguna Seca MRA is within 500 meters of an aquatic feature in which CTS may be present. • A portion of the Laguna Seca MRA is identified as a critical habitat for Monterey Spineflower.

Table 10.5-2

Laguna Seca MRA - HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
L20.3.1	Development with Reserve Areas or Development with Restrictions (Development)	California linderiella, toro manzanita, Monterey ceanothus, Hooker's manzanita, California tiger salamander
L20.3.2	Development with Reserve Areas or Development with Restrictions (Development)	California linderiella, toro manzanita, Monterey ceanothus, Hooker's manzanita, California tiger salamander
L20.5.1	Development with Reserve Areas or Development with Restrictions (Development)	California linderiella, toro manzanita, Monterey ceanothus, Hooker's manzanita, California tiger salamander
L20.5.2	Development with Reserve Areas or Development with Restrictions (Development)	California linderiella, toro manzanita, Monterey ceanothus, Hooker's manzanita, California tiger salamander
L20.5.3	Development with Reserve Areas or Development with Restrictions (Development)	California linderiella, toro manzanita, Monterey ceanothus, Hooker's manzanita, California tiger salamander
L20.5.4	Development with Reserve Areas or Development with Restrictions (Development)	California linderiella, toro manzanita, Monterey ceanothus, Hooker's manzanita, California tiger salamander

Reference: USACE 1997b

Table 10.6-1

Laguna Seca MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Recreational Users				✓	✓	✓

11.0 DRO/MONTEREY MRA CONCEPTUAL SITE MODEL

The Del Rey Oaks/Monterey (DRO/Monterey) MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the DRO/Monterey MRA are located at the end of Section 11.0.

11.1 DRO/Monterey MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

11.1.1 Boundaries and Access

The DRO/Monterey MRA is located in the southwestern portion of the former Fort Ord, along South Boundary Road (Figure 11.1-1). The DRO/Monterey MRA is contained within the jurisdictional boundaries of the City of Del Rey Oaks and the City of Monterey.

The DRO/Monterey MRA encompasses approximately 29 acres of undeveloped land and 5.245 acres of a portion of the existing South Boundary Road and associated right-of-way. The DRO/Monterey MRA contains the following four USACE property transfer parcels: E29.1, L6.2, L20.13.1.2, and L20.13.3.1 (Table 11.1-1 and Figure 11.1-1).

The DRO/Monterey MRA is partially restricted by four-strand barbed-wire fencing, which is not complete around the entire MRA, allowing access to the MRA. South Boundary Road is an active roadway with vehicle traffic on a daily basis. This is a major roadway of the FORA transportation network and is scheduled for upgrade and improvement in the FORA Capital Improvement Program. A number of unpaved roadway and dirt trails are located throughout the MRA (Figure 11.1-1). Detailed information on roadways and access is provided in Table 11.1-2.

11.1.2 Structure and Utilities

There are no existing buildings or structures within the DRO/Monterey MRA. There are several large buildings located to the southwest of the MRA. The MRA is not currently served by any major utilities.

11.1.3 Historical Military Use

Initial use of the DRO/Monterey MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II-era military munitions were removed during previous Army response actions within the DRO/Monterey MRA.

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Figure 11.1-2 shows the locations of known firing ranges and training areas within the MRA. Table 11.1-3 summarizes the historical military uses of these areas within the DRO/Monterey MRA. To facilitate previous MEC investigations and removal activities, the area was divided into MRSs. The MRSs were identified through a review of Fort Ord records completed for the Revised Fort Ord Archive Search Report (USACE 1997a). The MRA is comprised of two non-contiguous portions of MRS-43 and a portion of the South Boundary Road, which is located within the boundaries of MRS-15 DRO.1 (Figure 11.1-3). The boundaries of the two non-contiguous portions of MRS-43 include a large portion of Parcel L6.2 and all of Parcel E29.1 for a combined area of approximately 29 acres. The South Boundary Road portion of the DRO/Monterey MRA includes Parcels L20.13.1.2 and L20.13.3.1 for a total area of approximately 5 acres (Table 11.1-1).

Based on an interview, the 1997 Revised Archive Search Report identified portions of the ridge in the area of MRS-43 were used as a backstop for rifle grenades and shoulder launched projectiles from 1942 to 1944. Firing positions were excavated along South Boundary Road, and firing was from the southeast to the northwest at a diagonal to the hill. Impact occurred just north of a large stand of trees and continued up to the next to last large fire break. The firing positions were buried when the use was discontinued. The area was control burned in the 1940s to support this training (USACE 1997a).

Based on the results of previous investigations and removal actions, it was anticipated that weapons capable of firing 37 mm projectiles had been fired from the east of the DRO/Monterey MRA toward the hillside in MRS-43 at some time up through the 1940s (Shaw/MACTEC 2007a).

MRS-15 DRO-1 is not being evaluated in this CSM. This information is included because it was adjacent to the portion of South Boundary Road that lies within this DRO/Monterey MRA. There were several known ranges in MRS-15 DRO-1, all with firing points positioned such that they fired into the former impact area, away from MRS-43 (Shaw/MACTEC 2007).

11.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the DRO/Monterey MRA, including land use covenants, city ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 11.1-4. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

11.2 DRO/Monterey MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

11.2.1 Topography and Geology

The terrain of the DRO/Monterey MRA is hilly and sloping from the southwest to the northeast, while relatively flat along the roadway. The elevation ranges from approximately 150 to 260 feet msl with 0 to 30 percent slopes (Figure 11.2-1). The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. The primary soil types present in the DRO/Monterey MRA are Baywood Sand and Arnold-Santa Ynez Complex. Soil conditions at the survey sites are predominantly weathered dune sand (Figures 11.2-1), which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys.

11.2.2 Vegetation

Vegetation consists primarily of maritime chaparral in the DRO/Monterey MRA (Table 11.2-2 and Figure 11.2-2; USACE/Jones & Stokes 1992). The area south of South Boundary Road consists of dense brush. The area along South Boundary Road transitions from sparse vegetation adjacent to the roadway to more dense vegetation to the south. A number of sampling and removal actions have been performed at MRS-43 that required vegetation removal. Vegetation removal was performed with both manual and mechanical methods. Past field activities have noted the presence of poison oak in the area.

11.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the DRO/Monterey MRA. The MRA overlies the Seaside Groundwater Basin, which is structurally complex and divided into several sub-basins. Groundwater is generally encountered at a depth of more than 100 feet bgs; however, layers of perched groundwater may be present. The occurrence of groundwater beneath the MRA is not expected to influence geophysical surveys conducted for MEC remediation activities.

Storm-water drainage from the MRA flows overland to a drainage swale, which runs parallel to South Boundary Road and ultimately flows to the southwest through park district property. The surface water from the Site is ultimately discharged to Laguna del Rey. There are no delineated wetlands reported to be present on the DRO/Monterey MRA. There are two aquatic features (i.e., vernal pools, ponds) located within approximately 100 feet of the MRA (Figure 12.2-2).

11.3 DRO/Monterey MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

11.3.1 Investigation and Removal History

Numerous investigation and removal operations were performed by the Army in the DRO/Monterey MRA (MRS-43), which included:

- SS/GS Investigation at 19 100-foot by 200-foot grids in 1998 (USA 2001j)
- 100 percent Grid Sampling at 11 100-foot by 100-foot grids in December 1999 and March 2000 (Parsons 2001)
- 4-foot Removal Action with Schonstedt GA-52/Cx instrumentation
- Geophysical Investigation with G-858 digital magnetometer at 23 100-foot by 100-foot grids and partial grids (approximately 5.5 acres) (Parsons 2001)
- Geophysical Investigation with EM61 instrument at 164 100-foot by 100-foot grids and partial grids (Parsons 2001)
- Geophysical Investigation with EM-61HH instrument at 20 100-foot by 100-foot grids (Parsons 2001)

Investigations and removal actions conducted by the Army at the adjacent property to the northeast (MRS-15 DRO-1) are summarized in the “Track 2 Munitions Response, Remedial Investigation/Feasibility Study, Del Rey Oaks Munitions Response Area, Former Fort Ord, California” (Shaw/MACTEC 2007).

These investigations and removal actions are summarized in Table 11.3-1. During the removal actions, no burial pits containing MEC were encountered in the MRA. The results of these investigations and removal actions with respect to the types of MEC recovered are summarized in Table 11.3-2, and MEC and MD are shown on Figures 11.3-1, 11.3-2, and 11.3-3.

11.3.2 Types of MEC Recovered and Hazard Classification

Table 11.3-3 includes a summary of MEC recovered from the DRO/Monterey MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the DRO/Monterey MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

11.3.3 Location of MEC and MD

Figures 11.3-1, 11.3-2, and 11.3-3 show the distribution of MEC and MD within the DRO/Monterey MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the DRO/Monterey MRA is provided in Table 11.3-3 and included:

- 3 UXO items
- 3 DMM items
- 1,012 pounds of MD (includes MD-E and MD-F items if weights were documented)

The MMRP database indicates that MEC were encountered in the northwestern portion of MRS-43 (Parcel L6.2) and along the northeastern side of South Boundary Road (Figure 11.3-2). Most of the investigated grids within the central portion of MRS-43 did not contain any MD. Grids in the remaining portions of MRS-43 contained up to 10 pounds of MD with a few grids containing 10 to 100 pounds of MD. The MD identified on Figures 11.3-1 and 11.3-3 includes SAS but not SAA.

All of the MEC removed from the MRA was located within 0 to 6 inches bgs. Figure 11.3-4 shows the distribution of MEC recovered at specified depth intervals.

11.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 11.3-5 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007).

11.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issue:

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- The CERCLA process must be completed for the DRO/Monterey MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD.

11.4 DRO/Monterey MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

11.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The DRO/Monterey MRA is located in the southwestern portion of the former Fort Ord in an area designated as having no archaeological sensitivity.

Actions to be taken at the DRO/Monterey MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

11.4.2 Current Land Use

It has been reported that the northwestern portion of the MRA (Parcel L6.2) is accessed by day recreation including hikers and mountain bikers. There is also evidence of trespasser activity and illegal dumping.

11.4.3 Reasonably Foreseeable Future Land Use

Table 11.4-1 and Figure 11.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is planned for development and habitat reuse. It is important to note that general development land use category encompasses infrastructure activities such as roadway and utility construction as well as commercial/retail, parks, and borderland activities. Roadway expansion and utility construction will constitute the major development along a portion of South Boundary Road.

11.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Recreational Users (persons biking and on foot) – future

11.5 DRO/Monterey MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 11.5-1.

As discussed in Section 11.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the DRO/Monterey MRA as development and habitat reserve (Figure 11.5-1). Habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b).

11.5.1 Major Plant Communities and Ecological Habitats

Vegetation consists primarily of maritime chaparral in the DRO/Monterey MRA (Figure 11.2-2; USACE/Jones & Stokes 1992). The area south of South Boundary Road consists of dense brush. The area along South Boundary Road transitions from sparse vegetation adjacent to the roadway to more dense vegetation to the south.

11.5.2 Threatened and Endangered Species

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a

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major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BOs and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the DRO/Monterey MRA.

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 11.5-1, it is possible the CTS may be found in the DRO/Monterey MRA as the MRA is within 500 meters of aquatic features that may provide breeding habitat for the CTS.

11.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the DRO/Monterey MRA, which have been identified in Table 11.5-2 by parcel. The following species are identified in the HMP as having possible occurrence in the DRO/Monterey MRA: Seaside bird's beak, Sandmat manzanita, Monterey ceanothus, Eastwood's ericameria.

11.6 DRO/Monterey MRA Pathway Analysis

As discussed in Sections 11.3.4 and 11.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

11.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the DRO/Monterey MRA using the information gathered in the CSM profiles. Exposure pathways include a source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of previous removal actions by the Army. Exposure pathways for the DRO/Monterey MRA are presented on Figure 11.6-1 and discussed below.

Source

The majority of the source areas within the DRO/Monterey MRA were addressed during the Army's previous removal actions and included MRS-43. The historical source area within the DRO/Monterey MRA consists of MRS-43 as shown on Figure 11.1-3, and recovered MEC and MD from the MRA are shown on Figures 11.3-1, 11.3-2, and 11.3-3. MRS-15 DRO-1 was given consideration in this CSM because it is adjacent to South Boundary Road. The source areas in MRS-15DRO.1 include target areas and range safety fans from military weapons training and troop transit for troop training activities, all of which were well north of South Boundary Road.

Figure 11.6-2 illustrates the most likely release mechanisms for MEC being found in the DRO/Monterey, which included:

- Mishandling/Loss, Abandonment, and Burial (Military Weapons Training)
- Indirect and Direct Firing and Thrown (Military Weapons Training)
- Firing, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access is not restricted to MRS-43.

Receptor / Activity

Table 11.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade.

11.6.2 Exposure Pathway Analysis

As discussed above, Figure 11.6-1 graphically presents the exposure pathways analysis for the DRO/Monterey MRA. The graphic shows the current and future potentially complete pathways for activities in the DRO/Monterey MRA immediately adjacent to South Boundary Road.

11.7 DRO/Monterey MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA Remediation Program. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the DRO/Monterey MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

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- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the DRO/Monterey MRA are consistent with the historical use as a weapons and troop training area. Army has conducted removal actions over the majority of the MRA. Therefore, the DRO/Monterey MRA falls into the category of proceed to RI. Based on the information presented in the CSM for DRO/Monterey MRA, the recommendation is:

- Proceed with Documentation – Prepare RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

Table 11.1-1
DRO/Monterey MRA –Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
L6.2	6	MRS-43
L20.13.1.2	0.245	No related MRS
L20.13.3.1	5	No related MRS
E29.1	23	MRS-43
MRA TOTAL	34.245	

Table 11.1-2
DRO/Monterey MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> • South Boundary Road is a major roadway that traverses the MRA and is open to daily traffic. • South Boundary Road is a major roadway of the FORA transportation network and is scheduled for upgrade and improvement in the FORA Capital Improvement Program. • Unpaved roads and dirt trails are located throughout the undeveloped area of the MRA south of South Boundary Road.
Structures and Utilities	<ul style="list-style-type: none"> • No buildings or structures are present at the MRA. • No utilities serve the MRA.
Fencing and Access	<ul style="list-style-type: none"> • The MRA is partially restricted by four-strand barbed-wire fencing, which is not complete around the entire MRA, allowing access to the MRA.

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Table 11.1-3
DRO/Monterey MRA – Historical Military Use

Location	Description
MRS-43	<ul style="list-style-type: none"> • Portions of the ridge in this area were used as a backstop for rifle grenades and shoulder launched projectiles from 1942 to 1944. Firing positions were excavated along South Boundary Road, and firing was from the southeast to the northwest at a diagonal to the hill. Impact occurred just north of a large stand of trees and continued up to the next to last large fire break. The firing positions were buried when the use was discontinued. The area was control burned in the 1940s to support this training (USACE 1997a). • Based on the results of previous investigations and removal actions, it is anticipated that weapons capable of firing 37mm projectiles had been fired from east of the DRO MRA (Phase I) toward the hillside in MRS-43 at some time up through the 1940s (Shaw/MACTEC 2007). • Items encountered in the MRS included practice rifle grenades, 37mm low-explosive (LE) projectile (MK1), and a fragmentation hand grenade.
MRS-15 DRO.1 (adjacent to MRA to the northeast)	<ul style="list-style-type: none"> • A portion of South Boundary Road is adjacent to MRS-15 DRO-1. • MRS-15 DRO-1 is not being evaluated in this CSM. This information is included because it is adjacent to the portion of South Boundary Road that lies within this MRA. There were several known ranges in MRS-15 DRO-1, all with firing points positioned such that they fired into the former impact area away from MRS-43. • Range 24 was a sniper range (small arms range) at the time of base closure. Historical maps and photographs indicate that in the mid-1960s it was used for automatic rifle training, but past records also indicate that 40mm projectiles have been found or used on the range. Records and recent fieldwork also suggest that this range was used for antitank 35mm subcaliber training (Shaw/MACTEC 2007). • Range 25 was an offensive overhead firing range (small arms range) at the time of base closure. Historical maps and photographs indicate that in the early 1950s the range was also used for automatic rifle training. Past records indicate that 37mm projectiles were found or used on Range 25 (Shaw/MACTEC 2007). • Range 26 was a machine gun transition range at the time of base closure. Past records indicate that this range may have been used for training with 3.5-inch rockets, 37mm projectiles, and mortars. Records and recent field investigations also indicate that Range 26 was used for 2.36-inch rocket training. A range shown on a 1945 training map in the same vicinity as Range 26 is labeled “Austin Anti-Tank” (Shaw/MACTEC 2007).

Table 11.1-4
DRO/Monterey MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007). The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> City of Del Rey Oaks and City of Monterey established ordinances that prohibit excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. MOA establishes FORA's ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	<ul style="list-style-type: none"> Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. Future MEC work is required to be consistent with the applicable conservation measures.

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Table 11.2-1
DRO/Monterey MRA – Geology and Soils

Type	Description
General Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • The extreme southern portion of the MRA is in the Arnold Santa Ynez Complex. Limestone was noted at a quarry adjacent to South Boundary Road, which likely represents an outcrop of the Paso Robles Formation. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	<ul style="list-style-type: none"> • Terrain consists of rolling hills. • Elevation ranges from approximately 150 to 350 feet msl. • Surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. • The primary soil types present in the MRA are Baywood Sand with 2 to 15 percent slopes and Arnold-Santa Ynez Complex. The Baywood Sand has high infiltration capacity and is made up of poorly graded sand.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 11.2-2
DRO/Monterey MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
L6.2	MRS-43	Maritime chaparral
L20.13.1.2	No related MRS	Maritime chaparral
L20.13.3.1	No Related MRS	Maritime chaparral
E29.1	MRS-43	Maritime chaparral

Reference: USACE/Jones & Stokes 1992

Table 11.3-1
DRO/Monterey MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
MRS-43	<ul style="list-style-type: none"> In 1999, 19 100-foot by 200-foot grids were investigated using SS/GS protocol. The SS/GS program statistically selects random sampling locations within sampling grids in order to collect representative data for the MRS (USA 2001j). Between December 1999 and March 2000, 11 100-foot by 100-foot grids were sampled in MRS-43. In addition, seven of the SS/GS grids were reinvestigated as part of a confirmation/evaluation of the SS/GS methodology. All sampling was to a depth of 4 feet using a Schonstedt GA-52/Cx magnetometer (Parsons 2001). A 4-foot removal action was conducted in MRS-43 using the Schonstedt GA-52/Cx. This removal action included the unpaved shoulders of South Boundary Road for the majority of the road bordering MRS-43 and MRS-15 DRO.1 (Parsons 2001). Twenty-three 100-foot by 100-foot grids and partial grids (approximately 5.5 acres) were investigated using the G-858 digital magnetometer. None of these grids were GS/SS grids. At the time these grids were investigated, the grids had only been surface swept and had not yet been subject to removal efforts using Schonstedt GA-52/Cx magnetometers (Parsons 2001). An area equivalent to 164 100-foot by 100-foot grids and partial grids in MRS-43 (in addition to the ten 100 percent sampling grids) were investigated using the cart-mounted EM61 instrument (Parsons 2001). Twenty 100-foot by 100-foot grids were investigated using an EM-61HH instrument.
MRS-15 DRO 01 (adjacent to MRA to the northeast)	<ul style="list-style-type: none"> Provided in the “Track 2 Munitions Response, Remedial Investigation/Feasibility Study, Del Rey Oaks Munitions Response Area, Former Fort Ord, California” (Shaw/MACTEC 2007).

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Table 11.3-2
DRO/Monterey MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Projectile, 37mm, low explosive, MK I	1	0	0	3
Grenade, rifle, smoke, M23 series	1	0	0	1
Pot, 10 pounds, smoke, HC, screening, M1	1	0	0	1
Charge, 0.25 pound, demolition, TNT *	0	0	0	2
Cartridge, ignition, M2 series	0	2	0	1
Cartridge, 40mm, practice, M781	0	1	0	1
MRA TOTAL	3	3	0	

Note: * MMRP database identified item as UXO with a quantity of zero.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 11.3-3
DRO/Monterey MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	3 items
DMM	3 items
MD	1,012 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> MEC items were encountered in the northwestern portion of MRS-43 and along the northeastern side of South Boundary Road.
Vertical Extent	<ul style="list-style-type: none"> MEC were located within 6 inches bgs.

Table 11.3-4
DRO/Monterey MRA – HTW History and Conditions

Type	Summary
MRS-43	<ul style="list-style-type: none"> The investigation of HA-173 (MRS-43) included a literature review, site reconnaissance, and sampling for MC in an area where fragments from 37mm projectiles were found. No explosive compounds were detected and no further action related to MC was recommended for HA-173 under the BRA (Shaw/MACTEC 2006).
Reported in MRA	<ul style="list-style-type: none"> There is no evidence that non-munitions-related hazardous substances were stored, released, or disposed of on transfer Parcels E29.1, L6.2, L20.13.1.2, and L20.13.3.1 (Army 2007). Hazardous substances were not stored for one year or more, released, or disposed of on transfer Parcels E29.1, L6.2, L20.13.1.2, and L20.13.3.1 (Army 2007).

Table 11.4-1
DRO/Monterey MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
L6.2	MRS-43	Habitat	Reserve – Development Buffer	6
L20.13.1.2	No related MRS	Development	Roadway	0.245
L20.13.3.1	No related MRS	Development	Roadway	5
E29.1	MRS-43	Development	Light Industrial – Business Park	23
MRA - TOTAL				34.245

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Table 11.5-1
DRO/Monterey MRA – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • Dominant vegetation in the area is maritime chaparral. Maritime chaparral consists of variable sclerophyllous (hard-leaved) shrub communities within a scrub-live oak forest region that is best developed on sandy soils within the summer fog zone. This type of chaparral is considered rare by the CDFG and is declining statewide. Development has now limited the majority of this community type in the Monterey Bay Area to undeveloped portions of the former Fort Ord. As identified in the HMP there are a number of species that could be found on the MRA.
Habitat Management Plan / Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that a habitat management plan be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the USFWS biological opinion and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years following MEC removal to document habitat conditions. Since the inception of the MEC removal program the Army had elected to augment the monitoring program, where feasible to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development and habitat reserve. • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). • Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.
Threatened and Endangered Species	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife and native biological communities that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the DRO/Monterey MRA. • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of the DRO/Monterey MRA is located within 500 meters of an aquatic feature in which CTS may be present.

Table 11.5-2
DRO/Monterey MRA – HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E29.1	Development	Monterey spineflower; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; California black legless lizard; California tiger salamander
L6.2	Habitat Reserve	Monterey spineflower, Seaside bird's beak, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard; California tiger salamander
L20.13.1.2	Development	Monterey spineflower; Seaside bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; coast wallflower; California linderiella; California black legless lizard; California tiger salamander
L20.13.3.1	Development	Monterey spineflower; Seaside bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwood's ericameria; coast wallflower; California linderiella; California black legless lizard; California tiger salamander

Reference: USACE 1997b

Table 11.6-1
DRO/Monterey MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Recreational Users				✓	✓	✓

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12.0 EAST GARRISON MRA CONCEPTUAL SITE MODEL

The East Garrison CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the East Garrison MRA are located at the end of Section 12.0.

12.1 East Garrison MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military uses, and administrative controls associated with the MRA.

12.1.1 Boundaries and Access

The East Garrison MRA is located in the northeastern portion of the former Fort Ord (Figure 12.1-1). The East Garrison MRA is wholly contained within the jurisdictional boundaries of Monterey County.

The East Garrison MRA encompasses approximately 244 acres and contains the following four USACE property transfer parcels: E11b.6.1, E11b.7.1.1, E11b.8, and L20.19 1.1 (Table 12.1-1 and Figure 12.1-1).

Barloy Canyon Road is the only major roadway in the MRA (Figure 12.1-1). The western boundary of Barloy Canyon Road is lined with four-strand barbed-wire fencing. This fencing is not complete along the entire length of the roadway, allowing unauthorized access to Parcel E11b.6.1. The eastern boundary of Barloy Canyon Road is not fenced; however, a portion of Parcel E11b.8 contains the former Ammunition Supply Point (ASP), where access is currently restricted by cyclone fencing topped with razor wire (Figure 12.1-1). Vehicle traffic is currently restricted on Barloy Canyon Road by locked gates, barricades with concertina wire, and warning signs across Barloy Canyon Road to the north and by locked gates and barricades across South Boundary Road to the south. Controlled public traffic is only allowed on Barloy Canyon Road during Laguna Seca Raceway events. A number of additional paved and unpaved roadways and dirt trails are located throughout the MRA (Figure 12.1-1). Detailed information on roadways and access is provided in Table 12.1-2.

12.1.2 Structures and Utilities

The East Garrison MRA includes 24 existing buildings and structures; 23 related to the former ASP, which was used by the Army as an explosives storage and ordnance assembly area, and one related to former military operations in the northeastern portion of the MRA (Army 2007; Figure 12.1-1). Detailed information on these structures, consisting of location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed, is provided in Table 12.1-3.

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The MRA was served by water, sewer, electrical, and telephone utilities prior to base closure. The sewer services were discontinued, but the utility lines were left in place. Electrical and telephone utilities are also present, but service is not active. A natural gas line crosses the northeastern portion of the MRA. Detailed information on utilities is provided in Table 12.1-2.

12.1.3 Historical Military Use

Initial use of the East Garrison MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II-era military munitions have been removed during previous Army response actions within the East Garrison MRA.

Figure 12.1-2 shows the locations of known training sites in the vicinity of the MRA. Known and suspected training areas include (USACE 1997a and Parsons 2006c):

- Demolition Training Area and Hand Grenade Area
- Mechanic Training Area
- Rifle Grenade Range
- Engineer Training Area “C”
- An impact area for Stokes trench mortars is suspected of being present in the eastern portion of the East Garrison MRA. The location of possible firing points is unknown.

Three areas of the East Garrison MRA were designated as MRSs based on historical information. The MRSs were designated as MRS-11, MRS-23, and MRS-42, which includes an expanded area identified as MRS-42 EXP (Figure 12.1-3). The MRSs were identified in the Revised Archive Search Report and subsequent site assessment documents as follows:

- MRS-11 - Demolition Training Area and Hand Grenade Area
- MRS-23 - Engineer Training Area / Field Expedient Area and Mechanic Training Area
- MRS-42 - Rifle Grenade Range

Also, the range fans for the former East Garrison Small Arms Ranges, located to the northwest, extended onto the MRA (Figure 12.1-2).

A summary of the historical military use of each MRS is provided in Table 12.1-4.

12.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the East Garrison MRA, including land use covenants, county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in detail in Table 12.1-5. These administrative controls are enforceable

and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the East Garrison MRA.

12.2 East Garrison MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

12.2.1 Topography and Geology

The terrain of the East Garrison MRA varies from gently sloping in the south and west to steep canyon-like walls in the north and east. The elevation ranges from approximately 170 to approximately 480 feet msl (Figure 12.2-1). Three ravines exist within the MRA; one ravine extends to the east in the southern portion of the MRA, and two converging ravines extend to the northeast in the northern portion of the MRA. The slope of the terrain in the MRA ranges from relatively flat (3 to 5 percent) within the former ASP to steep (up to 50 percent) along the ravines. The MRA is underlain by several hundred feet of eolian deposits (Aromas Eolian Facies) consisting mostly of weathered dune sand. Surface soil conditions in the East Garrison MRA are predominantly weathered dune sand (Figure 12.2-1), which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys. Table 12.2-1 provides more detailed information on the geology of the former Fort Ord and soil encountered within the MRA.

12.2.2 Vegetation

The East Garrison MRA primarily consists of maritime chaparral with small areas of oak woodland and grassland (Table 12.2-2 and Figure 12.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to dense areas of overgrowth. Past field activities have noted the presence of poison oak in various areas of the MRA.

12.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the East Garrison MRA. The Salinas Groundwater Basin is the main hydrogeologic unit that underlies the East Garrison MRA. The depth to groundwater is estimated to be greater than 100 feet bgs and is not expected to influence geophysical surveys conducted for MEC remediation activities. There are no known wells within the boundaries of the East Garrison MRA; however, one monitoring well is located to the north-northwest of the MRA (Figure 12.2-1).

There are a number of small aquatic features (i.e., vernal pools, ponds) located within the boundaries, as well as within 500 feet (approximately 150 meters) of the eastern and

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northeastern portions of the East Garrison MRA, and a relatively larger aquatic feature located approximately 1,300 feet (approximately 340 meters) to the northwest of the MRA (Figure 12.2.2).

12.3 East Garrison MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

12.3.1 Investigation and Removal History

Several investigation and removal actions were conducted by the Army in the East Garrison MRA, which included:

MRS -11

- Magnetometer assisted visual surface (14.4 acres) and 1-foot removal actions on roads and trails (1.6 acres) consisting of 27 100-foot by 100-foot grids and partial grids in the southern portion of the MRS, began on December 2, 1997; the fieldwork was suspended on December 17, 1997 when it was revised to 1-foot removal action (USA 2001g)
- Removal action to a depth of 1 foot over 16 acres in the southern portion of the MRS in May 1998 (USA 2001g)
- SS/GS sampling conducted in five 100-foot by 200-foot grids in the northern portion of the MRS in May 1998 (USA 2001g)

MRS-23

- Removal action to a depth of 4 feet in 39 100-foot by 100-foot grids and partial grids in the MRS from November to December 1997 (USA 2001e)

MRS-42/MRS-42 EXP

- Removal action to a depth of 4 feet across approximately 45 acres of the MRS from February 1998 to February 2000 (USA 2001i)

The Army also conducted a site assessment of the East Garrison MRA (also known as East Garrison Area 4) (Parsons 2006c). Site assessments are conducted to collect data in MRSs or areas of interest that may contain evidence of military munitions training. Although the portions of East Garrison Area 4 that were subjected to the site assessment were not expected to contain any evidence of military munitions training, the area as a whole was designated as an area of interest because it contained the above-referenced MRSs and was in close proximity to other MRSs.

These investigation and removal actions are summarized in Table 12.3-1. During the removal actions, two burial pits containing MEC were discovered to the northeastern portion of MRS-42 EXP (Figure 12.3-2). Table 12.3-2 provides more detailed information on the specific types of MEC recovered from these burial pits. The results of these investigations and removal actions with respect to MEC and MD are summarized in Table 12.3-3 and are shown on Figures 12.3-1, 12.3-2, and 12.3-3.

12.3.2 Types of MEC Recovered and Hazard Classification

Table 12.3-3 includes a summary of types of MEC recovered from the East Garrison MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the East Garrison MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

12.3.3 Location of MEC and MD

Figures 12.3-1, 12.3-2, and 12.3-3 show the distribution of MEC and MD within the East Garrison MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the East Garrison MRA is provided in Table 12.3-4 and included:

- 326 UXO items
- 10 ISD items (MPPEH that could not be classified as UXO, DMM, or MD)
- 4,107 pounds of MD (includes MD-E and MD-F items if weights were documented)

The MMRP database indicates that the majority of MEC items encountered during previous removal actions were in the central portion of MRS-42 and in the southern portion of MRS-11 (Figure 12.3-2). The majority of MEC and MD were encountered within 6 inches bgs. Figure 12.3-4 shows the distribution of MEC recovered at specified depth intervals and

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does not include MEC recovered from the burial pits. The two burial pits encountered in MRS-42 EXP contained a total of 243 of the 336 MEC items found within the MRA.

12.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges, multi-use ranges, and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas were identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination, or should be considered for remediation/habitat mapping related to COCs.

Table 12.3-5 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within the MRA (Army 2007).

In addition, IRP Site 41 (Crescent Bluff Fire Drill Area) was investigated and approximately 76 cubic yards of soil were removed; the U.S. EPA and DTSC concurred on the no further action determination for IRP Site 41.

12.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issues:

- The CERCLA process must be completed for the East Garrison MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD

12.4 East Garrison MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

12.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The East Garrison MRA is located in the northeastern portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the East Garrison MRA will be in compliance with the Programmatic Agreement Among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

12.4.2 Current Land Use

The East Garrison MRA is currently undeveloped and unused, with the exception of the former ASP located in the central portion of the MRA (Figure 12.1-1). The former ASP was recently used as a staging area in support of Army MEC removal activities. A number of the bunkers (Buildings 760 through 769) have also been used to store explosives in support of the MEC removal activities. Other structures on the East Garrison MRA were used for equipment and supply storage (i.e., trucks, temporary fencing, sand bags, etc.).

12.4.3 Reasonably Foreseeable Future Land Use

Table 12.4-1 and Figure 12.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is predominantly planned for residential and habitat uses with a development corridor for the roadway. It is important to note that the development land use category encompasses infrastructure activities, such as roadway and utility corridor construction, as well as borderland activities.

12.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons conducting surface and subsurface activities) – future
- Recreational Users (persons biking or on foot) – future

12.5 East Garrison MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 12.5-1.

As discussed in Section 12.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the East Garrison MRA as development (which includes residential reuse) with a borderland development buffer area along the interface with an NRMA designated as habitat reserve (Figure 12.5-1). The setback requirements for the borderland buffer were defined in the Draft HCP as being 200 feet wide. The NRMA interface separates the development category land within the East Garrison MRA from the adjacent habitat reserve areas. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

12.5.1 Major Plant Communities and Ecological Habitats

The East Garrison MRA primarily consists of maritime chaparral with small areas of oak woodland and grassland (Figure 12.2-2 and Table 12.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to dense areas of overgrowth. Past field activities have noted the presence of poison oak in various areas of the MRA.

12.5.2 Threatened and Endangered Species and Critical Habitat

The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for the former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

The East Garrison MRA is identified within the HMP to require special management for the boundaries between developed areas and the NRMA. The requirements have both interim and long-term maintenance implications.

Threatened or endangered plant species identified as having possible occurrence in the East Garrison MRA include sand gilia (endangered) and Monterey spineflower (threatened). A portion of the East Garrison MRA has been designated as critical habitat for the Monterey spineflower by the USFWS.

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. CTS may occur within the East Garrison MRA due to the presence of several aquatic features within and adjacent to the MRA that may provide suitable breeding habitat (Figure 12.5.1).

12.5.3 Other Communities and Species of Concern

As identified in the HMP, there are a number of species that could be found on the East Garrison MRA, which have been identified by parcel in Table 12.5-2. The following species are identified in the HMP as having possible occurrence in the East Garrison MRA: toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Seaside bird's beak, Hooker's manzanita, and Monterey ornate shrew.

12.6 East Garrison MRA Pathway Analysis

As discussed in Sections 12.3.4 and 12.4, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

12.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the East Garrison MRA using the information gathered in the CSM profiles. Exposure pathways include a source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of previous removal actions by the Army. Exposure pathways for the East Garrison MRA are presented on Figure 12.6-1 and discussed below.

Source

Most of the source areas within the East Garrison MRA were addressed during the Army's previous removal actions. The historical source areas within the East Garrison MRA are shown on Figures 12.1-3, and recovered MEC and MD from these areas are shown on Figures 12.3-1, 12.3-2, and 12.3-3. The source areas include target areas, firing points, and

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range safety fans for military weapons training activities at MRS-11, MRS-42, and the Stokes trench mortar range to the east of MRS-42. Previous investigations by the Army concluded that MRS-23 is not a source area (Parsons 2006c).

Figure 12.6-2 illustrates the most likely release mechanisms for MEC being found in the East Garrison MRA, which include:

- Mishandling/Loss, Abandonment, and Burial (Military Weapons Training)
- Direct and Indirect Firing and Thrown (Military Weapons Training)
- Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access is not restricted to MRS-23 and MRS-11. Access is restricted to MRS-42 as it is contained within the fence surrounding the former ASP.

Receptor / Activity

Table 12.6-1 identifies the receptors and exposure media as Ground Surface or Below Grade.

12.6.2 Exposure Pathway Analysis

As discussed above, Figure 12.6-1 graphically presents the exposure pathways analysis for the East Garrison MRA. The graphic shows the current and future potentially complete pathways for activities in the East Garrison MRA. These exposure pathways exist because investigations and removal actions were not completed in the MRA.

12.7 East Garrison MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in East Garrison MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered at the East Garrison MRA are consistent with the historical military use as a weapons and troop training area. Army has conducted investigations and removal action at this MRA, which provide sufficient information to support an RI/FS report. Therefore, the East Garrison MRA falls into the category of proceed to RI. Based on the existing data for the East Garrison MRA, the recommendation is:

- Proceed with Documentation – Prepare RI/FS Report and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

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Table 12.1-1

East Garrison MRA –Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
E11b.6.1	48	No related MRS
E11b.7.1.1	122	MRS-11, MRS-23
E11b.8	68	MRS-42, MRS-42 EXP
L20.19.1.1	6	No related MRS
MRA TOTAL	244	

Table 12.1-2

East Garrison MRA – Site Features

Feature	Description
Roadways	<ul style="list-style-type: none"> Barloy Canyon Road is the only major roadway in the MRA. Barloy Canyon Road is a two-lane roadway oriented in a north-south direction and crosses the western portion of the MRA. Vehicle traffic is currently restricted on Barloy Canyon Road, with the exception of controlled traffic during Laguna Seca Raceway events. Other paved and unpaved roadways and dirt trails also exist throughout the MRA.
Fencing and Access	<ul style="list-style-type: none"> The western side of Barloy Canyon Road is lined with four-strand barbed-wire fencing. This fencing is not complete along the entire length of the roadway, allowing unauthorized access to Parcel E11b.6.1. The eastern side of Barloy Canyon Road is not fenced; however, a portion of Parcel E11b.8 contains the former ASP, where access is restricted by cyclone fencing topped with razor wire. Access to the MRA is restricted by locked gates, barricades with concertina, and warning signs across Barloy Canyon Road to the north and by locked gates and barricades across South Boundary Road to the south.
Structures and Utilities	<ul style="list-style-type: none"> The MRA includes 23 buildings and structures related to the former ASP, which was used as an explosives storage and ordnance assembly area, and one structure in the northeasternmost portion of the MRA. The MRA was served by water, sewer, electrical, and telephone utilities prior to base closure. Water and sewer services were discontinued, but the utility lines were left in place. Electrical and telephone utilities are also present, but service is not active. Two storm-water lines exist at the former ASP, which convey storm-water runoff to the northeast. A natural gas line crosses the northeastern portion of the MRA.

Table 12.1-3
East Garrison MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E11b.7.1.1	610	1,585	Vehicle Area	Not surveyed	Unknown	Unknown
E11b.8	725	4,095	Storehouse	rated 6 to 13	NO	1991
E11b.8	727	4,053	Storehouse	rated 6 to 13	NO	1991
E11b.8	730	4,714	Storehouse	rated 6 to 13	NO	1991
E11b.8	735	4,393	Storehouse	rated 6 to 13	NO	1991
E11b.8	740	829	Ordnance Admin Building	no ACM	NO	1991
E11b.8	741	498	Vehicle Maintenance Shop	no ACM	NO	1991
E11b.8	742	729	Sentry Station	unknown	NO	1991
E11b.8	744	2,208	Storehouse	unknown	NO	1991
E11b.8	745	722	Liquid Gas Storage Facility	no ACM	NO	1991
E11b.8	746	7,960	Ammo Surveillance Facility	no ACM	NO	1991
E11b.8	747	723	Standby Generator	unknown	NO	1991
E11b.8	750	1,230	Storehouse	unknown	NO	1991
E11b.8	752	1,927	General Purpose Magazine	unknown	NO	1991
E11b.8	760	1,935	Igloo Storage	no ACM	NO	1991
E11b.8	761	3,163	Igloo Storage	unknown	NO	1991
E11b.8	762	3,191	Igloo Storage	unknown	NO	1991
E11b.8	763	3,176	Igloo Storage	unknown	NO	1991
E11b.8	764	3,191	Igloo Storage	no ACM	NO	1991
E11b.8	765	3,176	Igloo Storage	no ACM	NO	1991
E11b.8	766	3,176	Igloo Storage	no ACM	NO	1991
E11b.8	767	3,163	Igloo Storage	no ACM	NO	1991
E11b.8	768	3,170	Igloo Storage	no ACM	NO	1991
E11b.8	769	3,170	Igloo Storage	no ACM	NO	1991

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Table 12.1-4
East Garrison MRA – Historical Military Use

Location	Historical Military Use
MRS-11	<ul style="list-style-type: none"> • This area was defined as a 5- to 15-acre Demolition Training Area (USACE 1997a). • This area was also identified as an old EOD range; however, the exact location was unknown (USACE 1997a). Based on the results of previous investigations, the EOD range was believed to be located west of this area (USA 2001g). • A historical map (Master Plan Fort Ord) from 1946 shows a live hand grenade training range in the vicinity (USACE 1997a). • A historical map (Fort Ord Training Areas & Facilities) from 1957 identifies a “Frag Zone” and “Engineer Training Area C” in the same area (USACE 1997a). • Items found in this area included hand grenades, flare and illuminating signals, one 4.2-inch projectile, and one 37mm projectile.
MRS-23	<ul style="list-style-type: none"> • This area is listed as an Engineer Training Area and Field Expedient Area (USACE 1997a). • A concrete pit in this area was identified as an amphibious training area used to test whether a vehicle’s engine would continue to run under water (USACE 1997a). • This area reportedly contained demolition blow holes, which were later determined to be burn pits for fire drills (USA 2001e). • One item was found in this area, which was a demolition charge.
MRS-42 and MRS-42 EXP	<ul style="list-style-type: none"> • This area was identified as a Rifle Grenade Area (USACE 1997a). • A historical map (Master Plan Fort Ord) from 1946 indicates “rifle grenade” at the approximate location of this area (USACE 1997a). • The area was also known as the ASP Rifle Grenade Area and Site OE-42 Explosives Storage Location (USA 2001i). • Items found in this area include rifle grenades and one 3-inch Stokes mortar.

Table 12.1-5
East Garrison MRA – Administrative Controls

Type	Description
Land Use Covenants	<ul style="list-style-type: none"> • To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. • Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007). • The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." • These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/ reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	<ul style="list-style-type: none"> • Monterey County Ordinance 16.10 prohibits excavation, digging, development or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 cubic yards or more of soil without approval.
FORA Resolution 98-1	<ul style="list-style-type: none"> • An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	<ul style="list-style-type: none"> • MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. • The MOA establishes FORA's ownership during MEC Remediation Period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	<ul style="list-style-type: none"> • The HMP incorporated conservation measures pursuant USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions/ Critical Habitat	<ul style="list-style-type: none"> • Since HMP release, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. • A portion of the East Garrison MRA has been designated as Critical Habitat for the Monterey spineflower by the USFWS. • Future MEC work is required to be consistent with the applicable conservation measures.

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Table 12.2-1
East Garrison MRA – Geology and Soils

Type	Description
Geology	<ul style="list-style-type: none"> • The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located 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 the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and 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: Pliocene-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 and alluvium. • The East Garrison MRA includes deposits from the Paso Robles Formation and sand and gravel deposits of Aromas Sandstone.
Topography and Soils	<ul style="list-style-type: none"> • Terrain varies from gently sloping in the south and west to steep canyon-like walls in the north and east. • Elevation ranges from approximately 170 to approximately 480 feet msl. • Three ravines exist within the MRA; one ravine extends to the east in the southern portion of the MRA, and two converging ravines extend to the northeast in the northern portion of the MRA. • Soils consist predominantly of the following: Arnold-Santa Ynez Complex, dissected Xerorthents, and Arnold Sandy Loam.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 12.2.2
East Garrison MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
E11b.6.1	No related MRSs	Maritime chaparral.
E11b.7.1.1	MRS-11, MRS-23	Maritime chaparral with a small area of grassland in the southwestern portion of the parcel.
E11b.8	MRS-42	Maritime chaparral surrounding the former ASP with inland coast live oak woodland to the north. Vegetation is not defined within the former ASP because this portion of the parcel is developed / disturbed.
L20.19.1.1	No related MRSs	No vegetation; parcel is developed with an existing roadway (Barloy Canyon Road)

Reference: USACE/Jones & Stokes 1992

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Table 12.3-1
East Garrison MRA – Investigation, Sampling, and Removal Activities

Activity	Summary
MRS-11	<ul style="list-style-type: none"> • In 1994, the USACE OESS deferred a planned sampling operation when a live MK2 hand grenade was found during survey operations. At that time, it was reported that the MRS was littered with fragments of MK2 hand grenades. The Archive Search Report Supplement then recommended that Site OE-11 be expanded to a much larger area, based on the discovery of MK2 hand grenades in eroded gullies as far as 300 yards north of the site boundary (just south of the ASP) (USACE 1994). • In 1997, a magnetometer-assisted visual surface and 1-foot removal operation of roads and trails in MRS-11 was suspended after one UXO fragmentation grenade was found at a depth of 13 inches in the roads and trails area and 47 ordnance scrap grenade fuzes were encountered on the surface in the MRS. Operations were accomplished over 27 100- by 100-foot grids and partial grids, all of which were located in the southern portion of MRS-11 (USA 2001g). • In 1998, MRS-11 underwent a 1-foot removal action over 16 acres in the southern half of the MRS. The removal operation included the grids that had been previously cleared of surface MEC and all of the grids that had been partially cleared to 1 foot during the previous roads and trails removal operation (USA 2001g). • In 1998, five 100-foot by 200-foot grids in the northern half of MRS-11 were sampled using SS/GS sampling methodology. No MEC were found during SS/GS sampling. Based on the results of the sampling and removal operations, additional investigation was recommended within MRS-11 and to the east of the MRS (USA 2001g).
MRS-23	<ul style="list-style-type: none"> • From November to December 1997, a 4-foot removal action was completed on 39 100-foot by 100-foot grids and partial grids in MRS-23 (USA 2001e).
MRS-42 and MRS-42 EXP	<ul style="list-style-type: none"> • From February 1998 to February 2000, a 4-foot removal action was conducted on approximately 45 acres in MRS-42. Approximately 6 acres of land planned for removal action were not complete due to reprogramming of funds (USA 2001i).
East Garrison MRA Site Assessment	<ul style="list-style-type: none"> • Between 2005 and 2006, a site assessment was conducted in the East Garrison MRA (also known as East Garrison Area 4). Site assessments are conducted to collect data in MRSs or areas of interest that may contain evidence of military munitions training. Although the portions of the East Garrison MRA that were subjected to the site assessment were not expected to contain any evidence of military munitions training, 17 anomalies resulted in military munitions or evidence of military munitions. Of the 17 items, two were identified as MEC: an MKI illumination hand grenade and an M125 series illumination signal. The other 15 items were MD, including MD-E items, expended SAA and inert military munitions, and MD-F (Parsons 2006c).

Table 12.3-2
East Garrison MRA – Burial Pits Containing MEC

Location	Grid	Pit No. *	Type	Item Description	Qty	Depth (inches bgs)
MRS-42 EXP	C4F5J9	1	UXO	Fuze, Grenade, Hand, Practice, M228	183	14
		2	UXO	Simulator, Explosive Booby Trap, Flash, M117	60	12

Notes: * If more than one pit was found in a grid.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 12.3-3
East Garrison MRA – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Cap, blasting, electric, M6	1	0	0	1
Charge, 0.5 pound, demolition, TNT	1	0	0	2
Flare, surface, trip, M49 series	1	0	0	1
Fuze, grenade, hand, M204 series	1	0	0	1
Fuze, grenade, hand, practice, M228	183	0	0	1
Grenade, hand, fragmentation, MK II	9	0	0	3
Grenade, hand, illumination, MK I	1	0	0	1
Grenade, rifle, antitank, M9 series	63	0	0	3
Grenade, rifle, smoke, M22 series	2	0	0	1
Projectile, 37mm, low explosive, MK I	2	0	0	3
Projectile, 3-inch, trench mortar, practice, MK I (Stokes)	0	0	9	1
Signal, ground, rifle, parachute, M17 series	1	0	0	1
Simulator, explosive booby trap, flash, M117	60	0	0	1
Projectile, 4.2-inch, smoke, white phosphorous, M2, with fuze, point detonating	0	0	1	0
Flare, type unknown	1	0	0	0
MRA TOTAL	326	0	10	

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Section 12 – East Garrison MRA Conceptual Site Model

Table 12.3-4
 East Garrison MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	326 items
ISD	10 items (MPPEH that could not be classified as UXO, DMM, or MD)
MD	4,107 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	<ul style="list-style-type: none"> • The majority of MEC items encountered during previous removal actions were in the central portion of MRS-42 and in the southern portion of MRS-11. • The majority of the MD encountered during previous removal actions were in the central portion of MRS-42 with lesser amounts to the east and northwest of MRS-42, and in the southeastern portion of MRS-11.
Vertical Extent	<ul style="list-style-type: none"> • The majority of MEC were encountered within 6 inches bgs. • Two burial pits in the northeastern portion of MRS-42 EXP contained a total of 243 MEC items.

Table 12.3-5
East Garrison MRA – HTW History and Conditions

Type	Summary
MRS-11	<ul style="list-style-type: none"> • The assessment of HA-100 (MRS-11) included site reconnaissance and site investigation soil sampling. Perchlorate and TNT were detected at low concentrations. Based on these results, the recommendation that HA-100 should be evaluated further as part of a remedial phase was made in the BRA. Step-out and biased soil sampling was conducted in 2004. The results of the 2004 soil sampling indicated that detected COCs were below the appropriate characterization goals and that no further action was recommended for HA-100. • As identified in the FOSET, hazardous substances were stored for one year or more, released or disposed of on Parcel Ellb.7.1.1 (MRS-11 and MRS-23) in excess of reportable quantities specified in 40 CFR Part 373. All hazardous substance storage operations have been terminated on this parcel.
MRS-23	<ul style="list-style-type: none"> • The interim action at IRP Site 41 (Crescent Bluff Fire Drill Area) included the excavation and removal of approximately 76 cubic yards of soil from three former burn pits. Results of the confirmation sampling indicated that soils with chemical concentrations above the target cleanup concentrations were removed. Results of the confirmation sampling and subsequent risk evaluation indicated that no further threat to human health, the environment, or groundwater was anticipated, and no further investigation or remediation was recommended. The U.S. EPA concurred that no further action was necessary at Site 41 in its letters dated April 14, 1997 and March 10, 2006. • As identified in the FOSET, hazardous substances were stored for one year or more, released, or disposed of on Parcel Ellb.7.1.1 (MRS-11 and MRS-23) in excess of reportable quantities specified in 40 CFR Part 373. All hazardous substance storage operations have been terminated on this parcel.
MRS-42	<ul style="list-style-type: none"> • Building 746 is one of 230 buildings suspected of having been used to store radioactive commodities, but no storage documentation is available. Twenty percent of the 230 suspect buildings (including Building 746) were randomly sampled, no radiological health hazards were identified, and it was recommended that all 230 buildings be released for unrestricted use. After reviewing the sampling results, the California Department of Health Services released all 230 buildings for unrestricted use on October 1, 1997. • As part of the site assessment of HA-172 (MRS-42), sampling was recommended to evaluate the possibility of residue related to the military munitions that had been identified at the MRS. Soil samples were collected in July 2002. Perchlorate and explosive compounds were included in the sample analyses, but were not detected in any of the soil samples. Based on the analytical results that indicate no residue of explosive compounds in soil, no further action is recommended. • As identified in the FOSET, there is no evidence that non-munitions-related hazardous substances were stored, released, or disposed of on Parcels E11b.8 (MRS-42).

Reference: Army 2007

Section 12 – East Garrison MRA Conceptual Site Model

Table 12.4-1
 East Garrison MRA- Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
E11b.6.1	No Related MRS	Habitat	Reserve	48
E11b.7.1.1	MRS-11	Habitat	Reserve	8
E11b.7.1.1	MRS-11	Habitat	Reserve	15
E11b.7.1.1	No Related MRS	Habitat	Reserve	99
E11b.8	No Related MRS	Development	Residential	39
E11b.8	No Related MRS	Development	Residential	10
E11b.8	MRS-42	Development	Residential	19
L20.19.1.1	No Related MRS	Development	Roadway	6
MRA TOTAL				244

Table 12.5-1
East Garrison MRA – Ecological Information

Type	Summary
Biological	<ul style="list-style-type: none"> • Vegetation varies from sparsely vegetated areas to dense areas of overgrowth. • Past field activities have noted the presence of poison oak in various areas of the site. A number of sampling and removal actions have been performed at the East Garrison MRA requiring vegetation removal, which has been predominantly cleared by manual methods. One exception is within the grassland areas to the south, which was mechanically cleared. For future MEC removal activities within habitat areas of maritime chaparral, the preferred method for vegetation clearance will be burning. • Consists primarily of maritime chaparral with small areas of oak woodland and grassland. These biological communities are described below: • Maritime chaparral is one of the dominant vegetation type within Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake. • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and riggut brome are the most common grassland community within the Plan Area. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman’s kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel. • Coast Live Oak Woodland and Savanna - The live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodlands include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall’s woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oaks, but probably make little use of the coastal oaks because the tightly spaced branches discourage them from entering the tree canopies.
Habitat Management Plan / Biological Opinions	<ul style="list-style-type: none"> • The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community

Section 12 – East Garrison MRA Conceptual Site Model

Table 12.5-1
East Garrison MRA – Ecological Information

Type	Summary
	<p>regeneration to HMP success criteria.</p> <ul style="list-style-type: none"> • The HMP identifies the area as development and habitat reserve with borderland development areas along an NRMA interface. The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species. • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA. • Since April 1997, a number of BOs have been issued that are relevant to MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures. • The HMP identified principal management categories. The East Garrison MRA is identified as development (including residential), habitat, and borderlands interface. These principal management categories are defined as: <ul style="list-style-type: none"> ◦ Development - lands in which no management restrictions are contained under the HMP although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA. Some plans for salvage of biological resources for these parcels may be specified. ◦ Habitat Reserve – land in which no development is allowed. Management goals for the area are conservation and enhancement of threatened and endangered species. ◦ Borderland Development Area – lands abutting the Natural Resources Management Area that are slated for development. Management of these lands includes no restrictions except along the development/reserve interface.
Threatened and Endangered Species / Critical Habitat	<ul style="list-style-type: none"> • Special-status biological resources are those resources, including plant, wildlife, and native biological communities that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Threatened or endangered plant species identified as having possible occurrence in the East Garrison MRA include sand gilia (endangered) and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. East Garrison MRA contains several aquatic features as well as several features within 1 km of the MRA which provide suitable breeding habitat for CTS. • A portion of the East Garrison MRA has been designated as Critical Habitat for the Monterey spineflower by the USFWS.

Table 12.5-2

East Garrison MRA - HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E11b.6.1	Habitat Reserve	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Monterey ornate shrew, California tiger salamander
E11b.7.1.1	Habitat Reserve	sand gilia, Seaside bird's beak, toro manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, Monterey ornate shrew, California tiger salamander
E11b.8	Development (Residential) and Borderland	toro manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, Monterey ornate shrew, California tiger salamander
L20.19.1.1	Development (Roadway) and Borderland Development Area	toro manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, Monterey ornate shrew, California tiger salamander

Reference: USACE 1997b

Table 12.6-1

East Garrison MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓

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13.0 PROGRAM IMPLEMENTATION

One of the goals of preparing a SEDR is to develop the process to complete the remaining steps in the sequence and phasing of the CERCLA activities as described in the AOC, within each MRA. This section describes the overall proposed process for navigating each of the ESCA parcels through the CERCLA process and provides a detailed regulatory pathway to closure by MRA. The detailed pathway to closure that has been developed considers the conclusions and recommendations presented in the CSMs for each of the respective MRAs.

13.1 Regulatory Approach and Process to CERCLA Compliance

The AOC establishes the regulatory and administrative framework for the expedited performance of cleanup of MEC, which may pose an unacceptable risk to human health and the environment, and obtaining regulatory site closure. The overall regulatory process for implementing the AOC and achieving site closure is depicted in the pathway to closure diagram on Figure 13.1-1. The programmatic objectives of the overall AOC and specific AOC Tasks corresponding to the pathway to closure are summarized in Table 13.1-1. This table is intended as a guide to the programmatic planning and scoping of each AOC Task. Specific DQOs and performance standards will be established as appropriate at the site-specific level and documented in the corresponding site-specific work plans or design documents.

13.2 MRA Groupings

In this SEDR, the ESCA parcels were combined into nine MRAs to facilitate the implementation of the AOC. The nine MRAs were further consolidated into four MRA Groupings. These groupings are based on an evaluation of the available data, CSMs, preliminary assessment of risk, and regulatory pathway requirements for each of the nine MRAs.

Each MRA Grouping consists of one or more MRAs that have similar pathway-to-closure characteristics and/or geographic proximity.

The four proposed MRA Groupings are listed below and presented on Figure 13.2-1.

- Group 1: Seaside MRA and Parker Flats MRA;
- Group 2: CSUMB MRA and Development North MRA;
- Group 3: Interim Action Ranges MRA, MOUT Site MRA, Laguna Seca MRA, and DRO/Monterey MRA;
- Group 4: East Garrison MRA

A description of each of the four MRA Groupings is presented below along with each grouping's proposed pathway to closure.

13.3 Pathway to Closure Descriptions

The rationale and proposed pathway to closure for each MRA Grouping is presented in the following sections.

13.3.1 Group 1

Group 1 includes the Seaside and Parker Flats MRAs. The Parker Flats MRA has been further split into two areas – Parker Flats Phase I and Parker Flats Phase II. The Army has completed an RI/FS report and is in the process of finalizing a ROD for the Parker Flats Phase I area. Therefore, the Parker Flats Phase I area is not summarized in the SEDR. The Army ROD will be implemented for this area under the ESCA RP.

The pathway to closure for Group 1 is depicted on Figure 13.3-1. Group 1 enters the pathway at three different points in the pathway-to-closure process as follows: implementation of existing NTCRA in the Seaside MRA; completion of RI field investigations in the Seaside MRA and Parker Flats Phase II MRA; and implementation of an Army ROD in the Parker Flats Phase I MRA.

The SEDR conclusions and recommendations for the Seaside MRA indicate that all detected MEC items were investigated and removed by the Army in the Phase 1 Removal Action, with the exception of discrete SCAs. A small area along the western edge of the ESCA parcel boundary that is outside the MRS Seaside 1-4 boundary is a data gap to be investigated. The Phase II Seaside MRA Removal Action is currently being completed and is focused on removing MEC from the discrete SCAs and filling data gaps to complete the RI on the Seaside MRA. Following completion of NTCRA and RI field efforts, an RI/FS report will be developed to support selection of appropriate remedies for the Seaside MRA.

The Seaside MRA will be included in the RQA Pilot Test. The results of the RQA Pilot Test will be used to refine the CSM and Risk Assessment during the RI stage and support the FS alternatives analysis, aimed at identifying the most appropriate remediation alternative for land proposed for residential use.

The SEDR conclusions and recommendations for the Parker Flats Phase II MRA indicate that some data exist to provide a general overall indication of the nature and extent of the MEC contained within this MRA and that the nature of MEC items already discovered and removed is generally consistent with the types of historical activities that have been documented in this MRA. However, the full nature and extent of MEC have not been investigated to a sufficient level of detail to support the analysis of risk and refinement of the CSM for an RI/FS report.

The proposed pathway to closure for Group 1 is depicted on Figure 13.3-1. Group 1 enters the pathway beginning with preparation of an NTCRA and RI work plan and carrying the CERCLA process through the execution of a ROD. Because a substantial amount of investigation and removal actions has occurred within this MRA Group, it is expected that the MEC data that are encountered during the RI fieldwork stage will be comparatively small in

quantity and of sufficient quality that we propose to intrusively investigate all anomalies during the RI stage of the CERCLA process. This approach will allow the management of this MRA Group through the CERCLA process with the goal of achieving a ROD that documents that no further remedial action is required (NFA ROD) with institutional controls. Following execution of the ROD, an Institutional Controls Implementation Plan (“IC Plan”) will be prepared.

13.3.2 Group 2

Group 2 includes the CSUMB and Development North MRAs. The SEDR conclusions and recommendations for both of these MRAs indicate that the quantity and quality of existing MEC data collected by the Army are sufficient to support an appropriate level of risk analysis and refinement of the CSM and evaluation of potential remedial options without further field investigation work.

The proposed pathway to closure for the MRA Group 2 is depicted on Figure 13.3-2. Group 2 enters the pathway at the RI/FS report stage, beginning with preparation of the RI/FS report using the existing data and information generated by the Army. Upon completion of the RI/FS report, an Army Proposed Plan and ROD will be prepared to document the remedial actions necessary to achieve regulatory closure. The Army ROD will be implemented via the AOC process. The ROD implementation will include the Remedial Design/Remedial Action (RD/RA) plans, necessary remedial actions, IC Plan, and preparation of a Remedial Action Completion Report (RACR) to document that all requirements for closure have been achieved.

13.3.3 Group 3

Group 3 includes the Interim Action Ranges MRA, MOUT Site MRA, Laguna Seca MRA, and DRO/Monterey MRA. The conclusions and recommendations for all of these MRAs indicate that the quantity and quality of MEC data collected by the Army are sufficient to support an appropriate level of risk analysis and refinement of the CSM and evaluation of potential remedial options. No additional RI fieldwork is recommended for this MRA.

The pathway to closure for Group 3 is depicted on Figure 13.3-3. Group 3 will be managed through the pathway similar to that for Group 2. However, because of the level of removal action already completed on these parcels and the proposed future intended land use, this MRA Group will be managed through the CERCLA process with the anticipated goal of achieving a ROD that documents that remedial action is limited to two small MEC clearance actions along the fence lines on Barloy Canyon and South Boundary Roads and the installation of fences along the former impact area boundary (although the final remedy may differ depending on the results of the RI/FS). The Army ROD will be implemented via the AOC process. The ROD implementation will include the RD/RA plans, necessary remedial actions, IC Plan, and preparation of an RACR to document that all requirements for closure have been achieved.

Section 13 – Program Implementation

Biological monitoring and reporting will be conducted in the cleared areas of Ranges 43-48 (Interim Action Ranges MRA) in 2008 under the ESCA RP and in accordance with the HMP and the vegetation monitoring protocol developed in the BOs. This monitoring and reporting effort will be conducted in 2011 and 2016 to meet the requirements of the HMP and the BOs, as directed by FORA

13.3.4 Group 4

Group 4 is composed entirely of the East Garrison MRA. The conclusions and recommendations for this MRA indicate that the quantity and quality of existing MEC data collected by the Army are sufficient to support an appropriate level of risk analysis and refinement of the CSM and evaluation of potential remedial options. No additional remedial investigation fieldwork is recommended for this MRA.

The proposed pathway to closure for Group 4 is depicted on Figure 13.3-4. Group 4 enters the pathway at the RI/FS report stage, similar to that for Groups 2 and 3. Group 4 will proceed directly to the preparation of an RI/FS report using the existing data and information generated by the Army. Upon completion of the RI/FS report, an Army Proposed Plan and ROD will be prepared to document the remedial actions necessary to achieve regulatory closure. The Army ROD will be implemented via the AOC process. The ROD implementation will include the RD/RA plans, necessary remedial actions, IC Plan, and preparation of a RACR to document that all requirements for closure have been achieved.

13.4 Implementation Schedule and Milestones

The CERCLA process for each of the four MRA Groups will be managed in parallel tracks such that work can proceed within each group simultaneously. The overall goal is to produce a steady stream of documents for regulatory review and approval, while allowing a steady progression of fieldwork. The proposed implementation schedule and targeted milestones are described in the following subsections.

13.4.1 Implementation Schedule

The work in each of the MRA Groups will proceed in parallel following the schedule requirements specified in the AOC. The start date for the Group 1 RI and NTCRA fieldwork is in the first quarter of 2008. Concurrent with the Group 1 fieldwork, the Group 2 draft RI/FS report will be prepared. The completion of the Group 2 draft RI/FS report is anticipated prior to finishing the Group 1 draft RI/FS report. The Group 2 draft RI/FS report is scheduled to be finalized no later than July 2009. Upon completion of the Group 1 fieldwork and the Group 2 draft RI/FS, the Group 1 draft RI/FS report will be prepared. The Group 1 draft RI/FS report is anticipated to be completed no later than December 2009.

The scheduling of Groups 3 and 4 will follow a similar format from the years 2010 through 2012 to support the regulatory pathway to closure. In addition, biological monitoring and reporting will be conducted in the cleared areas of Ranges 43-48 (Interim Action Ranges MRA) in 2008 under the ESCA RP and in accordance with the HMP and the vegetation

monitoring protocol developed in the BOs. This monitoring and reporting effort will be conducted in 2011 and 2016 to meet the requirements of the HMP and the BOs, as directed by FORA.

As the project evolves, it is anticipated that the schedule will be updated on an annual basis to reflect current project conditions. The goal is to further optimize the schedule and accelerate the regulatory closure of the ESCA parcels.

13.4.2 Schedule Milestones

Schedule milestones will follow the specified requirements of the AOC. As specified in the AOC, a draft, draft final, and final version of each primary document will be prepared. Consistent with the AOC, the regulatory agencies are allowed a period of 60 days to review the draft version and 30 days to review the draft final version of documents. It is the objective of this program that all comments will be addressed and incorporated into the draft final version such that the draft final version can be published as a final version without modification. A specific list of proposed milestones for primary AOC documents is presented on Table 13.4-1.

Section 13 – Program Implementation

Table 13.1-1
ESCA RP Project Objectives

AOC Tasks (by #) and Other Tasks	Objective	Performance Criteria	Activities Under Task (to be completed)
OVERALL	<ul style="list-style-type: none"> • Expedite property transfer and the cleanup of MEC to support approved reuse. • Facilitate and expedite completion of MEC removal actions. • Expedite characterization, assessment of risk of explosive hazards, FS, and cleanup alternatives analysis. • Expedite performance of cleanup of MEC, which pose an unacceptable risk to human health and the environment. 	<ul style="list-style-type: none"> • Site is protective of human health and the environment. • Provide property that can be put into beneficial reuse in accordance with the approved reuse plan. • Acceptance of RACR. 	<ul style="list-style-type: none"> • Implementation of AOC Tasks necessary to obtain site closure as identified in pathway to closure.
1 – Project Scoping Meeting	<ul style="list-style-type: none"> • Present the proposed approach to the ESCA RP and how it complies with the terms of the AOC. • Establish process to determine the project objectives and associated data needs and field tasks to reach project closeout. 	<ul style="list-style-type: none"> • Address all AOC required topics. • Agreement on scope of major elements of SEDR. • Agreement on MRAs, groupings, prioritization, and pathway to closure. 	<ul style="list-style-type: none"> • Attend project scoping meeting. • Define, group, and prioritize MRAs. • Define program objectives and pathway to closure for each MRA. • Scoping of major SEDR topics.
2 – Summary of Existing Data Report	<ul style="list-style-type: none"> • Provide specific recommendations for further action for each MRA. • Develop an understanding of each MRA based on existing data and identify data gaps to be filled during RI. 	<ul style="list-style-type: none"> • Regulatory approval of recommendations for further action. • Compile a complete and accurate summary of existing site conditions. • Initial CSMs accurately and effectively communicate the working hypotheses of the nature and extent of contamination and likely pathways of exposure. 	<ul style="list-style-type: none"> • Site overview • Programmatic objectives • Existing data summary and evaluation • CSMs • Recommendations

Table 13.1-1
ESCA RP Project Objectives

AOC Tasks (by #) and Other Tasks	Objective	Performance Criteria	Activities Under Task (to be completed)
3 – RI/FS Work Plan	<ul style="list-style-type: none"> • Propose methodology and DQOs to obtain the necessary information identified in the SEDR to characterize the nature and extent of MEC contamination in order to propose a preferred alternative at the site. • Propose methodology for RQA pilot. 	<ul style="list-style-type: none"> • Plan that will adequately characterize the property for purposes of developing and evaluating effective remedial alternatives. • Utilize best available and appropriate technology, including new and innovative technology. • Regulatory approval of RI/FS Work Plan 	<ul style="list-style-type: none"> • Programmatic Work Plan • Site-Specific RI/FS Work Plan • Sampling and Analysis Plan • Health and Safety Plan
RI Field Implementation Phase	<ul style="list-style-type: none"> • Complete fieldwork 	<ul style="list-style-type: none"> • Meet field DQOs as defined in AOC Task 3 	<ul style="list-style-type: none"> • MEC removal to depth • Subsurface MEC detection • SCA sifting • Quality Control and Quality Assurance • Data Management
4 – RI Report	<ul style="list-style-type: none"> • Adequately characterize the MRA and prepare human health risk assessments. • Present results from RI and provide information to assess potential risks to human health, safety, and the environment. 	<ul style="list-style-type: none"> • RI/FS Guidance • Risk Assessment Guidance for Superfund defined in AOC Task 3 • Applicable or relevant and appropriate requirements (ARARs) • National Contingency Plan (NCP) • Demonstrate that DQOs as defined in AOC Task 3 have been achieved. 	<ul style="list-style-type: none"> • Describe Nature and Extent of Contamination • Human Health Risk Assessment • Identify PRGs and Remedial Action Objectives (RAOs)
5 – FS Report	<ul style="list-style-type: none"> • Identification, prescreening, and detailed evaluation (nine CERCLA criteria) of remediation alternatives. 	<ul style="list-style-type: none"> • RI/FS Guidance • Develop RAOs consistent with goals for protecting human health and environment. • General response actions describe those actions that will satisfy the RAOs. 	<ul style="list-style-type: none"> • Develop Alternatives • Refine and Document RAOs • Identify potentially ARARs • Develop General Response Actions • Detailed Analysis of

Section 13 – Program Implementation

Table 13.1-1
ESCA RP Project Objectives

AOC Tasks (by #) and Other Tasks	Objective	Performance Criteria	Activities Under Task (to be completed)
		<ul style="list-style-type: none"> Detailed analysis of alternatives provides basis for identifying a preferred alternative and preparing proposed plan. 	<ul style="list-style-type: none"> Alternatives, including evaluation of nine CERCLA criteria Solicit Public Comments
Army Proposed Plan/ROD	<ul style="list-style-type: none"> Prepare summary report and solicit public comments. 	<ul style="list-style-type: none"> A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents; EPA 540-R-98-031 OSWER 9200.1-23P; July 1999 	<ul style="list-style-type: none"> Prepare Draft and Draft Final Proposed Plan Prepare Draft and Draft Final Response to public comments Prepare Draft and Draft Final ROD
6 – Remedial Design/Remedial Action	<ul style="list-style-type: none"> Design and Implement Remedial Action to meet RAOs. 	<ul style="list-style-type: none"> Remedial Design Work Plan Remedial Design Quality Assurance Project Plan Quality Assurance, Sampling and Data Analysis Construction Quality Work Plan 	<ul style="list-style-type: none"> Remedial Design Scoping Document Remedial Design Work Plan Remedial Action Work Plan Remedial Action Progress Meetings Pre-final Construction Inspection Final Construction Inspection
7 – IC Implementation Plan (IC Plan)	<ul style="list-style-type: none"> Develop plan for how necessary land, water, and reuse use restrictions will be enforced. 	<ul style="list-style-type: none"> California Health and Safety Code (chapters 6.5, 6.8, and 6.85), California Civil Code, Section 1471, California Code of Regulations. Title 22, Division 4.5, Chapter 39, Section 67391. Institutional Controls: A Guide to Implementing, Monitoring and Enforcing Institutional Controls at Superfund, Brownfields, Federal 	<p>Submittal of:</p> <ul style="list-style-type: none"> Maps describing real property subject to land/water resource use restrictions and other institutional controls. Description of how land use controls (LUC) and other institutional controls will be implemented, monitored, and enforced. Identification of types of LUC

Table 13.1-1
ESCA RP Project Objectives

AOC Tasks (by #) and Other Tasks	Objective	Performance Criteria	Activities Under Task (to be completed)
		Facility, UST, and RCRA Corrective Action Cleanups (Draft, December 2002)	<ul style="list-style-type: none"> • Definition of deed or land restrictions • Schedule
8 – Operation and Maintenance Plan	<ul style="list-style-type: none"> • In the event operations and maintenance of a remedy are required, develop a monitoring and control plan to ensure operability of selected remedy. 	<ul style="list-style-type: none"> • LUCs implemented and not violated 	<ul style="list-style-type: none"> • Documentation of operation and maintenance requirements, including periodic inspection of remediation site as necessary to maintain remedy and assure functionality
9 – Remedial Action Completion - RACR (After Action Report)	<ul style="list-style-type: none"> • Verification and documentation of completion of all response actions by respondent. 	<p>Site or MRA must meet all the criteria below to become eligible for Remedial Action Completion:</p> <ul style="list-style-type: none"> • Performance Standards specified in all RODs or removals are met • Site is protective of human health and the environment • The only remaining activities at the site are operations and maintenance, including long-term IC implementation. 	<p>RACR to include:</p> <ul style="list-style-type: none"> • Introduction • Operable Unit Background • Construction Activities • Chronology of Events • Performance Standards and Construction Quality Control • Final Inspection and Certifications • Operations and Maintenance • Summary of Project Costs • Observation and Lessons Learned • Operable Unit Contract Information • Appendix A – Remedial Action Report • Appendix B - Cost of Performance Summary

Section 13 – Program Implementation

Table 13.4-1
ESCA RP Schedule Milestones and Field Targets

MRA Group	Draft Document Name	Submittal Date	AOC Requirement
All MRA Groups	Project Scoping Meeting	Completed (11-Jun-07)	14 days after effective date of AOC
	Draft Summary of Existing Data Report (SEDR)	08-Feb-08	Due within 90 days of AOC effective date
Group 1 (Seaside and Parker Flats MRAs)	Draft Remedial Investigation / Feasibility Study Work Plan (RI/FS WP)	29-May-08	Due within 60 days of approval of SEDR
	<i>Parker Flats Phase I - Record of Decision (ROD)</i>	<i>01-Jul-08 (estimated)</i>	<i>Not Applicable</i>
	<i>Parker Flats Phase I - Draft Institutional Controls Implementation Plan (IC Plan) ¹</i>	<i>29-Sep-08</i>	Due 90 days after signature of ROD
	<i>Parker Flats Phase I - Draft Operations and Maintenance Plan (O&M Plan) ¹</i>	<i>29-Sep-08</i>	Due 90 days after signature of ROD
	<i>Remedial Investigation Fieldwork</i>	<i>Oct-08 through Jun-09</i>	<i>Not Applicable</i>
	Draft Remedial Investigation / Feasibility Study Report (RI/FS Report)	14-Dec-09	RI Report due 180 days after completion of RI fieldwork. FS Report due 120 days after approval of RI Report.
	Draft Institutional Controls Implementation Plan (IC Plan) ¹	04-May-11	Due 90 days after signature of ROD
	Draft Operations and Maintenance Plan (O&M Plan) ¹	04-May-11	Due 90 days after signature of ROD
	Pre-certification Inspection ²	TBD	Due within 90 days after Respondent concludes that the Remedial Action has been fully performed and the Performance Standards have been attained.
	Draft Remedial Action Completion Report (RACR) ²	TBD	Due within 30 days after the pre-certification inspection, if appropriate.
Notes: ¹ Schedule dependent upon approval of ROD.			
² If NFA ROD is approved, the Pre-certification Inspection and RACR will not be required.			
Group 2 (CSUMB and Development)	Draft Remedial Investigation / Feasibility Study Work Plan (RI/FS WP)	04-Aug-08	

Table 13.4-1
ESCA RP Schedule Milestones and Field Targets

MRA Group	Draft Document Name	Submittal Date	AOC Requirement
North MRAs)	Draft Remedial Investigation / Feasibility Study Report (RI/FS Report)	30-Jul-09	RI Report due 180 days after approval of RI/FS WP FS Report due 120 days after approval of RI Report
	Draft Remedial Design Scoping Document	05-Jun-10	Due 60 days after signature of ROD
	Draft Remedial Design / Remedial Action Work Plan	05-Jul-10	Due 30 days after U.S. EPA approval of the Remedial Design Scoping Document.
	Draft Institutional Controls Implementation Plan (IC Plan) ¹	05-Jul-10	Due 90 days after signature of ROD
	Draft Operations and Maintenance Plan (O&M Plan) ¹	05-Jul-10	Due 90 days after signature of ROD
	Pre-certification Inspection ¹ (if required)	31-Aug-11	Due within 90 days after Respondent concludes that the Remedial Action has been fully performed and the Performance Standards have been attained.
	Draft Remedial Action Completion Report (RACR) ¹ (if required)	30-Sep-11	Due within 30 days after the pre-certification inspection, if appropriate.
Note: ¹ Schedule dependent upon approval of ROD.			
Group 3 (Interim Action Ranges, MOU Site, Laguna Seca, and DRO/Monterey MRAs)	Draft Remedial Investigation / Feasibility Study Work Plan (RI/FS WP)	19-Mar-09	
	Draft Remedial Investigation/ Feasibility Study Report (RI/FS Report)	12-Mar-10	RI Report due 180 days after approval of RI/FS WP FS Report due 120 days after approved of RI Report
	Draft Remedial Design Scoping Document	31-Dec-10	Due 60 days after signature of the ROD
	Draft Remedial Design / Remedial Action Work Plan	31-Jan-11	Due 30 days after EPA approval of the Remedial Design Scoping Document.
	Institutional Controls Implementation Plan (IC Plan) ¹	31-Jan-11	Submit 90 days after signature of ROD
	Operations and Maintenance Plan (O&M Plan) ¹	31-Jan-11	Submit 90 days after signature of ROD

Section 13 – Program Implementation

Table 13.4-1
ESCA RP Schedule Milestones and Field Targets

MRA Group	Draft Document Name	Submittal Date	AOC Requirement
	Pre-certification Inspection ¹ (if required)	13-Sep-11	Due within 90 days after Respondent concludes that the Remedial Action has been fully performed and the Performance Standards have been attained.
	Draft Remedial Action Completion Report (RACR) ¹	13-Oct-11	Due within 30 days after the pre-certification inspection, if appropriate.
Note: ¹ Schedule dependent upon approval of ROD.			
Group 4 (East Garrison MRA)	Draft Remedial Investigation / Feasibility Study Work Plan (RI/FS WP)	19-Oct-09	
	Draft Remedial Investigation/ Feasibility Study Report (RI/FS Report)	13-Oct-10	RI Report due 180 days after approval of RI/FS WP FS Report due 120 days after approved of RI Report
	Draft Remedial Design Scoping Document	01-Oct-11	Due 60 days after Signing of the ROD
	Draft Remedial Design / Remedial Action Work Plan	31-Oct-11	Due 30 days after EPA approval of the Remedial Design Scoping Document.
	Draft Institutional Controls Implementation Plan (IC Plan) ¹	31-Oct-11	Due 90 days after signature of ROD
	Draft Operations and Maintenance Plan (O&M Plan) ¹	31-Oct-11	Due 90 days after signature of ROD
	Pre-certification Inspection ¹ (if required)	23-Jul-12	Due within 90 days after Respondent concludes that the Remedial Action has been fully performed and the Performance Standards have been attained.
	Draft Remedial Action Completion Report (RACR) ¹	22-Aug-12	Due within 30 days after the pre-certification inspection, if appropriate.
Note: ¹ Schedule dependent upon approval of ROD.			

Bold – 2008 milestone schedule
Non-Bold – Target dates for out years

Italics – Not AOC compliance milestone under the AOC
TBD – To be determined

14.0 REFERENCES

- EA Engineering, Science, and Technology (EA). 1991. Draft Final Fort Ord, California, Base-Wide Remedial Investigation/Feasibility Study, Volume I: Literature Review and Base Inventory Report. March. (Fort Ord Administrative Record No. BW-0136)
- Harding Lawson Associates (HLA). 1995. Basewide Remedial Investigation/Feasibility Study, Fort Ord, California, Volumes I and II. October 18. (Fort Ord Administrative Record Nos. BW-1283A, BW-1283B, and BW-1283E)
- Human Factors Applications, Inc. (HFA). 1994. OEW Sampling and OEW Removal Action, Fort Ord, Final Report. December 1. (Fort Ord Administrative Record No. OE-0012)
- MACTEC Engineering and Consulting, Inc. (MACTEC). 2006. Final Track 2 Munitions Response, Remedial Investigation/Feasibility Study, Parker Flats Munitions Response Area, Former Fort Ord, California. August 31. (Fort Ord Administrative Record No. OE-0523N)
- . 2007. Final Track 3 Impact Area Munitions Response Area, Munitions Response, Remedial Investigation/Feasibility Study, Former Fort Ord, California. June 25. (Fort Ord Administrative Record No. OE-0596R)
- Parsons. 2001. Final Maintenance Report, Fuel Breaks, Multi-Range Area (MRA), Former Fort Ord, Monterey, California, Ordnance and Explosives (OE) Cleanup. December 27. (Fort Ord Administrative Record No. OE-0543)
- . 2002a. Final Technical Information Paper, Surface Removal, Parker Flats, Former Fort Ord, Monterey, California, Ordnance and Explosives (OE) Cleanup. January 31. (Fort Ord Administrative Record No. OE-0534)
- . 2002d. Final Technical Information Paper, Surface Removal, Ordnance and Explosives (OE) Site Ranges 43-48, Former Fort Ord, Monterey, California, Ordnance and Explosives (OE) Cleanup. February 7. (Fort Ord Administrative Record No. OE-0537)
- . 2002c. Final Technical Information Paper, Surface Removal, BLM Area East of Parker Flats, Former Fort Ord, Monterey, California, Ordnance and Explosives (OE) Cleanup. April 23. (Fort Ord Administrative Record No. OE-0532)
- . 2004a. Final MRS-Ranges 43-48, Prescribed Burn, After-Action Report, Former Fort Ord, Monterey, California, Military Munitions Response Program. May. (Fort Ord Administrative Record No. OE-0482C)

Section 14 – References

- . 2004b. Draft Final Technical Information Paper, Non-Time Critical Removal Action, MRS-MOCO.2 (Phase I), Former Fort Ord, Monterey, California, Military Munitions Response Program. June 29. (Fort Ord Administrative Record No. OE-0480H)

- . 2005. Final MRS-Ranges 43-48 and MRS-MOCO.2, Technical Information Paper, Range-Related Debris Removal, Former Fort Ord, Monterey, California, Military Munitions Response Program. March 24. (Fort Ord Administrative Record No. OE-0533)

- . 2006a. Final Reestablishment of Impact Area Fuel Breaks, Phases 1, 2, and 3, After-Action Report, Former Fort Ord, Monterey, California, Military Munitions Response Program. January 30. (Fort Ord Administrative Record No. OE-0560H)

- . 2006b. Final Technical Information Paper, MRS-SEA.1-4, Time-Critical Removal Action and Phase 1 Geophysical Operations, Former Fort Ord, Monterey, California, Military Munitions Response Program. February 11. (Fort Ord Administrative Record No. OE-0495K)

- . 2006c. Final East Garrison Area 4 Site Assessment, Site Report, Former Fort Ord, Monterey, California, Military Munitions Response Program. March 16. (Fort Ord Administrative Record No. OE-0511E)

- . 2006d. Draft Final Non-Time-Critical Removal Action, MRS-MOCO.2 NOI Removal Area (Phases 1 and 2), After-Action Report, Former Fort Ord, Monterey, California, Military Munitions Response Program. June 6. (Fort Ord Administrative Record No. OE-0580D)

- . 2007. Final MRS-Ranges 43-48, Interim Action, Technical Information Paper, Former Fort Ord, Monterey, California, Military Munitions Response Program. January 26. (Fort Ord Administrative Record No. OE-0590L)

- Shaw Environmental, Inc. (Shaw). 2004a. Sampling and Analysis Plan, Military Operations on Urbanized Terrain Site, Former Fort Ord, California. November 23. (Fort Ord Administrative Record No. OTH-218)

- . 2004b. MOUT Sample Results Memo, Former Fort Ord, California. December 21. (Fort Ord Administrative Record No. OTH-218A)

- . 2005. Final After Action Report, Time Critical Removal Action and Military Munitions Reconnaissance, Eucalyptus Fire Area, Former Fort Ord, California. Revision 0. January 20. (Fort Ord Administrative Record No. OE-0499G)

- . 2007. Draft Final Technical Information Paper, Surface Removal, Range 44 Special Case Area, Former Fort Ord, California. October. (Fort Ord Administrative Record No. OE-0614H)

- Shaw Environmental, Inc./MACTEC Engineering and Consulting, Inc. (Shaw/MACTEC). 2006. Draft Final Comprehensive Basewide Range Assessment Report. Former Fort Ord, California, Revision 1C. November 24. (Fort Ord Administrative Record No. BW-2300G)
- . 2007a. Final Track 2 Munitions Response, Remedial Investigation/Feasibility Study, Del Rey Oaks Munitions Response Area, Former Fort Ord, California, Revision 1. August 24. (Fort Ord Administrative Record No. OE-0615Q)
- . 2007b. Draft Post-Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C. November 30. (Fort Ord Administrative Record No. BW-2447)
- . 2008. Final Feasibility Study Addendum, Site 39 Inland Ranges, Former Fort Ord, California, Revision 0. March 28. (Fort Ord Administrative Record No. BW-2423F)
- United States Department of the Army (Army). 2006. Track 1 Plug-In Approval Memorandum, Multiple Sites, Group 1-5, Former Fort Ord, California. May 31. (Fort Ord Administrative Record No. OE-0591)
- . 2007. Draft Findings of Suitability for Early Transfer (FOSET), Former Fort Ord, Environmental Services Cooperative Agreement (ESCA) Parcels and Non-ESCA Parcels (Operable Unit Carbon Tetrachloride Plume) (FOSET 5). June 26. (Fort Ord Administrative Record No. FOSET-004)
- United States Army Corps of Engineers (USACE). 1993. Final Environmental Impact Statement, Fort Ord Disposal and Reuse. June. (Fort Ord Administrative Record No. BW-1348)
- . 1994. Archives Search Report (Supplement No. 1), Fort Ord, California, Monterey County, California. November. (Fort Ord Administrative Record No. OE-0010)
- . 1997a. Revised Archives Search Report, Former Fort Ord, California, Monterey County, California. (Fort Ord Administrative Record No. OE-0022)
- . 1997b. Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California. April. (Fort Ord Administrative Record No. BW-1787)
- United States Army Corps of Engineers/Jones & Stokes Associates, Inc. (USACE/Jones & Stokes). 1992. Flora and Fauna Baseline Study of Fort Ord, California. December. (Fort Ord Administrative Record No. BW-1938)
- United States Fish and Wildlife Service (USFWS). 1999. Biological Opinion on the Closure and Reuse of Fort Ord, Monterey County, California (1-8-99-F/C-39R). March 30. (Fort Ord Administrative Record No. BW-2232A)

Section 14 – References

- . 2002. Biological Opinion on the Closure and Reuse of Fort Ord, Monterey County, California, as it affects Monterey Spineflower Critical Habitat (1-8-01-F-70R). October 22. (Fort Ord Administrative Record No. BW-2233)
- . 2005. Cleanup and Reuse of Former Fort Ord, Monterey County, California, as it affects California Tiger Salamander and Critical Habitat for Contra Costa Goldfields (1-8-04-F-25R). March 14. (Fort Ord Administrative Record No. BW-2334)
- USA Environmental, Inc. (USA). 2000a. Draft Final After Action Report, 100% Grid Sampling, Former Fort Ord, California, Site OE-15A. October 18. (Fort Ord Administrative Record No. OE-0286A)
- . 2000b. Draft Final SS/GS Sampling and OE Removal After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-4A. October 23. (Fort Ord Administrative Record No. OE-0216A)
- . 2000c. Final After Action Report, 100% OE Removal, Inland Range Contract, Former Fort Ord, California, Site OE-47. November 9. (Fort Ord Administrative Record No. OE-0213A-B)
- . 2000d. Final After Action Report, 100% Grid Sampling, Inland Range Contract, Former Fort Ord, California, Site OE-15B. December 18. (Fort Ord Administrative Record No. OE-0287A)
- . 2000e. Final OE Removal Action, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-13C. December 26. (Fort Ord Administrative Record No. OE-0227A)
- . 2000f. Final OE Removal Action, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-29. December 30. (Fort Ord Administrative Record No. OE-0226A)
- . 2001a. Final After Action Report, Geophysical Sampling, Investigation & Removal, Inland Range Contract, Former Fort Ord, California, Site Del Rey Oaks Group. April 24. (Fort Ord Administrative Record No. OE-0293A)
- . 2001b. Final OE Removal Action, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-14A (Lookout Ridge II). April 26. (Fort Ord Administrative Record No. OE-0296C)
- . 2001c. Final SS/GS and 100% Grid Sampling, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-28. August 17. (Fort Ord Administrative Record No. OE-0314)

- . 2001d. Final 4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-15 (Roads and Trails). September 23. (Fort Ord Administrative Record No. OE-0316)
- . 2001e. Final OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-23. September 30. (Fort Ord Administrative Record No. OE-0318)
- . 2001f. Final OE Investigation and Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Field Latrines. September 30. (Fort Ord Administrative Record No. OE-0319)
- . 2001g. Final SS/GS Sampling & 1' OE Removal, After-Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-11. September 30. (Fort Ord Administrative Record No. OE-0320)
- . 2001h. Final SS/GS Sampling, After-Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-45. September 30. (Fort Ord Administrative Record No. OE-0323)
- . 2001i. Final 100% Grid Sampling & 4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-53. September 30. (Fort Ord Administrative Record No. OE-0326)
- . 2001j. Final GridStats/SiteStats Sampling, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-43 and OE-15 DRO.1. September 30. (Fort Ord Administrative Record No. OE-0336)
- . 2001k. Final 4-Foot OE Removal & Investigation, After Action Report, Inland Range Contract, Former Fort Ord, California, IT Corporation Support (HTW). September 30. (Fort Ord Administrative Record No. OE-0340)
- . 2001l. Final 4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-42 Explosives Storage Location (ESL). October 12. (Fort Ord Administrative Record No. OE-0342)
- . 2001m. Final 100% Grid Sampling 4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-15 Seaside 1-4, DRO.02 and MoCo 1 & 2. October 13. (Fort Ord Administrative Record No. OE-0338)
- . 2001n. Final GridStats Sampling/4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-55. October 15. (Fort Ord Administrative Record No. OE-0343)
- . 2001o. Final 100% Grid Sampling/GridStats Sampling/4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-44 EDC/PBC. October 19. (Fort Ord Administrative Record No. OE-0339)

Section 14 – References

- . 2001p. Final 4' OE Removal, After Action Report, Inland Range Contract, Former Fort Ord, California, Former Fort Ord Fuel Breaks. November 15. (Fort Ord Administrative Record No. OE-0362)
- . 2001q. Final Sampling & OE Removal, Inland Range Contract Closure, After Action Report, Former Fort Ord, California. November 30. (Fort Ord Administrative Record No. OE-0368)
- UXB International, Inc. (UXB). 1995a. Final Report for Ordnance and Explosives Removal Action, Fort Ord, California, Laguna Seca Bus Turn-around (LSBT). November 1. (Fort Ord Administrative Record No. OE-0107)
- . 1995b. Final Report for Ordnance and Explosives Removal Action, Fort Ord, California, Laguna Seca Turn 11 (LST11). November 1. (Fort Ord Administrative Record No. OE-0108)
- . 1995c. Final Report for Ordnance and Explosives Removal Action, Fort Ord, California, Lookout Ridge II. November 1. (Fort Ord Administrative Record No. OE-0109)
- . 1995d. Final Report for Ordnance and Explosives Removal Action, Fort Ord, California, Site CSU. November 1. (Fort Ord Administrative Record No. OE-0121)
- . 1995e. Final Report for Ordnance and Explosives Removal Action, Fort Ord, California, Site HFA/CSU. November 1. (Fort Ord Administrative Record No. OE-0122)

APPENDIX A

Response to Comments

Response to Comments
Draft Summary of Existing Data Report, dated February 7, 2008
Review Comments provided by Judy Huang of EPA, dated March 18, 2008

No.	Comment Type / Report Section	Comment/Response
1	General Comment	<p>Comment:</p> <p>The Fort Ord Reuse Agency Environmental Services Agreement Draft Summary of Existing Data Report, dated February 7, 2008 (hereinafter referred to as the “Draft SEDR”), contains what appears to be incorrect use of the term “round.”</p> <p>Review the use of the term “round” throughout the Draft SEDR and replace it with the term “projectile” or other appropriate terms as necessary to better express the identity and condition of the munitions items described. (Note: This should not be interpreted as a request to correct the cited usage in historical documents used as references in the Draft SEDR.) Also, please ensure that all munitions noted in the narratives as being found in the specific parcels or on identified ranges are also listed in the tables recording the types and quantities of MEC located/removed from the specified locations.</p> <p>Response:</p> <p>The document has been revised such that the term “round” has been replaced with “projectile” for those items that were found (unless the item found is considered DMM and actually was a “round”). The document has also been checked to ensure that the text and tables are consistent in terms of the quantities and types of MEC found.</p>
2	General Comment	<p>Comment:</p> <p>There are a significant number of instances where the Draft SEDR contains munitions descriptions that use incorrect terminology or the item identified has the wrong filler listed. In other cases, the model (M) number listed for the item does not exist for that particular munitions type or caliber/size. While this is attributed to the historical documents from which the information was extracted and should not be attributed to the authors of the Draft SEDR, the fact does remain that these deficiencies exist. It would seem to be appropriate to add a disclaimer to the tables where the munitions items are listed to inform all concerned of this situation. Please provide the subject disclaimer as a footnote to the tables listing munitions items in the Draft SEDR, or at any other location deemed appropriate to accomplish the same intent.</p> <p>Response:</p> <p>The following footnote has been added to the appropriate tables: “Munitions descriptions have been taken directly from the Army’s MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.”</p>

Response to Comments
Draft Summary of Existing Data Report, dated February 7, 2008
Review Comments provided by Judy Huang of EPA, dated March 18, 2008

No.	Comment Type / Report Section	Comment/Response
3	General Comment	<p>Comment:</p> <p>The Conceptual Site Models (CSMs) provided for each of the nine Areas Covered by Environmental Services (ACES) that are discussed in the Draft SEDR appear to present some inconsistencies with respect to the ACES tables that list the Potential Receptors and Exposure Media (PREM Tables) and the related area-specific Pathway Analysis Flowcharts (PAFs) that are provided for each specific ACES. These inconsistencies related to the actual site conditions that currently exist and those that will exist after the sites have the remediation work completed. To assist in discussing these inconsistencies, the following factual statements are presented:</p> <ul style="list-style-type: none"> • Short of removing the soil to a specific depth and sifting it through a sieve designed to remove all potentially present MEC, no MEC removal (both surface and subsurface) eliminates one hundred percent of the MEC present on a site. As a result, there is always a potential for surface and subsurface MEC to be present on a cleared site unless the cited removal by screening has been conducted. • Both surface and subsurface MEC that are present on an ACES may be relocated and transposed due to human and environmental action on the ACES (i.e., grading, excavation, wind and rain may move MEC and may relocate it from subsurface to surface and vice versa). As a result, if surface MEC is/has been present, subsurface may be/may have also been present, and vice versa. As was previously stated, undetected/unremoved MEC may also change from one location category to another over time. <p>Based on the above statements and other established protocols involving munitions response and related terminology, the following issues exist in the PREM Tables:</p> <ul style="list-style-type: none"> • It is difficult to understand how any of the PREM Tables that have either Ground Surface or Below Grade checked as Exposure Media for a Potential Receptor do not have both checked. If there is a potential presence on the surface, there is a potential presence below the surface and vice versa. • It is unclear as to why some of the PAFs do not present both Ground Surface and Below Grade as Secondary Sources. • It is unclear as to why all categories of Receptors entering the ACES are not subject to potential exposure to both Exposure Media categories, unless there is some method in place that positively presents such contact (i.e., escorts, impenetrable barriers). • In some instances the Ground Surface category (when listed) is not analyzed to completion through Migration and Transport, Exposure Media, Exposure Pathways, and Potential Receptor categories.

Response to Comments
Draft Summary of Existing Data Report, dated February 7, 2008
Review Comments provided by Judy Huang of EPA, dated March 18, 2008

No.	Comment Type / Report Section	Comment/Response
		<ul style="list-style-type: none"> • An illustration for “Thrown Ordnance” is provided in some of the Release Mechanism Illustrations (RMIs) without the listing of “thrown” in the related PAFs. • The acronym “MD” is included under the heading of “Expected MEC Contamination – Types of MEC that may be encountered” on some of the PAFs. As MD (munitions debris) is not a subcategory of the term MEC, it is not MEC and should not be identified as such. Either the MD should be removed or the heading title changed to eliminate the error. <p>Please review the PREM Tables, the PAFs, and the RMIs for each ACES presented in the Draft SEDR for consistency and completeness and revise them as necessary. If there is some logical reason for the noted omissions, please provide an explanation thereof in an appropriate location in the Draft SEDR.</p> <p>Response:</p> <p>The PREM Tables have been modified to clarify the current and future receptors and the potential exposure routes. Surface and subsurface removal actions have been conducted in many of the areas; therefore, the risk of surface exposure has been reduced. Since there is a remote chance for buried MEC to become exposed due to erosion or other actions, even in areas where surface and subsurface removal actions have been conducted, “surface” has been added to the PREM Tables for current and future users. A more in depth risk analysis (such as an analysis for the potential of erosion, etc) will be performed and presented as part of the RI/FS for each of the MRAs.</p> <p>The PAFs have been revised to consider surface exposure due to buried MEC being exposed due to erosion or other actions. Therefore, “Ground Surface” has been added to the PAFs, as appropriate. Also, the release mechanism “Thrown” has been added to the PAFs, where appropriate, to correspond with the RMIs. Lastly, “MD” has been removed from the “Expected MEC Contamination” section of the PAFs since MD is not considered MEC and there is no risk of exposure to MD.</p>
1	Specific Comment, Table 4.1-4, Seaside MRA – Historical Military Use, Page 4-17	<p>Comment:</p> <p>The table has two entries in the row entitled Range 23M that read, “Used as a non-firing training area for laser-aimed Dragon anti-armor weapons.” and “Some Dragon rounds and 4.2-inch mortar fragments have been found on the range.” It is very unlikely that these are Dragon “rounds,” as the first statement indicates that Range 23M was a non-firing range. Live ammunition is not normally taken onto non-firing ranges in order to preclude accidental firing thereon. In addition, there appears to be a discrepancy with respect to this statement, as no “dragon rounds” are listed as found in MRS-15 SEA 1 in</p>

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		<p>either Table 4.3-3, Burial Pits Containing MEC, or Table 4.3-4, Seaside MRA – Types of MEC Removed and Hazard Classification.</p> <p>Please review the cited discrepancies and correct the listed sections and tables as necessary to make them consistent.</p> <p>Response:</p> <p>Tables 4.3-3 and 4.3-4 present information found in the Army’s MMRP database and contain information on MEC and MD items found during Army’s MEC removal actions. Although it is agreed that the term Dragon “rounds” may be misleading or incorrect, the statement that they were used or found on Range 23M comes from the Archives Search Report prepared by the USACE in October 1993. The Archives Search Report presents information obtained through historical research at various archives and records holding facilities, interviews with individuals associated with the Site or operations, and personal visits to the site. The Archives Search Report indicates that Ordnance Items Found or Utilized on Range 23M were “Dragon missiles (practice and HEAT), 4.2” Mortar.” The report does not differentiate between items that were found and items that were used. The term “round” has been revised, but no other changes have been made to the tables. However, the footnote discussed in the response to General Comment No. 1 above has been added to these two tables.</p>
2	Specific Comment, Figure 4.6-1, Seaside MRA Pathway Analysis Flowchart	<p>Comment:</p> <p>The cited flowchart lists “Direct and Indirect Firing & Thrown” as Release Mechanisms for munitions items found in the Target Area. However, it does not list “Thrown” as a Release Mechanism for munitions items found in the range safety fans. As the intent of a range safety fan is to include both the target areas and the area where items are expected to impact which do not hit the target or glance off of them, it would appear that the items thrown that do not land in the target area should land in the other portion of the range safety fan. Please revise the cited figure to correct this omission.</p> <p>Response:</p> <p>“Thrown” has been added to the pathway analysis flowchart for all affected figures.</p>
3	Specific Comment, Section 5.2.3, Surface Water and	<p>Comment:</p> <p>This section contains a sentence that states that, “There is one known groundwater monitoring well located in the northwestern portion of the MRA in the Phase I area, and a couple groundwater monitoring wells located</p>

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	Groundwater, page 5-4	<p>northwest of the MRA (Figure 5.2-1).” It is unclear as to exactly what is intended by the portion of the sentence that reads, “...and a couple groundwater monitoring wells...” Does it mean that there are two wells at the referenced location, or does it mean something else? Please review this sentence and modify it to better express the intended information.</p> <p>Response:</p> <p>The sentence has been revised as follows: “One known groundwater monitoring well is located in the northwestern portion of the MRA in the Phase I area, and two groundwater monitoring wells are located northwest of the MRA (Figure 5.2-1).”</p>
4	Specific Comment, Figure 6.6-1, CSUMB MRA Pathway Analysis Flowchart	<p>Comment:</p> <p>The cited flowchart stops the analysis of the pathway at the Secondary Sources column and does not proceed through the four remaining columns. Please explain the reason for what appears to be an incomplete analysis or revise the flowchart to reflect a completed analysis.</p> <p>Response:</p> <p>Figure 6.6-1 has been updated to reflect a completed pathway analysis through the four remaining columns for both Secondary Sources (Ground Surface and Below Grade).</p>

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1	Page 2-2, Section 2-2, Last Paragraph	<p>Comment:</p> <p>The last sentence should be revised to clarify that the consultations resulted in biological opinions (BOs) that allow impacts to and incidental take of listed species during MEC remedial activities but require mitigation measures to be implemented during the MEC activities to reduce and minimize impacts to the protected species and their habitats.</p> <p>Response:</p> <p>A sentence has been added to the end of the paragraph to provide clarification: “In addition, to remain consistent with the federal Endangered Species Act (ESA), the Army has completed consultations with the United States Fish and Wildlife Service (USFWS) on the Army’s predisposal actions, including cleanup of MEC. These consultations have resulted in biological opinions (BOs) that include endangered species incidental take permits. <i>These permits allow impacts to and incidental take of listed species during MEC cleanup activities, but require mitigation measures to be implemented during the MEC cleanup activities to reduce and minimize impacts to the protected species and their habitats.</i>”</p>
2	Page 4-8, Section 4.4.2, Third Paragraph	<p>Comment:</p> <p>The last sentence describing the “100-foot setback” is not accurate. The HMP does not establish a 100-foot setback but does identify natural resource management requirements along the Borderland Interface. The Draft Habitat Conservation Plan (HCP) being prepared by FORA does establish a width for managing the interface and I suggest referencing the Draft HCP rather than the HMP when discussing the setback distance. This statement needs to be revised throughout the SEDR.</p> <p>Response:</p> <p>The reference to the HMP describing the 100-foot setback has been replaced with the setback requirement identified in the Draft HCP. Therefore, the last sentence has been revised as follows: “Along the eastern border of the MRA with the former impact area, a 100-foot borderland development buffer area was established in the Habitat Management Plan (HMP) along the interface with a natural resources management area (NRMA) designated as habitat reserve. The setback requirements for the borderland buffer were defined in the Draft Habitat Conservation Plan (HCP) as being 200 feet wide, which must be managed and maintained as prescribed.”</p>

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3	Page 4-10, Section 4.5.	<p>Comment:</p> <p>See comment 2 regarding the 100-foot setback distance. The last paragraph should be revised to clarify the FORA will implement mitigation requirements identified in the HMP for MEC activities.</p> <p>Response:</p> <p>The section has been revised to remove the reference to the 100-foot-wide borderland buffer, which was not established in the HMP: “The HMP identifies the Seaside MRA as development (which includes residential reuse) with a 100-foot-wide borderland development buffer area along the interface with a natural resources management area (NRMA) designated as habitat reserve (Figure 4.5-1).</p> <p>The last paragraph has been revised as follows: “FORA will implement the mitigation requirements identified in the HMP prior to future development during MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA.”</p>
4	Page 4-10, Section 4.5.2	<p>Comment:</p> <p>Delete “Conference” from the sentence describing the BO since the original BO in 1993 requiring development of the HMP was not a Conference Opinion. The only Conference Opinion issued to the Army is the March 30, 1999 BO that is both a Biological and Conference Opinion because it included an evaluation of impacts to a species that was proposed for listing as an endangered species. The California black legless lizard was not listed after consideration but remains a special-status species identified in the HMP.</p> <p>The last sentence implies that only “currently applicable conservation measures” will be implemented. Please revise the last sentence by replacing “currently” with “the” since mitigation measures that may be identified in the future will require implementation. This statement occurs throughout the document and should be revised.</p> <p>Also, the first sentence in the last paragraph states that CTS “was identified as an endangered species.” Please replace “an endangered” with “a threatened.” This change needs to be made throughout the document.</p> <p>Response:</p>

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		<p>The HMP prepared by the Army in 1997 stated that the “The Installation-Wide Multispecies Habitat Management Plan (HMP) for former Fort Ord complies with the U.S. Fish and Wildlife Service (USFWS) final Biological/Conference Opinion for disposal and reuse of former Fort Ord land...” After review of the documents, the 1993 BO requiring establishment of the HMP was not a conference opinion. As such, the sentence describing the BO has been revised as follows: “The USFWS final Biological Conference Opinion for the Disposal and Reuse of Fort Ord (USFWS BO) required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species.” Other references present throughout the document which reference the 1993 BO have also been revised.</p> <p>The last sentence has been revised to read: “Future MEC remediation is required to be consistent with currently the applicable conservation measures.” References throughout the document with the same wording have also been revised.</p> <p>The first sentence in the last paragraph that refers to CTS has been updated to read: “In 2004, the California tiger salamander (CTS; <i>Ambystoma californiense</i>) was identified as an endangered a threatened species.” References throughout the document to the CTS as an endangered species have also been revised to indicate that the CTS is listed as a threatened species.</p>
5	Page 4-11, Section 4.5.2	<p>Comment:</p> <p>The last sentence of the top paragraph states, “the Seaside MRA is available for development without restrictions.” This sentence should be revised to clarify that future development activities must comply with future regulatory requirements and that only MEC related activities are covered by the Army’s BOs.</p> <p>Response:</p> <p>The last sentence of the paragraph has been revised as follows: “As presented in the HMP, with the exception of boundary management requirements, the Seaside MRA is available for development without restrictions <i>although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.</i>”</p>

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6	Page 4-11, Section 4.5.3	<p>Comment:</p> <p>Replace “(Ericameria fasciculate)” with “(Ericameria fasciculata).”</p> <p>Response:</p> <p>The text “(Ericameria fasciculate)” has been replaced with “(Ericameria fasciculata).”</p>
7	Page 4-19, Table 4.1-5, Biological Opinions	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
8	Page 4-34, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Delete “Conference” from the sentence describing the BO since the original BO in 1993 requiring development of the HMP was not a Conference Opinion. See comment 4.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “The USFWS final Biological Conference Opinion for the Disposal and Reuse of Fort Ord (USFWS BO) required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species.”</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
9	Page 4-35, Threatened and Endangered Species/Critical	<p>Comment:</p> <p>The second bullet states, “CTS was identified as an endangered species.” Please replace “an endangered” with “a threatened.” This change needs to be</p>

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	Habitat	<p>made throughout the document. See comment 4. Also, please clarify the statement, “the Seaside MRA is available for development without restrictions.” See comment 5.</p> <p>Response:</p> <p>As stated in comment 4, the text has been revised as follows: “In 2004, the California tiger salamander was identified as an endangered <i>a threatened</i> species.”</p> <p>The last sentence in the table has been revised to state: “As presented in the HMP, with the exception of boundary management requirements, the Seaside MRA is available for development without restrictions <i>although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.</i>”</p>
10	Page 4-36, Table 4.5-2	<p>Comment:</p> <p>Delete “100-foot Buffer from” since the buffer is not required by the HMP or add HCP to the header designating use. Also, add CTS to the list of species present in E24 and correct the typo for “cncamena” and “lizardr.”</p> <p>Response:</p> <p>Each occurrence in this section has been revised as follows: “Development (includes residential) and <i>a borderland 100-foot buffer along the NRMA from Borderland Interface</i>)”</p> <p>CTS has been added to the species for parcel E24 and E34. The typographical errors have been corrected to indicate “ericameria” and “lizard.”</p>
11	Page 5-9, Section 5.5	<p>Comment:</p> <p>Revise the last paragraph by deleting “prior to future development” and replacing with “for MEC activities.”</p> <p>Response:</p> <p>“prior to future development” has been replaced with “for MEC activities” in the appropriate sections as follows: “FORA will implement the mitigation requirements identified in the HMP prior to future development <i>for MEC activities</i> in accordance with ...”</p>

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12	Page 5-10, Section 5.5	<p>Comment:</p> <p>Replace “work” with “MEC activities” to avoid confusion with development activities which are not covered in the Army’s BOs.</p> <p>Response:</p> <p>The sentence has been revised as follows: “For borderland areas, FORA will follow best management practices while conducting work MEC activities to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.”</p>
13	Page 5-10, Section 5.5.2, Threatened and Endangered Species	<p>Comment:</p> <p>This section should identify that sand gilia and Monterey spineflower are present in this MRA.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Please replace “an endangered” with “a threatened.” Also, “insert “breeding” between “provide” and “habitat.”</p> <p>Response:</p> <p>The following sentence has been added to Section 5.5.2: “<i>Threatened or endangered plant species identified as having possible occurrence in the Parker Flats MRA include sand gilia (endangered) and Monterey spineflower (threatened).</i>”</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently the applicable conservation measures.”</p> <p>The last paragraph has been revised as follows: “In 2004, the CTS was identified as an endangered a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 5.5-1, it is possible the CTS may be found in the Parker Flats MRA because the MRA is within 2 km of aquatic features that may provide <i>breeding</i> habitat for the CTS.”</p>

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14	Page 5-18, Table 5.1-5, Biological Opinions	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
15	Page 5-32, Table 5.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Insert “and Habitat Reserve.” At the end of the first sentence since the Parker Flats MRA includes habitat reserve.</p> <p>Response:</p> <p>This comment pertains to the first sentence of the third bullet listed on Table 5.5-1 in the Habitat Management/Biological Opinions section. The first sentence has been revised to include habitat reserve to match the wording used in the document text. The sentence has been revised as follows: “The HMP identifies the area as development (including residential) <i>and habitat reserve</i> with borderland development areas adjacent to the NRMA interface.”</p>
16	Page 5-33, Table 5.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Insert “during MEC activities” to reduce confusion regarding future development activities which are not covered by the Army’s BOs.</p> <p>Response:</p> <p>The second to the last bullet in the Habitat Management Plan/Biological Opinions section of Table 5.5-1 has been revised as follows: “FORA will implement the mitigation requirements <i>during MEC activities</i> identified in the HMP in accordance with the BO...”</p>
17	Page 5-33, Table 5.5-1, Threatened and Endangered Species	<p>Comment:</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Please replace “an endangered” with “a threatened.”</p> <p>Response:</p>

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		As stated in comment 4, the text has been revised as follows: “CTS was identified as an endangered a <i>threatened</i> species.”
18	Page 5-34, Table 5.5-2	<p>Comment:</p> <p>Insert “CTS” into the HMP Species column for Parcels E19a.2, E19a.3, E19a.4, and E19a.5.</p> <p>Response:</p> <p><i>California tiger salamander</i> was added to the list of HMP Species for Parcels E19a.1, E19a.2, E19a.3, E19a.4, E19a.5, and E21b.3.</p>
19	Page 6-8, Section 6.5	<p>Comment:</p> <p>Revise the third paragraph by replacing “prior to future development” with “for MEC activities” and delete the second sentence discussing habitat areas since the HMP identifies these parcels as “Development.” Page: 2</p> <p>Response:</p> <p>The last two paragraphs of Section 6.5 have been revised as follows: “The HMP identifies the CSUMB MRA as development and habitat reserve with borderland development areas along an NRMA interface (Figure 6.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.</p> <p>FORA will implement the mitigation requirements identified in the HMP prior to future development <i>for MEC activities</i> in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.”</p>
20	Page 6-8, Section 6.5.2, Threatened and Endangered Species	<p>Comment:</p> <p>Include a statement that Monterey spineflower occurs within this MRA.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was</p>

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		<p>identified as an endangered species.” Please replace “an endangered” with “a threatened.” Also, insert “breeding” between “provide” and “habitat.”</p> <p>Response:</p> <p>The following sentence has been added to Section 6.5.2: “<i>The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the CSUMB MRA.</i>”</p> <p>The last paragraph has been revised as follows: “In 2004, the CTS was identified as an endangered a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 6.5-1, it is possible the CTS may be found in the CSUMB MRA because the MRA is within 2 km of aquatic features that may provide <i>breeding</i> habitat for the CTS.”</p>
21	Page 6-9, Section 6.5.3	<p>Comment:</p> <p>Delete “Monterey spineflower” since this is a threatened species and should be addressed in the previous section.</p> <p>Response:</p> <p>The Monterey spineflower has been deleted from the “Other Communities and Species of Concern” section and the following sentence has been added to the Threatened and Endangered Species section (the previous section): “The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the CSUMB MRA.”</p>
22	Page 6-14, Table 6.1-5	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
23	Page 6-25, Table 6.5-1, Habitat Management Plan/Biological	<p>Comment:</p> <p>Delete “habitat” since the CSUMB parcels do not contain HMP habitat reserves. Therefore, delete the “Habitat Reserve” bullet since it is not applicable to the CSUMB MRA.</p>

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	Opinions.	<p>Insert “for MEC activities” between “requirements” and “identified” in the second to the last bullet and delete the last sentence since there aren’t HMP habitat areas in the CSUMB parcels.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>The bullets in the this section of Table 6.5-1 have been revised as follows:</p> <ul style="list-style-type: none"> • The HMP identified principal management categories. The CSUMB MRA is identified as development (including residential), habitat, and borderlands interface. These principal management categories are defined as: <ul style="list-style-type: none"> • Development - lands in which no management restrictions are contained under the HMP. Some plans for salvage of biological resources for these parcels may be specified. • Habitat Reserve – land in which no development is allowed. Management goals for the area are conservation and enhancement of threatened and endangered species. • Borderland Development Area – lands abutting the NRMA that are slated for development. Management of these lands includes no restrictions except along the development/reserve interface. • FORA will implement the mitigation requirements <i>for MEC activities</i> identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). • Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with <i>the currently</i> applicable conservation measures.
24	Page 6-25, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>The title of this row should be revised since there is no “Critical Habitat” identified in the CSUMB parcels. In addition, Monterey spineflower should be included since it is a threatened species and is found in this MRA.</p> <p>Please revise the first sentence in the last bullet that states, “CTS was identified as an endangered species. Replace “an endangered” with “a threatened.”</p>

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		<p>Response:</p> <p>The title of this section of Table 6.5-1 has been revised as follows: “Endangered Species/Critical Habitat.”</p> <p>The following bullet has been added to the Threatened and Endangered Species section of Table 6.5-1:</p> <ul style="list-style-type: none"> • The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the CSUMB MRA. <p>As stated in comment 4, the text has been revised as follows: “CTS was identified as an endangered a <i>threatened</i> species.”</p>
25	Page 6-26, Table 6.5-2	<p>Comment:</p> <p>Insert “CTS” as an HMP Species found in Parcel S1.3.2 (western portion).</p> <p>Response:</p> <p>California tiger salamander has been added to the list of HMP species in the table. However, CTS was only added to Parcel S1.3.2 (eastern portion) since the eastern side of the parcel falls within the 2 km limit of potential CTS breeding habitat. The western portion of Parcel S1.3.2 does not fall within the 2 km limit of potential CTS breeding habitat (see Figure 6.5-1).</p>
26	Figure 6.4-1, CSUMB MRA	<p>Comment:</p> <p>The western portion is identified as “Habitat” yet the HMP designates the entire parcel as “Development.” If the reuse agency intends to reuse the parcel for habitat, the designation should be clarified so as not to confuse the relationship to the HMP designation.</p> <p>Response:</p> <p>It is assumed that this comment addresses the eastern portion of the MRA and not the west, as the western portion is identified as Residential development on Figure 6.4-1. Figure 6.4.1 shows the land use profile in the eastern portion of the MRA as “Habitat (CSUMB Open Space Park)” which is misleading. This portion of the MRA has been revised to indicate a non-residential reuse area (pink color scheme) that is defined as Non-Residential (CSUMB Open Space Park)” in the legend. Figure 6.5-1 shows the ecological land use profile as designated in the HMP. As shown on Figure 6.5-1, the entire MRA is designated for development (as defined by the</p>

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		HMP). .
27	Page 7-7, Section 7.5	<p>Comment:</p> <p>Revise the fourth paragraph by replacing “prior to future development” with “for MEC activities.”</p> <p>Response:</p> <p>“prior to future development” has been replaced with “for MEC activities.”</p>
28	Page 7-8, Section 7.5.2	<p>Comment:</p> <p>Sand gilia and Monterey spineflower should be included since they are threatened and endangered species and are found in this MRA. Monterey spineflower Critical Habitat is also designated in a portion of this MRA.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.” Also, insert “breeding” between “provide’ and “habitat.”</p> <p>Response:</p> <p>The following sentence has been added to Section 7.5.2: “<i>Threatened or endangered plant species identified as having possible occurrence in the Development North MRA include sand gilia (endangered) and Monterey spineflower (threatened). A portion of the Development North MRA has been designated as critical habitat for Monterey spineflower by the USFWS.</i>”</p> <p>The statement regarding critical habitat has also been added to the appropriate sections for other MRAs which contain areas that have been designated as critical habitat for the Monterey spineflower (Interim Action Ranges MRA, Laguna Seca MRA, and East Garrison MRA).</p> <p>The last paragraph has been revised as follows: “In 2004, the CTS was identified as an endangered a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 7.5-1, it is possible the CTS may be found in the Development North MRA because the MRA is within 2 km of aquatic features that may provide <i>breeding</i> habitat for the CTS.”</p>
29	Page 7-8, Section 7.5.3	<p>Comment:</p> <p>Delete “Monterey spineflower, sand gilia” since these are threatened and</p>

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		<p>endangered species and should be addressed in the previous section.</p> <p>Response:</p> <p>Monterey spineflower and sand gilia were deleted from the “Other Species and Communities of Concern” section and the following sentence was added to the “Threatened and Endangered Species” section (the previous section): “<i>Threatened or endangered plant species identified as having possible occurrence in the Development North MRA include sand gilia (endangered) and Monterey spineflower (threatened).</i>”</p>
30	Page 7-14, Biological Opinions	<p>Comment:</p> <p>The title of this “Type” should be revised to include “Critical Habitat” since Monterey spineflower occurs in a portion of this MRA.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>The title of this section has been revised. A statement regarding the designation of critical habitat for the Monterey spineflower has also been added to this section.</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
31	Page 7-22, Table 7.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Insert “Habitat Reserves, Habitat Corridor, and” between “as” and “development.”</p> <p>Response:</p> <p>The first sentence of the third bullet in the Habitat Management/Biological Opinions section of Table 7.5-1 has been revised to read: “The HMP identifies the area as <i>habitat reserve, habitat corridor, and</i> development with borderland development areas along the western portion of the MRA designated for residential reuse, and along portions of the southern and eastern boundaries adjacent to the NRMA interface.”</p>
32	Page 7-23, Table 7.5-1,	<p>Comment:</p>

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	Habitat Management Plan/Biological Opinions	<p>Insert another bullet to summarize the “Habitat Corridor” category.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>The following bullet for habitat corridor (as defined in the HMP) has been added to the table:</p> <ul style="list-style-type: none"> • <i>Habitat Corridor – land between major reserve areas. These lands are to be managed to promote connections between conservation areas.</i> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
33	Page 7-23, Table 7.5-1, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>Include a statement that the Monterey spineflower Critical Habitat is designated for a portion of this MRA.</p> <p>Please revise the first sentence in the last bullet that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”</p> <p>Response:</p> <p>The following bullet has been added to the table:</p> <ul style="list-style-type: none"> • <i>A portion of the Development North MRA has been designated as Critical Habitat for the Monterey spineflower.</i> <p>The same bullet has been added to other tables for which a portion of the MRA has been designated as Critical Habitat for the Monterey spineflower (Table 8.5-1 for the Interim Action Ranges MRA, Table 10.5-1 for the Laguna Seca MRA, and Table 12.5-1 for the East Garrison MRA).</p> <p>As stated in comment 4, the text has been revised as follows: “CTS was identified as an endangered <i>a threatened</i> species.”</p>
34	Page 7-23, Table 7.5-2.	<p>Comment:</p> <p>Insert “CTS” in the HMP Species column for Parcels E19a.3, E19a.4, L5.7, and L20.2.1.</p>

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		<p>Response:</p> <p>The California tiger salamander has been added to the list of HMP Species for Parcels E19a.3, E19a.4, L5.7, and L20.2.1.</p>
35	Page 8-7, Section 8.3.3	<p>Comment:</p> <p>The last sentence that states, “no further action has been recommended for HAs within this MRA (Army 2007)” needs to be revised. See Table 8.3-5 where it reports that the BRA recommended Range 44 and 43 for further evaluation. <i>Draft Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0</i> (Shaw/MACTEC, November 2007) identifies a soil remedial unit within Range 44.</p> <p>Response:</p> <p>The <i>Draft Final Feasibility Study Addendum Site 39 Ranges</i> was submitted as final in March 2008. Therefore, the paragraph has been revised as follows: “Table 8.3-5 summarizes the findings of the BRA with respect to HTW for each range. As stated in the FOSET, Based on the BRA, <i>further evaluation was recommended for HA-43 (Range 43) and HA-44 (Range 44) based upon the presence of munitions constituents (lead and/or HMX) detected in soil samples. Ranges 43 and 44 will be remediated by the Army in accordance with the Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0 (Shaw/MACTEC 2008).</i> No further action has been recommended for the other HAs identified within this MRA (Army 2007).”</p>
36	Page 8-8, Section 8.5	<p>Comment:</p> <p>Please revise the second paragraph stating that no further action was recommended. See comment 35.</p> <p>Response:</p> <p>The paragraph has been revised as follows: “As discussed in Section 8.3.4, COCs related to HTW have been previously addressed <i>or will be addressed by the Army.</i> and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors have been mitigated <i>or will be mitigated</i> to an acceptable level and ecological receptor exposure is not considered further in this CSM.</p>
37	Page 8-9, Section 8.5	<p>Comment:</p>

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		<p>Delete “prior to future development” and insert “for MEC activities.”</p> <p>Response:</p> <p>“prior to future development” has been replaced with “for MEC activities.”</p>
38	Page 8-9, Section 8.5.2	<p>Comment:</p> <p>Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”</p> <p>Response:</p> <p>The following sentence has been added to Section 8.5.2: <i>“Threatened or endangered plant species identified as having possible occurrence in the Interim Action Ranges MRA include sand gilia (endangered) and Monterey spineflower (threatened) by the USFWS.”</i></p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently the applicable conservation measures.”</p> <p>The first sentence in the last paragraph has been revised to state, “CTS was identified as an endangered a threatened species.”</p>
39	Page 8-10, Section 8.5.3	<p>Comment:</p> <p>Delete “Monterey spineflower, sand gilia” since these are threatened and endangered species and should be addressed in the previous section.</p> <p>Response:</p> <p>“Monterey spineflower, sand gilia” has been deleted from the list included in the “Other Communities and Species of Concern” section and have been added to the “Threatened and Endangered Species” Section (previous section). See the response to comment 38.</p>

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40	Page 8-10, Section 8.6	<p>Comment:</p> <p>This paragraph needs to be revised to recognize that a soil remedial area is located in Range 44. Although the ESCA RP is not responsible for HTW remediation, the paragraph should clarify that a portion of Range 44 will be remediated by the Army in accordance with <i>Draft Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0</i> (Shaw/MACTEC, November 2007).</p> <p>Response:</p> <p>The paragraph has been revised as follows: “Per the discussion in Sections 8.3.4 and 8.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army; based on the Army’s evaluation, no further action relative to the COCs is required for Ranges 43 and 44. These remedial actions will be conducted by the Army in accordance with the <i>Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0 (Shaw/MACTEC 2008)</i> and not under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.”</p>
41	Page 8-16, Table 8.1-5, Habitat Management Plan	<p>Comment:</p> <p>The first bullet needs to be revised as follows: “This MRA is identified as development with borderlands interface, and habitat reserve. The requirements for the borderlands interface have both short and long-term requirements. Interim requirements include the maintenance of firebreaks and vehicle barriers where appropriate. Long-term requirements apply as development occurs. Except for the habitat reserve and borderland interface parcels, the MRA is available for development once the future regulatory requirements have been completed.”</p> <p>Response:</p> <p>The first bullet has been modified as requested:</p> <ul style="list-style-type: none"> • This MRA is identified as development with borderlands interface and habitat reserve. The requirements for the borderlands interface have both short and long-term requirements. Interim requirements include the maintenance of firebreaks and vehicle barriers where appropriate. Long-term requirements apply as development occurs. Except for the habitat

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		<p>reserve and borderland interface parcels, the MRA is available for development once the future regulatory requirements have been completed. The MRA is identified within the HMP to require special management for the boundaries between developed areas and the NRMA. The requirements have both interim and long term maintenance implications. Except for boundary management requirements, the MRA is available for development without restrictions. Interim requirements include the maintenance of firebreaks and vehicle carriers where appropriate. Long term requirements apply as development occurs.</p>
42	Page 8-17, Table 8.1-5, Biological Opinions	<p>Comment:</p> <p>This “Type” title needs to be revised to include “Critical Habitat” since Monterey spineflower Critical Habitat has been designated by USFWS for a portion of the MRA.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>Critical habitat has been added to the title and a statement regarding the designation of critical habitat for the Monterey spineflower has been added to this section of the table.</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
43	Page 8-33, Table 8.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>The first sub-bullet of the last bullet describing the development category needs to be revised to clarify that although lands in the development category have no HMP management restrictions, development impacts are not covered by the Army BOs and future regulatory requirements must be addressed by the property recipient.</p> <p>Response:</p> <p>The first sub-bullet has been modified as follows:</p> <ul style="list-style-type: none"> ◦ Development - lands in which no management restrictions are contained under the HMP <i>although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.</i> Some plans

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		for salvage of biological resources for these parcels may be specified.
44	Page 8-34, Table 8.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
45	Page 8-34, Table 8.5-1, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species. Also describe that a portion of the MRA is identified as Monterey spineflower Critical Habitat.</p> <p>Please revise the first sentence in the last bullet that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”</p> <p>Response:</p> <p>The following two bullets have been added to this section of the table:</p> <ul style="list-style-type: none"> • Threatened or endangered plant species identified as having possible occurrence in the Interim Action Ranges MRA include sand gilia (endangered) and Monterey spineflower (threatened). • A portion of the Interim Action Ranges MRA has been designated as Critical Habitat for the Monterey spineflower. <p>As stated in comment 4, the text of the last bullet has been revised as follows: “CTS was identified as an endangered <i>a threatened</i> species.”</p>
46	Page 8-35, Table 8.5-2	<p>Comment:</p> <p>Delete “California tiger salamander” from the HMP Species column for Parcels E38 and E41. Insert CTS for Parcel E40.</p> <p>Response:</p> <p>California tiger salamander was deleted from the HMP Species list for</p>

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		Parcels E38 and E41 and added to the list for Parcels E40 and E42.
47	Page 9-8, Section 9.5	<p>Comment:</p> <p>Delete “prior to future development” and insert “for MEC activities.”</p> <p>Response:</p> <p>“prior to future development” has been replaced with “for MEC activities.”</p>
48	Page 9-9, Section 9.5.2	<p>Comment:</p> <p>Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species.</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened” in the first sentence and insert “that is known as a breeding site for CTS” at the end of the last sentence.</p> <p>Response:</p> <p>The following sentence has been added to Section 9.5.2: “<i>Threatened or endangered plant species identified as having possible occurrence in the MOUT Site MRA include sand gilia (endangered) and Monterey spineflower (threatened).</i>”</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p> <p>The first sentence in the last paragraph has been revised to state, “CTS was identified as an endangered <i>a threatened</i> species.”</p> <p>The MOUT Site MRA is located within 500 meters of two aquatic features. According to a 2004 survey map prepared by MACTEC, one of these features was identified as a “known CTS breeding habitat” while the other was identified as “potential CTS breeding habitat.” Although it is assumed for MEC activities that all potential habitats will contain CTS, adding “that is a known CTS breeding site for CTS” leads one to believe that both aquatic features have positively been identified as breeding sites. As such, the</p>

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		<p>paragraph has been revised as follows: “CTS may be found as far as 2 km from aquatic breeding habitats. Figure 9.5-1 shows the MOUT Site MRA with respect to various aquatic features. The MOUT Site MRA may have a presence of CTS because the MRA is located within 500 meters of an aquatic feature <i>two aquatic features, one of which was identified as suitable breeding habitat and the other which was identified as a known CTS breeding site in 2004.</i>”</p>
49	Page 9-9, Section 9.5.3	<p>Comment:</p> <p>Delete “Monterey spineflower and sand gilia” since these are added to the previous section on threatened and endangered species.</p> <p>Response:</p> <p>“Monterey spineflower and sand gilia” has been deleted from the list included in the “Other Communities and Species of Concern” section and have been added to the “Threatened and Endangered Species” Section (previous section). See the response to comment 48.</p>
50	Page 9-17, Table 9.1-5, Biological Opinions	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
51	Page 9-24, Table 9.5-1, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>Delete “Critical Habitat” from the title of this “Type” since no critical habitat is designated for this MRA.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened” in the first sentence and insert “that is known as a breeding site for CTS” after “aquatic feature” and delete “in which CTS may be present.”</p> <p>Response:</p> <p>“/Critical Habitat” has been deleted from the title of the “Type” heading in this table.</p>

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		<p>The last bullet has been revised as follows:</p> <ul style="list-style-type: none"> In 2004, the CTS was identified as an endangered <i>a threatened</i> species. CTS may be found as far as 2 km from aquatic breeding habitats. The MOUT Site MRA may have a presence of CTS because the MRA is located within 500 meters of an aquatic feature <i>two aquatic features, one of which was identified as suitable breeding habitat and the other which was identified as a known CTS breeding site in 2004.</i>
52	Page 10-3, Section 10.2.2	<p>Comment:</p> <p>Insert “prescribed burning and” between “with” and “both” when discussing vegetation clearance methods used in this MRA. Wolf Hill (MRS-47) was burned in 1994.</p> <p>Response:</p> <p>The sentence has been revised as follows: “Vegetation removal has been performed with <i>prescribed burning and</i> both manual and mechanical methods.”</p>
53	Page 10-8, Section 10.5	<p>Comment:</p> <p>The second third paragraph needs to be revised to reflect that the HMP identifies the Laguna Seca MRA as Development with Reserves or Development with Restrictions, not “development without restrictions.”</p> <p>Delete “prior to future development” and insert “for MEC activities” in the second paragraph and delete the last sentence since there is no borderland interface requirements in this MRA.</p> <p>Response:</p> <p>The third paragraph has been revised as follows: “The HMP identifies the Laguna Seca MRA as development with reserve or development with restrictions (Figure 10.5-1). This is defined as lands slated for development that contain inholdings of reserve or require specific restrictions to protect biological resources values; management of reserve inholdings must match that for habitat reserves, while management in development areas must proceed with certain specific restrictions identified in the HMP. Nearby NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.”</p>

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		<p>The last paragraph has been revised as follows: “FORA will implement the mitigation requirements identified in the HMP prior to future development for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.</p>
54	Page 10-8, Section 10.5.2	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Please revise the first sentence in the last paragraph that states “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p> <p>The first sentence in the last paragraph has been revised to state, “CTS was identified as an endangered <i>a threatened</i> species.”</p>
55	Page 10-14, Table 10.1-5, Biological Opinions	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
56	Page 10-23, Table 10.5-1, Biological	<p>Comment:</p> <p>Insert “by prescribed burning and” between “performed” and “with” in the second bullet to clarify that a portion of this MRA was burned in 1994 to clear vegetation in preparation for the removal action.</p>

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		<p>Response:</p> <p>The second bullet was revised as follows:</p> <ul style="list-style-type: none"> A number of sampling and removal actions have been performed at the Laguna Seca MRA that required vegetation removal. Vegetation removal has been performed <i>by prescribed burning and</i> with both manual and mechanical methods.
57	Page 10-24, Table 10.5-1, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>Please revise the first sentence in the second bullet that states “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”</p> <p>Revise the third bullet as follows: “A portion of the Laguna Seca MRA is identified as critical habitat for Monterey spineflower.”</p> <p>The Contra Cost goldfields critical habitat designation was removed by USFWS following an economic impact assessment. Wolf Hill (MRS-47) is the only portion of the MRA that contains Monterey spineflower critical habitat.</p> <p>Response:</p> <p>The first sentence in the second bullet has been revised to state, “CTS was identified as an endangered a <i>threatened</i> species.”</p> <p>The third bullet has been revised as follows:</p> <ul style="list-style-type: none"> <i>A portion of the Laguna Seca MRA is identified as a critical habitat for Monterey spineflower and Contra Costa Goldfields.</i>
58	Page 10-25, Table 10.5-2	<p>Comment:</p> <p>Delete “Sand gilia” and insert “CTS” for Parcels L20.3.1, L20.3.2, L20.5.1, L20.5.2, L20.5.3, and L20.5.4.</p> <p>Response:</p> <p>Sand gilia was deleted from the HMP Species lists and <i>California tiger salamander</i> was added to the lists for Parcels L20.3.1, L20.3.2, L20.5.1, L20.5.2, L20.5.3, and L20.5.4.</p>
59	Figure 10.4-1, Laguna Seca MRA Land Use	<p>Comment:</p> <p>The pink area needs to be renamed “Development with Reserve Areas or</p>

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	Profile Reuse Map	<p>Development with Restrictions” in accordance with the HMP designation. The HMP does not allow development but only allows a maintained grass area for over-flow parking during LS events.</p> <p>Response:</p> <p>The area has been renamed on the figure to “Non-Residential (Development with Reserve Areas or Development with Restrictions)”</p>
60	Page 11-7, Section 11.5	<p>Comment:</p> <p>The third paragraph needs to be revised as follows: “The HMP identifies the DRO/Monterey MRA as development and development with reserve areas or development with restrictions (Figure 11.5-1). The development with reserve areas or development with restrictions portion of the MRA supports plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.”</p> <p>Response:</p> <p>According to the FOSET and Figure 4-1 of the HMP, Parcel L6.2 (within the DRO/Monterey MRA) is designated as “Habitat Reserve.” It was noted, however, that the parcel does not border the NRMA. As such, the third paragraph has been revised as follows:</p> <p>The HMP identifies the DRO/Monterey MRA as development and habitat reserve with borderland development areas along an NRMA interface (Figure 11.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and Habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.</p>
61	Page 11-7, Section 11.5	<p>Comment:</p> <p>Delete “prior to future development” and insert “for MEC activities.” Also, delete the last sentence since there are no borderland interface requirements for this MRA.</p> <p>Response:</p> <p>The last paragraph has been revised as follows: “FORA will implement the mitigation requirements identified in the HMP prior to future development</p>

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		<p><i>for MEC activities</i> in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.</p>
62	Page 11-8, Section 11.5.2	<p>Comment:</p> <p>Include a statement regarding the presence of Monterey spineflower since it is a threatened species.</p> <p>Replace “currently” with “the” in the second paragraph since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened” in the first sentence and insert “breeding” between “provide” and “habitat.”</p> <p>Response:</p> <p>The following sentence has been added to Section 11.5.2: <i>“The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the DRO/Monterey MRA.”</i></p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p> <p>The last paragraph has been revised to state: “In 2004, the CTS was identified as an endangered <i>a threatened</i> species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 11.5-1, it is possible the CTS may be found in the DRO/Monterey MRA as the MRA is within 500 meters of aquatic features that may provide <i>breeding</i> habitat for the CTS.”</p>
63	Page 11-8, Section 11.5.3	<p>Comment:</p> <p>Delete Monterey spineflower since it was inserted in the section above.</p> <p>Response:</p>

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		"Monterey spineflower" has been deleted from the list included in the "Other Communities and Species of Concern" section and has been added to the "Threatened and Endangered Species" Section (previous section). See the response to comment 62.
64	Page 11-13, Table 11.1-4, Biological Opinions	<p>Comment:</p> <p>Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: "Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures."</p>
65	Page 11-17, Table 11.4-1	<p>Comment:</p> <p>Delete "Reserve – Development Buffer" and insert "Development with Reserve Areas or Development with Restrictions" for Parcel L6.2.</p> <p>Response:</p> <p>According to the FOSET and Figure 4-1 of the HMP, Parcel L6.2 (within the DRO/Monterey MRA) is designated as "Habitat Reserve." No changes have been made.</p>
66	Page 11-18, Table 11.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Delete "Conference." See comment 4.</p> <p>Response:</p> <p>The text has been revised as follows: "The USFWS final Biological Conference Opinion for the Disposal and Reuse of Fort Ord required that a habitat management plan be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species."</p>
67	Page 11-18, Table 11.5-1, Habitat Management Plan/Biological Opinions	<p>Comment:</p> <p>Delete "habitat reserve" from the third bullet and replace with "Development with Reserve Areas or Development with Restrictions."</p> <p>Response:</p>

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		According to the FOSET and Figure 4-1 of the HMP, Parcel L6.2 (within the DRO/Monterey MRA) is designated as "Habitat Reserve." No changes have been made.
68	Page 11-18, Table 11.5-1, Habitat Management Plans/Biological Opinions	<p>Comment:</p> <p>Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: "Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures."</p>
69	Page 11-18, Table 11.5-1, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>Delete reference to Critical Habitat in the title of the "Type" since no critical habitat occurs in this MRA. Also, include a statement regarding the presence of Monterey spineflower since it is a threatened species. Please revise the first sentence in the second bullet that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened."</p> <p>Response:</p> <p>"Critical Habitat" has been deleted from the title of the Type in this table since no critical habitat occurs within the MRA.</p> <p>The following bullet has been added to the table for this MRA:</p> <ul style="list-style-type: none"> • <i>The Monterey spineflower is a threatened plant species and has been identified as having possible occurrence in the DRO/Monterey MRA.</i> <p>The first sentence in the second bullet has been revised as follows: "CTS was identified as an endangered <i>a threatened</i> species."</p>
70	Page 11-19, Table 11.5-2	<p>Comment:</p> <p>Delete "habitat reserve" and insert "Development with Reserve Areas or Development with Restrictions." Also, insert "CTS" in the HMP Species column for Parcels E29.1 and L6.2.</p> <p>Response:</p> <p>According to the FOSET and Figure 4-1 of the HMP, Parcel L6.2 (within</p>

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		<p>the DRO/Monterey MRA) is designated as “Habitat Reserve.” No changes have been made.</p> <p>California tiger salamander has been added to the HMP Species lists for Parcels E29.1 and L6.2.</p>
71	Figure 11.4-1, DRO/Monterey MRA Land Use Profile Reuse Plan	<p>Comment:</p> <p>Rename the green area as “Development with Reserve Areas or Development with Restrictions.”</p> <p>Response:</p> <p>According to the FOSET and Figure 4-1 of the HMP, Parcel L6.2 (within the DRO/Monterey MRA) is designated as “Habitat Reserve.” No changes have been made.</p>
72	Figure 11.5-1, DRO/Monterey MRA Ecological Profile Habitat Type	<p>Comment:</p> <p>Parcel L6.2 is “Development with Reserve Areas or Development with Restrictions” and not “Habitat Reserve” as shown on the existing figure.</p> <p>Response:</p> <p>According to the FOSET and Figure 4-1 of the HMP, Parcel L6.2 (within the DRO/Monterey MRA) is designated as “Habitat Reserve.” No changes have been made.</p>
73	Page 12-4, Section 12.2.3	<p>Comment:</p> <p>Revise the first sentence on the page to reflect that several aquatic features are present <u>within</u> the MRA and within 500 feet.</p> <p>Response:</p> <p>The sentence has been revised as follows: “There are a number of small aquatic features (i.e., vernal pools, ponds) located <i>within the boundaries, as well as</i> within 500 feet (approximately 150 meters) of the eastern and northeastern portions of the East Garrison MRA, and a relatively larger aquatic feature located approximately 1,300 feet (approximately 340 meters) to the northwest of the MRA (Figure 12.2.2).”</p>
74	Page 12-8, Section 12.5	<p>Comment:</p> <p>The third paragraph needs to be revised to delete reference to the 100-foot wide development buffer along the interface. See comment 2.</p>

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		<p>Also, delete “prior to future development” and insert “for MEC activities.”</p> <p>Response:</p> <p>References to the development buffer being 100-foot wide have been revised to indicate a development buffer that is 200-foot wide as referenced in the Draft HCP.</p> <p>“prior to future development” has been replaced with “for MEC activities.”</p>
75	Page 12-8, Section 12.5.2	<p>Comment:</p> <p>Revise the title of this section to include “Critical Habitat” since a portion of this MRA is designated as Critical Habitat for the Monterey spineflower.</p> <p>Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species.</p> <p>Replace “currently” with “the” in the last bullet since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.” Also, revise the last sentence as follows: “CTS may occur within the East Garrison MRA due to the presence of several aquatic features within and adjacent to the MRA that may provide breeding habitat (Figure 12.5-1).”</p> <p>Response:</p> <p>The title of this section has been renamed as: Threatened and Endangered Species <i>and Critical Habitat</i>. This change has been made to the applicable sections for the other MRAs which contain critical habitat (Section 7.5.2 for the Development North MRA, Section 8.5.2 for the Interim Action Ranges MRA, and Section 10.5.2 for the Laguna Seca MRA).</p> <p>The following paragraph has been added to Section 12.5.2: “<i>Threatened or endangered plant species identified as having possible occurrence in the East Garrison MRA include sand gilia (endangered) and Monterey spineflower (threatened). A portion of the East Garrison MRA has been designated as critical habitat for the Monterey spineflower by the USFWS.</i>”</p>

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		<p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p> <p>The last paragraph has been revised as follows: “In 2004, the CTS was identified as an endangered <i>a threatened</i> species. CTS may be found as far as 2 km from aquatic breeding habitats. The East Garrison MRA may have a presence of CTS because the MRA is located within 1 km of several aquatic features (Figure 12.5.1). CTS may occur within the East Garrison MRA due to the presence of several aquatic features within and adjacent to the MRA that may provide suitable breeding habitat (Figure 12.5.1).”</p>
76	Page 12-9, Section 12.5.3	<p>Comment:</p> <p>Delete Monterey spineflower and sand gilia since they were inserted into the previous section, Threatened and Endangered Species/Critical Habitat.</p> <p>Response:</p> <p>“Monterey spineflower” and “sand gilia” have been deleted from the list included in the “Other Communities and Species of Concern” section and have been added to the “Threatened and Endangered Species” section (previous section). See the response to comment 75.</p>
77	Page 12-15	<p>Comment:</p> <p>Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p>
78	Page 12-24, Habitat Management Plan/Biological Opinions.	<p>Comment:</p> <p>Replace “currently” with “the” in the second to last bullet since mitigation measures identified in the future must also be implemented. See comment 4.</p> <p>The first sub-bullet of the last bullet describing the development category needs to be revised to clarify that although lands in the development category have no HMP management restrictions, development impacts are not covered by the Army BOs and future regulatory requirements must be</p>

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		<p>addressed by the property recipient. See comment 43.</p> <p>Response:</p> <p>As stated in the response to comment 4, the text has been revised as follows: “Future MEC remediation is required to be consistent with currently <i>the</i> applicable conservation measures.”</p> <p>The first sub-bullet has been modified as follows:</p> <ul style="list-style-type: none"> • Development - lands in which no management restrictions are contained under the HMP <i>although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.</i> Some plans for salvage of biological resources for these parcels may be specified.
79	Page 12-24, Threatened and Endangered Species/Critical Habitat	<p>Comment:</p> <p>Please revise the first sentence in the second bullet that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”</p> <p>Include a statement regarding the presence of Monterey spineflower, federally threatened, and that a portion of the MRA is designated as Critical Habitat for Monterey spineflower.</p> <p>Revise the second sentence to state, “East Garrison MRA contains several aquatic features as well as several features within 1 km of the MRA which provide suitable breeding habitat for CTS.</p> <p>Response:</p> <p>The first sentence in the second bullet has been revised as follows: “CTS was identified as an endangered <i>a threatened</i> species.”</p> <p>The following two bullets have been added to this section of the table (sand gilia was added to this section as well since it has also been identified at this MRA – see comment 76 and the HMP):</p> <ul style="list-style-type: none"> • <i>Threatened or endangered plant species identified as having possible occurrence in the East Garrison MRA include sand gilia (endangered) and Monterey spineflower (threatened).</i> • <i>A portion of the East Garrison MRA has been designated as Critical Habitat for the Monterey spineflower by the USFWS.</i>

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		The last bullet has been revised as follows: “In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. All of the East Garrison MRA is within 500 meters to 1 km of an aquatic feature in which CTS may be present. East Garrison MRA contains several aquatic features as well as several features within 1 km of the MRA which provide suitable breeding habitat for CTS.”
80	Page 12-25, Table 12.5-2	<p>Comment:</p> <p>Insert “CTS” in the HMP Species column for all parcels listed in the table.</p> <p>Response:</p> <p><i>California tiger salamander</i> has been added to the HMP Species lists for all of the parcels within the East Garrison MRA (E11b.6.1, E11b.7.1.1, E11b.8, and L20.19.1.1).</p>
81	Page 13-3, Section 13.3.3	<p>Comment:</p> <p>This section should discuss the biological monitoring and reporting requirements that started when Ranges 43-48 were cleaned in 2005. Biological monitoring under the ESCA is required for 2008, 2011, and 2016 per the vegetation monitoring protocol developed in accordance with the BOs.</p> <p>Response:</p> <p>The purpose of Section 13 is to discuss the steps required to achieve regulatory closure for the MRA Groups as defined in the AOC. However, the biological monitoring and reporting requirements are an important aspect of the efforts being conducted by the ESCA RP Team and should be referenced in this section. Therefore, the following paragraph has been added to Section 13.3.3 to support the biological monitoring and reporting requirements for the areas of Ranges 43-48: “Biological monitoring and reporting will be conducted in the cleared areas of Ranges 43-48 (Interim Action Ranges MRA) in 2008 under the ESCA RP and in accordance with the HMP and the vegetation monitoring protocol developed in the BOs. This monitoring and reporting effort will be conducted in 2011 and 2016 to meet the requirements of the HMP and the BOs, as directed by FORA.”</p>
82	Page 13-4, Section 13.4.1	<p>Comment:</p> <p>The second paragraph needs to be revised to recognize that biological monitoring in Ranges 43-48 needs to occur in years 2008, 2011, and 2016 to collect habitat recovery for years 5, 8, and 13 following remediation that was</p>

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		<p>completed in 2005. The paragraph currently states scheduling begins in 2009 and ends in 2012 which is not consistent with the BO requirements for this MRA.</p> <p>Response:</p> <p>The purpose of Section 13 is to discuss the steps required to achieve regulatory closure for the MRA Groups as defined in the AOC. However, the biological monitoring and reporting requirements are an important aspect of the efforts being conducted by the ESCA RP Team and should be referenced in this section. Therefore, the second paragraph of Section 13.4 has been revised as follows to support the biological monitoring and reporting requirements for the areas of Ranges 43-48 that were cleaned in 2005: “The scheduling of the Priority 3 and 4 MRA Groups 3 and 4 will follow a similar format from the years 2009 though 2012 <i>to support the regulatory pathway to closure. In addition, biological monitoring and reporting will be conducted in the cleared areas of Ranges 43-48 (Interim Action Ranges MRA) in 2008 under the ESCA RP and in accordance with the HMP and the vegetation monitoring protocol developed in the BOs. This monitoring and reporting effort will be conducted in 2011 and 2016 to meet the requirements of the HMP and the BOs, as directed by FORA.</i>”</p>
83	Page 13-6, Table 13.1-1	<p>Comment:</p> <p>This table should include the BO tasks including collection of baseline habitat data, baseline wetland data, follow-up monitoring for HMP Annuals and shrubs, follow-up wetland monitoring, and the annual monitoring reports.</p> <p>Response:</p> <p>The purpose of Table 13.1-1 in Section 13 is to present the tasks required to achieve regulatory closure for the MRA Groups as defined in the AOC. Although biological monitoring is required, Table 13.1-1 is not the appropriate place to present the BO tasks since the table is directly tied to the AOC. No changes have been made.</p>
84	Page 13-11, Table 13.4.1, Priority 3	<p>Comment:</p> <p>This section should address the biological monitoring requirements that are in progress and data collection and monitoring that remain to be conducted at Ranges 43-48 for years 2008, 2011, and 2016.</p> <p>Response:</p>

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		<p>The purpose of Table 13.4-1 in Section 13 is to present the tasks required to achieve regulatory closure for the MRA Groups as defined in the AOC. Although biological monitoring is required, Table 13.4-1 is not the appropriate place to present the BO tasks since the table is directly tied to the AOC. No changes have been made.</p>
85	Page 14-3, Section 14	<p>Comment:</p> <p>References to the Draft Final Feasibility Study Addendum, Site 39 Inland Ranges (Army 2007) needs to be included to reference Army soil remediation activities.</p> <p>Response:</p> <p>The Draft Final Feasibility Study Addendum was approved as final in March 2008. Thus, a reference to the Final Feasibility Study Addendum report has been added as indicated below:</p> <p>———. 2008. Final Feasibility Study Addendum, Site 39 Inland Ranges, Former Fort Ord, California, Revision 0. March 28. (Fort Ord Administrative Record No. BW-2423F)</p>
	General Comment	<p>Comment:</p> <p>I also suggest including references to the previous biological monitoring reports prepared for Ranges 43-48 which requires ongoing monitoring and reporting to demonstrate the habitat is recovering in accordance with the HMP and BOs.</p> <p>Response:</p> <p>References were not made to the biological monitoring conducted at the site in the text; therefore, these references have not been added.</p>

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1	Page 2-1, Section 2.2	<p>Comment:</p> <p>At the end of the first paragraph, U.S. Environmental Protection Agency (EPA) is identified as the lead regulatory agency and California Department of Toxic Substances Control (DTSC) and California Regional Water Quality Control Board (RWQCB) are identified as support agencies. It would be further clarifying if a statement is added as follows: the Army is the lead agency under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for conducting environmental investigations, making cleanup decisions and taking cleanup actions at the former Fort Ord.</p> <p>Response:</p> <p>The end of the first paragraph has been revised as follows: “In accordance with the FFA, the Army was designated as the lead agency under CERCLA for conducting environmental investigations, making cleanup decisions, and taking cleanup actions at the former Fort Ord. The U.S. EPA was designated as is the lead regulatory agency for the cleanup while the DTSC and RWQCB are supporting agencies.</p>
2		<p>Comment:</p> <p>Reuse of habitat reserve areas must be consistent with the Fort Ord Installation-wide Multispecies Habitat Management Plan (HMP). Under the HMP, certain habitat management actions are required in habitat reserve areas, which would relate to the development of potential receptors. Please include this information in the Land Use and Exposure Profile and Pathway Analysis sections for Munitions Response Areas (MRAs) containing habitat reserve.</p> <p>Response:</p> <p>Per the HMP, biologists are required to perform the habitat monitoring activities. The biologists (as well as archeologists) have been included as “Ancillary workers” as part of the potential receptors and pathway analyses for those areas requiring habitat monitoring.</p>
3	Page 4-7, Section 4.3.4, HTW History and Conditions (Seaside	<p>Comment:</p> <p>In addition to the Basewide Range Assessment Report and FOSET referenced in this section, Draft Post Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C, dated November 30, 2007 is now available.</p>

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	MRA)	<p>Response:</p> <p>The last paragraph in Section 4.3.4 has been revised as follows:</p> <p>“Table 4.3-6 summarizes the findings of the BRA investigation activities with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007). The Seaside MRA is also part of IRP Site 39 at the former Fort Ord. Previous soil remediation activities were conducted as part of the Site 39 program, which has an existing Record of Decision (ROD). <i>In an effort to facilitate the closure of Site 39 Seaside Parcels at Fort Ord with respect to risks related to residual metals in soil, a Draft Post-Remediation Health Risk Assessment (PRHRA) has been prepared on behalf of the Army for the Seaside MRA Parcels. The results indicate that the residual metals concentrations in soil do not pose an unacceptable risk to human health and the environment within the Seaside MRA Parcels and that a residential restriction due to residual metals concentrations in soil is not necessary on Ranges 18, 19, 21, and 46. The results of the PRHRA are presented in the “Draft Post-Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C,” prepared by Shaw/MACTEC in November 2007 (Shaw/MACTEC 2007b).”</i>”</p>
4	Page 8-5, Section 8.3.1, Investigation and Removal History (Interim Action Ranges MRA)	<p>Comment:</p> <p>This section should identify and discuss the status of several special case areas (SCAs) within this MRA so that an appropriate level of analysis will be conducted as part of the planned Remedial Investigation/Feasibility Study (RI/FS). The SCAs identified within Ranges 43-48 site are described in <i>Final MRS-Ranges 43-48, Interim Action, Technical Information Paper</i> (Parsons, 2007).</p> <p>Response:</p> <p>The third bullet from the end of the list states:</p> <ul style="list-style-type: none"> • The Interim Action at Ranges 43-48 designated several areas as Special Case Areas or non-completed areas. Subsurface removal was not completed due to high concentration of debris/anomalies and other reasons (Parsons 2007) <p>No revisions have been made.</p>

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5	Page 8-11, Section 8.6.2, Exposure Pathway Analysis (Interim Action Ranges MRA)	<p>Comment:</p> <p>It is stated, “The SCAs and noncompleted areas are designated as habitat; therefore, it is less likely that the receptors would conduct subsurface activities in those areas.” While it is possible that the intensity of subsurface may be considered less compared to a development area, some intrusive activities are required in order to carry out habitat management responsibilities that are outlined in the HMP. This section should recognize the types of subsurface activities that can be expected and potential for MEC exposure by future receptors, so that an appropriate level of analysis will be conducted as part of the planned RI/FS.</p> <p>Response:</p> <p>The following revision has been made:</p> <p>“The SCAs and non-completed areas are in the area designated as habitat; therefore, it is less likely that the receptors would conduct subsurface activities in those areas, <i>although some lighter intensity intrusive activities may be required occasionally (e.g., biologists driving stakes as part of the biological monitoring requirements in habitat areas per the HMP).</i>”</p> <p>In addition, ancillary workers have been added to the PAF.</p>
6	Page 8-11, Section 8.6.2, Exposure Pathway Analysis (Interim Action Ranges MRA)	<p>Comment:</p> <p>Regarding the risk of surface exposure, this section states “the risk of surface exposure was greatly reduced as a result of surface removal actions and sifting operations.” While this is a true statement, it should also be recognized that there is a potential for subsurface MEC items to become exposed on the surface in the future. Some of the SCAs within this MRA include areas with high density of subsurface anomalies and/or munitions debris, and with disturbed ground surface. The potential for MEC items to be present on the surface should be included in a detailed evaluation as part of the planned RI/FS. Accordingly, Table 8.6-1 Interim Action MRA Potential Receptors should recognize the potential for surface exposures for some of the potential receptors.</p> <p>Response:</p> <p>The potential for buried MEC to become exposed at the ground surface has been added to the appropriate pathway analysis and exposure scenario sections. A more detailed analysis of the risks will be presented in the</p>

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7	Page 8-8, Section 8.4.2, Current Land Use (Interim Action Ranges MRA)	<p>Comment:</p> <p>The section states “Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers.” MRS-Ranges 43-48 is within the former Impact Area and access is restricted to authorized personnel only. “Day recreational users” and any unauthorized personnel who gain access to the restricted Impact Area will be considered trespassers and if discovered, will be cited and the incident will be followed up per the site security program. Please correct the statement that suggests that recreational use in any part of the MRS Ranges 43-48 is currently authorized.</p> <p>Response:</p> <p>The reference to recreational users has been deleted from the paragraph and it is assumed that any recreational users who may be accessing the MRA are considered trespassers. The paragraph has been revised as follows:</p> <p>“The current uses for the MRA include habitat. There are residual structures that were in support of the training at the MRA, but these have been abandoned. Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers. There is also evidence of trespasser activity and illegal dumping.”</p>
8	Page 13-2, Section 13.3.1, Priority 1 MRA Group	<p>Comment:</p> <p>Fifth paragraph contains the following sentence “Because a substantial amount of investigation and removal action is anticipated to occur during the RI within this Priority Group, it is expected that the MEC data that are encountered during the RI stage will be comparatively small in quantity...” Please clarify the meaning of this sentence.</p> <p>Response:</p> <p>For clarification, this comment pertains to the sixth paragraph of Section 13.3.1. The sentence has been revised to clarify that due to the extensive investigation and removal activities that have occurred within this MRA Group, it is anticipated that there will not be much additional data to collect during the RI fieldwork. The sentence has been revised as follows:</p> <p>“Because a substantial amount of investigation and removal <i>actions has</i></p>

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		<p><i>occurred is anticipated to occur during the RI</i> within this MRA Group, it is expected that the MEC data that are encountered during the RI fieldwork stage will be comparatively small in quantity and of sufficient quality that we propose to intrusively investigate all anomalies during the RI stage of the CERCLA process.”</p>
9	Page 13-3, Section 13.3.3, Priority 3 MRA Group	<p>Comment:</p> <p>The second paragraph indicates that the expected or anticipated remedy for this Priority Group includes MEC removal along two roads only. It should be recognized that the final remedy will be subject to a detailed evaluation in an RI/FS and may be different from a remedy expected at this time.</p> <p>Response:</p> <p>The paragraph has been revised to clarify that the remedy for this MRA Group is anticipated to consist of MEC clearance/removal along the two roads, but the actual remedy will depend on the results of the RI/FS. The paragraph now states:</p> <p>“The pathway to closure for Group 3 is depicted on Figure 13.3-3. Group 3 will be managed through the pathway similar to that for Group 2. However, because of the level of removal action already completed on these parcels and the proposed future intended land use, this MRA Group will be managed through the CERCLA process with the <i>anticipated</i> goal of achieving a ROD that documents that remedial action is limited to two small MEC clearance actions along the fence lines on Barloy Canyon and South Boundary Roads and the installation of fences along the former impact area boundary (<i>although the final remedy may differ depending on the results of the RI/FS</i>). The Army ROD will be implemented via the AOC process. The ROD implementation will include the RD/RA plans, necessary remedial actions, IC Plan, and preparation of an RACR to document that all requirements for closure have been achieved.”</p>

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1	Page 1-2, Section 1.3, Information Sources	<p>Comment:</p> <p>The Fort Ord Data Integration System is available at www.fodis.net.</p> <p>Response:</p> <p>The sentence has been revised to state: "...Fort Ord Data Integration System (FODIS) website (www.fodis.com www.fodis.net); and..."</p>
2	Page 2-1, Section 2.2	<p>Comment:</p> <p>California Regional Water Quality Control Board is misidentified as Monterey Bay Regional Water Quality Control Board.</p> <p>Response:</p> <p>The sentence has been revised to indicate the correct Regional Board: "To oversee the cleanup of the base, the Army, DTSC, the Monterey Bay <i>the Central Coast</i> Regional Water Quality Control Board (RWQCB), and U.S. EPA entered into a Federal Facility Agreement (FFA)."</p>
3	Page 2-1, Section 2.2	<p>Comment:</p> <p>Statement "The FFA formalized the Army's requirements for protecting human health and the environment by remediating contamination, including MEC, present at the former Fort Ord" is not accurate. The purposes of the Fort Ord Federal Facility Agreement (FFA) are described in Section 4 of the FFA. Please strike or revise the above mentioned sentence.</p> <p>Response:</p> <p>The statement has been revised as follows: "To oversee the cleanup of the base, the Army, DTSC, the Central Coast Regional Water Quality Control Board (RWQCB), and U.S. EPA entered into a Federal Facility Agreement (FFA). <i>One of the purposes of the FFA was to ensure that the environmental impacts associated with past and present activities at the former Fort Ord were thoroughly investigated and appropriate remedial action taken as necessary to protect the public health and the environment.</i> The FFA formalized the Army's requirements for protecting human health and the environment by remediating contamination, including MEC, present at the former Fort Ord. In accordance with the FFA, the U.S. EPA is the lead regulatory agency for the cleanup while the DTSC and RWQCB are supporting agencies.</p>

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4	Page 2-2	<p>Comment:</p> <p>Track 0 areas are not “sites” since they have never been suspected of military munitions-related activities of any kind. Please replace “sites” with “areas” to avoid confusion.</p> <p>Response:</p> <p>The bullet has been revised as follows:</p> <ul style="list-style-type: none"> • Track 0: Sites <i>Areas</i> that contain no evidence of MEC and have never been suspected of having been used for military munitions-related activities.
5	Page 2-4, Section 2.5, Governing Documents	<p>Comment:</p> <p>First bullet appears to contain an incomplete sentence.</p> <p>Response:</p> <p>The first bullet has been revised as follows:</p> <ul style="list-style-type: none"> • “Administrative Order on Consent for Cleanup of Portions of the Former Fort Ord”: The AOC was entered into by FORA, the U.S. EPA, the DTSC, and the DOJ ENRD on December 20, 2006 and outlines the process <i>to remediate the Areas Covered by Environmental Services (ACES) to achieve regulatory closure and thereby satisfy the Army’s CERCLA obligations.</i> under CERCLA by which the site cleanup.
6	Page 4-15, Table 4.1-2, Seaside MRA Site Features, Fencing and Access	<p>Comment:</p> <p>Please describe the existing fence along the southern side of Eucalyptus Road that prevents access into the MRA and to the rest of the Impact Area. Also, Eucalyptus Road is blocked by the Army for vehicular traffic; pedestrian, bicyclist, and equestrian-type access is allowed (except for specific reasons/circumstances). Please update the table.</p> <p>Response:</p> <p>The following revisions have been made to the Fencing and Access section of Table 4.1-2:</p> <ul style="list-style-type: none"> • Access to the area east of General Jim Moore Boulevard is restricted by four-strand barbed-wire fencing reinforced with concertina, locked chain-link gates with concertina on the bottom to block the access roads into MRS-15 SEA 1 and MRS-15 SEA 2, and warning signs posted along the fencing.

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		<ul style="list-style-type: none"> • Access to the area west of General Jim Moore Boulevard is unrestricted. • Access to the area south of Eucalyptus Road is restricted by four-strand barbed-wire fencing reinforced with concertina and locked chain-link gates with concertina on the bottom to block the access roads into MRS-15 SEA 3 and MRS-15 SEA 4. • Vehicular access Access to Eucalyptus Road is restricted by barriers marked with "Road Closed" signs (at the General Jim Moore Boulevard/Eucalyptus Road and Parker Flats Road/Eucalyptus Road intersections) and barricades marked with "road closed" signs (at the Parker Flats Cutoff/Eucalyptus Road intersection).
7	Page 4-21, Table 4.2-2, Seaside MRA Vegetation	<p>Comment:</p> <p>The Time Critical Removal Action including vegetation removal and surface MEC removal was conducted between December 2001 and March 2002, according to <i>Final MRS-SEA.1-4 Time-Critical Removal Action and Phase I Geophysical Operations Technical Information Paper</i> (Parsons 2006b). Please update the current description that indicates that vegetation cutting at the site occurred in the late 1990's. Please also note that the Technical Information Paper indicates that vegetation cutting in the eastern portion of MRS-SEA.4 was conducted in 2003.</p> <p>Response:</p> <p>According to the <i>Final MRS-SEA.1-4 Time-Critical Removal Action and Phase I Geophysical Operations Technical Information Paper</i>, the majority of the vegetation clearance activities on MRS-15 SEA 1-3 and the western 51 acres of MRS-15 SEA-4 happened from 2001 to 2002 in support of the TCRA. The 25-acre eastern portion of MRS-SEA.4 was cut in 2003 after being added by the Site Specific Work Plan Addendum. In addition, a total of 87 acres located throughout MRS-SEA.1, MRS-SEA.2, and MRS-SEA.3 were re-cleared in the fall of 2003 to support the Geophysical survey. As such, the following revision was made to the first sentence of each bullet in the table:</p> <ul style="list-style-type: none"> • All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army in the late 1990s from 2001 to 2003.
8	Page 4-24, Table 4.3-2, Seaside MRA Removal Activities	<p>Comment:</p> <p>Non-time critical removal action is described as having occurred during January through March of 2002. However, this activity occurred following the time-critical removal action at the site, which was conducted between December 2001 and March 2002, according to the <i>Final MRS-SEA.1-4 Time-</i></p>

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		<p><i>Critical Removal Action and Phase I Geophysical Operations Technical Information Paper</i> (Parsons, 2006b). Please update. Same comment applies to Section 4.3.1 on Page 4-4.</p> <p>Response:</p> <p>According to the <i>Final MRS-SEA.1-4 Time-Critical Removal Action and Phase I Geophysical Operations Technical Information Paper</i> (Parsons, 2006b), activities related to the TCRA and NTCRA occurred from January 2002 to March 2004. Later in the document, it states that the TCRA occurred from December 2001 to March 2002 and the “Geophysical operations were conducted on MRS-SEA.1–4 from March 2002 to December 2003 to complete the NTRCA and 100% digital geophysical survey.” The document states that re-training occurred in March 2004 for the dig team that missed the MD on NCR 126. Therefore, the text and table have been revised to indicate that the TCRA occurred from December 2001 to March 2002 and the NTCRA occurred from March 2002 to March 2004.</p>
9	Page 4-36, Table 4.6-1, Seaside MRA Potential Receptors	<p>Comment:</p> <p>Trespassers, emergency response workers, ancillary workers, and recreational users are identified in the table but do not appear to be considered as potential receptors (contrary to the text portion of the SEDR). Please verify the information and update the table if appropriate.</p> <p>Response:</p> <p>Table 4.6-1 has been revised to include trespassers, emergency response workers, ancillary workers, and recreational users as potential receptors.</p>
10	Page 5-20, Table 5.2-2, Parker Flats MRA Vegetation	<p>Comment:</p> <p>Please note that vegetation was cut prior to MEC removal actions previously conducted by the Army. A small portion of Parker Flats MRA Phase I was burned in 2005 as part of a FORA project.</p> <p>Response:</p> <p>The following note was added to the table: <i>“As part of the Army’s removal actions for MEC on the Parker Flats MRA, vegetation was cut to make the surface safe and accessible for MEC removal crews. In 2005, FORA, under the supervision of the Army performed a prescribed burn on 147 acres of the Parker Flats MRA.”</i></p>

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11	Page 5-21, Table 5.3-2, Parker Flats MRA Removal Activities	<p>Comment:</p> <p>The removal areas within MRS-27A and MRS-27B are part of the Phase I MRA and pending ROD. MEC removal was conducted in August 2000 in several expansion grids associated with the MRS-4A for which records are available in the MMRP Database.</p> <p>Response:</p> <p>According to the FOSET, only the southern portions of MRS-27A and MRS-27B are included in the Phase I MRA and pending ROD. As such, the remainder of these MRSs will be evaluated as part of the Parker Flats Phase II RI. The MRS information presented in the "Activity" column of Table 5.3-2 have been changed to indicate "MRS-4A and Expansion Grids" and the "Northern Portions of MRS-27A, B, and C, and MRS-4A and 'No Data' Areas"</p> <p>The following bullet has been added to describe the removal activities associated with the MRS-4A expansion grids:</p> <ul style="list-style-type: none"> • 100 Percent 4-foot MEC Removal Action – In August 2000, a 100 percent removal action was conducted to a depth of 4 feet in several 100-foot by 100-foot expansion grids and partial expansion grids. MEC were encountered in some of these expansion grids and consisted primarily of hand grenades, rifle grenades, and grenade fuzes (Fort Ord MMRP Database). <p>The following bullets related MRS-27A and MRS-27B have been deleted from Table 5.3-2 since they describe removal activities within the Phase I area of the Parker Flats MRA:</p> <ul style="list-style-type: none"> • 4-foot OE Removal – Between September 1998 and December 2000, a 4-foot removal was performed on 5 acres of MRS-27A overlapping the site MRS-53 expansion area (USA 2001i). • 4-foot OE Removal – Between March and October 1999, a 4-foot removal was performed on 4 acres of MRS-27A and 3.5 acres of MRS-27B overlapping the site MRS-55 expansion area (USA 2001n).
12	Page 5-35, Table 5.6-1, Parker Flats MRA Potential Receptors	<p>Comment:</p> <p>Emergency response workers are identified in the table but do not appear to be considered as potential receptors (contrary to the text portion of the SEDR). Please verify the information and update the table if appropriate.</p> <p>Response:</p>

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		Emergency response workers have been added to Table 5.6-1 as potential receptors to be considered.
13	Page 6-11, Table 6.1-2, CSUMB MRA Site Features	<p>Comment:</p> <p>Please clarify the meaning of the last bullet “FORA and CSUMB to patrol and enforce no access restriction from FOSET into LUC.”</p> <p>Response:</p> <p>The last bullet in the table has been deleted because the origin of the statement could not be verified.</p>
14	Page 6-25, Table 6.6-1, CSUMB MRA, Potential Receptors	<p>Comment:</p> <p>Residents are identified in the table but do not appear to be considered as potential receptors (contrary to the text portion of the SEDR). Please verify the information and update the table if appropriate.</p> <p>Response:</p> <p>Residents have been added to the list of potential receptors considered on the table.</p>
15	Page 7-24, Table 7.6-1, Development North MRA, Potential Receptors	<p>Comment:</p> <p>Trespassers are identified in the table but do not appear to be considered as potential receptors (contrary to the text portion of the SEDR). Please verify the information and update the table if appropriate.</p> <p>Response:</p> <p>Trespassers have been added to the list of potential receptors considered on the table.</p>
16	Page 9-3, Section 9.2.2, MOUT Site MRA, Vegetation	<p>Comment:</p> <p>Please note that much of the vegetation in MRS-28 was burned in an accidental fire in 2003 (Eucalyptus Fire).</p> <p>Response:</p> <p>The following information was added to the paragraph:</p> <p>“Given the terrain, the vegetation removal was performed predominantly</p>

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		through manual practices, <i>although a significant portion of the MRA was burned during an accidental fire that occurred in July 2003.</i> "
17	Page 9-25, Table 9.6-1, MOUT Site MRA, Potential Receptors	<p>Comment:</p> <p>Emergency response workers, ancillary workers, residents, and recreational users are identified in the table but do not appear to be considered as potential receptors. The text portion of the SEDR recognizes emergency response workers, ancillary workers, and recreational users as potential receptors. Please verify the information and update the table if appropriate.</p> <p>Response:</p> <p>Emergency response workers and ancillary workers have been added to the table as potential receptors.</p>
18	Page 12-1, Section 12.1.1, East Garrison MRA Boundary and Access	<p>Comment:</p> <p>Eucalyptus Road is cited as located to the north of the MRA. Please check the paragraph for possible mis-identification of road names.</p> <p>Response:</p> <p>The paragraph has been revised as follows: "Vehicle traffic is currently restricted on Barloy Canyon Road by locked gates, barricades with concertina wire, and warning signs across Barloy Canyon Road at the intersection with Eucalyptus Road to the north and by locked gates and barricades across South Boundary Road to the south."</p>
19	Page 12-18, Table 12.3-1, East Garrison MRA Investigation and Removal Activities	<p>Comment:</p> <p>It is stated four of the anomalies that were investigated during Site Assessment in East Garrison Area 4 turned out to be suspected MEC. These items were subsequently detonated, and the results of the demolition confirmed that the MKI illumination hand grenade and the M125 series illumination signal were MEC; the two 3-inch MKI practice Stokes trench mortars were determined to be MD. This information is provided in <i>Final East Garrison Area 4 Site Assessment Site Report</i> (Parsons, 2006c).</p> <p>Response:</p> <p>The bullet in the East Garrison MRA Site Assessment section of Table 12.3-1 has been revised as follows:</p> <ul style="list-style-type: none"> • "Between 2005 and 2006, a site assessment was conducted in the East Garrison MRA (also known as East Garrison Area 4). Site assessments

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		<p>are conducted to collect data in MRSs or areas of interest that may contain evidence of military munitions training. Although the portions of the East Garrison MRA that were subjected to the site assessment were not expected to contain any evidence of military munitions training, 17 anomalies resulted in military munitions or evidence of military munitions. Of the 17 items, four <i>two</i> were identified as suspected MEC: an MKI illumination hand grenade; <i>and</i> an M125 series illumination signal; and two 3-inch MKI practice Stokes trench mortars. The other 13 <i>15</i> items were MD, including MD-E items, expended SAA and inert military munitions, and MD-F (Parsons 2006c).”</p>
20	Page 12-21, Table 12.3-5, East Garrison MRA HTW History	<p>Comment:</p> <p>The table indicates that BRA recommended further evaluation for HA-100 (MRS-11) and a discussion of the BRA recommendation for MRS-42 (HA-172) is not included. Table 2 of the FOSET indicates that BRA recommended no further action for all of the HAs associated with this MRA (HA-100/MRS-11, HA-125/MRS-23 and HA-172/MRS-42). Please update the table to reflect the information in the FOSET.</p> <p>Response:</p> <p>The following revisions were made to the first bullet in the MRS-11 section of Table 12.3-5:</p> <ul style="list-style-type: none"> • “The assessment of HA-100 (MRS-11) included site reconnaissance and site investigation soil sampling. Perchlorate and TNT were detected at low concentrations. Based on these results, the recommendation that HA-100 should be evaluated further as part of a remedial phase was made in the BRA. <i>Step-out and biased soil sampling was conducted in 2004. The results of the 2004 soil sampling indicated that detected COCs were below the appropriate characterization goals and that no further action was recommended for HA-100.</i>” <p>The following bullet was added to the MRS-42 section of Table 12.3-5:</p> <ul style="list-style-type: none"> • “As part of the site assessment of HA-172 (MRS-42), sampling was recommended to evaluate the possibility of residue related to the military munitions that had been identified at the MRS. Soil samples were collected in July 2002. Perchlorate and explosive compounds were included in the sample analyses, but were not detected in any of the soil samples. Based on the analytical results that indicate no residue of explosive compounds in soil, no further action is recommended.”

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21	Page 13-2, Section 13.3.1, Priority 1 MRA Group, third paragraph	<p>Comment:</p> <p>The statement “all MEC were investigated and removed” should be corrected to state that “all detected MEC items were investigated and removed.”</p> <p>Response:</p> <p>The sentence has been revised as follows: “The SEDR conclusions and recommendations for the Seaside MRA indicate that all <i>detected</i> MEC items were investigated and removed by the Army in the Phase 1 Removal Action, with the exception of discrete SCAs.”</p>
22	Page 13-3, Section 13.3.3, Priority 3 MRA Group, second paragraph	<p>Comment:</p> <p>“Barloy Canyon Road” is misspelled.</p> <p>Response:</p> <p>“Barley Canyon Road” has been corrected to “Barloy Canyon Road.”</p>
23	Figure 13.3-4	<p>Comment:</p> <p>Figure 13.3-4 is missing from the hard copy of the report.</p> <p>Response:</p> <p>Figure 13.3-4 will be included with the hard copy of the Draft Final SEDR submission.</p>

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1	Table 8.3-4, Interim Action Ranges MRA, Vertical Extent	<p>Comment:</p> <p>Hand-written revision to the Range number.</p> <p>Response:</p> <p>The table has been revised to state:</p> <ul style="list-style-type: none"> • The majority of the MEC removed from the MRA were located on the surface; however, this observation may not include subsurface MEC items removed during the Range 44 45 sifting operations.
2	Table 8.4-1, Interim Action Ranges MRA, Future Land Use by Parcel	<p>Comment:</p> <p>Hand-written revision to the Range numbers in the MRS Number column.</p> <p>Response:</p> <p>The MRS-Ranges have been revised from MRS Ranges 43-38 to MRS-Ranges 43-48.</p>
3	Table 11.3-1, DRO/Monterey MRA – Investigation, Sampling, and Removal Activities	<p>Comment:</p> <p>Hand-written revision to the Range numbers in the third bullet in the MRS-43 Summary.</p> <p>Response:</p> <p>The third bullet has been revised as follows:</p> <ul style="list-style-type: none"> • A 4-foot removal action was conducted in MRS-43 using the Schonstedt GA-52/Cx. This removal action included the unpaved shoulders of South Boundary Road for the majority of the road bordering MRS-23 MRS-43 and MRS-15 DRO.1 (Parsons 2001).

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1	General Comment	<p>Comment:</p> <p>Revise the use of “Priority Groupings” when referring to the MRA groups (i.e., Priority Group 1, Priority Group 2, etc) throughout the document to avoid confusion with the DoD priority ranking of the types of hazards found on Munitions Response Sites.</p> <p>Response:</p> <p>References throughout the text to Priority Groupings have been eliminated. The MRA groups are now referred to as “Group 1”, “Group 2”, etc.</p>

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	Seaside MRA	<p>Comment:</p> <p>The lack of soils data for this MRA in particular is a major issue. There are existing data in the form of conformation reports, etc. that demonstrate that even in areas where the Army has determined that “No Further Action” is necessary dangerous contamination still remains. Remediation activities at the Seaside MRA are not complete, even in areas deemed safe by the Army. FORA must critically evaluate all of the Army’s conclusions for these sites. As previously noted, the Army has used outdated standards to evaluate many of these sites, particularly for lead. The concentrations that remain are unacceptable for a substance that has no lower threshold for toxicity (ATSDR 2007). These inaccuracies are not uncommon (see Site 39 Post-Remediation Sampling reports).</p> <p>Section 4.7 should recommend additional evaluations of soil contamination at former firing ranges such as Site 39 to address these problems.</p> <p>Response:</p> <p>A Draft Post-Remediation Health Risk Assessment (PRHRA) was prepared by the Army to document the chemical contamination risks at the portions of Site 39 that are within the boundaries of the Seaside MRA (Seaside Transfer Parcels 1 though 4) following soil removal actions. According to the Draft PRHRA, remediation of chemical contamination in soil has been completed at the development portions of the Seaside MRA related to Ranges 18, 19, 21, and 46. Based on the conservative evaluation of potential risks and hazards under the post-remediation conditions, adverse noncancer health effects and cancer risks were considered unlikely to be associated with future commercial or residential development under the exposure conditions evaluated. No remediation of Ranges 20, 22, 23, and 48 was necessary based on the sampling results and other areas of the Seaside MRA did not indicate the potential for chemical contamination.</p> <p>Therefore, the following information has been added to the last paragraph in Section 4.3.4:</p> <p><i>“In an effort to facilitate the closure of Site 39 Seaside Parcels with respect to risks related to residual metals in soil, a Draft Post-Remediation Health Risk Assessment (PRHRA) has been prepared on behalf of the Army for the Seaside MRA Parcels. The results indicate that the residual metals concentrations in soil do not pose an unacceptable risk to human health and the environment within the Seaside MRA parcels and that a residential</i></p>

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		<p><i>restriction due to residual metals concentrations in soil is not necessary on Ranges 18, 19, 21, and 46. The results of the PRHRA are presented in the 'Draft Post-Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C', prepared by Shaw/MACTEC in November 2007 (Shaw/MACTEC 2007b)."</i></p> <p>In addition, the above indicated reference, Shaw/MACTEC 2007b, has been added to the reference section of the report.</p> <p>No recommendation to evaluate soil contamination at the Seaside MRA has been added to the report.</p>
	<p>Seaside MRA, Specific Comment, Section 4.7, page 4-13, second open bullet</p>	<p>Comment:</p> <p>"Conduct a Residential Quality Assurance (RQA) Pilot Study to assess the small potential for risk from undetected MEC in future residential areas." By describing the risk from undetected MEC as "small," FORA appears to have already made a determination about the risks in these areas. It is improper to pre-judge the results of a risk assessment, and these types of statements damage FORA's credibility as an independent entity from the Army. FORA should remove the "small" adjective and avoid these sorts of statements in the future.</p> <p>Response:</p> <p>FORA agrees that the use of adjectives that prematurely quantify potential risk is inappropriate. The word "small" has been removed from the second open bullet as requested.</p>
	<p>Parker Flats MRA</p>	<p>Comment:</p> <p>When evaluating Hazardous and Toxic Waste conditions, FORA must remember that many of the screening values used by the Army are completely inappropriate. They are based on old data from 1991-3 and do not reflect the current state of the toxicological science. None of these standards were re-evaluated as in the controversial Second Five-Year Review conducted by the Army as required.</p> <p>Response:</p> <p>In accordance with the Administrative Order on Consent (AOC), the SEDR is to provide a summary of existing background information and investigation data based on historical maps, military munitions databases, and available documents (reports, work plans, maps, etc.), most of which have been</p>

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		<p>reviewed and approved by the appropriate regulatory oversight agencies. The SEDR is not required to provide an in-depth evaluation of historical data pertaining to Hazardous and Toxic Waste (HTW) with respect to the appropriate use of screening criteria by the Army.</p> <p>No changes have been incorporated into the report based on this comment.</p>
	Parker Flats MRA, Specific Comment, Section 5.7, page 5-13, third bullet	<p>Comment:</p> <p>“Conduct a Residential Quality Assurance (RQA) Pilot Study to assess the small potential for risk from undetected MEC in future residential areas.” By describing the risk from undetected MEC as “small,” FORA appears to have already made a determination about the risks in these areas. It is improper to pre-judge the results of a risk assessment. Please see specific comments for the Seaside MRA.</p> <p>Response:</p> <p>FORA agrees that the use of adjectives that prematurely quantify potential risk is inappropriate. The word “small” has been removed from the second open bullet as requested.</p>
	Development North MRA, Specific Comment, Section 7.3.4, page 7-5, last paragraph	<p>Comment:</p> <p>The text refers to Table 7.3-5 for a summarization of HTW data for this MRA. The table detailing this information is Table 7.3-4.</p> <p>Response:</p> <p>The reference to Table 7.3-5 in Section 7.3.4 has been changed to Table 7.3-4 as appropriate.</p>
	Interim Action Ranges MRA	<p>Comment:</p> <p>Small arms ranges have been identified within the boundaries of this MRA (Range 43). Section 8.3.3 states that no further action is recommended for HTW at this MRA but Table 8.3-5 states that sampling has identified lead levels in soil that are above screening levels for ecological receptors and that an investigation into remedial options was recommended. This is simply one instance of the FOSET incorrectly stating that areas are safe, and illustrates the risks that FORA takes when it accepts Army conclusions at face value. Please see our comments regarding soil contamination in the General Comments and Seaside MRA Sections of these comments.</p> <p>FORA should state what actions it intends on taking at Range 43 in the</p>

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		<p>future.</p> <p>The site still contains numerous special case areas where MEC still remain after the major removal action for Ranges 43-48. This section makes no mention of these areas or the need to address them. Simply stating that they are not an issue does not make it so. This is a major problem and needs to be addressed in the next version of the SEDR.</p> <p>Response:</p> <p>To address the first two parts of this comment, the second paragraph of Section 8.3.3 has been revised as follows to be consistent with Table 8.3-5:</p> <p>“Table 8.3-5 summarizes the findings of the BRA with respect to HTW for each range. As stated in the FOSET bBased on the BRA, <i>further evaluation was recommended for HA-43 (Range 43) and HA-44 (Range 44) based upon the presence of munitions constituents (lead and/or HMX) detected in soil samples. Ranges 43 and 44 will be remediated by the Army in accordance with the Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0 (Shaw/MACTEC 2008).</i> hNo further action has been recommended for <i>the other</i> HAs <i>identified</i> within this MRA (Army 2007).”</p> <p>In addition, the above indicated reference, Shaw/MACTEC 2008, has been added to the reference section of the report.</p> <p>As for the third part of this comment, FORA recognizes that there are special case areas that remain in the Interim Action Ranges MRA. The special case areas were acknowledged in Section 8.3.1 (first paragraph, 19th bullet) and have been depicted on Figure 8.3-4. As indicated in Section 8.7 of the SEDR, the recommendation for the Interim Action Ranges MRA is to proceed to the Remedial Investigation/Feasibility Study (RI/FS) phase for MEC because there is sufficient data of appropriate quality to evaluate remedy selection and prepare a Record of Decision. The RI/FS report will, therefore, expand on and further evaluate the information available for the Interim Action Ranges MRA and the need to address the special case areas.</p> <p>No changes have been incorporated into the report based on the above response to the third part of the comment.</p>
	Interim Action Ranges MRA, Specific	<p>Comment:</p> <p>The summary of the 2003 prescribed burn omits the many problems this burn</p>

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	Comment, Section 8.3.1, page 8-5, last bullet	<p>caused such as the fact that it went out of control and burned three times the area it intended and exposed residents to high concentrations of smoke and particulate matter. The statement that 95% of the vegetation was cleared is misleading, since manual clearance of stumps and other burned debris was still required.</p> <p>Response:</p> <p>The details of the prescribed burn are appropriately documented in Parsons “Final MRS-Ranges 43-48, Prescribed Burn, After-Action Report, Former Fort Ord, Monterey, California, Military Munitions Response Program” dated May 2004 (Fort Ord Administrative Record No. OE-0482C). The applicable portion of the Parsons report as it pertains to the discovery and removal of military munitions within the Interim Action Ranges MRA is the only information required to be reviewed and summarized in the SEDR. No changes have been incorporated into the report based on this comment.</p> <p>Lastly, the statement in the last bullet of Section 8.3.1 related to vegetation clearance has been revised as follows: “The prescribed burn cleared the vegetation from approximately 95 percent of the <i>vegetation covering the</i> site, revealing numerous MEC previously hidden by the brush (Parsons 2004a)”.</p>
	MOUT Site MRA	<p>Comment:</p> <p>Army investigations into this area have been incredibly limited, even though it is one of the oldest portions of Fort Ord and has had a number of historical uses. The exact nature of these uses, particularly during the early days of the base, is not fully known but have included small arms training. Despite this uncertainty the Army has recommended no further action for MRS-270 based almost entirely on a site walk. This is grossly insufficient for a site that has been used for over 90 years. Surface conditions have almost certainly changed over the years and visual inspections cannot account for conditions below ground. FORA should conduct soil sampling at MRS-270 to evaluate soil contamination in the area before proceeding to the RI.</p> <p>Response:</p> <p>The MOUT Site MRA consists of two transfer parcels: F1.7.2, which is the MOUT training area, and L20.8, which is a narrow parcel corresponding to approximately 8,000 feet of Barloy Canyon Road. Only the northern portion of Parcel L20.8 (approximately 1,000 feet) passes through MRS-270 (see note in Table 9.1-1 of the SEDR). The remainder of MRS-270 is not associated with the property being transferred to FORA or with the ESCA</p>

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		<p>Remediation Program. No additional information, such as the identification of previously unknown target areas or small arms ranges within MRS-270, was discovered during the preparation of the SEDR that would suggest the potential for soil contamination in Parcel L20.8.</p> <p>Therefore, no recommendation to conduct soil sampling has been incorporated into the report based on this comment. However, FORA notes there is a possibility of discovering data on the MOUT Site MRA that would warrant further investigation outside the initial recommendations.</p>
	Laguna Seca MRA	<p>Comment:</p> <p>As previously noted, the Army's efforts to remediate soil at the Site 39 property have not been as successful as they claim. Since this area contains portions of Site 39 and has been part of Fort Ord since inception, FORA should conduct additional soil sampling in this MRA to verify that dangerous concentrations of soils do not remain.</p> <p>Response:</p> <p>In accordance with the AOC, the SEDR is to provide a summary of existing background information and investigation data based on historical maps, military munitions databases, and available documents (reports, work plans, maps, etc.), most of which have been reviewed and approved by the appropriate regulatory oversight agencies. The Laguna Seca MRA was evaluated based on a thorough review of these informational sources in accordance with industry standards for such assessments. Therefore, the information provided in the SEDR is considered to be complete and accurate to the best of professional knowledge and judgment. No additional information, such as the identification of previously unknown target areas or small arms ranges within the area of Site 39 (MRS-47), was discovered during the preparation of the SEDR that would suggest the potential for soil contamination.</p> <p>In addition, the Army has completed the RI/FS process for munitions constituents (i.e., lead and other metals) at this MRA, which is not required to be reevaluated or restated in detail in the SEDR.</p> <p>Therefore, the SEDR recommends that the appropriate course of action for the Laguna Seca MRA (Group 3) is to proceed to the RI/FS for MEC since sufficient data of acceptable quality exist for the MRA. During the RI/FS phase, available background information and investigation data will be further reviewed to evaluate if the MRA has been sufficiently characterized</p>

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		<p>for MEC with respect to human health and the environment based on the intended future use of the property. This further evaluation effort will be presented in the RI/FS report. If this further evaluation identifies conditions that warrant additional investigation for MEC, then FORA will recommend such investigations in the RI/FS report to support the acceptance of a remedy selection and to confirm that the property poses no unacceptable risk to human health and the environment based on the intended future use of the property.</p> <p>Therefore, no recommendation to conduct soil sampling has been incorporated into the report based on this comment.</p>
	DRO / Monterey MRA	<p>Comment:</p> <p>The SEDR provides no data to verify that soil contamination did not result from the presence of small arms ranges within the MRA. Sites with a history of use going back as far as the DRO/Monterey MRA should be investigated as thoroughly as possible since historical records from the first half of the 20th century are often incomplete or inaccurate. Site walks cannot be considered sufficient, particularly since topography can change over time with use. FORA should conduct additional soil sampling in this MRA for lead and other heavy metals related to firing ranges.</p> <p>Response:</p> <p>In accordance with the AOC, the SEDR is to provide a summary of existing background information and investigation data based on historical maps, military munitions databases, available documents (reports, work plans, maps, etc.), most of which have been reviewed and approved by the appropriate regulatory oversight agencies. The DRO/Monterey MRA was evaluated based on a thorough review of these informational sources in accordance with industry standards for such assessments. Therefore, the information provided in the SEDR is considered to be complete and accurate to the best of professional knowledge and judgment. No additional information, such as the identification of previously unknown target areas or small arms ranges, was discovered during the preparation of the SEDR that would suggest the potential for soil contamination.</p> <p>In addition, the Army has completed the RI/FS process for munitions constituents (i.e., lead and other metals) at this MRA, which is not required to be reevaluated or restated in detail in the SEDR.</p> <p>Therefore, the SEDR recommends that the appropriate course of action for</p>

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		<p>the DRO/Monterey MRA (Group 3) is to proceed to the RI/FS for MEC since sufficient data of acceptable quality exist for the MRA. During the RI/FS phase, available background information and investigation data will be further reviewed to evaluate if the MRA has been sufficiently characterized for MEC with respect to human health and the environment based on the intended future use of the property. This further evaluation effort will be presented in the RI/FS report. If this further evaluation identifies conditions that warrant additional investigation for MEC, then FORA will recommend such investigations in the RI/FS report to support the acceptance of a remedy selection and to confirm that the property poses no unacceptable risk to human health and the environment based on the intended future use of the property.</p> <p>Therefore, no recommendation to conduct soil sampling has been incorporated into the report based on this comment.</p>

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(FOCAG), Position Paper, dated March 11, 2008

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		<p><i>Note: The Fort Ord Community Advisory Group (FOCAG) provided a Position Paper to the Fort Ord Reuse Authority (FORA), dated August 12, 2008. As stated in the position paper on Page 3 of 6, "FORA, EPA, and DTSC failed to respond to the FOCAG 3-11-08 FORA ESCA RP Letter."</i></p> <p><i>FORA acknowledges receipt of the FOCAG Position Paper, dated March 11, 2008, on the "FORA ESCA Remediation Program (RP) / Document Control Number 09595-07-078-001", which refers to the Draft Summary of Existing Data Report (SEDR). FORA has reviewed the March 11, 2008 Position Paper and has provided responses to the comments below that are relevant to the SEDR.</i></p> <p><i>The Army, FORA, U.S. Environmental Protection Agency (EPA), and Department of Toxic Substances Control (DTSC) are all working on a coordinated response to the various issues raised in the FOCAG Position Papers dated March 11, 2008 and August 12, 2008. We expect to have a response completed and sent to FOCAG in accordance with the Army's letter to FOCAG, dated September 12, 2008, which acknowledged receipt of the August 12, 2008 Position Paper.</i></p>
1	General Comment	<p>Comment:</p> <p>Most agree the Army needs to clean up the mess it made at Fort Ord. However, under no circumstances should munitions cleanup be privatized and a waiver granted exempting adherence to Environmental laws in place to protect the public's health, safety, and the environment. To do so would be an abomination of due diligence and process. What is the justification for the Covenant Deferral Request?</p> <p>Response:</p> <p>A Covenant Deferral Request (CDR) is a document prepared in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h)(3)(C), which provides the basis for the deferral by EPA, with the concurrence of the State, of the covenant required by Section 120(h)(3)(A)(ii) with respect to the early transfer of real property included within the Site. CERCLA Section 120(h)(3)(C) allows for the early transfer of property before all response actions have been completed provided certain conditions are met, including, but not limited to, a deed that includes assurances that all necessary response actions will be complete and Land Use Controls (LUCs) necessary to protect human health and the environment. The EPA requires that the CDR supporting information is: 1)</p>

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		<p>of sufficient quality and quantity to support the request for deferral of the CERCLA Covenant; and 2) that it provides a basis for EPA to make its determination. Therefore, the CDR is not considered a waiver exempting adherence to environmental laws, but a process to address the necessary response actions to protect public health and safety and the environment while allowing for the early transfer and reuse of the property.</p> <p>No changes have been incorporated into the report based on this comment.</p>
2	General Comment	<p>Comment:</p> <p>To date only limited sampling and removal has been conducted at most of the sites part of the Remediation Program (RP). The proposed FOSET and remediation is in large part based on assumptions rather than sound scientific methodology. There is a significant difference between sampling and clearance to a prescribed depth for a particular use. CERCLA would require a revised RI/FS and ROD for this program. Since the 1994 Base Wide RI/FS, the scope of land uses have changed significantly. Many sites included in the RP were not considered for residential uses because of the exposure dangers to public health and safety from UXO, OEW, and residual contamination.</p> <p>Response:</p> <p>In accordance with the Administrative Order on Consent (AOC), the SEDR is to provide a summary of existing background information and investigation data based on historical maps, military munitions databases, and available documents (reports, work plans, maps, etc.), which have been reviewed and approved by the appropriate regulatory oversight agencies. As stated in Section 13 of the SEDR, another goal of the SEDR is to develop and present the process to complete the remaining steps in the sequencing and phasing of the CERCLA activities for Munitions and Explosives of Concern (MEC) within each Munitions Response Area (MRA), as described in the AOC. Section 13 of the SEDR describes the overall proposed process for navigating each of the ESCA parcels through the CERCLA process for MEC and provides a detailed regulatory pathway to closure by MRA, which includes preparation and approval of an RI/FS and ROD for MEC based on future land use for each MRA or group of similar MRAs.</p> <p>No changes have been incorporated into the report based on this comment.</p>
3	General Comment	<p>Comment:</p> <p>Because of the nature of military munitions use and cleanup, the strictest</p>

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		<p>standards available, i.e., CERCLA should be implemented to the greatest extent possible. Any attempts to side step or circumvent this public health and environmental law must not be allowed. To do so will likely result in negative human health and environmental impacts.</p> <p>Response:</p> <p>As stated in Section 13 of the SEDR, one of the goals of the SEDR is to develop and present the process to complete the remaining steps in the sequencing and phasing of the CERCLA activities for MEC within each MRA, as described in the AOC. Section 13 of the SEDR describes the overall proposed process for navigating each of the ESCA parcels through the CERCLA process for MEC and provides a detailed regulatory pathway to closure by MRA, which includes preparation and approval of an RI/FS and ROD based on future land use for each MRA or group of similar MRAs.</p> <p>No changes have been incorporated into the report based on this comment.</p>
4	General Comment	<p>Comment:</p> <p>Historical maps indicate that over the years as ranges were decommissioned, new ranges the extent of which is unknown. How many millions of troops trained at Fort Ord? How many millions of pounds of munitions were used at former fort Ord? Of the millions of pounds of munitions used, how many millions of pounds of constituents were released into the environment? Were did the residual contamination go?</p> <p>Response:</p> <p>In accordance with the AOC, the SEDR provides a summary of existing background information and investigation data based on historical maps, military munitions databases, and other available documents (reports, work plans, maps, etc.), which have been reviewed and approved by the appropriate regulatory oversight agencies. To the extent that information has been documented, relevant data from prior documents has been summarized in the SEDR. The requested information regarding the number of troops trained, pounds of munitions used, pounds of constituents released to the environment, or the disposition of these constituents is not within the intended scope of the SEDR.</p> <p>No changes have been incorporated into the report based on this comment.</p>

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5	General Comment	<p>Comment:</p> <p>A new previously unidentified exposure pathway to human and ecological receptors now exists. The burning of former training ranges has resulted in a new and significant threat to human health and safety. A new RI/FS should include Ash analysis for all sites burned purposely or accidentally, and the potential onsite and offsite exposure to human and ecological receptors. This new exposure and potential effects on human and ecological receptors was never analyzed in the 1994 Base Wide RI/FS.</p> <p>Response:</p> <p>The FORA Environmental Services Cooperative Agreement (ESCA) Remediation Program describes burning as an appropriate vegetation removal method supporting MEC remediation activities planned for habitat reserve areas containing maritime chaparral. However, to accomplish the current ESCA work, FORA has been able to implement mechanical cutting for vegetation clearance on ESCA parcels designated for development. Based on the successful vegetation clearance practices to date and the limited area containing maritime chaparral on the ESCA parcels, FORA will continue to implement mechanical cutting for vegetation clearance in development and habitat reserve areas. Prescribed burning is not anticipated at this time; however, each MRA related to the ESCA will be assessed individually. Vegetation removal options within the habitat reserve areas will be appropriately addressed in each work plan and consistent with the approved biological opinions.</p> <p>No changes have been incorporated into the report based on this comment.</p>
6	General Comment	<p>Comment:</p> <p>Many military munitions constituents are known endocrine disruptors, carcinogens, mutagens, etc. Environmental contamination is reaching epidemic levels likely due to lax regulation, oversight, and enforcement of environmental laws over industry and commerce. Naturally, conservatively, 1 in 150 children has autism, Asthma, Alzheimer’s Disease, cancer, to list a few are at epidemic levels. Today, the U.S. public is sicker than ever before. USGS studies show pharmaceuticals are increasingly showing up in U.S. reclaimed and drinking water supplies. Is there endocrine disruptor screening being conducted at former Fort Ord? If not, why not? Does Soil analysis of ranges include every known or suspected OEW constituent used at For Ord? If not, why not?</p>

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		<p>Response:</p> <p>In accordance with the AOC, the SEDR is to provide a summary of existing background information and investigation data based on historical maps, military munitions databases, and available documents (reports, work plans, maps, etc.), which have been reviewed and approved by the appropriate regulatory oversight agencies. This comment is not consistent with the intended scope of the SEDR under the AOC. Since this subject is raised in the FOCAG Position Paper dated August 12, 2008, the Army, FORA, EPA, and DTSC are all working on a coordinated response to this issue. We expect to have a response completed and sent to FOCAG in accordance with the Army's letter to FOCAG, dated September 12, 2008, which acknowledged receipt of the August 12, 2008 Position Paper.</p> <p>No changes have been incorporated into the report based on this comment.</p>
7	General Comment	<p>Comment:</p> <p>The public is very concerned with the undermining of the Regulatory agencies and their current ability to protect human health, safety, and the environment. A 1999 EPA Range Rule position letter addressing Military Base Closures states: "During the last several years an increasing number of issues have arisen relative to UXO, hazardous contaminants, and military range cleanup. The following represents a description of the major EPA issues or concerns along with installations where we have encountered these problems. This list should not be construed as exhaustive." Since this EPA position letter it appears efforts are being made to circumvent the environmental laws in place to protect the public.</p> <p>FORA should adopt the Precautionary Principle (1998 Wingspread Statement) and apply it to the Fort Ord Reuse Plan to ensure safety for current and future generations to the greatest extent possible.</p> <p>Response:</p> <p>Regulatory agencies have not allowed regulations to be waived and the response actions by the Army and FORA have been conducted in accordance with applicable environmental laws.</p> <p>As stated in Section 13 of the SEDR, one of the goals of the SEDR is to develop and present the process to complete the remaining steps in the sequencing and phasing of the CERCLA activities for MEC within each MRA, as described in the AOC. Section 13 of the SEDR describes the overall</p>

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		<p>proposed process for navigating each of the ESCA parcels through the CERCLA process for MEC and provides a detailed regulatory pathway to closure by MRA, which includes preparation and approval of an RI/FS and ROD for MEC based on future land use for each MRA or group of similar MRAs.</p> <p>No changes have been incorporated into the report based on this comment.</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Judy Huang of the EPA, dated July 29, 2008

No.	Comment Type / Report Section	Comment/Response
1	General Comment	<p>Comment:</p> <p>It is our understanding that the schedule provided in the SEDR is only a preliminary proposal and can be modified with concurrence from the Fort Ord Reuse Authority, the United States Army, and the Environmental Protection Agency after consultation with the California Department of Toxic Substances Control. In addition, early submittal of any AOC specified documents and reports will not trigger a schedule related Stipulated Penalty as specified in Section XXIV, Stipulated Penalties, of the AOC. However, Regulatory review of documents submitted prior to scheduled date will be subject to workload considerations.</p> <p>Pursuant to Section XIV, EPA Approval of Plans and Other Submissions, of the AOC, and after consultation with the California Department of Toxic Substances Control, EPA hereby approves the Draft Final SEDR.</p> <p>Response:</p> <p>FORA acknowledges that regulatory review of documents submitted prior to the scheduled date will be subject to regulatory workload considerations.</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Judy Huang of the EPA, dated July 29, 2008

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Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Gail Youngblood of the Army, dated July 8, 2008

No.	Comment Type / Report Section	Comment/Response
1	Specific Comment, Page 5-35, Table 5.5-2, Parker Flats MRA	<p>Comment:</p> <p>Habitat Management Plan (HMP) Category by Parcel. The HMP Designated Use for Development Parcels E19a.3, E19a.5, and E21b.3 should also be identified as “(Borderland Buffer along NRMA Interface).” See previous section on Table 4.5-2 for consistency.</p> <p>Response:</p> <p>In Table 5.5-2, the HMP Designated Use column for Parcels E19a.3, E19a.5, and E21b.3 has been revised to indicate “Development (<i>includes a borderland buffer along the NRMA Interface</i>)” to be consistent with Table 4.5-2 in the previous section of the SEDR.</p>
2	Specific Comment, Page 6-25, Table 6.5-2, CSUMB MRA	<p>Comment:</p> <p>HMP Category by Parcel. The HMP Designated Use for Development Parcel S1.3.2 should be identified as “Development (Borderland Buffer along the southeast corner of the parcel along the NRMA Interface).” See previous comment.</p> <p>Response:</p> <p>In Table 6.5-2, the HMP Designated Use column for Parcel S1.3.2 (eastern portion) has been revised to indicate “Development (<i>includes a borderland buffer in the southeastern corner of the parcel along the NRMA Interface</i>)” to be consistent with previous sections of the SEDR.</p>
3	Specific Comment, Page 7-24, Table 7.5-2, Development North MRA	<p>Comment:</p> <p>HMP Category by Parcel. The HMP Designated Use for Parcels E19a.3, L5.7 and L20.2.1 should be identified as “Development (Borderland Buffer along the southeast corner of the parcel along the NRMA Interface).”</p> <p>Response:</p> <p>In Table 7.5-2, the HMP Designated Use column for Parcel E19a.3 has been revised to indicate “Development (<i>includes a borderland buffer in the eastern portion of the parcel along the NRMA Interface</i>)” and Parcel L5.7 has been revised to indicate “Development (<i>includes a borderland buffer in the southern portion of the parcel along the NRMA Interface</i>)” to be consistent with previous sections of the SEDR.</p> <p>However, Parcel L20.2.1 is designated as Habitat Corridor in the HMP and includes a Borderland Interface in the southern portion of the parcel along the boundary with the NRMA. The HMP does not indicate a borderland buffer</p>

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Review comments provided by Gail Youngblood of the Army, dated July 8, 2008

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		requirement between the Habitat Corridor and adjacent NRMA, which is designated as Habitat Reserve. Therefore, no change has been made to Parcel L20.2.1 in Table 7.5-2 with respect to this comment.
4	Specific Comment, Figure 7.4-1	<p>Comment:</p> <p>The eastern side of Parcel L5.7 should not be mapped as “Borderland Interface.” See HMP Attachment A as revised in 2005. Also, revise Figure 7.5-1 as well as described above.</p> <p>Response:</p> <p>Figures 7.4-1 and 7.5-1 have been revised to remove the “Borderland Interface” designation line along the eastern boundary of Parcel L5.7.</p>
5	Specific Comment, Page 8-35, Table 8.5-2, Interim Action Ranges MRA	<p>Comment:</p> <p>HMP Category by Parcel. The HMP Designated Use for Parcel E40 should be identified as “Development (Borderland Buffer along the NRMA Interface).”</p> <p>Response:</p> <p>In Table 8.5-2, the HMP Designated Use column for Parcel E40 has been revised to indicate “Development (<i>includes a borderland buffer along the NRMA Interface</i>)” to be consistent with previous sections of the SEDR.</p>
6	Specific Comment, Page 10-7, Section 10.4.3, Laguna Seca MRA	<p>Comment:</p> <p>Reasonably Foreseeable Future Land Use. The second sentence indicates that “expansion of Laguna Seca Raceway facilities” is planned to occur in this area. This planned use is not consistent with the HMP, which identifies the area as Recreation Area Expansion #1 for which allowable use is maintained grasslands for overflow parking during Laguna Seca events. In addition, the planned use may not be consistent with the Fort Ord Base Reuse Plan, which identifies the area as Open Space/Recreation. Please evaluate the text of this section for possible clarifications.</p> <p>Response:</p> <p>The third sentence of Section 10.4.3 has been revised as follows: “These future uses continue to be associated with <i>open space/recreation and maintained grasslands for overflow parking during the Laguna Seca Raceway events</i>, such as parking or expansion of Laguna Seca Raceway facilities.”</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Jack Stewart of the State Veterans Cemetery Citizens Action
Committee, dated July 18, 2008

No.	Comment Type / Report Section	Comment/Response
1	Specific Comment	<p>Comment:</p> <p>Careful consideration should be devoted to include all elements that will provide for all planning needs to incorporate the State Veterans Cemetery officially in the Final CIOP SEDR.</p> <p>Response:</p> <p>FORA acknowledges the need to incorporate planning information for the State Veterans Cemetery into Environmental Services Cooperative Agreement (ESCA)-related documents and will make every effort to accommodate the needs and requests of the Citizens Action Committee. This planning information will be incorporated into future documents as the information becomes available.</p>
2	Specific Comment, Section 5.4.3 and Figure 5.4-1	<p>Comment:</p> <p>Particular attention is invited to the following provisions:</p> <p>a. Article 5.4.3 Reasonably Foreseeable Future Land Use. Please include “The State Central Coast Veterans’ Cemetery”.</p> <p>b. Map Figure 5.4-1. Please include the attached map of the Central Coast State Veterans Cemetery dated 6/18/08, on the Parker Flats MRA Land Use Profile Reuse Map Figure 5.4-1.</p> <p>Response:</p> <p>In response to comment 2a, the third sentence of Section 5.4.3 has been revised as follows:</p> <p>“It is important to note that general development land use category, encompasses infrastructure activities, such as roadway and utility construction as well as commercial/retail, parks, and borderland activities, <i>a horse park, and the State Central Coast Veterans Cemetery.</i>”</p> <p>In response to comment 2b, since Figure 5.4-1 is based on existing data as presented in the Base Reuse Plan, we have not incorporated the State Veterans Cemetery into the figure. However, the proposed boundary of the Veterans Cemetery will be incorporated into future documents.</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Jack Stewart of the State Veterans Cemetery Citizens Action
Committee, dated July 18, 2008

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Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by LeVonne Stone of the Fort Ord Environmental Justice Network,
Inc. (FOEJN), dated July 16, 2008

No.	Comment Type / Report Section	Comment/Response
1	General Comment	<p>Comment:</p> <p>Please include the comments we filed on the draft version in the Final document as well as FORA's response to those concerns. We submitted comments on the Draft SEDR on March 15, 2008. They should have been included in this Draft Final version and need to be included in the final so the community's concerns are acknowledged, and acted on.</p> <p>Response:</p> <p>Responses to FOEJN comments were provided to FOEJN as an attachment to the cover letter for the Draft Final SEDR; however, the comment letter from FOEJN, dated March 15, 2008 and the responses to FOEJN comments were inadvertently left out of the Draft Final SEDR. The comment letter from FOEJN on the Draft SEDR and the responses to FOEJN comments have been incorporated into Appendix A (Response to Comments) of the Final SEDR.</p>
2	General Comment	<p>Comment:</p> <p>We would like to emphasize again that we feel the data from the Army that FORA relies so heavily on are not representative of actual conditions on Fort Ord. This is especially true for lead related soil contamination. The Army's approach to evaluating lead has been highly subjective and has excluded areas with significant lead contamination from its cleanup activities.</p> <p>The Army has a history of misrepresenting its own data or drawing conclusions based on insufficient data. FORA accepts these data at its own peril, as many properties that the Army has determined to be safe may actually require additional actions to meet FORA and regulatory standards. Concentrations over 10,000 ppm are possible in many of these areas. Such high levels of lead are incredibly dangerous to both humans and wildlife.</p> <p>We outlined the problems with the Army's approach in our comments on the Draft SEDR, and they remain applicable for the Draft Final version as well. Please review our previous comments for more information about the risks of lead exposure and the unacceptable methodologies used by the Army to estimate those exposures. Allowing the Army to leave this contamination in place could result in delays in the development or use of these properties.</p> <p>Response:</p> <p>In accordance with the Administrative Order on Consent (AOC), the SEDR is to provide a summary of existing background information and investigation data based on historical maps, military munitions databases, and available</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by LeVonne Stone of the Fort Ord Environmental Justice Network,
Inc. (FOEJN), dated July 16, 2008

No.	Comment Type / Report Section	Comment/Response
		<p>documents (reports, work plans, maps, etc.), which have been reviewed and approved by the appropriate regulatory oversight agencies. The SEDR is not intended to provide an in-depth evaluation of historical data pertaining to Hazardous and Toxic Waste (HTW) with respect to risks of lead exposure and the methodologies and screening criteria used by the Army. HTW will continue to be addressed under the Army's basewide range assessment program. An evaluation of the representativeness of the Army's data with respect to Munitions and Explosives of Concern (MEC) is also outside the intended scope of the SEDR, but will be evaluated in the remedial investigation.</p> <p>No changes have been incorporated into the report based on this comment.</p>
3	General Comment	<p>Comment:</p> <p>We would also like to contest the Army's description of the burning of vegetation in MRS-28 as an "accidental fire" (comment no. 16). These areas were burned when a prescribed burn escaped the Army's control in 2003 and burned three times the area intended. Simply describing this as an "accidental fire" ignores the Army's responsibility in this major failure in protecting the health and safety of the surrounding communities.</p> <p>The public's opposition to prescribed burning is grounded in this event, primarily because the fire came within a few hundred feet of residential areas and blew so much unhealthy smoke over the community that it could be seen from space. We would recommend adding "caused by an out of control Army prescribed burn" to the language suggested by the Army. The new sentence should read "Given the terrain, the vegetation removal was performed primarily through manual practices, although a significant portion of the MRA was burned during an accidental fire caused by an out of control Army prescribed burn in July 2003."</p> <p>Response:</p> <p>The accidental fire at MRS-28, identified as the Eucalyptus Fire, was not the result of an out of control Army-prescribed burn. As was described in the Army's "Action Memorandum Time-Critical Removal Action (Surface Removal) Eucalyptus Fire Area Within the Multi Range Area, Former Fort Ord, Monterey, California," dated October 15, 2003, the accidental fire that affected MRS-28 began on July 17, 2003 in the Military Operations in Urban Terrain (MOUT) facility. The Army's prescribed burn began on October 24, 2003 and primarily affected Ranges 43 through 48. The accidental fire at MRS-28 was a wildfire that started as a result of a Navy Seal training exercise at the MOUT facility. This information is provided in a Fort Ord</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by LeVonne Stone of the Fort Ord Environmental Justice Network,
Inc. (FOEJN), dated July 16, 2008

No.	Comment Type / Report Section	Comment/Response
		<p>Prescribed Burn Fact Sheet (Chronology of Events) on the Former Fort Ord Environmental Cleanup website (http://www.fortordcleanup.com/ / community / presentations / 13nov03_pubmeet / Factsheet_FortOrdburns_Oct2003.pdf).</p> <p>No changes have been incorporated into the report based on this comment.</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by LeVonne Stone of the Fort Ord Environmental Justice Network,
Inc. (FOEJN), dated July 16, 2008

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Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Mike Weaver of the Fort Ord Community Advisory Group
(FOCAG), dated July 29, 2008

No.	Comment Type / Report Section	Comment/Response
1	General Comment	<p>Comment:</p> <p>Your for-profit clean up contractor, LFR and it's subsidiaries, prepared the document, identified the clean up issues, and will be the contractor FORA has designated responsible for cleaning up what they have identified.</p> <p>1) This contravenes CERCLA 2) This ignores your FORA Planning Agency's responsibility under CEQA.</p> <p>As secretary of the Fort Ord Community Advisory Group, I cannot condone this.</p> <p>Your Fort Ord Reuse Authority is the lead agency, the planning agency, for the property reuse of former Fort Ord. The Fort Ord Community Advisory Group has repeatedly requested your compliance with CEQA, the California Environmental Quality Act.</p> <p>Response:</p> <p>FORA is not a decision-making agency in the performance of the Army's statutory obligations. Rather, FORA is the Army's contractor, performing the Army's remedial work as required by the CERCLA. FORA's contractual obligations include the requirement that it perform under the direction, guidance and oversight of EPA in consultation with the DTSC, as described in the AOC. In these circumstances, FORA's undertaking is not within the purview of CEQA.</p> <p>No changes have been incorporated into the report based on this comment.</p>

Response to Comments
Draft Final Summary of Existing Data Report, dated June 25, 2008
Review comments provided by Mike Weaver of the Fort Ord Community Advisory Group
(FOCAG), dated July 29, 2008

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 18, 2008

Mr. Stan Cook
Fort Ord Reuse Authority
100 12th Street, Building 2880
Marina, CA 93933

Re: Draft Summary of Existing Data Report, Former Fort Ord, Monterey County, California,
dated February 7, 2008

Dear Stan:

Attached are EPA comments on the Draft Summary of Existing Data Report, Former Fort Ord,
Monterey County, California, dated February 7, 2008.

If you have any questions, please do not hesitate to call me at (415) 972-3681 or e-mail me at
huang.judy@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Judy C. Huang".

Judy C. Huang, P.E.
Remedial Project Manager

cc:

Dan Ward (DTSC)
Site Mitigation/Office of Military Facilities
8800 Cal Center Drive
Sacramento, CA 95826

Roman Racca (DTSC)
Site Mitigation/Office of Military Facilities
8800 Cal Center Drive
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Kristie Reimer, AICP
Principal Planner
BRAC / Federal Programs
LFR Inc.
1900 Powell Street, 12th Floor
Emeryville, CA 94608

FORA ESCA RP QASP - EPA Comments
3/18/2008

Page 1 of 6

FORA ESCA DCN 09595-07-078-008

Ms. Gail Youngblood
Fort Ord Base Realignment and Closure Office
P.O. Box 5008
Monterey, CA 93944-5004

Mr. Thomas Hall (via E-mail)

**REVIEW OF THE
FORT ORD REUSE AUTHORITY
ENVIRONMENTAL SERVICES COOPERATIVE AGREEMENT
DRAFT SUMMARY OF EXISTING DATA REPORT
FORMER FORT ORD, CALIFORNIA
FEBRUARY 7, 2008**

GENERAL COMMENTS

1. The Fort Ord Reuse Agency Environmental Services Cooperative Agreement Draft Summary of Existing Data Report, dated February 7, 2008 (hereinafter referred to as the "Draft SEDR"), contains what appears to be the incorrect use of the term "round."

For example, this term is used in Table 4.1-4, Seaside MRA – Historical Military Use, where it is stated that, "Some Dragon rounds and 4.2-inch mortar fragments have been found on the range." The use of the term "round" denotes the presence of a complete Dragon Missile, which constitutes DMM when found on a range (i.e., it has not been fired or the motor would be expended and it would be classified as UXO). It is very unlikely that a number of complete, unfired Dragon Missiles were found discarded on the range. They are most likely impacted (fired) Dragon Missiles that constitute UXO and are not "rounds" as defined below. (Note: The range under discussion is Range 23M in Parcel E24, located in MRS-15-SEA 01. See the specific comment on Table 4.1-3 for further discussion of the "Dragon rounds" found on this range.) There are other instances of the incorrect use of the term "round" elsewhere in the document.

The following definitions referring to the term "round" are found in Army Regulation (AR) 310-25, Dictionary of United States Army Terms:

"round

See round of ammunition.

round of ammunition (A)

A round of ammunition comprises all the components necessary to fire the weapon once. In general, these components are primer, propellant, container or holder for propellant (cartridge case or bag), and projectile—with fuze and booster if necessary—for the proper functioning of the projectile."

While AR 310-25 has recently been superseded, the superseding document contains no definitions, and it is safe to assume that this long-standing definition has not changed in the last six years. The Navy currently defines "complete round of ammunition" in the same manner as AR 310-25 did.

The incorrect use of the term "round" may cause the reader to mistakenly believe that a fuze, propellant increments, and an ignition cartridge (or cartridge case with primer and propellant) are all present in the items that are being described, which is very likely not the case. The same holds true with respect to a missile or a rocket. All of the components necessary for the launcher to be fired one time should be present to constitute a round. A rocket, a missile, or an artillery, small arms, or mortar projectile that has been fired, or one which has been separated from its cartridge case/propellant/motor for demilitarization or any other purpose should not be referred to as a "round." Also, if a round is present, the item so described has not been fired.

Review the use of the term "round" throughout the Draft SEDR and replace it with the term "projectile" or other appropriate terms as necessary to better express the identity and condition of the munitions items described. (Note: This should not be interpreted as a request to correct the cited usage in historical documents used as references in the Draft SEDR.) Also, please ensure that all munitions noted in the narratives as being found in the specific parcels or on identified ranges are also listed in the tables recording the types and quantities of MEC located/removed from the specified locations.

2. There are a significant number of instances where the Draft SEDR contains munitions descriptions that use incorrect terminology or the item identified has the wrong filler listed. In other cases, the model (M) number listed for the item does not exist for that particular munitions type or caliber/size. While this is attributed to the historical documents from which the information was extracted and should not be attributed to the authors of the Draft SEDR, the fact does remain that these deficiencies exist. It would seem to be appropriate to add a disclaimer to the tables where the munitions items are listed to inform all concerned of this situation. Please provide the subject disclaimer as a footnote to the tables listing munitions items in the Draft SEDR, or at any other location deemed appropriate to accomplish the same intent.
3. The Conceptual Site Models (CSMs) provided for each of the nine Areas Covered by ~~Environmental Services (ACES) that are discussed in the Draft SEDR appear to present~~ some inconsistencies with respect to the ACES tables that list the Potential Receptors and Exposure Media (PREM Tables) and the related area-specific Pathway Analysis Flowcharts (PAFs) that are provided for each specific ACES. These inconsistencies relate to the actual site conditions that currently exist and those that will exist after the sites have the remediation work completed. To assist in discussing these inconsistencies, the following factual statements are presented:
 - Short of removing the soil to a specific depth and sifting it through a sieve designed to remove all potentially present MEC, no MEC removal (both surface and subsurface) eliminates one hundred percent of the MEC present on a site. As a result, there is always a potential for surface and subsurface MEC to be present on a cleared site unless the cited removal by screening has been conducted.
 - Both surface and subsurface MEC that are present on an ACES may be relocated and transposed due to human and environmental action on the ACES (i.e., grading,

excavation, wind and rain may move MEC and may relocate it from subsurface to surface and vice versa). As a result, if surface MEC is/has been present, subsurface may be/may have also been present, and vice versa. As was previously stated, undetected/unremoved MEC may also change from one location category to another over time.

Based on the above statements and other established protocols involving munitions response and related terminology, the following issues exist in the PREM Tables:

- It is difficult to understand how any of the PREM Tables that have either Ground Surface or Below Grade checked as Exposure Media for a Potential Receptor do not have both checked. If there is a potential presence on the surface, there is a potential presence below the surface and vice versa.
- It is unclear as to why some of the PAFs do not present both Ground Surface and Below Grade as Secondary Sources.
- It is unclear as to why all categories of Receptors entering the ACES are not subject to potential exposure to both Exposure Media categories, unless there is some method in place that positively prevents such contact. (i.e., escorts, impenetrable barriers).
- In some instances the Ground Surface category (when listed) is not analyzed to completion through Migration and Transport, Exposure Media, Exposure Pathways, and Potential Receptor categories.
- An illustration for "Thrown Ordnance" is provided in some of the Release Mechanism Illustrations (RMIs) without the listing of "thrown" in the related PAFs.
- The acronym "MD" is included under the heading of "Expected MEC Contamination – Types of MEC that may be encountered" on some of the PAFs. As MD (munitions debris) is not a subcategory of the term MEC, it is not MEC and should not be identified as such. Either the MD should be removed or the heading title changed to eliminate the error.

Please review the PREM Tables, the PAFs, and the RMIs for each ACES presented in the Draft SEDR for consistency and completeness and revise them as necessary. If there is some logical reason for the noted omissions, please provide an explanation thereof in an appropriate location in the Draft SEDR.

SPECIFIC COMMENTS

1. **Table 4.1-4, Seaside MRA – Historical Military Use, page 4-17:** The table has two entries in the row entitled Range 23M that read, "Used as a non-firing training area for laser-aimed Dragon anti-armor weapons." and "Some Dragon rounds and 4.2-inch mortar fragments have been found on the range." It is very unlikely that these are Dragon "rounds," as the first statement indicates that Range 23M was a non-firing range. Live

ammunition is not normally taken onto non-firing ranges in order to preclude accidental firing thereon. In addition, there appears to be a discrepancy with respect to this statement, as no "dragon rounds" are listed as found in MRS-15 SEA 1 in either Table 4.3-3, Burial Pits Containing MEC, or Table 4.3-4, Seaside MRA – Types of MEC Removed and Hazard Classification.

Please review the cited discrepancies and correct the listed sections and tables as necessary to make them consistent.

2. **Figure 4.6-1, Seaside MRA Pathway Analysis Flowchart:** The cited flowchart lists "Direct and Indirect Firing & Thrown" as Release Mechanisms for munitions items found in the Target Area. However, it does not list "Thrown" as a Release Mechanism for munitions items found in the range safety fans. As the intent of a range safety fan is to include both the target areas and the area where items are expected to impact which do not hit the target or glance off of them, it would appear that the items thrown that do not land in the target area should land in the other portions of the range safety fan. Please revise the cited figure to correct this omission.
3. **Section 5.2.3, Surface Water and Groundwater, page 5-4:** This section contains a sentence that states that, "There is one known groundwater monitoring well located in the northwestern portion of the MRA in the Phase I area, and a couple groundwater monitoring wells located northwest of the MRA (Figure 5.2-1)." It is unclear as to exactly what is intended by the portion of the sentence that reads, "...and a couple groundwater monitoring wells..." Does it mean that there are two wells at the referenced location, or does it mean something else? Please review this sentence and modify it to better express the intended information.
- ~~4. **Figure 6.6-1, CSUMB MRA Pathway Analysis Flowchart:** The cited flowchart stops the analysis of the pathway at the Secondary Sources column and does not proceed through the four remaining columns. Please explain the reason for what appears to be an incomplete analysis or revise the flowchart to reflect a completed analysis.~~



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT ORD OFFICE, ARMY BASE REALIGNMENT AND CLOSURE
P.O. BOX 5008, BUILDING #4463 GIGLING ROAD
MONTEREY, CALIFORNIA 93944-5008

ESCA-0056
ESCA AR

MAR 03 2008

Base Realignment and Closure

Stan Cook
ESCA Remediation Program Manager
Fort Ord Reuse Authority
100 12th Street
Marina, CA 93933

Subject: *Draft Summary of Existing Data Report (SEDR)*, dated February 7, 2008, received on February 11, 2008.

Thank you for an opportunity to review and comment on the subject document. The Army's comments are enclosed. Please note our comments are focused on "big picture" issues such as the consistency with documents previously produced under the Army's cleanup program, and our comments on natural resources-related sections are provided in a separate list. A copy of this letter will be furnished to U.S. Environmental Protection Agency (Judy Huang) and California Department of Toxic Substances Control (Roman Racca).

Sincerely,

A handwritten signature in cursive script that reads "Gail Youngblood".

Gail Youngblood
BRAC Environmental Coordinator
Fort Ord Field Office

Enclosures

DRAFT Summary of Existing Data Report

February 7, 2008

Army Comments on Natural Resources Related Issues:

1. Page 2-2, Section 2-2, last paragraph. The last sentence should be revised to clarify that the consultations resulted in biological opinions (BOs) that allow impacts to and incidental take of listed species during MEC remedial activities but require mitigation measures to be implemented during the MEC activities to reduce and minimize impacts to the protected species and their habitats.
2. Page 4-8, Section 4.4.2, third paragraph. The last sentence describing the "100-foot setback" is not accurate. The HMP does not establish a 100-foot setback but does identify natural resource management requirements along the Borderland Interface. The Draft Habitat Conservation Plan (HCP) being prepared by FORA does establish a width for managing the interface and I suggest referencing the Draft HCP rather than the HMP when discussing the setback distance. This statement needs to be revised throughout the SEDR.
3. Page 4-10, Section 4.5. See comment 2 regarding the 100-foot setback distance. The last paragraph should be revised to clarify the FORA will implement mitigation requirements identified in the HMP for MEC activities.
4. Page 4-10, Section 4.5.2. Delete "Conference" from the sentence describing the BO since the original BO in 1993 requiring development of the HMP was not a Conference Opinion. The only Conference Opinion issued to the Army is the March 30, 1999 BO that is both a Biological and Conference Opinion because it included an evaluation of impacts to a species that was proposed for listing as an endangered species. The California black legless lizard was not listed after consideration but remains a special-status species identified in the HMP.

The last sentence implies that only "currently applicable conservation measures" will be implemented. Please revise this sentence by replacing "currently" with "the" since mitigation measures that may be identified in the future will require implementation. This statement occurs throughout the document and should be revised.

Also, the first sentence in the last paragraph states that CTS "was identified as an endangered species." Please replace "an endangered" with "a threatened." This change needs to be made throughout the document.

5. Page 4-11, Section 4.5.2. The last sentence of the top paragraph states, "the Seaside MRA is available for development without restrictions." This sentence should be revised to clarify that future development activities must comply with future regulatory requirements and that only MEC related activities are covered by the Army's BOs.
6. Page 4-11, Section 4.5.3. Replace "*(Ericameria fasciculata)*" with "*(Ericameria fasciculata)*."
7. Page 4-19, Table 4.1-5, Biological Opinions. Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.
8. Page 4-34, Habitat Management Plan / Biological Opinions. Delete "Conference" from the sentence describing the BO since the original BO in 1993 requiring development of the HMP was not a Conference Opinion. See comment 4.

Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.

9. Page 4-35, Threatened and Endangered Species/ Critical Habitat. The second bullet states, “CTS was identified as an endangered species.” Please replace “an endangered” with “a threatened.” This change needs to be made throughout the document. See comment 4. Also, please clarify the statement, “the Seaside MRA is available for development without restrictions.” See comment 5.

10. Page 4-36, Table 4.5-2. Delete “100-foot Buffer from” since the buffer is not required by the HMP or add HCP to the header designating use. Also, add CTS to the list of species present in E24 and correct the typo for “cncamena” and “lizardr.”

11. Page 5-9, Section 5.5. Revise the last paragraph by deleting “prior to future development” and replacing with “for MEC activities.”

12. Page 5-10, Section 5.5. Replace “work” with “MEC activities” to avoid confusion with development activities which are not covered in the Army’s BOs.

13. Page 5-10, Section 5.5.2, Threatened and Endangered Species. This section should identify that sand gilia and Monterey spineflower are present in this MRA.

Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.

Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Please replace “an endangered” with “a threatened.” Also, insert “breeding” between “provide” and “habitat.”

14. Page 5-18, Table 5.1-5, Biological Opinions. Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.

15. Page 5-32, Table 5.5-1, Habitat Management Plan / Biological Opinions. Insert “and Habitat Reserve.” At the end of the first sentence since the Parker Flats MRA includes habitat reserve.

16. Page 5-33, Table 5.5-1, Habitat Management Plan / Biological Opinions. Insert “during MEC activities” to reduce confusion regarding future development activities which are not covered by the Army’s BOs.

17. Page 5-33, Table 5.5-1, Threatened and Endangered Species. Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Please replace “an endangered” with “a threatened.”

18. Page 5-34, Table 5.5-2. Insert “CTS” into the HMP Species column for Parcels E19a.2, E19a.3, E19a.4, and E19a.5.

19. Page 6-8, Section 6.5. Revise the third paragraph by replacing “prior to future development” with “for MEC activities” and delete the second sentence discussing habitat areas since the HMP identifies these parcels as “Development.” Page: 2

20. Page 6-8, Section 6.5.2, Threatened and Endangered Species. Include a statement that Monterey spineflower occurs within this MRA.

Please revise the first sentence in the last paragraph that states, "CTS was identified as an endangered species." Please replace "an endangered" with "a threatened." Also, insert "breeding" between "provide" and "habitat."

21. Page 6-9, Section 6.5.3. Delete "Monterey spineflower" since this is a threatened species and should be addressed in the previous section.

22. Page 6-14, Table 6.1-5. Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

23. Page 6-25, Table 6.5-1, Habitat Management Plan / Biological Opinions. Delete "habitat" since the CSUMB parcels do not contain HMP habitat reserves. Therefore, delete the "Habitat Reserve" bullet since it is not applicable to the CSUMB MRA.

Insert "for MEC activities" between "requirements" and "identified" in the second to the last bullet and delete the last sentence since there aren't HMP habitat areas in the CSUMB parcels.

Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

24. Page 6-25, Threatened and Endangered Species / Critical Habitat. The title of this row should be revised since there is no "Critical Habitat" identified in the CSUMB parcels. In addition, Monterey spineflower should be included since it is a threatened species and is found in this MRA.

Please revise the first sentence in the last bullet that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened."

25. Page 6-26, Table 6.5-2. Insert "CTS" as an HMP Species found in Parcel S1.3.2 (western portion).

26. Figure 6.4-1, CSUMB MRA. The western portion is identified as "Habitat" yet the HMP designates the entire parcel as "Development." If the reuse agency intends to reuse the parcel for habitat, the designation should be clarified so as not to confuse the relationship to the HMP designation.

27. Page 7-7, Section 7.5. Revise the fourth paragraph by replacing "prior to future development" with "for MEC activities." Page: 3

28. Page 7-8, Section 7.5.2. Sand gilia and Monterey spineflower should be included since they are threatened and endangered species and are found in this MRA. Monterey spineflower Critical Habitat is also designated in a portion of this MRA.

Please revise the first sentence in the last paragraph that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened." Also, insert "breeding" between "provide" and "habitat."

29. Page 7-8, Section 7.5.3. Delete "Monterey spineflower, sand gilia" since these are threatened and endangered species and should be addressed in the previous section.

30. Page 7-14, Biological Opinions. The title of this "Type" should be revised to include "Critical Habitat" since Monterey spineflower occurs in a portion of this MRA.

Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

31. Page 7-22, Table 7.5-1, Habitat Management Plan / Biological Opinions. Insert "Habitat Reserves, Habitat Corridor, and" between "as" and "development."

32. Page 7-23, Table 7.5-1, Habitat Management Plan / Biological Opinions. Insert another bullet to summarize the "Habitat Corridor" category.

Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

33. Page 7-23, Table 7.5-1, Threatened and Endangered Species/Critical Habitat. Include a statement that Monterey spineflower Critical Habitat is designated for a portion of this MRA.

Please revise the first sentence in the last bullet that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened."

34. Page 7-23, Table 7.5-2. Insert "CTS" in the HMP Species column for Parcels E19a.3, E19a.4, L5.7, and L20.2.1.

35. Page 8-7, Section 8.3.3. The last sentence that states, "no further action has been recommended for HAs within this MRA (Army 2007)" needs to be revised. See Table 8.3-5 where it reports that the BRA recommended Range 44 and 43 for further evaluation. *Draft Final Feasibility Study Addendum Site 39 Ranges, Former Fort Ord, California, Revision 0* (Shaw/MACTEC, November 2007) identifies a soil remedial unit within Range 44.

36. Page 8-8, Section 8.5. Please revise the second paragraph stating that no further action was recommended. See comment 35.

37. Page 8-9, Section 8.5. Delete "prior to future development" and insert "for MEC activities."

38. Page 8-9, Section 8.5.2. Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species.

Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

Please revise the first sentence in the last paragraph that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened."

39. Page 8-10, Section 8.5.3. Delete "Monterey spineflower, sand gilia" since these are threatened and endangered species and should be addressed in the previous section.

40. Page 8-10, Section 8.6. This paragraph needs to be revised to recognize that a soil remedial area is located in Range 44. Although the ESCA RP is not responsible for HTW remediation, the paragraph should clarify that a portion of Range 44 will be remediated by the Army in accordance with *Draft Final*

41. Page 8-16, Table 8.1-5, Habitat Management Plan. The first bullet needs to be revised as follows: "This MRA is identified as development with borderlands interface, and habitat reserve. The requirements for the borderlands interface have both short and long-term requirements. Interim requirements include the maintenance of firebreaks and vehicle barriers where appropriate. Long-term requirements apply as development occurs. Except for the habitat reserve and borderland interface parcels, the MRA is available for development once the future regulatory requirements have been completed.

42. Page 8-17, Table 8.1-5, Biological Opinions. This "Type" title needs to be revised to include "Critical Habitat" since Monterey spineflower Critical Habitat has been designated by USFWS for a portion of the MRA.

Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

43. Page 8-33, Table 8.5-1, Habitat Management Plan / Biological Opinions. The first sub-bullet of the last bullet describing the development category needs to be revised to clarify that although lands in the development category have no HMP management restrictions, development impacts are not covered by the Army BOs and future regulatory requirements must be addressed by the property recipient.

44. Page 8-34, Table 8.5-1, Habitat Management Plan / Biological Opinions. Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

45. Page 8-34, Table 8.5-1, Threatened and Endangered Species / Critical Habitat. Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species. Also describe that a portion of the MRA is identified as Monterey spineflower Critical Habitat.

Please revise the first sentence in the last bullet that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened."

46. Page 8-35, Table 8.5-2. Delete "California tiger salamander" from the HMP Species column for Parcels E38 and E41. Insert CTS for Parcel E40.

47. Page 9-8, Section 9.5. Delete "prior to future development" and insert "for MEC activities."

48. Page 9-9, Section 9.5.2. Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species.

Replace "currently" with "the" since mitigation measures identified in the future must also be implemented. See comment 4.

Please revise the first sentence in the last paragraph that states, "CTS was identified as an endangered species." Replace "an endangered" with "a threatened" in the first sentence and insert "that is known as a breeding site for CTS" at the end of the last sentence.

49. Page 9-9, Section 9.5.3. Delete "Monterey spineflower and sand gilia" since these are added to the previous section on threatened and endangered species.

50. Page 9-17, Table 9.1-5, Biological Opinions. Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.

51. Page 9-24, Table 9.1-5, Threatened and Endangered Species / Critical Habitat. Delete “Critical Habitat from the title of this “Type” since no critical habitat is designated for this MRA.

Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened” in the first sentence and insert “that is known as a breeding site for CTS” after “aquatic feature” and delete “in which CTS may be present.”

52. Page 10-3, Section 10.2.2. Insert “prescribed burning and” between “with” and “both” when discussing vegetation clearance methods used in this MRA. Wolf Hill (MRS-47) was burned in 1994.

53. Page 10-8, Section 10.5. The second paragraph needs to be revised to reflect that the HMP identifies the Laguna Seca MRA as Development with Reserves or Development with Restrictions, not “development without restriction.”

Delete “prior to future development” and insert “for MEC activities” in the second paragraph and delete the last sentence since there is no borderland interface requirements in this MRA.

54. Page 10-8, Section 10.5.2. Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.

Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”

55. Page 10-14, Table 10.1-5, Biological Opinions. Replace “currently” with “the” since mitigation measures identified in the future must also be implemented. See comment 4.

56. Page 10-23, Table 10.5-1, Biological. Insert “by prescribed burning and” between “performed” and “with” in the second bullet to clarify that a portion of this MRA was burned in 1994 to clear vegetation in preparation for the removal action.

57. Page 10-24, Table 10.5-1, Threatened and Endangered Species / Critical Habitat. Please revise the first sentence in the second bullet that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”

Revise the third bullet as follows: “A portion of the Laguna Seca MRA is identified as critical habitat for Monterey spineflower.”

The Contra Costa goldfields critical habitat designation was removed by USFWS following an economic impact assessment. Wolf Hill (MRS-47) is the only portion of the MRA that contains Monterey spineflower critical habitat.

58. Page 10-25, Table 10.5-2. Delete “Sand gilia” and insert “CTS” for Parcels L20.3.1, L20.3.2, L20.5.1, L20.5.2, L20.5.3, and L20.5.4.

59. Figure 10.4-1, Laguna Seca MRA Land Use Profile Reuse Map. The pink area needs to be renamed “Development with Reserve Areas or Development with Restrictions” in accordance with the HMP designation. The HMP does not allow development but only allows a maintained grass area for over-flow parking during LS events.

60. Page 11-7, Section 11.5. The third paragraph needs to be revised as follows: “The HMP identifies the DRO/Monterey MRA as development and development with reserve areas or development with restrictions (Figure 11.5-1). The development with reserve areas or development with restrictions portion of the MRA supports plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.”

61. Page 11-7, Section 11.5. Delete “prior to future development” and insert “for MEC activities.” Also, delete the last sentence since there are no borderland interface requirements for this MRA.

62. Page 11-8, Section 11.5.2. Include a statement regarding the presence of Monterey spineflower since it is a threatened species.

Replace “currently” with “the” in the second paragraph since mitigation measures identified in the future must also be implemented. See comment 4.

Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened” in the first sentence and insert “breeding” between “provide” and “habitat.”

63. Page 11-8, Section 11.5.3. Delete “Monterey spineflower” since it was inserted in the section above.

64. Page 11-13, Table 11.1-4, Biological Opinions. Replace “currently” with “the” in the second paragraph since mitigation measures identified in the future must also be implemented. See comment 4.

65. Page 11-17, Table 11.4-1. Delete “Reserve – Development Buffer” and insert “Development with Reserve Areas or Development with Restrictions” for Parcel L6.2.

66. Page 11-18, Table 11.5-1, Habitat Management Plan / Biological Opinions. Delete “Conference.” See comment 4.

67. Page 11-18, Table 11.5-1, Habitat Management Plan / Biological Opinions. Delete “habitat reserve” from the third bullet and replace with “Development with Reserve Areas or Development with Restrictions.”

68. Page 11-18, Table 11.5-1, Habitat Management Plan / Biological Opinions. Replace “currently” with “the” in the last bullet since mitigation measures identified in the future must also be implemented. See comment 4.

69. Page 11-18, Table 11.5-1, Threatened and Endangered Species / Critical Habitat. Delete reference to Critical Habitat in the title of the “Type” since no critical habitat occurs in this MRA. Also, include a statement regarding the presence of Monterey spineflower since it is a threatened species. Please revise the first sentence in the second bullet that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”

70. Page 11-19, Table 11.5-2. Delete “Habitat Reserve” and insert “Development with Reserve Areas or Development with Restrictions.” Also, insert “CTS” in the HMP Species column for Parcels E29.1 and L6.2.

71. Figure 11.4-1, DRO/Monterey MRA Land Use Profile Reuse Plan. Rename the green area as “Development with Reserve Areas or Development with Restrictions.”

72. Figure 11.5-1, DRO/Monterey MRA Ecological Profile Habitat Type. Parcel L6.2 is “Development with Reserve Areas or Development with Restrictions” and not “Habitat Reserve” as shown on the existing figure.

73. Page 12-4, Section 12.2.3. Revise the first sentence on the page to reflect the fact that several aquatic features are present within the MRA and within 500 feet.....

74. Page 12-8, Section 12.5. The third paragraph needs to be revised to delete reference to the 100-foot wide development buffer area along the interface. See comment 2.

Also, delete “prior to future development” and insert “for MEC activities.”

75. Page 12-8, Section 12.5.2. Revise the title of this section to include “Critical Habitat” since a portion of this MRA is designated as Critical Habitat for Monterey spineflower.

Include a statement regarding the presence of Monterey spineflower and sand gilia since they are threatened and endangered species.

Replace “currently” with “the” in the last bullet since mitigation measures identified in the future must also be implemented. See comment 4.

Please revise the first sentence in the last paragraph that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.” Also, revise the last sentence as follows: “CTS may occur within the East Garrison MRA due to the presence of several aquatic features within and adjacent to the MRA that may provide breeding habitat (Figure 12.5-1).”

76. Page 12-9, Section 12.5.3. Delete Monterey spineflower and sand gilia since they were inserted into the previous section, Threatened and Endangered Species / Critical Habitat.

77. Page 12-15. Replace “currently” with “the” in the last bullet since mitigation measures identified in the future must also be implemented. See comment 4.

78. Page 12-24, Habitat Management Plan / Biological Opinions. Replace “currently” with “the” in the second to last bullet since mitigation measures identified in the future must also be implemented. See comment 4.

The first sub-bullet of the last bullet describing the development category needs to be revised to clarify that although lands in the development category have no HMP management restrictions, development impacts are not covered by the Army BOs and future regulatory requirements must be addressed by the property recipient. See comment 43.

79. Page 12-24, Threatened and Endangered Species / Critical Habitat. Please revise the first sentence in the second bullet that states, “CTS was identified as an endangered species.” Replace “an endangered” with “a threatened.”

Include a statement regarding the presence of Monterey spineflower, federally threatened, and that a portion of the MRA is designated as Critical Habitat for Monterey spineflower.

Revise the second sentence to state, “East Garrison MRA contains several aquatic features as well as several features within 1 km of the MRA which provide suitable breeding habitat for CTS.

80. Page 12-25, Table 12.5-2. Insert "CTS" in the HMP Species column for all parcels listed in the table.

81. Page 13-3, Section 13.3.3. This section should discuss the biological monitoring and reporting requirements that started when Ranges 43 – 48 were cleaned in 2005. Biological monitoring under the ESCA is required for 2008, 2011, and 2016 per the vegetation monitoring protocol developed in accordance with the BOs.

82. Page 13-4, Section 13.4.1. The second paragraph needs to be revised to recognize that biological monitoring in Ranges 43 – 48 needs to occur in years 2008, 2011, and 2016 to collect habitat recovery for years 5, 8, and 13 following remediation that was completed in 2005. The paragraph currently states scheduling begins in 2009 and ends in 2012 which is not consistent with the BO requirements for this MRA.

83. Page 13-6, Table 13.1-1. This table should include the BO tasks including collection of baseline habitat data, baseline wetland data, follow-up monitoring for HMP Annuals and shrubs, follow-up wetland monitoring, and the annual monitoring reports.

84. Page 13-11, Table 13.4-1, Priority 3. This section should address the biological monitoring requirements that are in progress and data collection and monitoring that remain to be conducted at Ranges 43 – 48 for years 2008, 2011, and 2016.

85. Page 14-3, Section 14. References to the Draft Final Feasibility Study Addendum, Site 39 Inland Ranges (Army, 2007) needs to be included to reference Army soil remediation activities.

I also suggest including references to the previous biological monitoring reports prepared for Ranges 43 – 48 which requires ongoing monitoring and reporting to demonstrate the habitat is recovering in accordance with the HMP and BOs.

DRAFT Summary of Existing Data Report (SEDR)

Army Comments:

1. p.2-1, Section 2.2. At the end of the first paragraph, U.S. Environmental Protection Agency (EPA) is identified as the lead regulatory agency and California Department of Toxic Substances Control (DTSC) and California Regional Water Quality Control Board (RWQCB) are identified as support agencies. It would be further clarifying if a statement is added as follows: the Army is the lead agency under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for conducting environmental investigations, making cleanup decisions and taking cleanup actions at the former Fort Ord.
2. Reuse of habitat reserve areas must be consistent with the *Fort Ord Installation-wide Multispecies Habitat Management Plan* (HMP). Under the HMP, certain habitat management actions are required in habitat reserve areas, which would relate to the development of potential receptors. Please include this information in the Land Use and Exposure Profile and Pathway Analysis sections for Munitions Response Areas (MRAs) containing habitat reserve.
3. p.4-7, Section 4.3.4 HTW History and Conditions (Seaside MRA). In addition to the Basewide Range Assessment report and FOSET referenced in this section, *Draft Post Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C*, dated November 30, 2007 is now available.
4. p.8-5, Section 8.3.1 Investigation and Removal History (Interim Action Ranges MRA). This section should identify and discuss the status of several special case areas (SCAs) within this MRA so that an appropriate level of analysis will be conducted as part of the planned Remedial Investigation/Feasibility Study (RI/FS). The SCAs identified within the Ranges 43-48 site are described in *Final MRS-Ranges 43-48, Interim Action, Technical Information Paper* (Parsons, 2007).
5. p.8-11, Section 8.6.2 Exposure Pathway Analysis (Interim Action Ranges MRA). It is stated "The SCAs and noncompleted areas are designated as habitat; therefore, it is less likely that the receptors would conduct subsurface activities in those areas." While it is possible that the intensity of subsurface activity may be considered less compared to a development area, some intrusive activities are required in order to carry out habitat management responsibilities that are outlined in the HMP. This section should recognize the types of subsurface activities that can be expected and potential for MEC exposure by future receptors, so that an appropriate level of analysis will be conducted as part of the planned RI/FS.
6. p.8-11, Section 8.6.2 Exposure Pathway Analysis (Interim Action Ranges MRA). Regarding the risk of surface exposure, this section states "The risk of surface exposure was greatly reduced as a result of surface removal actions and sifting operations." While this is a true statement, it should also be recognized that there is a potential for subsurface MEC items to become exposed on the surface in the future. Some of the SCAs within this MRA include areas with high density of subsurface anomalies and/or munitions debris, and with disturbed ground surface. The potential for MEC items to be present on the surface should be included in a detailed evaluation as part of the planned RI/FS. Accordingly, Table 8.6-1 Interim Action MRA Potential Receptors should recognize the potential for surface exposures for some of the potential receptors.

7. p.8-8, Section 8.4.2 Current Land Use (Interim Action Ranges MRA). The section states "Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers." MRS-Ranges 43-48 is within the former Impact Area and access is restricted to authorized personnel only. "Day recreational users" and any unauthorized personnel who gain access to the restricted Impact Area will be considered trespassers and if discovered, will be cited and the incident will be followed up per the site security program. Please correct the statement that suggests that recreational use in any part of MRS-Ranges 43-48 is currently authorized.
8. p.13-2, Section 13.3.1 Priority 1 MRA Group. Fifth paragraph contains the following sentence "Because a substantial amount of investigation and removal action is anticipated to occur during the RI within this Priority Group, it is expected that the MEC data that are encountered during the RI stage will be comparatively small in quantity...." Please clarify the meaning of this sentence.
9. p.13-3, Section 13.3.3 Priority 3 MRA Group. The second paragraph indicates that the expected or anticipated remedy for this Priority Group includes MEC removal along two roads only. It should be recognized that the final remedy will be subject to a detailed evaluation in an RI/FS and may be different from a remedy expected at this time.

Detail/minor comments:

1. p.1-2, Section 1.3 Information Sources. The Fort Ord Data Integration System is available at www.fodis.net.
2. p.2-1, Section 2.2. California Regional Water Quality Control Board is misidentified as Monterey Bay Regional Water Quality Control Board.
3. p.2-1, Section 2.2. Statement "The FFA formalized the Army's requirements for protecting human health and the environment by remediating contamination, including MEC, present at the former Fort Ord" is not accurate. The purposes of the Fort Ord Federal Facility Agreement (FFA) are described Section 4 of the FFA. Please strike or revise the above mentioned sentence.
4. p.2-2. Track 0 areas are not "sites" since they have never been suspected of military munitions-related activities of any kind. Please replace "sites" with "areas" to avoid confusion.
5. p.2-4, Section 2.5 Governing Documents. First bullet appears to contain an incomplete sentence.
6. p.4-15, Table 4.1-2 Seaside MRA Site Features. Fencing and access. Please describe the existing fence along the southern side of Eucalyptus Road that prevents access into the MRA and to the rest of the Impact Area. Also, Eucalyptus Road is blocked by the Army for vehicular traffic; pedestrian, bicyclist and equestrian-type access is allowed (except for specific reasons/circumstances). Please update the table.
7. p.4-21, Table 4.2-2 Seaside MRA Vegetation. The Time-Critical Removal Action including vegetation removal and surface MEC removal was conducted between December 2001 and March 2002, according to *Final MRS-SEA.1-4 Time-Critical Removal Action and Phase 1 Geophysical Operations Technical Information Paper* (Parsons, 2006b). Please update the current description that indicates that vegetation cutting at the site occurred in the late 1990's. Please also note that the Technical Information Paper indicates that vegetation cutting in the eastern portion of MRS-SEA.4 was conducted in 2003.

8. p.4-24, Table 4.3-2 Seaside MRA Removal Activities. Non-time critical removal action is described as having occurred during January through March of 2002. However this activity occurred following the time-critical removal action at the site, which was conducted between December 2001 and March 2002, according to *Final MRS-SEA.1-4 Time-Critical Removal Action and Phase 1 Geophysical Operations Technical Information Paper* (Parsons, 2006b). Please update. Same comment applies to Section 4.3.1 on p.4-4.
9. p.4-36, Table 4.6-1 Seaside MRA Potential Receptors. Trespassers, emergency response workers, ancillary workers and recreational users are identified in the table but do not appear to be considered as potential receptors (contrary to the text-portion of the SEDR). Please verify the information and update the table if appropriate.
10. p.5-20, Table 5.2-2 Parker Flats MRA Vegetation. Please note that vegetation was cut prior to MEC removal actions previously conducted by the Army. A small portion of Parker Flats MRA Phase I was burned in 2005 as part of a FORA project.
11. p.5-21, Table 5.3-2 Parker Flats MRA Removal Activities. The removal areas within MRS-27A and MRS-27B are part of the Phase I MRA and pending ROD. MEC removal was conducted in August 2000 in several expansion grids associated with MRS-4A for which records are available in the MMRP Database.
12. p.5-35, Table 5.6-1 parker Flats MRA Potential Receptors. Emergency response workers are identified in the table but do not appear to be considered as potential receptors (contrary to the text-portion of the SEDR). Please verify the information and update the table if appropriate.
13. p.6-11, Table 6.1-2 CSUMB MRA Site Features. Fencing and access. Please clarify the meaning of the last bullet "FORA and CSUMB to patrol and enforce no access restriction from FOSET into LUC."
14. p.6-25, Table 6.6-1 CSUMB MRA Potential Receptors. Residents are identified in the table but do not appear to be considered as potential receptors (contrary to the text-portion of the SEDR). Please verify the information and update the table if appropriate.
15. p.7-24, Table 7.6-1 Development-North MRA Potential Receptors. Trespassers are identified in the table but do not appear to be considered as potential receptors (contrary to the text-portion of the SEDR). Please verify the information and update the table if appropriate.
16. p.9-3, Section 9.2.2 MOUT Site MRA Vegetation. Please note that much of the vegetation in MRS-28 was burned in an accidental fire in 2003 (Eucalyptus Fire).
17. p.9-25, Table 9.6-1 MOUT Site MRA Potential Receptors. Emergency response workers, ancillary workers, residents and recreational users are identified in the table but do not appear to be considered as potential receptors. The text-portion of the SEDR recognizes emergency response workers, ancillary workers and recreational users as potential receptors. Please verify the information and update the table if appropriate.
18. p.12-1, Section 12.1.1. East Garrison MRA Boundary and Access. Eucalyptus Road is cited as located to the north of the MRA. Please check the paragraph for possible mis-identification of road names.

19. p.12-18, Table 12.3-1 East Garrison MRA Investigation and Removal Activities. It is stated four of the anomalies that were investigated during Site Assessment in East Garrison Area 4 turned out to be suspected MEC. These items were subsequently detonated, and the results of the demolition confirmed that the MKI illumination hand grenade and the M125 series illumination signal were MEC; the two 3-in. MKI practice Stokes trench mortars were determined to be MD. This information is provided in *Final East Garrison Area 4 Site Assessment Site Report* (Parsons, 2006c).
20. p.12-21, Table 12.3-5 East Garrison MRA HTW History. The table indicates that BRA recommended further evaluation for HA-100 (MRS-11) and a discussion of BRA recommendation for MRS-42 (HA-172) is not included. Table 2 of the FOSET indicates that BRA recommended no further action for all of the HAs associates with this MRA (HA-100/MRS-11, HA-125/MRS-23 and HA-172/MRS-42. Please update the table to reflect the information in the FOSET.
21. p.13-2, Section 13.3.1 Priority 1 MRA Group. Third paragraph. The statement "all MEC were investigated and removed" should be corrected to state "all detected MEC items were investigated and removed."
22. p.13-3. Section 13.3.3 Priority 3 MRA Group. Second paragraph. "Barloy Canyon Road" is misspelled.
23. Figure 13.3-4 is missing from the hard copy of the report.



Fort Ord Environmental Justice Network, Inc.

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March 15, 2008

Fort Ord Reuse Authority
Michael Houlemard, Exe. Officer
100 12th St.
Marina, CA 93933-6006

RE: Draft FORA Draft Summary of Existing Data for Administrative Order of Consent

Dear Mr. Houlemard:

Please see attached hard copy, enclosed report submitted by Fort Ord Environmental Justice Network, Inc. for inclusion in the Administrative Records.

In addition this report reflects additional comments from the community.

The (AOC) Administrative Order of Consent will further complicate the community involvement process by forcing average citizens to deal with one more agency to express concerns regarding the cleanup of Fort Ord. It may not be immediately clear to residents which agency is responsible for a particular action, or whom they should contact if they have a problem. While citizens and the Army have often disagreed about approaches to clean up contamination at the base, their participation in the cleanup has hinged upon the knowledge that the Army was committed to rectifying the environmental problems they were responsible for creating. Transfer of any cleanup responsibilities to another entity, much less in this manner, would make citizens reconsider the limited trust they have placed in the Army, EPA, and the entire cleanup process. One reason that the AOC will erode public trust is that under the proposed agreement, FORA is not required to perform any remedies or investigations that the Army has selected for the properties in question. Instead, FORA will be required to conduct its own investigations and evaluations and then determine what actions should be taken if they are deemed appropriate by the EPA. Not only would this result in acceptable delays in the cleanup of certain areas adjacent to residential properties, it would create a situation where remedies that have already undergone public review and been accepted could be suddenly rejected with little to no public input.

If you wish to discuss contents of this report further, please contact LeVonne Stone, FOEJN TAG Program Manager at 831-582-0803

Thank You,

LeVonne Stone

Cc: Viola Cooper, USEPA, Region 1X

Please sign upon receiving, giving me a copy of signature page

**Comments on
FORA Draft Summary of Existing Data
Prepared by
Environmental Stewardship Concepts
On Behalf of
The Fort Ord Environmental Justice Network
March 12, 2008**

These comments were prepared at the request of the Fort Ord Environmental Justice Network (FOEJN) to provide technical comment to the Army regarding the clean up of unexploded ordinance at the former base. FOEJN represents the affected community in the greater Fort Ord area in the clean up of contamination and ordnance related waste.

Document Summary

This document was published by Fort Ord Reuse Authority (FORA) to meet the requirements of the Agreed Order of Consent between the Army and FORA. The report is meant to summarize the existing information on the properties that will be transferred to FORA. This information is to form the basis of an upcoming Remedial Investigation/ Feasibility Study for the same sites. The properties are a mix of contaminated and uncontaminated sites and require a wide variety of actions.

Issues/Recommendations

- **The SEDR does not address soil contamination in any relevant way.**
- **There is a focus on munitions response actions that give a false impression that soil contamination is not a substantial issue at Fort Ord.**
- **FORA frequently accepts Army conclusions without any substantive evaluation of the data used to support them.**
- **Metals are still prevalent in dangerous concentrations at sites that were previously used for firing ranges.**
- **The sections on each of the FORA designated Munitions Response Areas (MRA) should include a table listing specific documents that were consulted for that MRA.**

General Comments

The SEDR's largest flaw is that it barely addresses soil contamination, and when it does FORA accepts the Army's conclusions without any critical evaluation. FORA has a responsibility to substantively evaluate soil contamination under the AOC as part of the SEDR. However, the SEDR does not give the specifics of a single investigation about this particularly critical medium. The AOC clearly states that FORA must gather data on "all data necessary to fully characterize conditions under investigation," and the RI/FS that will be based on this document is to "address all hazardous substances at the site as directed by EPA... in accordance with... the relevant guidance" (Section 25.a). An Army designation of "No Further Action Required" does not exempt FORA from this requirement. The focus on the Munitions and Explosives of Concern (MEC) almost to the exclusion of these issues gives the false impression that soil contamination isn't a major issue at Fort Ord or the transferred properties and avoids the responsibilities laid out in the AOC.

Heavy metal contamination continues to be widespread at Fort Ord, even in areas that have been previously investigated or remediated. The reasons for this remaining contamination are a combination of insufficient screening levels and cleanup standards along with a severely flawed methodology for estimating lead concentrations in soils. The Army estimated lead concentrations based on the percent of ammunition covering the ground. This method greatly underestimated soil concentrations of lead and was not particularly good at predicting the distribution of contamination either. A review of after action reports reveals that this approach often left areas with contamination in excess of **10,000 ppm** lead. These levels are extremely hazardous to both humans and wildlife, but the Army has ignored them and designated some of these areas as needing “No Further Action.” For more information about these risks, please review FOEJN comments relating to the cleanup of Site 39. FORA must address these issues by evaluating actual data and drawing its own conclusions based on those data.

FORA needs to remember that the Army has a very poor track record at Fort Ord. The Army claimed that the prescribed burn of 2003 would be completely safe, but it escaped the control of Army contractors and came perilously close to spreading into adjacent communities while pouring dangerous smoke over them. The Army designed the groundwater treatment systems that have now allowed contamination plumes to migrate off-base. The Army continues to make poor decisions regarding contamination at the base as well, the plan to place highly contaminated soils into the unlined and leaking OU2 Landfill that contributed to the original listing of Fort Ord on the National Priorities List being an excellent example. The ESCA and the AOC have granted FORA powers well beyond what they previously had. With these additional powers come additional responsibilities, and FORA has the opportunity to use them to affect a better cleanup at Fort Ord by identifying and discussing these problems openly and honestly in the SEDR.

To make it easier for individuals to review the SEDR, FORA should include a table of documents consulted to draw FORA’s conclusions about each of its designated Munitions Response Areas (MRAs). References such as “(USA 2000b)” scattered throughout the SEDR make it more difficult to determine exactly what data are being summarized for each MRA. Alternatively, FORA could split up Section 14 and provide a separate References section for Sections 1-13.

Otherwise the document is well written and intuitively organized. The maps and figures are informative and well laid out, but again more data could be presented. It would be in all party’s interests to make this report as comprehensive as possible. This will help clearly identify what properties and contamination that FORA is responsible for.

Seaside MRA

The lack of soils data for this MRA in particular is a major issue. There are existing data in the form of conformation reports, etc. that demonstrate that even in areas where the Army has determined that “No Further Action” is necessary dangerous contamination still remains. Remediation activities at the Seaside MRA are not complete, even areas deemed safe by the Army. FORA must critically evaluate all of the Army’s conclusions for these sites. As previously noted, the Army has used outdated standards to evaluate many of these sites, particularly for lead. The concentrations that remain are unacceptable for a substance that has no lower threshold for toxicity (ATSDR 2007). These inaccuracies are not uncommon (see Site 39 Post-Remediation Sampling reports).

Section 4.7 should recommend additional evaluations of soil contamination at former firing ranges such as Site 39 to address these problems.

Specific Comments:

Section 4.7 page 4-13, second open bullet: “Conduct a Residential Quality Assurance (RQA) Pilot Study to assess the small potential for risk from undetected MEC in future residential areas.” By describing the risk from undetected MEC as “small,” FORA appears to have already made a determination about the risks in these areas. It is improper to pre-judge the results of a risk assessment, and these types of statements damage FORA’s credibility as an independent entity from the Army. FORA should remove the “small” adjective and avoid these sorts of statements in the future.

Parker Flats MRA

When evaluating Hazardous and Toxic Waste conditions, FORA must remember that many of the screening values used by the Army are completely inappropriate. They are based on old data from 1991-3 and do not reflect the current state of the toxicological science. None of these standards were re-evaluated as in the controversial Second Five-Year Review conducted by the Army as required.

Specific Comments:

Section 5.7 page 4-13, third bullet: “Conduct a Residential Quality Assurance (RQA) Pilot Study to assess the small potential for risk from undetected MEC in future residential areas.” By describing the risk from undetected MEC as “small,” FORA appears to have already made a determination about the risks in these areas. It is improper to pre-judge the results of a risk assessment. Please see specific comments for the Seaside MRA.

CSUMB MRA

We have no comments on this Section

Development North MRA

Specific Comments

Section 7.3.4, page 7-5, last paragraph: The text refers to Table 7.3-5 for a summarization of HTW data for this MRA. The table detailing this information is Table 7.3-4.

Interim Action Ranges MRA

Small arms ranges have been identified within the boundaries of this MRA (Range 43). Section 8.3.3 states that no further action is recommended for HTW at this MRA but Table 8.3-5 states that sampling has identified lead levels in soils that are above screening levels for ecological receptors and that an investigation into remedial options was recommended. This is simply one instance of the FOSET incorrectly stating that areas are safe, and illustrates the risks that FORA takes when it accepts Army conclusions at face value. Please see our comments regarding soil contamination in the General Comments and Seaside MRA Sections of these comments.

FORA should state what actions it intends on taking at Range 43 in the future.

The site still contains numerous special case areas where MEC still remain after the major removal action for Ranges 43-48. This section makes no mention of these areas or the need to address them. Simply stating that they are not an issue does not make it so. This is a major problem and needs to be addressed in the next version of the SEDR.

Specific Comments

Section 8.3.1, page 8-5, last bullet: The summary of the 2003 prescribed burn omits the many problems this burn caused such as the fact that it went out of control and burned three times the area it intended and exposed residents to high concentrations of smoke and particulate matter. The statement that 95% of the vegetation was cleared is misleading, since manual clearance of stumps and other burned debris was still required.

MOUT Site MRA

Army investigations into this area have been incredibly limited, even though it is one of the oldest portions of Fort Ord and has had a number of historical uses. The exact nature of these uses, particularly during the early days of the base, is not fully known but have included small arms training. Despite this uncertainty the Army has recommended no further action for MRS-270 based almost entirely on a site walk. This is grossly insufficient for a site that has been used for over 90 years. Surface conditions have almost certainly changed over the years and visual inspections cannot account for conditions below ground. FORA should conduct soil sampling at MRS-270 to evaluate soil contamination in the area before proceeding to the RI.

Laguna Seca MRA

As previously noted, the Army's efforts to remediate soil at the Site 39 property have not been as successful as they claim. Since this area contains portions of Site 39 and has been part of Fort Ord since its inception, FORA should conduct additional soil sampling in this MRA to verify that dangerous concentrations of soils do not remain.

DRO/Monterey MRA

The SEDR provides no data to verify that soil contamination did not result from the presence of small arms ranges within this MRA. Sites with a history of use going back as far as the DRO/Monterey MRA should be investigated as thoroughly as possible since historical records from the first half of the 20th century are often incomplete or inaccurate. Site walks cannot be considered sufficient, particularly since topography can change over time with use. FORA should conduct additional soil sampling in this MRA for lead and other heavy metals related to firing ranges.

East Garrison MRA

We have no additional comments on this section.

Disclaimer

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SC
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3-11-08

Fort Ord Reuse Authority (FORA)
100 12th St., Building 2880
Marina, CA 93933
c/o Mr. Stan Cook, Ms. Laura Baldwin

FOR THE ADMINISTRATIVE RECORD

RE: Comments; FORA ESCA Remediation Program (RP) / Document Control Number:
09595-07-078-001

Dear Mr. Cook and Ms. Baldwin,

Most agree the Army needs to clean up the mess it made at Fort Ord. However, under no circumstance should munitions cleanup be privatized and a waiver granted exempting adherence to Environmental laws in place to protect the public's health, safety, and the environment. To do so would be an abomination of due diligence and process. What is the justification for the Covenant Deferral Request?

"Because of missing or incomplete range activity records, misdirected shots, and poor or undocumented disposal practices, no area in Site 39 can be considered clear of UXO/OEW". This statement is typical of military munitions training ranges at former Fort Ord.

The proposed 3300 acres to be transferred for residential housing, commercial and other public uses is highly contaminated with UXO, OEW, and military munitions constituents.

1994 RI/FS;

"Site 39 was used Since the early 1900s for ordinance training activities. As a result, OEW, including UXO, is present at the site. OEW is defined as bombs and war heads; guided and unguided ballistic missiles; artillery, mortar, and rocket ammunition; small arms ammunition; anti-personnel and anti-tank mines; demolition charges; pyrotechnics; grenades; torpedoes and depth charges; containerized or uncontainerized high explosives and propellants; nuclear materials; chemicals and radiological agents; and all similar or related items designed to cause damage to personnel or materials. Oil in which explosive

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compounds are detected will be considered OEW if the concentration is sufficient to present an imminent hazard. UXO is a subset of OEW and consists of unexploded bombs, warheads, artillery shells, mortar rounds, and chemical weapons. Components or ordnance items (e.g., boosters, bursters, fuzes, igniter tubes) are also included in the UXO definition. Many of the UXO/OEW items listed above have been found at Site 39. Nonnuclear materials, chemical agents, or biological agents have been found or reported to have been used at the site.”

To date only limited sampling and removal has been conducted at most of the sites part of the Remediation Program (RP). The proposed FOSET and remediation is in large part based on assumptions rather than sound scientific methodology. There is a significant difference between sampling and clearance to a prescribed depth for a particular use. CERCLA would require a revised RI/FS and ROD for this program. Since the 1994 Base Wide RI/FS, the scope of land uses have changed significantly. Many sites included in the RP were not considered for residential uses because of the exposure dangers to public health and safety from UXO, OEW, and residual contamination.(1) (2)

The extent of contamination at former Fort Ord from military munitions training and disposal is unknown. Historically, dangerous military munitions and constituents show up in the most unlikely places. No square inch of former training ranges should be assumed to be free or safe from dangerous ordnance and chemicals. A example of military munitions live and inert found in parcels slated for residential development include but are not limited to the following;

fragment hand grenades MKII ,smoke hand grenades M18, hand grenade M10, 4inch trench mortars MK1, 4inch trench mortars FM, 4inch trenordnance components, blasting caps M6, blasting caps M7, hand grenade fuzes M228, 75mm Shrapnel MK1 , 37mm LE MK1 , 75mm HE MK1, Livens projector FM, surface trip flare M49, 3.5inch rocket M29, 35mm Rockets M73, 3inch Hotchkiss projector, activator mine AT M1, mine AT M1, primer igniter tube M57, cartridge ignition M2, signal illumination M125, mine fuze M6A1, rifle grenade M22, 57mm projector HE M306, flash artillery M110, projectile PD M503ch mortars HC, 3inch trench mortars MK1, 81mm mortar HE M43, 40mm projector M781

Because of the nature of military munitions use and cleanup, the strictest standards available, i.e. CIRCLA should be implemented to the greatest extent possible. Any attempts to side step or circumvent this public health and environmental law must not be allowed . To do so will likely result in negative human health and environmental impacts.

Historical maps indicate that over the years as ranges were decommissioned, new
FORA ESCA RP letter

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ranges the extent of which is unknown. How many millions of troops trained at Fort Ord? How many millions of pounds of munitions were used at former fort Ord? Of the millions of pounds of munitions used, how many millions of pounds of constituents were released into the environment? Where did the residual contamination go?

A new previously unidentified exposure pathway to human and ecological receptors now exists. The burning of former training ranges has resulted in a new and significant threat to human health and safety. A new RI/FS should include Ash analysis for all sites burned purposely or accidentally, and the potential onsite and offsite exposure to human and ecological receptors. This new exposure and potential effects on human and ecological receptors was never analyzed in the 1994 Base Wide RI/FS.

In the Monterey Herald dated 12-05-07 Pg. B6, there was a brief account of a recent U.S. Geological Survey study of ash resulting from the Southern California wild fires. The USGS study found caustic alkali materials and elevated levels of arsenic, lead, and other metals. The studies led author said that USGS found that "rainwater runoff from burned areas may hurt eco systems, aquatic wildfire habitat and surface water quality." Has the ESCA process analyzed the data revealed in this study? If not, why not?

It appears USGS is well equipped with staff and technology to analyze potential significant negative impacts resulting from burning wild land habitat. USGS participation in analyzing burn impacts at former Fort Ord could result in significant new information that would greatly benefit the full disclosure of impacts resulting from the burning. This new significant information will greatly benefit the understanding of potential adverse impacts by the public, regulators, decision makers, Army and all those involved in the ESCA process.

If USGS is not required to analyze data at the former Fort Ord, what justification exists for this decision?

Many military munitions constituents are known endocrine disruptors, carcinogens, mutagens, ect.. Environmental contamination is reaching epidemic levels likely due to lax regulation, oversight, and enforcement of environmental laws over industry and commerce. Nationally, conservatively, 1 in 150 children has autism. Asthma, Alzheimer's Disease, cancer, to list a few are at epidemic levels. Today, the U.S. public is sicker than ever before. USGS studies show pharmaceuticals are increasingly showing up in U.S. reclaimed and drinking water supplies. Is there endocrine disruptor screening being conducted at former Fort Ord? If not, why not? Does Soil analysis of ranges include every known or suspected OEW constituent used at For Ord? If not, why not?

The public is very concerned with the undermining of the Regulatory agencies and their

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current ability to protect human health, safety, and the environment. A 1999 EPA Range Rule position letter addressing Military Base Closures states; "During the last several years an increasing number of issues have arisen relative to UXO, hazardous contaminants, and military range cleanup. The following represents a description of the major EPA issues or concerns along with installations where we have encountered these problems. This list should not be construed as exhaustive." Since this EPA position letter it appears efforts are being made to circumvent the environmental laws in place to protect the public.(3)

FORA should adopt the Precautionary Principle (1998 Wingspread Statement) and apply it to the Fort Ord Reuse Plan to ensure safety for current and future generations to the greatest extent possible.(4)

Thank you for the opportunity to comment on this project. We look forward to your response to our concerns.

Sincerely,



Lance Houston
FOCAG Member

Cc.

Assemblyman John Laird
Cal DTSC, c/o Joyce Whiten and Yolanda Gaarza
U.S. EPA, Region 9, c/o Viola Cooper
Mick Weaver, FOCAG
Bruce Becker, FOCAG
Debra Mickelson
David Dilworth, HOPE

Attachments;

- (1) Scientific Integrity in Policy Making Update-July 2004 Introduction / Union of Concerned Scientists / Full Report @ www.ucsusa.org
- (2) EPA - Why we need a code of professional ethics
www.nteu280.org/Issues/NTEU-%20Professional%20Ethics.htm
- (3) 1999 EPA letter to DoD, Range Rule www.epa.gov/fedfac/documents/uxomemo.htm
- (4) 1998 Wingspread statement www.rachel.org/library/getfile.cfm?ID=189

Union of Concerned Scientists

www.ucsusa.org

Scientific Integrity in Policy Making Update-July 2004

Introduction

On February 18, 2004, 62 preeminent scientists including Nobel laureates, National Medal of Science recipients, former senior advisers to administrations of both parties, numerous members of the National Academy of Sciences, and other well-known researchers released a statement titled *Restoring Scientific Integrity in Policy Making*. In this statement, the scientists charged the Bush administration with widespread and unprecedented “manipulation of the process through which science enters into its decisions.” The scientists’ statement made brief reference to specific cases that illustrate this pattern of behavior. In conjunction with the statement, the Union of Concerned Scientists (UCS) released detailed documentation backing up the scientists’ charges in its report, *Scientific Integrity in Policy Making*.

On April 2, the White House Office of Science and Technology Policy issued a statement by Director John H. Marburger III that dismissed the scientists’ concerns and attempted to debunk the specific charges. In a detailed analysis released April 19, UCS reviewed each charge again, and directly addressed the administration’s responses, concluding, “UCS stands by the findings and conclusions of our report.” The UCS analysis found that the White House response failed to offer substantive evidence to support its claims. Instead, the White House document was filled with largely irrelevant information and arguments unrelated to the scientists’ charges.

“The administration is dismissive of the concerns of leading scientists across the country,” said Kurt Gottfried, UCS board chair and emeritus professor of physics at Cornell University. “The absence of a candid and constructive response from the White House is troubling, as these issues—from childhood lead poisoning and mercury emissions to climate change and nuclear weapons—have serious consequences for public health, well-being, and national security.”

Since the release of the UCS report in February, the administration has continued to undermine the integrity of science in policy making seemingly unchecked. Many scientists have spoken out about their frustration with an administration that has undermined the quality of the science that informs policy making by suppressing, distorting, or manipulating the work done by scientists at federal agencies and on scientific advisory panels. For instance, Michael Kelly, a biologist who had served at the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service for nine years, recently resigned his position and issued an indictment of Bush administration practices. As Kelly wrote, “I speak for many of my fellow biologists who are embarrassed and disgusted by the agency’s apparent misuse of science.”

This document investigates several new incidents that have surfaced since the February 2004 UCS report. These new incidents have been corroborated through in-depth interviews and internal government documents, including some documents released through the Freedom of Information Act. The cases that follow include:

- ! egregious disregard of scientific study, across several agencies, regarding the environmental impacts of mountaintop removal mining;
- ! censorship and distortion of scientific analysis, and manipulation of the scientific process, across several issues and agencies in regard to the Endangered Species Act;
- ! distortion of scientific knowledge in decisions about emergency contraception;
- ! new evidence about the use of political litmus tests for scientific advisory panel appointees. These new revelations put to rest any arguments offered by the administration that the cases to date have been isolated incidents involving a few bad actors.

Concern in the scientific community has continued to grow. In the months since the original UCS report, more than 4,000 scientists have signed onto the scientists' statement. Signers include 48 Nobel laureates, 62 National Medal of Science recipients, and 127 members of the National Academy of Sciences. A number of these scientists have served in multiple administrations, both Democratic and Republican, underscoring the unprecedented nature of this administration's practices and demonstrating that the issues of scientific integrity transcend partisan politics.

The United States has an impressive history of investing in and reaping the benefits of scientific research. The actions by the Bush administration threaten to undermine the morale and compromise the integrity of scientists working for and advising America's world-class governmental research institutions and agencies. Not only does the public expect and deserve government to provide it with accurate information, the government has a responsibility to ensure that policy decisions are not based on intentionally or knowingly flawed science. To do so carries serious implications for the health, safety, and environment of all Americans.

Given the lack of serious consideration and response by the administration to concerns raised by scores of prominent scientists, UCS is committed to continuing to investigate and publicize cases—corroborated by witnesses and documentation—in which politics is allowed to stifle or distort the integrity of the scientific process in governmental policy making. UCS—working with scientists across many disciplines, other organizations, and elected officials—will also seek to develop and implement solutions that will protect government scientists from retribution when they bring scientific abuse to light, provide better scientific advice to Congress, strengthen the role of the Office of Science and Technology Policy, strengthen and ensure adherence to conflict of interest guidelines for federal advisory panels, and ensure full access to government scientific analysis that has not been legitimately classified for national security reasons.

WHY WE NEED A CODE OF PROFESSIONAL ETHICS

www.nteu280.org/Issues/NTEU-%20Professional%20Ethics.htm

This document is intended to explain why a code of professional ethics is needed in the EPA workplace.

8/25/99

Management Practices and Workplace Conditions of Concern Because They Create Pressure To Violate the Code of Ethics For Professionals at EPA

There are current management practices and workplace conditions at EPA condoned by some elements of management which place strong pressure on EPA professionals to violate ethical principles and practices. Several examples follow:

1. Fear by some EPA managers of political retribution from economically powerful industries that are doing things harmful to the environment is one negative condition we as professionals must deal with at EPA. Some managers fear being punished if they tell the truth and/or "do the right thing" with regard to controlling the environmental problem which that particular industry is causing. This is especially problematic when the fearful manager is at the top of an organization's chain of command. The fearful manager "chickens out," because its easier to deal with the dismay and anger of the professionals that work for him or her than to deal with the dismay and anger of higher echelon managers or of an industry with lots of money to contribute to the re-election campaigns of members of Congress and with plenty of access to those members and their staffs, and with the certainty of a sympathetic hearing.
2. It is this condition - political pressure down the chain of command - that is the source of the problem for most unethical behavior by professionals at EPA: Frightened managers pressure professionals to write assessments and analyses that appear to justify a control action which is well less than that which the real risks and real costs suggest are actually warranted.
3. There is a lack of a management process for dealing with a conflict between a professionals's analysis of an issue and Agency policy on that issue. This is a problem: 1) when facts elicited in an analysis do not support the Agency policy and the analysis is then ignored, altered or otherwise subverted by management; or 2) when the professional refuses to remain silent on the issue, and is then subjected to disciplinary sanctions.
4. Tracking and assessment of professional performance should be based on the number of assessments or analyses prepared and their quality, as judged in light of applicable professional standards, and not exclusively on the number of assessments or analyses that produced a certain prescribed result. (E.g., the performance standard should not be "number of new pesticides registered" but "number of proposed new pesticides assessed.")

5. When work is initially assigned to a professional, the assignment must be made in such a way that it is clear that the work product is to be a complete, unconstrained analysis or assessment of the matter at issue.

6. The amount of work time and calendar time allotted to the professional assigned to do the work by the manager assigning the work must be appropriate to the importance of the results. Consideration must be given to the health and environmental risks involved, control and other costs, the complexity of the subject matter, the size of the relevant literature, and the number of experts on that subject within and outside EPA who must be consulted for a complete and balanced work product to be produced.

7. As civil servants serving the public interest, U.S. Environmental Protection Agency employees are entrusted with the responsibility of acting conscientiously to fulfill EPA's assigned mission to protect human health and the environment:

o Those in our trust include:

- The American public, including dependent minors and others not yet of voting age
- Other people throughout the world who are affected by the actions of Americans both here and abroad
- Future generations
- Other living things
- The Earth itself and its ability to sustain life.

o Those affected by our actions also include:

- Those who release pollutants into our environment
- Producers and users of toxic substances
- Those who generate, transport and dispose of hazardous wastes and other wastes and discards.

Those in this latter group are members of the "regulated community"; they are *not* our "customers". They are those whose behavior we must monitor, assess and enforce against environmental standards and the law.

We accept the usefulness of obtaining feedback from those in the first group regarding their satisfaction with our performance. Although some in the latter group appreciate our efforts and do their best to cooperate, many others do not. We reject the validity of assessing how "satisfied" those in the latter group are with our performance. Every person we deal with, including those in the "the regulated community", deserve to be treated with dignity and respect. But they also need to be handled with candor as to the seriousness of any violations and their impact on the public interest. They need to be handled with firmness when they violate the law.

8. In working to fulfill its mission, EPA managers and staff rarely interact directly with the general public or with regulated firms. Instead, for most programs, EPA managers and staff work with and through State and local agencies. While in some cases the relationship between EPA and the State or Local agency is one of true partnership, more often it is not. Further, with the current focus within EPA on identifying customers and getting customer feedback, there is also a tendency to view State and local environmental agencies as our

"customers." Neither is an accurate description of the nature of the relationship in most cases. Treating State and local environmental agencies and officials as "customers" is therefore inappropriate. They are not our customers; they are at best our partners, but more often they are an additional class of entities and individuals that we - to all intents and purposes - regulate.

1999 EPA Position Paper Range Rule

To

Department of Defense (DoD)

Ms. Sherri W. Goodman

Deputy Under Secretary of Defense

dated April 22, 1999

EPA ISSUES AT CLOSED, TRANSFERRED, AND TRANSFERRING MILITARY RANGES
During the last several years an increasing number of issues have arisen relative to UXO, hazardous contaminants, and military range cleanup. The following represents a description of the major EPA issues or concerns along with installations where we have encountered these problems. This list should not be construed as exhaustive.

1. Range Assessment and Investigation

1. Range investigations often lack sufficient site-specific information. The Services and the USACE generally are not adhering to CERCLA standards and procedures for assessment and cleanup. The PA/SI, RI/FS, Removal, Remedial, and NOFA processes need to be equivalent to those specified under CERCLA and the NCP. [For example, at the Black Hills Army Depot the PA/SI did not meet the minimum requirements set by EPA for assessment. The RI/FS workplans and all associated documents were based upon this deficient PA/SI and were also determined not to meet EPA minimum requirements. Other sites with similar issues include Savanna Army Depot, Badlands Bombing Range, Lowry Bombing Range, Fort Ritchie, Fort Meade, and the Nansmond Ordnance Depot.]
2. There has been an increasing tendency for UXO investigations to use statistical grid sampling methods. Although statistical grid sampling may yield additional information, extrapolation of these results often lead to inappropriate decisions. The statistical grid sampling approach used by the USACE would only be appropriate if one expected a relatively uniform distribution of UXO, which is not the case at military ranges. EPA believes that in order to achieve protection of human health and the environment, UXO investigations should be based on a combination of information such as historical data (e.g., archives, photos, interviews), range use information, visual site inspections, previous detection surveys, previous Explosives and Ordnance Demolition (EOD) Unit response actions, and the resultant knowledge of impact zones and "hot spots." [For example, at the Lowry Bombing Range the USACE proposed and attempted to use the statistical sampling and extrapolation methodology. The State of Colorado has recently indicated that those methods significantly underestimated the amount of ordnance present (inert or live). Other sites that have similar issues are Savanna Army Depot, Fort Ord, Fort Ritchie, and the Nansmond Army Depot.]
3. Military ranges generally are not designated by the Services or the USACE as areas of concern (AOC) even when the installation is listed on the

Superfund National Priorities List (NPL). EPA believes all areas at closed, transferred, and transferring bases with known or suspected UXO are areas of concern and need to be evaluated in the CERCLA and NCP context. More recently, the Services and the USACE have unilaterally excluded UXO areas from proposed CERCLA Records of Decisions (RODs) or from RODs being implemented where UXO was included in the remedy (e.g., NAF Adak, Umatilla Army Depot) . [At the Umatilla Army Depot, the Army has indicated that they will not address UXO as specified in the ROD. This decision is now in dispute resolution. At NAF Adak, the Navy has recently indicated that they do not wish to proceed with a ROD for a separate UXO operable unit. At Savanna Army Depot, the entire depot (approximately 21 square miles) was initially utilized as a firing range. Activities up to 1997 were not directed at UXO assessment and response, rather they were directed in large degree toward open burning and disposal grounds and non-explosive chemical contamination. Up to this time, UXO in potential firing areas was not included within the realm of the potential cleanup, therefore, most UXO prone or suspected areas were not considered areas of concern. In 1998, the Army tentatively agreed to evaluate several options for assessing areas known or suspected to be contaminated with UXO. The USACE has proposed to use Sitestats/Gridstats which EPA believes is a very problematic analytical method (see 1b above). Other facilities that have ranges with similar issues include, but are not limited to: Jefferson Proving Ground, Lowry Bombing Range, Badlands Bombing Range, Fort Meade, Camp Bonneville, Fort Ord, Aberdeen Proving Ground, Tobyhanna Army Depot, NAF Adak, and Fort Ritchie.]

4. EPA is encouraged by DoD's recent shift to address ranges through a "risk management" strategy focusing on both range assessment and remediation for UXO and other constituents. DoD needs to continue to develop and ultimately implement this approach through the USACE and the Services. However, despite this recent change in strategy, EPA has noted at a number of ranges the USACE continues to apply statistical sampling and risk assessment methods which often lead to premature "informed risk management decisions." Since the proposed Range Rule process is heavily dependent upon accurate "informed risk management decision making," DoD needs to ensure that this revised strategy develops accurate information, reduces short-term risks, and sets the stage to achieve long-term risk reduction goals. The current approach utilized by the USACE generally does not address these goals. [For example, at Fort Ritchie, the Army had proposed to surface clear and provide contractor support in UXO areas that have been proposed by the LRA to include a residential area. Based in large degree upon the statistical sampling, the Army wanted to perform only a surface clearance, even though the DDESB standards recommend much more conservative clearance for residential land use. It is important to note that in many areas where UXO clearance is not performed to the frost line or sufficient depth, additional UXO is likely to surface via frost heaving or erosional processes (i.e., mortars have been found to surface on a golf course). These and other UXO-related issues require the

Army develop a long-term UXO remedial strategy for this area. Other ranges with similar circumstances include Savanna Army Depot, Lowry Bombing Range, Fort Meade, Nansmond Army Depot, Fort Ord, Jefferson Proving Ground, and Badlands Bombing Range.]

5. DoD is generally not applying the best available technologies to assess and remediate UXO. In most cases, there appears to be a standard approach to default to the traditional methods known as "mag and flag". Yet, according to the USACE and others, application of these methods often results in more expensive, slower, and less accurate UXO detections than other demonstrated technologies. DoD needs to begin using better technologies earlier to achieve the most protective level of UXO cleanup, while continuing to examine the capabilities, uncertainties, and acceptabilities of the various detection approaches. [For example, at Fort Ritchie only surface clearance is proposed for areas known to be contaminated with UXO that will be used for residential and commercial purposes. When asked what measures would be used during excavation, the Army indicated they would only have personnel on-site with a magnetometer. At Badlands Bombing Range, the artillery impact area was surveyed using mag and flag but this location would have been suitable for using multiple towed array sensor methods that have yielded more reliable results at other similar locations at Badlands.]
6. In those cases where UXO investigations at ranges (or UXO sites) have been performed, the general approach has been to limit investigation to known ranges/ UXO sites only. Investigations should not be limited to within the "fenceline," especially when information suggests that UXO problems are more extensive. [Although Aberdeen Proving Ground has agreed to perform additional clearance ¼ mile around the existing facility, no additional investigation is being performed off-site (e.g., especially in the adjacent rivers or in the Chesapeake Bay). Other sites with similar issues include the Badlands Bombing Range, Savanna Army Depot, Tooele Army Depot, Lowry Bombing Range, Jefferson Proving Ground, and NAF Adak.]

2. Non-Compliance with Regulatory Authorities

1. DDESB 6055.9 Standards for depth of clearance generally are not being followed. [For example, at Fort Ritchie a surface clearance is proposed for a residential area. DDESB 6055.9 Standards (chapter 12) specifies that default depths of clearance to 10 feet should be used unless an alternative is justified and approved by the DDESB based on detailed site-specific information. As no detailed investigations have taken place over the range areas at Fort Ritchie, a default clearance depth of 10 feet should be used (unless bedrock is shallower). Please note that EPA views chapter 12 as critical due to the nature of explosives safety issues. In addition, many other range situations have already been documented to have uncontrolled listed wastes (and/or hazardous substances) and may present an imminent and substantial endangerment to human health and the environment. Other ranges with similar problems include: Savanna Army Depot, Fort Meade,

Fort Ord, Badlands Bombing Range, Lowry Bombing Range, Umatilla Army Depot, Camp Bonneville, Jefferson Proving Ground, Nansmond Ordnance Depot, Tooele Army Depot, and NAF Adak.]

2. Current EPA environmental regulations, including, but not limited to, RCRA and CERCLA, are applicable, but generally are not being followed. [This is particularly relevant to the depth of clearance of UXO. Many UXO-contaminated areas at closed, transferred, or transferring military ranges are: 1) not being investigated, or 2) when discovered, are not being addressed consistent with human health, environmental, or explosives safety regulations. These types of situations have been noted at many ranges including: Savanna Army Depot, Fort Meade, Fort Ord, Badlands Bombing Range, Lowry Bombing Range, Umatilla Army Depot, Camp Bonneville, Jefferson Proving Ground, Nansmond Ordnance Depot, Tooele Army Depot, and NAF Adak. Other information pertinent to this issue is presented in 1(a) above, and 4(a) below.]

3. Communication, Coordination and Dissemination of Information

Efforts by the Services and the USACE to communicate the scope, nature, and extent of UXO response activities have not always been successful. In some cases, there has been little or no effort. Regulators and the public need to be better informed during all stages of the efforts to address military ranges. The over-reliance on time-critical response actions also tends to reduce coordination with the regulators and other non-DoD parties. [For example, the regulators and the public have been discouraged by the USACE lack of cooperation at the Black Hills Army Depot. Adequate information and answers concerning investigations and cleanup activities have not been provided to these parties. At Fort Wingate there has been little or no public involvement concerning UXO issues. At BRAC RAB meetings only cursory information is presented on the USACE activities. Neither the State, Tribes, or the general public have received sufficient documentation on the USACE UXO activities at Fort Wingate that has both BRAC and FUDS properties. Another example is with the proposed transfer of property at Fort McClellan. The Army has been in the process of negotiating a transfer of UXO contaminated property with the U.S. Fish and Wildlife Service (USFWS). It appears that State and Federal regulatory agencies have not been contacted to participate in these negotiations. Similar situations have been noted at the Badlands Bombing Range, Lowry Bombing Range, Jefferson Proving Ground, Fort Ord, and Fort Ritchie.]

4. Remedy Selection and Implementation

1. EPA believes some range UXO detection/clearance operations may not be appropriate for CERCLA removal nor RCRA emergency situations. To further complicate matters is the Service/USACE preference to implement "CERCLA-like" accelerated actions. Some of these actions may not be consistent with CERCLA and the NCP and generally result in less regulator and public oversight/involvement. Using time-critical/emergency responses as the sole response paradigm should not be a default approach for the Services/USACE, especially for range problems that are well beyond the scope of such actions. [For example, at Fort Ord clearance was conducted

for several years as a time-critical removal action. Similar circumstances are noted at Jefferson Proving Ground, Umatilla Army Depot, and Fort Meade.]

2. There is a general over-reliance on institutional controls as the principal remedy component or as the only remedy to ensure protectiveness. Where

employed, the institutional controls may not be adequately defined, roles and responsibilities are left unclear and ultimately they may not prevent future incidents where UXO is encountered. The Services and the USACE are not always implementing adequate access controls (e.g., fencing, posting of guards, patrols, etc.) where needed. In addition, periodic inspections need to be performed at many locations where UXO has been identified, is suspected, or may have surfaced via erosion or frost heaving at previously cleared areas. [For example, at NAF Adak institutional controls are proposed for vast areas outside the town where UXO will generally not be cleared, nor has the area been adequately investigated despite DoD records indicating potentially extensive UXO contamination. This appears to be a problem because the recent reuse proposals to expand the town's uses are expected to lead to an increase in the population (primarily members of the Aleut Tribe, especially children). At Tobyhanna Army Depot, a 20,000 acre UXO area is now a State park where only signs were posted. The park was closed in 1997 when 53 unexploded 37 mm shells were found and a recent removal action has found significant additional UXO. Other examples of access problems have been noted at Camp Elliott (Tierrasanta), Camp Bonneville, Jefferson Proving Ground, Lowry Bombing Range, Badlands Bombing Range, Fort Ritchie, Fort Wingate, and Nansemond Army Depot.]

3. Effective regulatory and DoD oversight is an important aspect of remedy implementation. When it is not implemented, the risk of incidents increase. [For example, the UXO from the Fort Irwin cleanup was mistaken for clean scrap and transported to a scrap yard for recycling (in violation of RCRA – the UXO went to a non-permitted facility without manifest). An employee was killed when he attempted to cut live UXO with welding equipment. Other examples of where better oversight was needed include, Fort Ord, Jefferson Proving Ground, and Fort Meade where UXO contaminated areas were inappropriately slated for transfer.]

5. Transfer of UXO Contaminated Land

1. EPA believes DoD generally should retain ownership and/or control of UXO areas that are not yet assessed and/or cleaned up as determined by DoD, the appropriate regulatory agencies and the public (e.g., "permanently duded" impact areas; UXO burial sites; sites not yet scheduled to be remediated). Federal land management agencies generally want DoD to complete all environmental restoration prior to any transfer to them. Present land transfer practices by DoD indicate that UXO contaminated lands continue to be transferred. [At Fort McClellan the transfer of approximately 10,000 acres of UXO contaminated land has been proposed. The area has not been adequately assessed and UXO contamination not yet addressed. The

proposed transfer is to the USFWS who do not appear to have sufficient resources to address UXO contamination of this magnitude. At Jefferson Proving Ground, a portion of UXO contaminated property north of the firing line was proposed for transfer to the USFWS. The area was proposed to be used for recreational purposes, but it has not been thoroughly assessed and UXO not addressed. It has also been mentioned that the USFWS has since decided not to proceed with the transfer. At Nomans Land Island,

although the fed-to-fed transfer has already taken place, DoD has a continuing obligation to address UXO safety issues there, as does the USFWS (i.e., to secure the property against trespassers, per the transfer agreement). Although the area is planned to be used as a wildlife refuge, it is known to be frequented by boating enthusiasts, and UXO safety issues remain because storm events and other processes (freeze/thaw) will continue to expose UXO in areas where only surface clearance has been performed. At Fort Wingate, two closed test ranges containing UXO are slated for transfer to the DOI. The land may then be re-developed for residential, commercial, open space, and subsistence farming/ranching uses. Much of these lands are proposed to be transferred to the DOI. Another example is the UXO contaminated areas transferred to the State at the Tobyhanna Army Depot.]

2. In some cases, the Services and the USACE have performed only a cursory investigation (see # 1). Based upon limited information, property has been and is being transferred. Rather than sufficiently assessing sites and making the property safe for use or transfer, the DoD and the Services appear to be transferring the land and then waiting for others to identify problems for DoD response. [For example, DoD is contacted periodically about newly found UXO at a number of transferred sites. This has been noted at the Aberdeen Proving Ground, Raritan Arsenal, Morgan Depot, White Sands Missile Range, Lowry Bombing Range, Badlands Bombing Range, Fort Ritchie, Tobyhanna Army Depot, Fort Ord, Fort Meade (i.e., Tipton Air Field), Jefferson Proving Ground, Raritan Arsenal, Morgan Depot, and at EPA private sites such as the Cohen Property Site in Massachusetts. Although the EOD units have a good response record, their responses tend to be limited to the newly found UXO, with generally no further investigation performed to determine the nature and extent of any additional UXO. This EOD "house call" type follow-up cannot substitute for adequate investigations.]

The Wingspread Statement on the Precautionary Principle

January 1998

The release and use of toxic substances, the exploitation of resources, and physical alterations of the environment have had substantial unintended consequences affecting human health and the environment. Some of these concerns are high rates of learning deficiencies, asthma, cancer, birth defects and species extinctions; along with global climate change, stratospheric ozone depletion and worldwide contamination with toxic substances and nuclear materials.

We believe existing environmental regulations and other decisions, particularly those based on risk assessment, have failed to protect adequately human health and the environment - the larger system of which humans are but a part.

We believe there is compelling evidence that damage to humans and the worldwide environment is of such magnitude and seriousness that new principles for conducting human activities are necessary.

While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists and other individuals must adopt a precautionary approach to all human endeavors.

Therefore, it is necessary to implement the Precautionary Principle: When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

In this context the proponent of an activity, rather than the public, should bear the burden of proof.

The process of applying the Precautionary Principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.

=====

Participants: Dr. Nicholas Ashford, M.I.T.; Katherine Barrett, Univ. of British Columbia; Anita Bernstein, Chicago-Kent College of Law; Dr. Robert Costanza, Univ. of Maryland; Pat Costner, Greenpeace; Dr. Carl Cranor, Univ. of California, Riverside; Dr. Peter deFur, Virginia Commonwealth Univ.; Gordon Durnil, Attorney; Dr. Kenneth Geiser, Toxics Use Reduction Inst., Univ. of Mass., Lowell; Dr. Andrew Jordan, Centre for Social and Economic Research on the Global Environment, Univ. Of East Anglia; Andrew King, United Steelworkers of America, Canadian Office; Dr. Frederick Kirschenmann, Farmer; Stephen Lester, Center for Health, Environment and Justice; Sue Maret, Union Inst.; Dr. Michael M'Gonigle, Univ. of Victoria, British Columbia; Dr. Peter Montague, Environmental Research Foundation; Dr. John Peterson Myers, W. Alton Jones Foundation; Dr. Mary O'Brien, Environmental Consultant; Dr. David

Ozonoff, Boston Univ.; Carolyn Raffensperger, Science and Environmental Health Network; Dr. Philip Regal, Univ. of Minnesota; Hon. Pamela Resor, Massachusetts House of Representatives; Florence Robinson, Louisiana Environmental Network; Dr. Ted Schettler, Physicians for Social Responsibility; Ted Smith, Silicon Valley Toxics Coalition; Dr. Klaus-Richard Sperling, Alfred-Wegener- Institut, Hamburg; Dr. Sandra Steingraber, Author; Diane Takvorian, Environmental Health Coalition; Joel Tickner, Univ. of Mass., Lowell; Dr. Konrad von Moltke, Dartmouth College; Dr. Bo Wahlstrom, KEMI (National Chemical Inspectorate), Sweden; Jackie Warledo, Indigenous Environmental Network;



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105**

July 29, 2008

Michael A. Houlemard, Jr.
Fort Ord Reuse Authority
100 12th Street, Building 2880
Marina, CA 93933

Re: Approval of Draft Final Summary of Existing Data Report, Former Fort Ord
Monterey County, California, dated June 25, 2008.

Dear Mr. Houlemard:

EPA has reviewed the Draft Final Summary of Existing Data Report, Former Fort Ord, Monterey, County, California, dated June 25, 2008 (SEDR). As required by Task 2, Appendix B, Statement of Work, of the Administrative Order on Consent for Cleanup of Portions of the Former Fort Ord, CERCLA Docket No. R9-2007-03 (AOC), the Draft Final SEDR:

1. Summarized all Hazardous and Toxic Waste and Munitions and Explosives of Concern (MEC) investigations, removal actions, After Action Reports, MEC incidents, and anticipated future uses of the Environmental Services Cooperative Agreement parcels,
2. Identified data gaps, and
3. Provided preliminary risk assessments, Operational Unit Specific Conceptual Site Models, next step recommendations, and a proposed cleanup schedule.

It is our understanding that the schedule provided in the SEDR is only a preliminary proposal and can be modified with concurrence from the Fort Ord Reuse Authority, the United States Army, and the Environmental Protection Agency after consultation with the California Department of Toxic Substances Control. In addition, early submittal of any AOC specified documents and reports will not trigger a schedule related Stipulated Penalty as specified in Section XXIV, Stipulated Penalties, of the AOC. However, Regulatory review of documents submitted prior to scheduled date will be subject to workload considerations.

Pursuant to Section XIV, EPA Approval of Plans and Other Submissions, of the AOC, and after consultation with the California Department of Toxic Substances Control, EPA hereby approves the Draft Final SEDR.

If you have any questions, please do not hesitate to call me at (415) 972-3681 or e-mail me at huang.judy@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Judy C. Huang". The signature is written in a cursive style with a long horizontal flourish at the end.

Judy C. Huang, P.E.
Remedial Project Manager
Superfund Division

Cc:

Robert Carr (EPA)

Gail Youngblood
Fort Ord Base Realignment and Closure Office
P.O. Box 5004
Monterey, CA 93944-5004

Stan Cook
Fort Ord Reuse Authority
100 12th Street, Building 2880
Marina, CA 93933

Roman Racca (DTSC)
8800 Cal Center Drive
Sacramento, CA 95826



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT ORD OFFICE, ARMY BASE REALIGNMENT AND CLOSURE
P.O. BOX 5008, BUILDING #4463 GIGLING ROAD
MONTEREY, CALIFORNIA 93944-5008

ESCA-0086
ESCA AR

JUL 08 2008

Base Realignment and Closure

Stan Cook
ESCA Remediation Program Manager
Fort Ord Reuse Authority
100 12th Street
Marina, CA 93933

Subject: *Draft Final Summary of Existing Data Report (SEDR)*, dated June 25, 2008,
received on June 30, 2008.

Dear Mr. Cook:

Thank you for an opportunity to review and comment on the subject document. We appreciate that our comments to the draft version of the document have been incorporated. During the most recent review additional comments related to natural resource matters were generated; these comments are listed at the enclosure. A copy of this letter will be furnished to U.S. Environmental Protection Agency (Judy Huang) and California Department of Toxic Substances Control (Roman Racca).

Sincerely,

Gail Youngblood
BRAC Environmental Coordinator
Fort Ord Field Office

Enclosure

DRAFT FINAL Summary of Existing Data Report (SEDR)
June 25, 2008

Army Comments on Natural Resources Related Issues:

1. Page 5-35, Table 5.5-2, Parker Flats MRA – Habitat Management Plan (HMP) Category by Parcel. The HMP Designated Use for Development Parcels E19a.3, E19a.5, and E21b.3 should also be identified as “(Borderland Buffer along NRMA Interface).” See previous section on Table 4.5-2 for consistency.
2. Page 6-25, Table 6.5-2, CSUMB MRA – HMP Category by Parcel. The HMP Designated Use for Development Parcel S1.3.2 should be identified as “Development (Borderland Buffer along the southeast corner of the parcel along the NRMA Interface).” See previous comment.
3. Page 7-24, Table 7.5-2, Development North MRA – HMP Category by Parcel. The HMP Designated Use for Parcels E19a.3, L5.7 and L20.2.1 should be identified as “Development (Borderland Buffer along the southeast corner of the parcel along the NRMA Interface).”
4. Figure 7.4-1. The eastern side of Parcel L5.7 should not be mapped as “Borderland Interface.” See HMP Attachment A as revised in 2005. Also, revise Figure 7.5-1 as well as described above.
5. Page 8-35, Table 8.5-2, Interim Action Ranges MRA – HMP Category by Parcel. The HMP Designated Use for Parcel E40 should be identified as “Development (Borderland Buffer along the NRMA Interface).”
6. Page 10-7, Section 10.4.3, Laguna Seca MRA - Reasonably Foreseeable Future Land Use. The second sentence indicates that “expansion of Laguna Seca Raceway facilities” is planned to occur in this area. This planned use is not consistent with the HMP, which identifies the area as Recreation Area Expansion #1 for which allowable use is maintained grasslands for overflow parking during Laguna Seca events. In addition, the planned use may not be consistent with the Fort Ord Base Reuse Plan, which identifies the area as Open Space/Recreation. Please evaluate the text of this section for possible clarifications.

MONTEREY COUNTY



MILITARY & VETERANS AFFAIRS OFFICE

RICHARD F. GARZA, MILITARY & VETERANS AFFAIRS OFFICER
1200 AGUAJITO RD. RM 003, MONTEREY, CA 93940
(831) 647-7610 FAX # (831) 647-7618

Date: July 18, 2008

To: Stan Cook, ESCA Program Manager.

Subject: Comments on the Final Draft of the Summary of Existing Data Report.

Mr. Cook:

The Special Actions Committee, a committee assigned by the County of Monterey, State Veterans Cemetery Citizens Action Committee (CAC), respectfully submits this response on the subject matter above. A hard copy of this correspondence with attachments will be hand carried to your office early Monday morning July 21, 2008.

Comments on ^{SEDR} ~~CIOP~~ ^{CAS} submitted by CAC:

← CAS 9/18/08

1. Careful consideration should be devoted to include all elements that will provide for all planning needs to incorporate the State Veterans Cemetery officially in the Final ~~CIOP~~ ^{CAS} _{SEDR}.

← CAS 9/18/08

2. Particular attention is invited to the following provisions:

a. Article 5.4.3 Reasonably Foreseeable Future Land Use. Please include "The State Central Coast Veterans' Cemetery".

b. Map Figure 5.4-1. Please include the attached map of the Central Coast State Veterans Cemetery dated 6/18/2008, on the Parker Flats MRA Land Use Profile Reuse Plan Map Figure 5.4-1.

These review plans are respectfully submitted.

CAC Special Actions Committee Members:

Jack Stewart
CAC Vice Chair

Edith Johnsen

Gordon Nakagawa



Fort Ord Environmental Justice Network, Inc.

Mailing address - P.O. Box 361....Marina, CA. 93933

831-582-0803 voice & fax...831-277-5241

www.foejn.org - ejustice@mbay.net

July 16, 2008

Fort Ord Reuse Authority
Michael Houlemard, Exe. Officer
100 12th St.
Marina, CA 93933-6006



RE: Draft Final Summary of Existing Data Report (SEDR).

Dear Mr. Houlemard:

Please see attached hard copy, enclosed report submitted by Fort Ord Environmental Justice Network, Inc. for inclusion in the Administrative Records.

In addition this report reflects additional comments from the community.

Please see report titled Draft Summary of Existing Data Report, submitted March 15, 2008, concerning the FOR A's Agreement of Consent. FOEJN commented on and submitted the report for insertion in the Administrative records. Our comments are not recorded in your latest report. FOEJN has commented repeatedly about the health hazards from lead exposure.

We would like to emphasize again that we feel the data from the Army that FORA relies so heavily on are not representative of actual conditions on Fort Ord. This is especially true for lead related soil contamination. The Army's approach to evaluating lead has been highly subjective and has excluded areas with significant lead contamination from its cleanup activities.

If you wish to discuss contents of this report further, please contact LeVonne Stone, FOEJN TAG Program Manager at 831-582-0803

Thank You,

LeVonne Stone

A handwritten signature in cursive script that reads "LeVonne Stone".

Cc: Viola Cooper, USEPA, Region 1X

Please sign upon receiving, giving me a copy of signature page

**Comments on
Draft Final
Summary of Existing Data Report
On Behalf of
The Fort Ord Environmental Justice Network**

Fort Ord Reuse Authority
Stan Cook, FORA ESCA Program Manager

Mr. Cook,

RE: Draft Final Summary of Existing Date Report

This letter constitutes our formal comments on the Draft Final Summary of Existing Data Report (SEDR). Please include this letter in the Administrative Record of the cleanup of Fort Ord.

Please include the comments we filed on the draft version in the Final document as well as FORA's response to those concerns. We submitted comments on the Draft SEDR on March 15, 2008. They should have been included in this Draft Final version and need to be included in the final so the community's concerned are acknowledged, and acted on.

We would like to emphasize again that we feel the data from the Army that FORA relies so heavily on are not representative of actual conditions on Fort Ord. This is especially true for lead related soil contamination. The Army's approach to evaluating lead has been highly subjective and has excluded areas with significant lead contamination from its cleanup activities.

The Army has a history of misrepresenting its own data or drawing conclusions based on insufficient data. FORA accepts these data at its own peril, as many properties that the Army has determined to be safe may actually require additional actions to meet FORA and regulatory standards. Concentrations over 10,000 ppm are possible in many of these areas. Such high levels of lead are incredibly dangerous to both humans and wildlife.

We outlined the problems with the Army's approach in our comments on the Draft SEDR, and they remain applicable for the Draft Final version as well. Please review our previous comments for more information about the risks of lead exposure and the unacceptable methodologies used by the Army to estimate those exposures. Allowing the Army to leave this contamination in place could result in delays in the development or use of these properties.

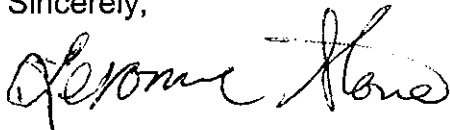
We would also like to contest the Army's description of the burning of vegetation in MRS-28 as an "accidental fire" (comment no. 16). These areas were burned when a prescribed burn escaped the Army's control in 2003 and burned three times the area intended. Simply

describing this as an "accidental fire" ignores the Army's responsibility in this major failure in protecting the health and safety of the surrounding communities.

The public's opposition to prescribed burning is grounded in this event, primarily because the fire came within a few hundred feet of residential areas and blew so much unhealthy smoke over the community that it could be seen from space. We would recommend adding "caused by an out of control Army prescribed burn" to the language suggested by the Army. The new sentence should read "Given the terrain, the vegetation removal was performed primarily through manual practices, although a significant portion of the MRA was burned during an accidental fire *caused by an out of control Army prescribed burn* in July 2003."

Otherwise we find the document well organized and well written. Please feel free to contact us if you have any questions about our previous comments, the flaws in the Army's methodologies, or the health effects of lead exposure.

Sincerely,



LeVonne Stone,
Executive Director, FOEJN

Disclaimer

"This document has been funded partly or wholly through the use of U.S EPA Technical Assistance Grant Funds. Its contents do not necessarily reflect the policies, actions or positions of the U.S. Environmental Protection Agency. The Fort Ord Environmental Justice Network Inc. does not speak for nor represent the U.S. Environmental Protection Agency."

Mention of any trade name or commercial product or company does not constitute endorsement by any individual or party that prepared or sponsored this report.

Fort Ord Community Advisory Group (FOCAG)
Mike Weaver, Secretary
P.O. Box 2173
Monterey, CA 93942
Email: focag@fortordcag.org
Website: www.fortordcag.org

Fort Ord Reuse Authority (FOR A)
c/o Mr. Stan Cook
100 12th Street, Building 2880
Marina, CA 93933

Re: DRAFT FINAL Summary of Existing Data Report
FOR THE ADMINISTRATIVE RECORD (via fax 831-883-3675, hard copy to follow)

July 29, 2008

Dear Mr. Cook,

Regarding the document prepared for your Planning Agency titled:
DRAFT FINAL Summary of Existing Data Report, and dated June 25, 2008:
It ties your FOR A agency's plans for property reuse of the former Fort Ord
Army base in with a "Reader's Digest" type condensed version of known and
suspected dangers and an abbreviated version of how your for-profit clean up
contractor, LFR, plans to deal with it.

Your for-profit clean up contractor, LFR and it's subsidiaries, prepared the
document, identified the clean up issues, and will be the contractor FOR A has
designated responsible for cleaning up what they have identified.

- 1) This contravenes CERCLA
- 2) This ignores your FOR A Planning Agency's responsibility under CEQA.

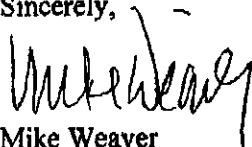
As secretary of the Fort Ord Community Advisory Group, I cannot condone this.

Your Fort Ord Reuse Authority is the lead agency, the planning agency, for the
property reuse of former Fort Ord. The Fort Ord Community Advisory Group has
repeatedly requested your compliance with CEQA, the California Environmental
Quality Act.

Sir, there are millions of dollars of taxpayer money at stake. There is the health and safety
of both existing and future residents both on and adjacent to this former Army base.
Environmental issues abound. Once again you are asked to please comply with the law.

Your substantive response to our concerns is awaited.

Sincerely,

A handwritten signature in black ink that reads "Mike Weaver". The signature is written in a cursive, slightly slanted style.

Mike Weaver

Secretary, FOCAG

Phone: 831-484-6659

Direct email: michaelrweaver@att.net

c.c.

California Department of Toxic Substance Control
United States Environmental Protection Agency, Region 9
United States Army BRAC, former Fort Ord
Environmental Justice Network