Superfund Proposed Plan

Remedial Action is Proposed for California State University Monterey Bay Off-Campus Munitions Response Area, Group 2 Remedial Investigation/Feasibility Study, Former Fort Ord, Monterey County, California

United States Department of the Army **June 5, 2013**

INTRODUCTION

The United States Department of the Army (Army) is presenting this **Proposed Plan*** to the public for review and comment regarding the proposed cleanup of the Group 2 **Munitions Response Area** (**MRA**), which consists of the California State University Monterey Bay (CSUMB) Off-Campus MRA located at the former Fort Ord Army base in Monterey County, California (**Figure 1**). Specifically, this Proposed Plan identifies the **Preferred Remedial Alternative** of **Land Use Controls (LUCs)** for managing the risk to future land users from **Munitions and Explosives of Concern (MEC)** that potentially remain in the CSUMB Off-Campus MRA where MEC investigations and removal actions have been completed. The *Group 2 Remedial Investigation/Feasibility Study, California State University Monterey Bay Off-Campus Munitions Response Area, Former Fort Ord, Monterey County, California* (Group 2 RI/FS) (ESCA RP Team 2013) was conducted as part of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** or **Superfund** process for the site.

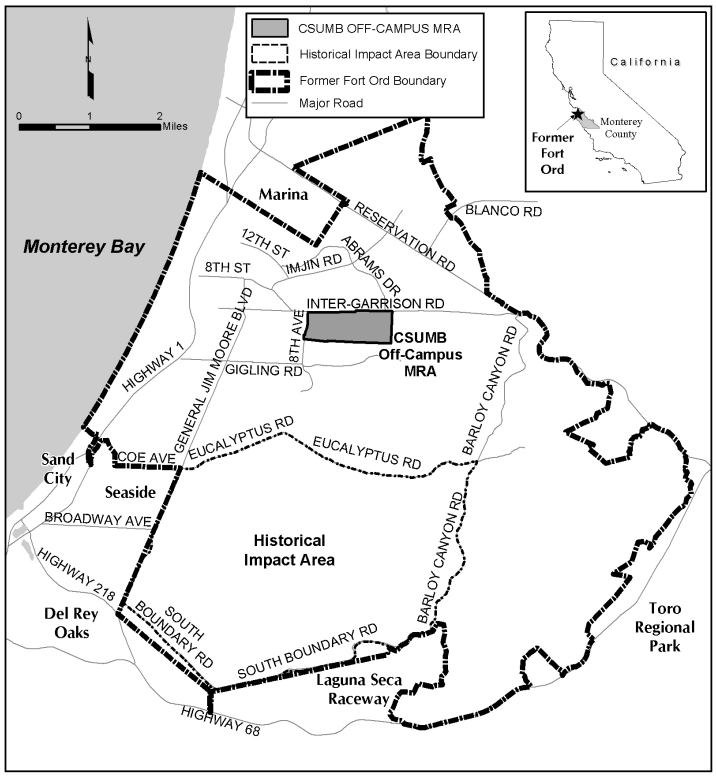

Figure 1. CSUMB Off-Campus MRA and Fort Ord Location Map

Dates to remember:

MARK YOUR CALENDAR
PUBLIC COMMENT PERIOD:
June 12 to July 12, 2013

Comments on the Proposed Plan:

PUBLIC MEETING:
June 19, 2013
6:00 pm to 8:00 pm
Carpenters Union Hall, 910 2nd Avenue, Marina, California

The Army will hold a public meeting to explain the Proposed Plan, receive comments, and answer questions. Oral and written comments will also be accepted at the meeting.

Written comments may be sent to:
Department of the Army, Fort Ord Base Realignment and Closure (BRAC) Office
Attn: William K. Collins
BRAC Environmental Coordinator
P.O. Box 5008, Monterey, CA 93944-5008

* *This Proposed Plan contains terms adopted by the Army for the overall Fort Ord **Military Munitions Response Program (MMRP)**. The terminology used in this Proposed Plan that first appears in **bold letters** is defined in the **Glossary** found at the back of this document on **pages 13 through 15.** References to **Figures, Tables**, and **page numbers** also appear in bold letters.*

Based on the Army Basewide Range Assessment Program (Shaw 2012), which evaluated the potential presence of hazardous and toxic waste (HTW) chemicals of concern in soil, no further action has been recommended for historical areas within the CSUMB Off-Campus MRA as documented in *Finding of Suitability for Early Transfer (FOSET), Former Fort Ord, California, Environmental Services Cooperative Agreement (ESCA) Parcels and Non-ESCA Parcels (Operable Unit Carbon Tetrachloride Plume) (FOSET 5)* (Army 2007). As a follow-up to the 3rd Five-Year Review, an additional evaluation is being conducted by the Army to determine the protectiveness of the human health-based cleanup levels for the Interim Action sites with lead in soil, including Site 39B located within the CSUMB Off-Campus MRA (Army 2012). This evaluation is expected to be completed by December 2013.

This Proposed Plan is based on information presented in the Group 2 **Remedial Investigation/Feasibility Study** (**RI/FS**; ESCA RP Team 2013), as well as other documents in the Fort Ord **Administrative Record**. The Administrative Record contains documents used in making decisions for environmental cleanup projects at the former Fort Ord. The Army encourages members of the local community and other interested parties to review these documents and make comments on this Proposed Plan.

Public comments will be considered before any action is selected. Information on how to comment on this document and the location of the Administrative Record is provided on **pages 11 through 12** of this Proposed Plan.

THE DECISION MAKING PROCESS

Remedial Alternatives have been evaluated to address the risk to future land users from potentially remaining MEC at the CSUMB Off-Campus MRA. The purposes of this Proposed Plan are to:

- Provide background information about the CSUMB Off-Campus MRA
- Describe the remedial options considered
- Identify the Preferred Alternative for remedial action at the CSUMB Off-Campus MRA and explain the reasons for the preference
- Solicit public review of and comment on the alternatives described
- Provide information on how the public can be involved in the remedy selection process for the CSUMB Off-Campus MRA.

The flow chart shown in **Figure 2** summarizes the CSUMB Off-Campus MRA decision-making process that includes public involvement and remedy selection.

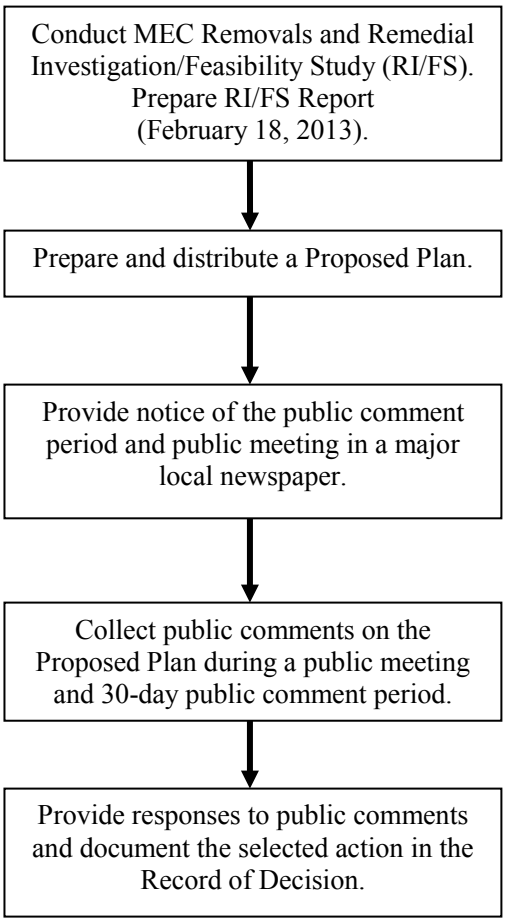

Figure 2. CSUMB Off-Campus MRA Record of Decision Process

In March 2007, the Army and Fort Ord Reuse Authority (FORA) entered into an Environmental Services Cooperative Agreement (ESCA), which allows FORA to complete munitions response on approximately 3,300 acres of the former Fort Ord property with funding provided by the Army. The property was transferred to FORA in May 2009 with restrictions prohibiting use for any purposes other than activities associated with the investigation and remediation of MEC and installation of utilities and roadways until the completion of remedial action. These restrictions are documented in the federal deed. Similar restrictions were also documented in Covenant to Restrict the Use of Property (CRUP), a California state land use covenant. This Proposed Plan is based on the Group 2 RI/FS that was prepared by FORA under the ESCA. The Army is the lead agency for the former Fort Ord site, including the ESCA property, under CERCLA.

The Army is the responsible party and lead agency for investigating, reporting, making cleanup decisions, and taking cleanup actions at the former Fort Ord. Under the ESCA, FORA is investigating, reporting, and implementing cleanup actions within the ESCA areas on behalf of the Army. This Proposed Plan is part of the Army's community relations program, a component of the requirements of Section 117(a) of the CERCLA or Superfund, and follows U.S. Environmental Protection Agency (EPA) guidance (EPA 1988).

Public comments on this Proposed Plan will be accepted during a public meeting and during the 30-day public review and comment period. The Army and/or the EPA, in consultation with the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC), will consider public comments and make a final decision in a **Record of Decision (ROD).** The selected remedy will be implemented by FORA, and its successor, for the CSUMB Off-Campus MRA; however, the Army is ultimately responsible for the integrity of the remedy, although all or part of such responsibilities may

BACKGROUND

The former Fort Ord is located in northwestern Monterey County, California, approximately 80 miles south of San Francisco (**Figure 1**). The former Army base is made up of approximately 28,000 acres of land next to Monterey Bay and the cities of Seaside, Sand City, Monterey, and Del Rey Oaks to the south and Marina to the north. Laguna Seca Recreation Area, Toro Park, and Highway 68 border former Fort Ord to the south and southeast.

Since it was established in 1917, Fort Ord served primarily as a training and staging facility for infantry and cavalry troops. From 1947 to 1975, Fort Ord was a basic training center. After 1975, the 7th Infantry Division was based at Fort Ord. Fort Ord was selected for closure in 1991. The majority of the soldiers were reassigned to other Army posts in 1993. The Army has retained a portion of former Fort Ord property as the Ord Military Community and U.S. Army Reserve Center. The remainder of Fort Ord was identified for transfer to federal, state, and local government agencies and other organizations for reuse.

Cavalry, field artillery, and infantry units used portions of the former Fort Ord for maneuvers, target ranges, and other purposes. **Military munitions** were fired into, fired upon, or used on the facility. As a result, a wide variety of conventional munitions and explosives of concern (MEC), both **unexploded ordnance (UXO)** and **discarded military munitions (DMM)** items, have been encountered at sites throughout the former Fort Ord.

Fort Ord was placed on the National Priorities List (NPL) of Superfund sites by the EPA on February 21, 1990, due to evidence of contaminated soil and groundwater. A Federal Facility Agreement (FFA) was signed in July 1990 by representatives of the Army, EPA, and the DTSC and Regional Water Quality Control Board (RWQCB) — agencies that are part of Cal/EPA. The FFA established schedules for conducting investigations and requires the cleanup process be conducted as expeditiously as possible. In 1991, the basewide Remedial Investigation / Feasibility Study (RI/FS) for soil and groundwater contamination (hazardous and toxic waste or HTW) began, and Fort Ord was placed on the Base Realignment and Closure (BRAC) List. Since 1993, MEC-related field investigations, sampling, and removal activities have been conducted at many former Fort Ord sites by the Army. This investigation and removal work was focused on addressing explosive hazards. In 1998, the Army agreed to evaluate MEC at the former Fort Ord in a Munitions Response RI/FS consistent with CERCLA, and the Munitions Response RI/FS work plan was issued in 1999.

be transferred to another party (e.g., future landowner), with the approval of EPA and in consultation with Cal/EPA DTSC. Responses to public comments on this Proposed Plan will appear in the "Responsiveness Summary" section of the ROD. The flow chart shown in **Figure 2** summarizes the development and approval process for the Group 2 ROD.

SUMMARY OF GROUP 2 MRA SITE CHARACTERISTICS

Group 2 includes the CSUMB Off-Campus MRA. The Group 2 RI/FS summarizes the available data and evaluated MEC related risks for the CSUMB Off-Campus MRA (Volume 1; ESCA RP Team 2013). Originally, Group 2 also included the County North MRA. In August 2009, the *Track 1 Plug-In Approval Memorandum* ("the Approval Memorandum") was issued for the County North MRA by the Army for public review and comment (Army 2009). A notice announcing agency concurrence with the Approval Memorandum was published on March 16, 2010. The Track 1 Plug-In process was described in the Army's *Record of Decision, No Further Action Related to Munitions and Explosives of Concern - Track 1 Sites, No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22)* (Army 2005). Therefore, this Group 2 Proposed Plan only addresses the CSUMB Off-Campus MRA.

CSUMB Off-Campus MRA

The CSUMB Off-Campus MRA is located in the north-central portion of the former Fort Ord (**Figure 1**). The CSUMB Off-Campus MRA encompasses approximately 333 acres of undeveloped open space and includes two planned reuses: approximately 49 acres for residential (CSUMB campus housing) and approximately 284 acres for non-residential (CSUMB open space park) (**Figure 3**).

The CSUMB Off-Campus MRA is composed of several **munitions response sites (MRS)**. The majority of the MRA is composed of MRS-31, which was a troop training and maneuver area that encompassed four smaller MRSs: MRS-04C, MRS-07, MRS-08, and MRS-18. The remainder of the MRA consists of MRS-13C and a portion of MRS-13B (**Figure 3**). Where MRSs coincide on Figure 3, the designation nomenclature is represented as the MRSs separated by a colon (e.g., MRS-04C:MRS-31).

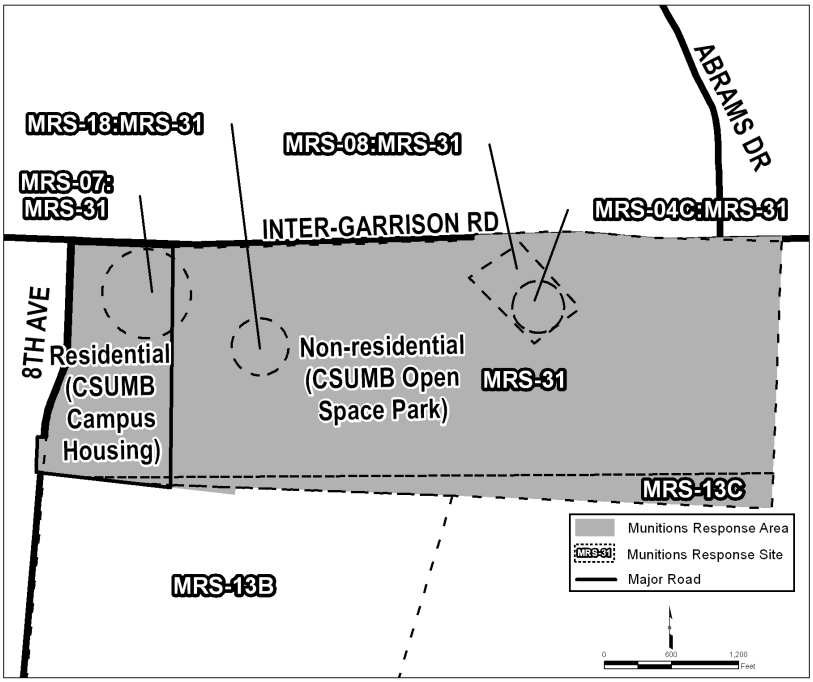

Figure 3. CSUMB Off-Campus MRA

Historical records and recovered MEC and **munitions debris (MD)** indicate that the majority of the CSUMB Off-Campus MRA had previously been used as a troop training and maneuver area. The types of training included: chemical, biological, and radiological (CBR) training (MRS-04C); mine and booby trap training (MRS-07 and MRS-08); practice mortar training (MRS-13B and MRS-

13C); minefield practice area (MRS-18); and troop maneuvers, confidence course, and land navigation training (MRS-31). CBR training typically included use of tear gas agents in a test chamber or use of hand grenades containing tear gas agents. Although CBR training was identified on historical facilities and training maps, there was no evidence of chemical, biological, or radiological material use during the training at the CSUMB Off-Campus MRA. Recovered MEC and MD also indicated that practice hand grenade training and practice rifle grenade training occurred in MRS-31.

MEC investigations and removal actions were completed in the CSUMB Off-Campus MRA by Army contractors in accordance with contractual and/or work plan requirements. MEC investigations, consisting of grid sampling in 100- by 100-foot grids, were conducted by Army contractors in MRS-04C, MRS-07, MRS-08, MRS-13B, and MRS-18 using analog geophysical instruments. Based on the results of the grid sampling investigations, a MEC removal action was conducted by Army contractors across the entire MRS-31, which encompasses MRS-04C, MRS-07, MRS-08, and MRS-18. The MRS-31 removal action was conducted in three parts using analog geophysical instruments with detected anomalies investigated to a depth of 3 or 4 feet (ft) below ground surface (bgs). If anomalies were detected greater than 3 or 4 ft bgs, the anomalies were investigated following approval, and MEC removals were conducted if MEC was encountered. An MEC removal action was also conducted in MRS-13C located along the southern boundary of the CSUMB Off-Campus MRA. The MEC removal action was conducted by Army contractors using analog geophysical instruments with detected anomalies investigated to a depth of 4 ft bgs. If anomalies were detected greater than 4 ft bgs, the anomalies were investigated and MEC removals were conducted if MEC was encountered.

A Residential Quality Assurance (RQA) Pilot Study was conducted by FORA contractors in the approximately 49-acre proposed future residential (CSUMB campus housing) reuse area of the CSUMB Off-Campus MRA as an additional verification and quality assurance of prior MEC investigations and removal actions. The RQA data were collected in two phases. During the first phase of the RQA Pilot Study, a digital geophysical mapping investigation and subsurface MEC removal were conducted in approximately 17 acres followed by a soil scrape and second digital geophysical mapping investigation and subsurface MEC removal on approximately 5 of the 17 acres. During the second phase of the RQA Pilot Study, a detailed data evaluation was conducted on the approximately 49-acre area, and a limited site walk with analog geophysical instruments was conducted to support the data evaluation. The digital and analog geophysical instruments used during the RQA Pilot Study were effective at detecting the types of munitions expected at the CSUMB Off-Campus MRA. The RQA Pilot Study activities included removal of detected MEC and MD from the proposed future residential (CSUMB campus housing) reuse area to the depth of detection and confirmed the results of previous MEC investigations and removal actions. Based on the RQA Pilot Study, the approximately 49 acres proposed for future residential reuse within the CSUMB Off-Campus MRA were recommended as acceptable for future residential reuse with appropriate use restrictions, such as construction support and disclosures. Results of the pilot study are documented in the CSUMB Off-Campus MRA RQA Process Pilot Study Technical Information Paper (ESCA RP Team 2012).

The MEC and MD encountered within the CSUMB Off-Campus MRA were consistent with the documented historical uses. The types of MEC and MD removed from the MRA included: firing devices, hand grenades and hand grenade fuzes, rifle grenades, practice mines and mine fuzes, mortars (60mm and 81mm), various projectiles, illumination flares and signals, smoke generating items, rockets, and simulators. The majority of these items were associated with practice and pyrotechnic munitions.

SUMMARY OF SITE RISKS

Although MEC investigations and removal actions have been completed at the CSUMB Off-Campus MRA, there is still a potential risk to human health and the environment from previous military munitions-related activities. The *Fort Ord Ordnance and Explosives Risk Assessment Protocol* (Malcolm Pirnie 2002) was developed to estimate the risk to future land users of the property from any potentially remaining MEC in terms of an "Overall MEC Risk Score." The Overall MEC Risk Scores are expressed in letters A through E.

Overall MEC Risk Score	A	B	C	D	E
	Lowest	Low	Medium	High	Highest

The representative future land users of the property (i.e., receptors) identified for analysis in the MEC risk assessment for the CSUMB Off-Campus MRA included:

- resident, recreational user, maintenance worker, construction worker, and trespasser for the residential (CSUMB campus housing) reuse area
- recreational user, maintenance worker, construction worker, and trespasser for the non-residential (CSUMB open space park) reuse area

A summary of the Overall MEC Risk Scores for each receptor for the two reuse areas within the CSUMB Off-Campus MRA is provided below.

Summary of Overall MEC Risk Scores for the CSUMB Off-Campus MRA

Reuse Area	**Receptor**	**Overall MEC Risk Score**				
		A Lowest	**B Low**	**C Medium**	**D High**	**E Highest**
Residential (CSUMB Campus Housing)	Resident	✓				
	Recreational User	✓				
	Maintenance Worker	✓				
	Construction Worker	✓				
	Trespasser	✓				
Non-residential (CSUMB Open Space Park)	Recreational User	✓				
	Maintenance Worker	✓				
	Construction Worker	✓				
	Trespasser	✓				

The risk assessment (Volume 2; ESCA RP Team 2013) estimated the Overall MEC Risk Scores for each receptor is "A", the lowest risk. Although previous MEC removal actions have been completed on the MRA, the potential exists for MEC to remain in the subsurface. Therefore, the risks associated with intrusive receptors (people who engage in intrusive activities) are assumed to remain at a level that requires mitigation.

REMEDIAL ACTION OBJECTIVES

The remedial action objective (RAO) for the Group 2 CSUMB Off-Campus MRA is based upon the risk assessment results and on EPA's RI/FS Guidance (EPA 1988) to achieve the EPA's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with **Applicable or Relevant and Appropriate Requirements (ARARs)**."

The RAO developed for the protection of human health and the environment for the CSUMB Off-Campus MRA is to prevent or reduce the potential for the CSUMB Off-Campus MRA reuse receptors to come in direct contact with MEC items potentially remaining in subsurface soil and minimize potential impacts from such exposures. In order to achieve this RAO, remedial alternatives for the CSUMB Off-Campus MRA reuse areas were evaluated to (1) mitigate potentially remaining MEC risks, and (2) comply with ARARs and other guidelines as summarized in the following section.

Although the Army determined that there are no potential Federal or State ARARs that relate to LUCs at the CSUMB Off-Campus MRA, LUCs will be implemented in a manner consistent with Federal and State guidance. While the Army does not consider California laws and regulations concerning CRUPs to be potential ARARs, the Army entered into a CRUP with the DTSC at the time the property was transferred to FORA. The DTSC will modify the existing CRUP, if appropriate, to document the land use restrictions included in the identified remedy, if selected. Although the DTSC and the EPA Region IX disagree with the Army's determination that California laws and regulations concerning CRUPs are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the CRUP and the DTSC will modify the CRUP, if appropriate, to be consistent with the identified remedy.

SUMMARY OF REMEDIAL ACTION ALTERNATIVES

Three remedial alternatives were evaluated for the CSUMB Off-Campus MRA as identified below (Volume 3; ESCA RP Team 2013):

Alternative 1 – No Further Action

This alternative assumes no further action would be taken at the CSUMB Off-Campus MRA to address potential MEC risks for those receptors identified in the risk assessment. This alternative is provided as a baseline for comparison to the other remedial alternatives, as required under CERCLA and the National Contingency Plan (NCP).

Alternative 2 – Land Use Controls

This alternative assumes that LUCs, without additional MEC remediation on any portion of the CSUMB Off-Campus MRA, would be implemented to address potential MEC risks for intrusive reuse. The LUCs alternative consists of requirements for MEC recognition and safety training for people involved in intrusive activities prior to the start of such activities to increase their awareness of and ability to identify MEC items, **construction support** by unexploded ordnance **(UXO)-qualified personnel** during intrusive activities, and residential use restriction in the proposed future non-residential reuse area. Residential use would be allowed for the proposed future residential reuse area where the RQA Pilot Study was implemented. Construction support would be arranged during the planning stages of the project prior to the start of any intrusive activities. Two levels of construction support have been identified: on-call construction support and active construction support. For on-

call construction support, UXO-qualified personnel must be contacted prior to the start of intrusive activities to ensure their availability, advised about the project, and placed "on call" to assist if suspected MEC are encountered during intrusive activities. For active construction support, UXO-qualified personnel must be contacted prior to the start of intrusive activities, advised about the project, and must be on-site during intrusive activities to monitor for MEC items. For the CSUMB Off-Campus MRA, on-call construction support will be required. If evidence of MEC is found during construction support activities, the intrusive and ground-disturbing work will immediately cease, no attempt will be made to disturb, remove, or destroy the MEC, and the local police department will be immediately notified so that appropriate explosive ordnance disposal personnel can be dispatched to address the MEC, as required under applicable laws and regulations.

Alternative 3 – Additional Subsurface MEC Remediation

This alternative assumes that subsurface MEC remediation would be conducted throughout the entire footprint of the CSUMB Off-Campus MRA. Additional subsurface MEC remediation would involve detection and removal of subsurface MEC to the depth of detection using best available and appropriate detection technology and procedures and Department of Defense Explosives Safety Board-approved MEC detonation procedures in areas where explosive MEC items are identified during remedial activities and require disposal. This alternative includes implementing the appropriate type of vegetation clearance in the MRA, if necessary, and the implementation of additional MEC remediation. The specific details of the vegetation clearance methods and the MEC detection equipment used would be presented in the Remedial Design/Remedial Action Work Plan, or similar document.

EVALUATION AND COMPARISON OF ALTERNATIVES

Remedial alternatives for the CSUMB Off-Campus MRA were evaluated based on EPA's nine evaluation criteria specified in EPA's Guidance for Conducting Remedial Investigations/Feasibility Studies under CERCLA (EPA 1988). The evaluation and comparison of the alternatives is summarized in **Table 1** at the back of this Proposed Plan.

- **Alternative 1 - No Further Action**

  This alternative does not meet the threshold criteria of overall protection of human health; therefore, it is not evaluated further.

- **Alternative 2 - Land Use Controls**

  This alternative meets the threshold criteria of overall protection of human health and the environment by reducing the potentially remaining MEC risks by:

  1) Requiring MEC recognition and safety training for people involved in intrusive activities prior to the start of intrusive work and requiring construction support by UXO-qualified personnel during intrusive activities.

  2) Prohibiting use of any of the non-residential portion of the MRA for residential reuse in accordance with DTSC policy in the non-residential portion of the MRA.

Prior MEC response actions have addressed the most significant threats; therefore this alternative need not satisfy the preference for reduction of toxicity, mobility, or volume through treatment. This alternative meets the remaining balancing criteria for the MRA because it offers:

1) short-term effectiveness since the use restrictions (MEC recognition and safety training, construction support, and residential use restriction) would not create short term exposure and would, upon implementation, mitigate potentially remaining MEC risks to construction workers who are to conduct intrusive activities during development within the MRA and prohibit the reuse of the non-residential portion of the MRA for residential reuse;
2) long-term effectiveness and permanence since use restrictions will be monitored and enforced to mitigate potentially remaining MEC risks to those people who are to conduct intrusive activities during long-term reuse and would be maintained until further evaluation determined the LUCs were no longer necessary, and prohibit the reuse of the non-residential portion of the MRA for residential reuse in the long term; and
3) moderate costs to implement and maintain.

The State supports the proposed remedy and the modifying criteria of community acceptance will be addressed in the Group 2 ROD based on comments received on the Proposed Plan.

- **Alternative 3 - Additional Subsurface MEC Remediation**

This alternative may meet the threshold criteria of overall protection of human health and the environment given the following factors:

1) while MEC removals and investigations have been conducted at the MRA, the potential exists that some MEC may remain in the subsurface. This alternative offers additional protection of human health for the future land users who conduct intrusive activities during development or reuse of these areas.
2) the alternative would be implemented in compliance with ARARs; potential ARARs are listed in Appendix A of the final Feasibility Study.

This alternative may meet the balancing criteria because:

1) it may be effective in the short term because additional MEC removals would be conducted;
2) it is unknown whether this alternative would provide long-term effectiveness or permanence after additional MEC removals are completed because the MRA may require additional risk mitigation measures (e.g., LUCs) to protect receptors conducting intrusive activities during long-term reuse;
3) it offers the greatest reduction of toxicity, mobility, or volume through treatment because the alternative may result in reduction of the volume of MEC potentially remaining in the subsurface if MEC is discovered and removed;
4) the alternative is technically and administratively feasible to implement, however, a high level of technical effort may be required to implement additional vegetation clearance and to coordinate UXO-qualified personnel teams conducting MEC removals and managing and reporting MEC-related data; and

5) it has the highest implementation costs of the alternatives evaluated.

If additional subsurface MEC remediation is conducted and no additional MEC items are found, the level of uncertainty regarding MEC potentially remaining on site could be reduced. The modifying criteria of state and community acceptance will be addressed in the Group 2 ROD once comments on the Proposed Plan have been received.

The Preferred Alternative:

Alternative 2: Land Use Controls

The preferred alternative includes:

- MEC Recognition and Safety Training
- Construction support by UXO-qualified personnel
- Restrictions prohibiting residential use on a portion of the MRA

Based on information currently available, the lead agency believes the Preferred Alternative meets the threshold criteria and provides the best approach among the remedial alternatives with respect to the balancing and modifying criteria. The lead agency expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): 1) be protective of human health and the environment; 2) comply with ARARs (or justify a waiver); 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element (or justify not meeting the preference). MEC removal actions ("treatment") that have already been completed were considered in the development of alternatives and remedy selection. Therefore, the Land Use Controls alternative is selected "post-treatment" as the Preferred Alternative to address the potential risk that any remaining MEC presents to future users of the property.

PREFERRED ALTERNATIVE

Based on the evaluation and comparison of the three remedial alternatives, the Army proposes Alternative 2, LUCs, as the preferred alternative for implementation at the CSUMB Off-Campus MRA because it best meets the nine evaluation criteria specified in the EPA's RI/FS Guidance (EPA 1988).

LUCs would be protective of human health for the future land users, and would be effective in the short- and long-term at mitigating the risk to future workers and residents conducting intrusive activities from potentially remaining MEC. This remedial alternative would require a low level of effort to implement, a moderate level of effort to administer over time, and would be cost effective. The proposed land use restrictions will modify the existing restrictions in the federal deed and the CRUP. Residential use restriction would be implemented in accordance with DTSC policy in the non-residential portion of the MRA. No ARARs were identified for this alternative; however, LUCs would be implemented in a manner consistent with Federal and State guidance. The preferred remedial alternative will include requirements to be protective of people conducting intrusive activities at the reuse areas during both development and long-term reuse: (1) MEC Recognition and Safety Training, and (2) Construction Support.

In addition to the requirements for MEC recognition and safety training, construction support, and residential use restriction in the proposed future non-residential reuse portion of the MRA, Long-Term Management Measures comprised of a deed notice, annual monitoring and reporting, and five-year review reporting will also be instituted. The deed notice will (1) inform future property owners that MEC was found and removed at the reuse area; (2) inform future property owners about the selected remedy; and (3) outline appropriate procedures to be followed in the event that MEC is encountered. FORA or FORA's successor will collect and submit this information for the CSUMB Off-Campus MRA regarding MEC finds and changes in site conditions that could increase the possibility of finding MEC at the site. The results of the monitoring activities will be reported to the Army and regulatory agencies annually. The Army will conduct a review of the former Fort Ord Superfund site every five years to determine whether the selected remedy continues to be protective of human health and the

environment. It will include a review of any LUCs. The next five-year review will occur in 2017.

The preferred alternative identified in this Proposed Plan may be modified in response to public comments or new information.

After the Group 2 ROD is signed, a Remedial Design/Remedial Action Work Plan will be developed. This work plan will outline the processes for modifying the existing use restrictions with the land use restrictions selected as part of the remedy. This work plan will also include procedures for responding to and coordinating unexpected circumstances such as a future discovery of significant number of MEC in the CSUMB Off-Campus MRA. A process has been developed for reporting any discovery of MEC to an appropriate local law enforcement agency. The local law enforcement agency will promptly request response by UXO-qualified personnel. Any MEC finds or incidents will be reported immediately to the regulatory agencies and will be documented in the annual reports. This information will be reviewed at the time of subsequent five year reviews. If selected, LUCs may be modified in the future based on the five-year review process.

HOW TO MAKE COMMENTS

The Army is the responsible party and lead agency for investigating, reporting, making cleanup decisions, and taking cleanup actions at the former Fort Ord. The Army, as lead agency, is soliciting public comments on the Preferred Alternative of LUCs, as well as other remedial action alternatives described in this Proposed Plan to manage the risk from MEC at the CSUMB Off-Campus MRA. The Group 2 RI/FS (ESCA RP Team 2013) provides a detailed site report that describes the information gathered during the literature review and site investigations, as well as a more detailed description of the reasons for the Army's proposed remedial alternative, LUCs. This and other reports referenced herein are available for review at the Information Repositories and the Administrative Record listed below.

Public comments will be considered before any action is selected. Written and oral comments on this Group 2 Proposed Plan will be accepted at the public meeting scheduled on June 19, 2013, from 6:00 p.m. to 8:00 p.m. at the Carpenters Union Hall, 910 2nd Avenue, Marina, California. Representatives from the Army, EPA, and DTSC will be present at this meeting to explain the Group 2 Proposed Plan, listen to concerns, answer questions, and accept public comments. Representatives from FORA will also be present to answer questions on the Group 2 Proposed Plan.

Written comments will be accepted throughout the 30-day public comment period from June 12 to July 12, 2013. Correspondence should be postmarked no later than July 12, 2013 and should be sent to the attention of the U.S. Army representative at the following address (*Please reference the Group 2 Proposed Plan in your correspondence*):

Department of the Army
Fort Ord Base Realignment and Closure (BRAC) Office
ATTN: William K. Collins
BRAC Environmental Coordinator
P.O. Box 5008
Monterey, California 93944-5008

INFORMATION ACCESS

U.S. Army Representative

Department of the Army

Fort Ord Base Realignment and Closure (BRAC) Office
P.O. Box 5008
Monterey, California 93944-5008
Contact: William K. Collins, BRAC Environmental Coordinator
(831) 393-1284 FAX: (831) 393-9188
Hours: 8:00 am - 5:00 pm

Regulatory Representatives

U.S. Environmental Protection Agency, Region IX

Superfund Federal Facilities Cleanup Branch
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Administrative Record Department Location

Fort Ord Administrative Record (www.fortordcleanup.com)
Building 4463 Gigling Road, Room 101
Ord Military Community, California 93944-5008
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Hours: Mon-Fri 9:00 am-4:00 pm. Other hours by appointment. Closed daily, 12:00 pm-1:30 pm and Federal holidays.

Information Repositories

California State University Monterey Bay (CSUMB) Tanimura & Antle Family Memorial Library
Divarty Street, CSUMB Campus (Please park in lot # 508)
Seaside, California 93955
(831) 582-3733
For current library hours, call or visit http://library.csumb.edu/

Seaside Branch Library
550 Harcourt Avenue
Seaside, California 93955
(831) 899-2055
Hours: Mon-Thurs 10:00 am-8:00 pm; Fri/Sat 10:00 am-5:00 pm

REFERENCES

Environmental Services Cooperative Agreement Remediation Program Team (ESCA RP Team). 2012. Final Residential Quality Assurance Process Pilot Study Technical Information Paper CSUMB Off-Campus Munitions Response Area, Former Fort Ord, Monterey County, California. October 8. (Fort Ord Administrative Record No. ESCA-0257B)

———. 2013. Final Group 2 Remedial Investigation/Feasibility Study, California State University Monterey Bay Off-Campus MRA, Former Fort Ord, Monterey, California. February 18. (Fort Ord Administrative Record No. ESCA-0177E)

Malcolm Pirnie. 2002. Final Fort Ord Ordnance and Explosives Risk Assessment Protocol. October. (Fort Ord Administrative Record No. OE-0402G)

Shaw Environmental, Inc. (Shaw). 2012. Final Comprehensive Basewide Range Assessment Report. Former Fort Ord, California, Revision 2. January 17. (Fort Ord Administrative Record No. BW-2300L)

United States Department of the Army (Army). 2005. Record of Decision, No Further Action Related to Munitions and Explosives of Concern - Track 1 Sites, No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22), Former Fort Ord, California. March 10. (Fort Ord Administrative Record No. OE-0526)

———. 2007. Finding of Suitability for Early Transfer (FOSET), Former Fort Ord, California, Environmental Services Cooperative Agreement (ESCA) Parcels and Non-ESCA Parcels (Operable Unit Carbon Tetrachloride Plume) (FOSET 5). September 25. (Fort Ord Administrative Record No. FOSET-004J)

———. 2009. Track 1 Plug-In Approval Memorandum, County North Munitions Response Area, Former Fort Ord, California. August 26. (Fort Ord Administrative Record No. ESCA-0169)

———. 2012. 3rd Five-Year Review, Fort Ord Superfund Site (including FORA ESCA RP Sites), Monterey, California. September 17. (Fort Ord Administrative Record No. BW-2632)

United States Environmental Protection Agency (EPA). 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. Interim Final. EPA/540/G-89/001. October.

GLOSSARY

Administrative Record – A compilation of all documents relied upon to select a remedial action pertaining to the investigation and cleanup of Fort Ord.

Applicable or Relevant and Appropriate Requirements (ARARs) – The substantive Federal and State environmental cleanup standards and other requirements that a selected remedy will meet. These requirements may vary among sites and alternatives.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, otherwise known as Superfund) – CERCLA authorizes federal action to respond to the release or threatened release of hazardous substances into the environment or a release or threatened release of a pollutant or contaminant into the

environment that may present an imminent or substantial danger to public health or welfare. This law also establishes criteria for the creation of key cleanup documents such as the Remedial Investigation (RI), Feasibility Study (FS), Proposed Plan, and Record of Decision (ROD).

Construction Support – Assistance provided by DOD explosive ordnance disposal (EOD) or UXO-qualified personnel and/or by personnel trained and qualified for operations involving chemical agents (CA), 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 and explosive hazard, or CA, regardless of configuration, to ensure the safety of personnel or resources from any potential explosive or CA hazards (DOD Manual 6055.09M).

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))

Feasibility Study (FS) – An evaluation of potential remedial technologies and treatment options that can be used to clean up a site.

Land Use Controls (LUC) – Land use controls 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 include fences, pavement, or signs. Legal mechanisms include deed restrictions that limit how the property is used. Administrative mechanisms include providing munitions recognition training for workers who do intrusive work.

Military Munitions – Military munitions means 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 Department of Defense, 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, except that the term does include 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)).

Military Munitions Response Program (MMRP) – Program established by the Department of Defense to manage environmental, health and safety issues presented by MEC.

Munitions Debris – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. Munitions debris is confirmed inert by technically-qualified personnel.

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

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain MEC. Examples include former ranges and munitions burial areas. A munitions response area is made up of one or more munitions response sites.

Munitions Response Site (MRS) – A discrete location within a MRA that is known to require a munitions response.

Preferred Remedial Alternative – The remedial alternative that, when compared to other potential alternatives, was determined to best meet the nine CERCLA evaluation criteria in the Feasibility Study, and is proposed for implementation at a site.

Proposed Plan – A plan that identifies the preferred alternative for a site cleanup, and is made available to the public for comment.

Record of Decision (ROD) – A ROD is the document used to record the remedial action decision under CERCLA. The ROD will be filed in the project Administrative Record and project file.

Remedial Alternatives – Potential remedies to address contamination (in this case, MEC).

Remedial Investigation (RI) – The RI is intended to "adequately characterize the site for the purpose of developing and evaluating an effective remedial alternative" (NCP, 40 CFR 300.430(d)). In addition, the RI provides information to assess the risks to human health, safety, and the environment that were identified during risk screening in the site investigation.

Superfund – See Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) above.

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 either by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5) (A) through (C)).

UXO-Qualified Personnel – Personnel who have performed successfully in military EOD positions, or are qualified to perform in the following Department of Labor, Service Contract Act, Directory of Occupations, contractor positions: UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist or Senior UXO Supervisor (DOD Manual 6055.09M).

Table 1

Summary of Evaluation of Remedial Alternatives for CSUMB Off-Campus MRA

Remedial Alternative	EPA's 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protectiveness of Human Health and the Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, or Volume Through Treatment [1]	Implementability	Cost	State Acceptance	Community Acceptance
Alternative 1 - No Further Action	Not protective; does not mitigate potentially remaining MEC risks to intrusive workers	No ARARs identified for this alternative	Not effective in the short-term; no MEC risk mitigation	Not effective in the long-term; no MEC risk mitigation	No reduction in volume because no further MEC removals would be conducted	Not administratively feasible	Minimal	Unlikely	Unlikely
Alternative 2 - Land Use Controls	Protective to construction and maintenance workers; mitigates risks to future residents	No ARARs identified for this alternative	Required training and construction support would mitigate risks to construction and maintenance workers	Required training and construction support would mitigate risks to construction and maintenance workers and residents; effective in long-term for potential MEC risks posed to future residents until evaluation determines LUCs no longer necessary	No reduction in volume because no further MEC removals would be conducted	Technically and administratively feasible to implement	$1,204,000	Likely to be acceptable	May be acceptable
Alternative 3 - Additional MEC Remediation	May be protective of human health and the environment	Implementation would require compliance with ARARs	May be effective in the short-term, although additional mitigation measures (such as land use controls) may be required	May be effective in the long-term, although additional mitigation measures (such as land use controls) may be required	May result in MEC reduction if additional MEC is discovered and removed during remediation	Technically and administratively feasible to implement	$6,920,000	Likely to be acceptable because of additional remediation and short and long term mitigation actions	Acceptability unknown due to vegetation disturbance and removal involved.

Notes:

ARARs = applicable or relevant and appropriate requirements

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

LUC = Land Use Controls

MEC = munitions and explosives of concern

[1] = Completed MEC removal actions already provide for reduction of volume.