

**APPENDIX E**

**RESPONSE TO COMMENTS**

## Appendix E

### Response to Comments

#### CONTENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IX .....	1
USEPA SUPPLEMENTAL COMMENTS LETTER DATED NOVEMBER 9, 2006 .....	17
DEPARTMENT OF TOXIC SUBSTANCES CONTROL LETTER DATED OCTOBER 31, 2006.....	32
HUMAN AND ECOLOGICAL RISK DIVISION (DEPARTMENT OF TOXIC SUBSTANCES CONTROL) LETTER DATED OCTOBER 31, 2006.....	37
UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE LETTER DATED NOVEMBER 1, 2006 .....	55
DEPARTMENT OF FISH AND GAME LETTER DATED NOVEMBER 2, 2006 .....	60
CALIFORNIA DEPARTMENT OF FISH AND GAME, OFFICE OF SPILL PREVENTION AND RESPONSE. RESOURCE ASSESSMENT PROGRAM LETTER DATED OCTOBER 24, 2006 .....	62
ECOMUNITION CORPORATION LETTER DATED OCTOBER 27, 2006 .....	64
UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT LETTER DATED OCTOBER 13, 2006.....	66
MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT LETTER DATED OCTOBER 25, 2006.....	73
FORT ORD ENVIRONMENTAL JUSTICE NETWORK (FOEJN) LETTER DATED OCTOBER 31, 2006 (PREPARED BY ENVIRONMENTAL STEWARDSHIP CONCEPTS [ESC])...	76

**RESPONSE TO COMMENTS**  
**Draft Track 3 Impact Area Munitions Response**  
**Area Munitions Response Remedial Investigation/Feasibility Study,**  
**Former Fort Ord, August 8, 2006**

**United States Environmental Protection Agency, Region IX**  
**COMMENTS**

**GENERAL COMMENTS**

**Comment 1:** The Draft Track 3 Impact Area Munitions Response Area Remedial Investigation/Feasibility Study, Former Fort Ord, California, (hereinafter referred to as the Draft Track 3 IA RI/FS) contains numerous uses of the terms “MEC Specialist,” “Qualified MEC Personnel,” “Military Munitions Specialists,” and other similar terms without defining what exactly is intended by the use of these terms, or the qualifications of the personnel described by them. The Department of Defense has provided precise terminology for identifying personnel qualified as Explosive Ordnance Disposal Technicians and as Unexploded Ordnance (UXO) Technicians. These two categories of personnel are the only ones authorized to undertake the recovery and disposal of munitions and explosives of concern (MEC).

Their titles and necessary education and experience are outlined in the Department of Defense Explosives Safety Board Technical Paper (TP) 18 (Minimum Qualifications for Unexploded Ordnance [UXO]. Technicians and Personnel).

TP 18 defines the terms “Explosive Ordnance Disposal (EOD) Personnel,” “UXO Technician,” and “UXO-Qualified Personnel” as follows:

- **Explosive Ordnance Disposal (EOD) Personnel:** Military personnel who have graduated from the Naval School, Explosive Ordnance Disposal (NAVSCOLEOD); are assigned to a military unit with a Service-defined EOD mission; and meet Service and assigned unit requirements to perform EOD duties. EOD personnel have received specialized training to address explosive and certain Chemical Agent (CA) hazards during both peacetime and wartime. EOD personnel are trained and equipped to perform Render Safe Procedures (RSP) on nuclear, biological, chemical, and conventional munitions, and on improvised explosive devices.
- **UXO Technician:** Personnel who are qualified for and filling Department of Labor, Service Contract Act, and Directory of Operations contractor positions of UXO Technician me, UXO Technician II, and UXO Technician III.

- **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 Operations contractor positions: UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist or senior UXO Supervisor.”**

**It should be noted that UXO Technician 1 personnel are not considered as UXO qualified by TP 18. For this reason, they must always work under the supervision of a UXO Technician II or higher when accomplishing MEC related work. They are not allowed to serve as escorts in MEC contaminated areas.**

**As the terms “MEC Specialist,” “Qualified MEC Personnel,” and “Military Munitions Specialists” are used in the Draft Track 3 IA RI/FS without being defined, they should either be defined as to the qualifications expected of these positions, or they should be replaced with the official terms used by the Department of Defense. Any definition of these terms and functions performed by persons occupying these positions should comply with the requirements of TP 18. Please make this correction as necessary throughout the Draft Track 3 IA RI/FS.**

**Response 1:** The language used to describe UXO Technicians will be defined in the report using the Department of Defense Explosive Safety Board Technical Paper 18 definitions and consistently used throughout the document.

**Comment 2:** The plates provided in the Draft Track 3 IA RI/FS provide a significant amount of information that is very useful to the reader. However, their utility could be improved significantly if some of the more significant features were reproduced on all of the plates numbered 3 through 11. These omissions include the identity/location of MRS-15 Mortar Alley, the Watkins Gate Burn Area outline, the Eucalyptus Fire Area outline, and Range 36A. Please revise the listed plates to include these features.

**In addition, the titles for Plates 5 through 12 are somewhat misleading. The titles read. Distribution of (specific munitions type/types listed) as MEC and Munitions Debris inside the Impact Area.” This title would seem to indicate that the plates show the distribution throughout the entire impact area instead of the cleared/investigated areas, as is the actual situation. The actual distribution of MEC/munitions debris (MD) throughout the entire impact area is unknown at this time. Please revise the plate titles to read Distribution of (specific munitions type/types listed) Located to Date as MEC and Munitions Debris inside the Impact Area.” This would more accurately express what is actually displayed on the listed plates.**

- Response 2: The Eucalyptus Fire Area and Watkins Gate Burn Area are shown on the plates, but the plates will be revised and the areas labeled. MRS-15 Mortar Alley, Range 36A, and Badger Flats will be added to Plates 5 through 12.
- Comment 3:** Some of the acronyms listed in the Volume 1 Acronym List differ somewhat from the definition of the same acronym in the Volume 2 Acronym List. Examples include the definitions of FFA and HLA. Also, the definition of ITRC reads “Interstate Technology and Regulatory Cooperation” in both Acronym Lists. It should read “Interstate Technology and Regulatory Council.” Please review the Acronym Lists in both volumes and ensure that the redundant definitions are consistent. Correct the ITRC definition as noted in the Acronym Lists and in the Glossary Sources listing on page xvi of Volume 1.
- Response 3: The acronym lists will be revised to make consistent across both volumes. The acronym for ITRC will be revised as suggested.
- Comment 4:** The remedial alternatives presented in the Draft Track 3 IA RI/FS do not adequately present the disadvantages of each of the alternatives. Also, it is questionable that Alternative 3, Removal to Depth MEC Remediation, would reduce the risk to surface-only receptors from C to A, yet it would have no effect (remains at E) for receptors intruding in excess of one foot below the surface. While it is correct that the removal will likely leave some MEC in place on the site, the assumption that “some MEC below 1 foot is removed” instead of “most MEC below 1 foot is removed” is conservative, yet questionable. The E risk for intrusive operations below 1 foot for an area that has undergone a proper removal action states, in effect, that the removal has been of little or no effect. This may be construed to present a case for the cessation of subsurface removal actions due to their inability to reduce risk for receptors conducting intrusive activities below 1 foot. Please review the basis for the cited determinations and include any changes deemed necessary in the revision of the Draft Track 3 IA RI/FS. Also, please explain in detail the basis for the E level of risk for intrusive operations below 1 foot for an area that has undergone a proper removal action. [Footnote: A review of the October 2002 version of the Final Fort Ord Ordnance and Explosives Risk Assessment Protocol provides the following information. (Note: This assumes that the protocol has not been modified by unpublished agreements concerning its use. This example is for the construction worker.):
1. For a removal of 100% of the DETECTED MEC (this is NOT removal of 100% of the MEC present), the Depth below Ground Surface Score is 1, per Table 5-1 on page 25 of the protocol. This assumes that the removal has met the DQOs for the sector investigated. It does not make any assumption about the percent of detection or the instrument used.

2. For the Level of Intrusion, the Score is 5 (Highly Intrusive) from Table 5-2 of the protocol (page 26).
3. The Migration/Erosion Potential was previously determined to have a Score of 1 (Very Stable).
4. Using the Accessibility Factor Matrix (Table 5-4 on page 28 of the protocol, which combines the Depth Below Ground Surface Score (1), Level of Intrusion Score (5) and Migration/Erosion Potential Score (1), the results is an Accessibility Factor Score of 1 (Least Potential for Accessibility). This is primarily because of the 100% removal score rule noted in 1 above.
5. The OE Density Score is 1 (100% of Detected OE removed to Level of Intrusion) from Table 5-5 on page 31 of the protocol. Again, this score is due primarily to the 100% removal score rule.
6. The Intensity of Contact with Soil Score is 5 (assuming a work day of over 9 hours a day). This is from Table 5-6 on page 32 of the protocol.
7. The Frequency of Entry Score is 4 (Frequent) from Table 5-7 on page 33 of the protocol.
8. The Exposure Factor Scoring Matrix (Table 5-8) on page 35 of the protocol is used to determine the Exposure Factor. It is entered using the Frequency of Entry Score of 4 (Frequent), the Intensity of Contact with Soil Score of 5 (High-Contact more than 9 hours per day) and the OE Density Score of 1 (100% of Detected MEC removed to intrusion depth). The results are an Exposure Factor Score of 1, which is Least Potential for Exposure.
9. The OE Hazard Classification Score (Table 5-9, page 36) will be assumed in this example to be 3 (OE [MEC] that will kill an individual if detonated by an individual's activities.) (This assumes the worst case).
10. The Overall OE Risk Scoring Matrix (Table 5-10, page 38) is entered to determine the OE Risk Score using the OE Type Score (3) (OE that can kill), the Exposure Factor Score (1) (Least Potential for Exposure) and the Accessibility Factor Score (1) (Least Potential for Accessibility). The Overall Risk Score for a removal to depth of 100% of the DETECTED MEC (NOT 100% of the MEC on the site) is A (Lowest Risk) for a construction worker. Similar results are achieved for other receptors.

A review of the Draft Track 3 IA RI/FS sections and tables related to the risk scoring reveals results that do not match those achieved by the correct application of the Final Fort Ord Ordnance and Explosives Risk Assessment Protocol. This is due to an assumption found on page 92 that violates a basic premise of the protocol. The premise that is violated is for a removal of 100% of the DETECTED MEC (this is NOT removal of 100% of the MEC present), the Depth Below Ground Surface Score is 1, per Table 5-1 on page 25 of the protocol. This assumes that the removal has met the DQOs for the sector

**investigated. It does not make any assumption about the percent of detection or the instrument used. It also does not require any analysis of the potential residual MEC remaining after that 100% removal.**

Response 4: The risk assessment will be revised to provide additional details on the factors used in the scoring. It is true that the protocol states that a score of 1 for depth below ground surface is likely to occur when considering remedial alternatives. For the removal to depth scenario where all detected MEC items are removed according to the data quality objectives, using a score of 1 for depth below ground surface and 1 for MEC density for all depths would result in a score of "A" (lowest risk) for all receptors. Although this is an approach that could be used, the MR BCT did not feel that a score of "A" (lowest risk) is appropriate scoring for the Impact Area MRA.

A very high density of MEC was observed at MRS- Ranges 43 through 48 during Interim Action. This indicates that the MEC density in the rest of the Impact Area MRA could be as high as that encountered at Ranges 43 through 48. In over 150 acres of Ranges 43 through 48, removal to depth using geophysical detection technology was not completed during the Interim Action due to the presence of high concentrations of metallic debris which made it impossible to identify individual anomalies to investigate. These areas would require a different approach in order to complete a subsurface MEC removal. In the periphery of such areas the density of debris is still very high. Though it has been shown that detection technologies can reliably detect most shallow subsurface MEC items, there may still be concerns about the ability of the BAT to detect MEC items at depth. In addition, because the site was used as a multi-range impact area for decades, the possibility of Type 3 MEC items remaining in the subsurface cannot be ruled out. Therefore, an after-action scoring of "A" (lowest risk) was considered inappropriate for receptors intruding below 1 foot depth.

An alternative approach, also allowable under the Fort Ord Risk Assessment Protocol, was therefore used for calculating the risk for receptors that would intrude below one foot. Similar to the application of the protocol for the Parker Flats MRA, the MEC depth below ground surface and MEC density input factors were selected based on calculated after-action MEC density below the 1 foot depth. The resulting overall risk score is "E" (highest risk) for the deeper intruding receptors.

Additional text will be included to the uncertainty analysis that indicates that the risk score of E may not be an accurate reflection of the risk below one foot, because the risk would have been reduced through the removal action; however, the Army and the regulatory agencies does not believe that the risk score of "A" or lowest risk is accurate either, due to the uncertainties that exist with removals completed below a foot using current best available technologies.

The Army anticipates that, at the time the remedial actions are completed, better technologies may be available and it may be possible to meet the established DQOs, at which point the risks could be reevaluated using the Risk Assessment Protocol or other future method developed to evaluate risk at MRSs.

**Comment 5:** It is unclear why a Remedial Alternative (or alternatives) including an instrument assisted surface removal is not presented in the Draft Track 3 IA RI/FS. As controlled burning is to be conducted prior to the surface removals, it would appear that an instrument would assist in locating surface MEC and MD covered by ash and other materials deposited by the burn. Please explain this omission in detail or include instrumented surface removal in the Remedial Alternatives presented in the Draft Track 3 IA RI/FS.

Response 5: MEC detection instruments will be available on site to check for MEC in areas where the soil surface is not visible. Section 3.3.2.1.1 will be revised to include a description of this protocol for areas where the soil surface is not visible.

#### **SPECIFIC COMMENTS – Volume 1**

**Comment 1:** Section 1.1, Description of the MR RI/FS Program, page 2: In the second paragraph of the section, it is stated that, “Three categories of sites have been identified, Track 0 through Track 3.” This would appear to include four categories instead of the three as noted. Please review the cited sentence and correct it as necessary.

Response 1: The sentence will be revised to state that there are four Tracks or categories. It will read “*Four categories of sites have been identified, Track 0 through Track 3.*”

**Comment 2:** Section 2.2.1, Location, page 11: The first and second sentences of this section note that, “The Impact Area MRA is located in the southwestern portion of the former Fort Ord. The area covers approximately 8,000 acres and is bounded by Eucalyptus Road to the North, Barloy Canyon Road to the east, South Boundary Road to the south, and General Jim Moore Boulevard to the west.” The 8,000 acre number does not agree with the 6,560 acre number given in Section 2.1, Definition of Impact Area MRA, found on page 6 of Volume 2 of the Draft Track 3 IA RI/FS. The 6,560 acre number is also found in other sections of Volume 2. Please review the Draft Track 3 IA RI/FS and revise it as necessary to ensure that the correct acreage is provided throughout both volumes.

Response 2: The text will be revised to clarify that the historical Impact Area was approximately 8,000 acres, but that the portion of the Impact Area included in this RI/FS as the Track 3 Impact Area MRA is 6,560 acres. The text will be modified as follows:



*“The historical Impact Area is located in the southwestern portion of the former Fort Ord. The area covers approximately 8,000 acres and is bounded by Eucalyptus Road to the North, Barloy Canyon Road to the east, South Boundary Road to the south, and General Jim Moore Boulevard to the west. The firing ranges were located approximately along the perimeter of the historical Impact Area such that weapons firing was generally directed toward the center of the Impact Area.*

*The Impact Area MRA consists of 6,560 acres of the 8,000 acre historical Impact Area designated for transfer to BLM as Habitat Reserve. Portions of the historical Impact Area not included in the Impact Area MRA consist of the MOUT which will continue to be used as a training facility, the northern and western edges of the Impact Area that are designated for development, and a portion of habitat reserve in MRS-Ranges 43-48 that is not designated to be transferred to BLM (Plate 2)”.*

**Comment 3:** Section 2.2.2, General History, page 11: The first paragraph of this section contains the following statements:

- **“By 1961, numbers had been assigned to some of the ranges following the numbering scheme already in use at the beach trainfire ranges. A training map from 1964 indicates that by this date all of the ranges within the Impact Area were consecutively numbered. The locations and limits of the individual trainfire ranges have not changed appreciably since that time. At the time of base closure, thirty ranges (numbered 18 through 48) were active or considered operational.”**

**It is unclear as to whether the term “trainfire” is intended to refer to the small arms (primarily rifle) ranges, which is correct use of the term, or if it is intended to include all of the ranges numbered 18 through 48, which would be incorrect use of the term.**

**Trainfire was an Army program established after a post-Korean Conflict study revealed that many soldiers involved in direct combat with the enemy did not fire their individual weapons, or if they did fire them, they often did not aim them at individual enemy soldiers. It was primarily used to train soldiers to fire their rifles at the enemy and did not include crew served or anti-armor weapons.**

**Please correct the cited statements to remove the noted ambiguity.**

**Response 3:** The text will be revised as follows: *“By 1961, numbers, beginning with 18, had been assigned to some of the ranges within the Impact Area following the numbering scheme already in use at the beach trainfire ranges (designated 1 through 17). A training map from 1964 indicated that by this date all of the ranges*

*within the Impact Area were consecutively numbered. The locations and limits of the individual ranges have not changed appreciably since that time.”*

**Comment 4:** Section 3.2, Track 3 Impact Area MRA Munitions Response Site History and Development, page 30: In the last paragraph of this section it is stated that, “Range control records and interviews indicate the firing points were used by artillery divisions utilizing 105mm howitzers and were fired at targets within the Impact Area.” The use of the term “artillery divisions” is incorrect. The U.S. Army does not, nor did it during the active life of Fort Ord, have any artillery divisions. Artillery assigned to a division was referred to as “Division Artillery” or by the term “DivArty.” That unit consisted of artillery battalions and batteries (during the World War I time period there were also artillery regiments). Please change the term “artillery divisions” to read “artillery units.”

**Response 4:** The text will be revised as suggested. Artillery divisions will be revised to artillery units as follows: “*Range control records and interviews indicate the firing points were used by artillery units utilizing 105mm howitzers and were fired at targets within the Impact Area*”.

**Comment 5:** Section 3.3.1, History of Investigations, page 31: In the subsection entitled Grid Sampling, the last sentence in the first paragraph notes that some of the MEC items found included, “...blasting caps for practice hand grenades...” A review of the After Action report for MRS (OE)-15A determined that these items were reported in that document as being recovered on the site as “...for practice hand grenades...” This is incorrect, as there are no blasting caps used on any fuzes designed for practice hand grenades type classified by the Department of Defense. As there have been instances where fragmentation (HE) hand grenade fuzes have been used in practice grenade bodies, it is possible that someone removed the blasting cap (detonator) from these fuzes and discarded them in the impact area. In any case, the “blasting caps” did not come from a practice hand grenade fuze type classified as such. This statement, if allowed to remain in the Draft Track 3 IA RI/FS, may give the public the incorrect impression that practice hand grenades normally contain blasting caps. Please revise the cited sentence to remove the words “for practice hand grenades.”

**Response 5:** The text will be revised as suggested. The words “for practice hand grenades” will be removed and the sentence will read as follows: *MEC and munitions debris removed from the sample grids included practice and illuminating projectiles, practice and smoke producing hand grenades, practice rockets, blasting caps, and a rifle fired smoke grenade (USA, 2000a).*

**Comment 6:** Section 3.3.1, History of Investigations, page 38: In the subsection entitled Watkins Gate Burn Area, the last sentence beginning on that page and

continuing on page 39 reads, “Four-hundred ninety-nine MEC items and munitions debris (68,590 pounds [lbs]) were removed under the TCRA.” As it is currently constructed, the sentence may be interpreted two ways. It could be read to mean that there was a total of 499 MEC items and munitions debris (MD) and this total weighed 68,590 pounds. It could also be read to mean there were 499 MEC items and there was also 68,590 pounds of MD found and removed. Please restructure the cited sentence to remove the noted ambiguity.

Response 6: The sentence will be revised as follows: *“Four-hundred ninety-nine MEC items and 68,590 pounds (lbs) of munitions debris were removed under the TCRA”.*

**Comment 7:** Section 3.3.1, History of Investigations, page 39: In the subsection entitled Digital Geophysical Transects Sampling, a sentence is found that reads, “A large number of ‘pop-out pins were identified in one of the Range 18 sample grids and this may have been the firing point for the 60mm mortars (USA, 2000a).” No explanation as to what a “pop-out pin” is or what it does is provided. Please insert the following explanation (or similar wording) in the section to explain what a “pop-out pin” is and what it does: “The ‘pop-out pin’ is a fuze safety device that is partially released from the fuze upon the mortar firing. It is a spring-loaded ‘bore-rider’ that keeps the fuze safe until the fuze and projectile exits the mortar tube. At that time it is ejected completely from the fuze and final arming is allowed to proceed. The presence of these pins indicates that the mortars were fired within approximately 50 feet of their location.”

Response 7: The text will be revised to include the explanation of what a pop-out pin is and what it does. The following will be added. *“The pop-out pin is a fuze safety device that is partially released from the fuze upon the mortar firing. This pin rides up the bore of the mortar until it clears the muzzle, whereupon it is ejected from the fuze.”*

**Comment 8:** Section 3.3.1, History of Investigations, page 40: In the subsection entitled Eucalyptus Fire Area, the last sentence in the subsection reads, “Munitions debris consisted primarily of 3.5-inch practice rockets, practice hand grenades, hand grenade fuzes, dummy rockets, and signals.” As currently written, this sentence may lead the reader to think that practice grenades are always munitions debris (MD). Please revise the sentence to read, “Munitions debris consisted primarily of 3.5-inch practice rockets (expended), practice hand grenades (expended), hand grenade fuzes (expended), dummy rockets, and signals (expended).”

Response 8: The text will be revised as suggested.

**Comment 9:** Section 3.4, FTO Battelle-Oak Ridge National Laboratory (ORNL) Airborne Geophysical Survey, page 54: The last sentence in this section reads, “As stated above, the information should not be used to identify areas that may be free of contamination.” However, that is not exactly what is stated above. The referenced statement is that, “Accordingly, Battelle concludes ‘airborne data are not suitable for declaring an area free of contamination (because) some MEC types fall below the detection threshold of the system and only a percentage of other ordnance types will be detected.’” While the data are suitable for IDENTIFYING areas that may be free of contamination, the results cannot be used to DECLARE an area free of contamination. Please revise the cited sentence to reflect this difference.

**Response 9:** The text will be revised as suggested. The sentence will be modified as following: “As stated above, the information should not be used to declare an area free of contamination.”

**Comment 10:** Section 3.5.1, Training Practices, pages 55 and 56: The subsection entitled World War II Training contains a table (untitled) that lists military munitions that may have been used on specific ranges in the impact area. In the row of the table labeled Live Hand Grenade Range, the distance that the listed grenades may be thrown is shown as 25 meters. FM 23-30 (Grenades and Pyrotechnics) notes that the average soldier can throw a MK II fragmentation grenade 30 meters and an MK IIIA1 offensive hand grenade 40 meters. Please make these corrections.

In addition, in the row labeled Artillery Training, the maximum range for the 8-inch howitzer is shown as 13,400 yards. It is actually 18,510 yards, unless the charge used is limited by safety requirements. Please review this maximum range and correct it as necessary.

**Response 10:** The table will be revised as suggested. The maximum range description for live hand grenades will be modified as follows “NA, Average throwing distance for a MK II is 30 m, and for a MK IIIA1 is 40 m. Frag danger zone 150-meters (m).” The maximum range description for practice hand grenades will be modified as follows: “NA, Average throwing distance – 30 m.” The maximum range description for 8 inch projectiles will be changed to “8-inch; approximately 5,900 to 18,510 yards.”

**Comment 11:** Section 3.5.1, Training Practices, pages 57 and 58: The subsection entitled 1950s Training contains a table (untitled) that lists military munitions that may have been used on specific ranges in the impact area. In the row of the table labeled Live Hand Grenade Range, the distance that the listed grenades may be thrown is shown as 25 meters. FM 23-30 (Grenades and Pyrotechnics) notes that the average soldier can throw a MK II fragmentation grenade 30 meters and an M26 fragmentation hand grenade 40 meters. Please make

these corrections.

Also, the row labeled 57mm Recoilless Rifle only lists the M306 series HE projectile and the M306A1 target practice projectiles. The M308 series smoke (white phosphorous) projectile and the M307 series HEAT projectiles have been found downrange, so it would appear that these were also fired. Please add these projectiles to the list as noted.

In addition, in the row labeled Artillery Training, the maximum range for the 8-inch howitzer is shown as 13,400 yards. It is actually 18,510 yards, unless the charge used is limited by safety requirements. Please review this maximum range and correct it as necessary here and at any other occurrences in the Draft Track 3 IA RI/FS (i.e., on page 60).

Response 11: The table will be revised to correct the throwing distances for the hand grenades, include the M307 series HEAT and M308 series smoke projectiles, and correct the maximum range of the 8-inch howitzer. See above for changes related to hand grenades and 8-inch projectiles. The 57mm Recoilless Rifle Range entry will be changed as follows: Military Munitions that may be used Column – *57mm M306 Series HE projectile, M306A1 target practice projectile, M307 series HEAT projectile, and M308 series smoke (white phosphorous)*. The maximum range column will also be updated to include the maximum range for the M307 HEAT of 6,364 m and the maximum range for the M308 series smoke of 400 m).

Comment 12: Section 3.5.1, Training Practices, page 62: The subsection entitled Recoilless Rifles-57mm does not list the M308 series smoke (white phosphorous) projectile and the M307 series HEAT projectiles, both of which have been found downrange. Please add these projectiles to the list as noted.

Response 12: The text will be revised to include the M307 series HEAT and M308 series smoke projectile as follows: *“The maximum range for the 57mm projectile is approximately 6,500 meters. 57mm projectiles HE and practice could be found down range of the 57mm recoilless rifle range and could extend into the center of the Impact Area. In addition M307 series HEAT projectiles and M308 series smoke (white phosphorous) could be found downrange.”*

Comment 13: Section 3.5.1, Training Practices, page 64: The subsection entitled Practice Hand Grenades lists the throwing range of the practice grenades as “about 25m.” The correct distance is 30 to 40 meters (depending on the model thrown) per FM 23-30 (Grenades and Pyrotechnics). Please make this correction.

Response 13: The text will be revised as follows: *“Because practice hand grenades can only be thrown about 30 to 40 m, they would be expected to be localized near the targets and not be found further down range.”*

**Comment 14:** Section 3.5.3.2, Vertical Distribution, page 78: The first paragraph of the subsection entitled Watkins Gate Burn Area contains a sentence that reads, “The results of the survey indicate the potential for more buried items to be present in the areas with high anomalies per foot, than in areas with low anomaly per foot densities.” The use of the word “buried” in the cited sentence raises a question. Is it the intent of this sentence to state that there is a greater potential for subsurface MEC to be present as a result of firing, or that there is a greater potential for purposely buried MEC to be found there in burial pits? Please clarify this and, if the intent is to indicate the presence due to firing activities, please replace the word “buried” with the word “subsurface.” Also, if the intent is to express a potential for more burial pits, please expand this subsection to explain why this is the case.

**Response 14:** The text will be revised as follows: *“The results of the survey indicate the potential for more subsurface items to be present in the areas with high anomalies per foot densities.”*

**Comment 15:** Section 5.1.1, Site Use and Development, page 101: The first four bullets in this section are a listing of the types of training conducted at the installation prior to its closing. There are some omissions from the listings contained therein. Please review the listing and correct it as necessary to address the following concerns:

- When was training conducted with the larger artillery weapons listed in the tables contained in Section 3.5.1, Training Practices?
- When was the training with the 4.2-inch mortar conducted?
- Was any training conducted in the area using mines?
- Which weapons fired white phosphorous projectiles?

Also, in the fifth bullet on page 102, the word “in” appears to be a typographical error.

**Response 15:** The text will be revised to include the requested information.

**Comment 16:** Appendix B, MEC and Munitions Debris Removed from the Impact Area, Table B7, MRS-15 Range 30A, page 1 of 6: Line 16 of the table has an item listed with the nomenclature of “M430” in the column labeled “MM Item Description.” It would appear that the correct nomenclature for this item is Projectile, 40mm, HEDP, M430. If this is correct, please enter it into the table. If it is incorrect, please provide the correct entry in the table.

**Response 16:** The entry was cut off in the table. The full entry is Projectile, 40mm, high explosive dual-purpose, M430. The table will be reformatted so the entry is not cut off.

**Comment 17:** Appendix B, MEC and Munitions Debris Removed from the Impact Area, Table B7, MRS-15 Range 30A, page 4 of 6: Line 6 of the table has an item listed with the nomenclature of “M430” in the column labeled “MM Item Description.” It would appear that the correct nomenclature for this item is Projectile, 40mm, HEDP, M430. If this is correct, please enter it into the table. If it is incorrect, please provide the correct entry in the table.

Also, on lines 19 and 20 of the table, two items are listed that have the nomenclature of “series” in the column labeled “MM Item Description.” Please provide the correct nomenclature for these two items in the table.

**Response 17:** The entries were cut off in the table. The full entries are 40mm, high explosive dual-purpose, M430 and Projectile, 60mm, mortar, practice, M50 series. The table will be reformatted to the entries are not cut off.

**Comment 18:** Appendix B, MEC and Munitions Debris Removed from the Impact Area, Table B8, MRS-15 BLM: There are a number of entries in the table that have a red asterisk in the column labeled “MM Item Description.” All of these items have the words “Model Unknown” in their description as well. The purpose of the asterisk is not explained in the table. Please provide a note in the legend at the end of the table to explain the purpose of the red asterisks.

Also, there are a number of munitions items on page 5 of 11 that have a model number listed followed by the words “Model Unknown” in the “MM Item Description” column of the table. As these two situations are in conflict, please correct these entries as necessary.

**Response 18:** The table will be revised to provide a footnote identifying the information noted by the asterisks. Entries that have a model number followed by “Model Unknown” are the result of database quality control review process during which conflicting information concerning the item made it impossible to conclusively assign a correct model number.

## **SPECIFIC COMMENTS – Volume 2**

**Comment 1:** Section 2.2.1, Application of Risk Assessment Results, page 12: The second bullet in this section reads as follows:

“The potential After Action MEC Risks associated with a removal to depth for all receptors intruding below 1 foot remain highest risk (E). For shallow intruding receptors (those intruding less than 1 foot) and surface only receptors, the risk is lowest (A). It was assumed that all MEC encountered

and detected on the surface and below ground surface would be removed. However, based on the potential limitations of the detection equipment and procedures, it would not be possible to verify that all MEC items were removed to all depths. Therefore, for the removal to depth scenario, the risk assessment assumed nearly all items would be removed in the top 1 foot below ground surface, and some MEC would remain below a depth of 1 foot below ground surface.”

While this is a very conservative approach that is to be applauded from a safety perspective, by assuming that the risk from MEC after a removal to depth is basically the same as that after a 1 foot removal, the assumption will tend to result in the removal to depth alternative being rejected due to its much higher cost. If this basic approach is followed during the risk assessment process on subsequent RI/FS, removal below the 1 foot depth could potentially be eliminated as a viable option at the former Fort Ord.

Please review the basis for determining that the risk is not reduced by a removal of all detectable MEC to depth for those individuals conducting intrusive activities below the 1 foot depth.

Response 1: Please see response to EPA General Comment 4.

The risk assessment will be revised to provide additional details on the factors used in the scoring. It is true that the protocol states that a score of 1 for depth below ground surface is likely to occur when considering remedial alternatives. For the removal to depth scenario where all detected MEC items are removed according to the data quality objectives, using a score of 1 for depth below ground surface and 1 for MEC density for all depths would result in a score of “A” (lowest risk) for all receptors. Although this is an approach that could be used, the MR BCT did not feel that a score of “A” (lowest risk) is appropriate scoring for the Impact Area MRA.

A very high density of MEC was observed at MRS- Ranges 43 through 48 during Interim Action. This indicates that the MEC density in the rest of the Impact Area MRA could be as high as that encountered at Ranges 43 through 48. In over 150 acres of Ranges 43 through 48, removal to depth using geophysical detection technology was not completed during the Interim Action due to the presence of high concentrations of metallic debris which made it impossible to identify individual anomalies to investigate. These areas would require a different approach in order to complete a subsurface MEC removal. In the periphery of such areas the density of debris is still very high. Though it has been shown that detection technologies can reliably detect most shallow subsurface MEC items, there may still be concerns about the ability of the BAT to detect MEC items at depth. In addition, because the site was used as a multi-range impact area for



decades, the possibility of Type 3 MEC items remaining in the subsurface cannot be ruled out. Therefore, an after-action scoring of “A” (lowest risk) was considered inappropriate for receptors intruding below 1 foot depth.

An alternative approach, also allowable under the Fort Ord Risk Assessment Protocol, was therefore used for calculating the risk for receptors that would intrude below one foot. Similar to the application of the protocol for the Parker Flats MRA, the MEC depth below ground surface and MEC density input factors were selected based on calculated after-action MEC density below the 1 foot depth. The resulting overall risk score is “E” (highest risk) for the deeper intruding receptors.

Additional text will be included to the uncertainty analysis that indicates that the risk score of E may not be an accurate reflection of the risk below one foot, because the risk would have been reduced through the removal action; however, the Army and the regulatory agencies does not believe that the risk score of “A” or lowest risk is accurate either, due to the uncertainties that exist with removals completed below a foot using current best available technologies.

The Army anticipates that, at the time the remedial actions are completed, better technologies may be available and it may be possible to meet the established DQOs, at which point the risks could be reevaluated using the Risk Assessment Protocol or other future method developed to evaluate risk at MRSs.

**Comment 2:** Section 3.2.3, Construction Monitoring, page 28: The first sentence in this section notes that, Construction monitoring would be performed by qualified MEC personnel (military munitions specialists) during any intrusive or ground-disturbing construction activities at the Impact area MRA...” While the use of the undefined terms “qualified MEC personnel” and “military munitions specialists” has been addressed in General Comment 1 above, the use of the term “military munitions specialists” deserves additional comment. The Army currently has a number of non-UXO qualified job titles that fit into the category of “military munitions specialists.” For example, an Ammunition Supply Specialist or an Ammunition Specialist would not be qualified to perform construction monitoring. Please correct the cited sentence in accordance with the comments provided here and in General Comment 1.

Response 2: The text will be revised as suggested.

**Comment 3:** Section 5.1, Evaluation of Remedial Alternatives, page 60: Alternative 2, Visual Surface MEC Remediation, found in the subsection entitled Overall Protection of Human Health and the Environment, has a sentence that reads as follows:

**“However, because MEC would not be removed from the subsurface that would potentially pose MEC risks to reusers conducting intrusive activities during reuse, this alternative would be protective of human health for receptors conducting intrusive activities in combination with Land Use Controls that include MEC recognition training and escorted access by qualified personnel, and construction monitoring during any intrusive activities.”**

**This sentence is very long and is difficult to understand. Please revise the cited sentence to better express the intended meaning.**

Response 3: The text will be revised as suggested.

**Comment 4: Section 5.1.8, State Acceptance, pages 72-73: With the exception of Alternative 1, No Further Action, the assumption is presented that all of the alternatives are “...likely to be acceptable to the regulatory agencies...” This is somewhat questionable, as the removal of surface MEC with no subsurface removals on the roadways, trails, and fuel breaks would seem to be less acceptable than a complete subsurface removal throughout the entire impact area. Please review the wording of the quoted statement found in the listed alternatives and modify them as deemed necessary.**

Response 4: The text will be revised as suggested to provide additional detail for each of the alternatives.

**Comment 5: Section 5.1.9, Community Acceptance, pages 73-74: With the exception of Alternative 1, No Further Action, the assumption is presented that all of the alternatives are “...likely to be acceptable to the public...” This is somewhat questionable, as the removal of surface MEC with no subsurface removals on the roadways trails, and fuel breaks would seem to be less acceptable than a complete subsurface removal throughout the entire impact area.**

**Please review the wording of the quoted statement found in the listed alternatives and modify them as deemed necessary.**

Response 5: The text will be revised as suggested to provide additional detail for each of the alternatives.

**USEPA Supplemental Comments  
Letter dated November 9, 2006  
COMMENTS**

**GENERAL COMMENTS**

**Comment 1:** The MRS-16 burn went very well and the Army team and POM fire department did an outstanding job. However, the 58 acre fire produced a significant amount of smoke. EPA is concerned with the large acreage the Army proposes for prescribed burns in the Track 3 RI/FS. As noted at the Track 3 RI/FS meeting in September 2006, EPA had the understanding after the 2003 prescribed burn at Ranges 43-48 that future prescribed burns would be 100 acres or less in size, like MRS-16. However, the Army said that EPA had misunderstood and that they had simply proposed that future prescribed burns would be smaller. EPA understands that the Army needs to burn the acreage to remove the MEC and that this is the overall goal. But we are concerned that in the RI/FS, the Army proposes (for Alternatives 2 and 4) 800 acres of prescribed burning per year in two 400 acre increments. We are concerned that significant smoke will be generated and no relocation offered to help minimize smoke impacts. EPA understands that the average impact area polygon is approximately 400 acres, but had understood that the Army was looking to make these polygons smaller and hence result in smaller prescribed burns. The Army should analyze the feasibility of creating these smaller polygons and additional fire breaks in the RI/FS. These subdivisions of polygons and creation of fuel breaks do not have to be permanent. They can be temporary. If feasible, the Army could split each 400 acre polygon into 4 smaller polygons with the creation of temporary fuel breaks that are only surface cleared. The Army could achieve 400 acre prescribed burns by conducting 100 acre prescribed burns over 4 consecutive days. Also, the Draft Track 3 RI/FS does not discuss the basis for the 400 acre sized (or 300 acre for Alternative 3) prescribed burns and up to 800 acres of prescribed burns per year or the implementability thereof in section 5 of the FS. This discussion should be added. Finally, please clarify the size of the fuel breaks proposed for the impact area. The draft RI/FS briefly discusses the size of existing fuel breaks (45-50 feet) but does not indicate whether these fuel breaks will be enlarged to 150 feet as they were for MRS-16.

**Response 1:** As described in the FS, a phased approach of conducting prescribed burning and MEC remedial actions on approximately 800 acres per year is allowed in accordance with the HMP for which prescribed burning is implemented in Habitat Reserve areas at the former Fort Ord. Each prescribed burn area will not exceed 400 acres (separated by a minimum of 25 acres to allow a mosaic pattern consisting of difference age classes of vegetation) as specified under the HMP,

unless specifically coordinated with USFWS. Therefore, under the Surface MEC Removal remedial alternative, prescribed burning and MEC removal could be conducted on up to 800 acres per year. The 300 acres per year assumed under the MEC Removal to Depth alternative is based on the longer duration to conduct the removals prior to vegetation regrowth.

It is anticipated that the prescribed burns will be conducted in stages and consist of several small burns rather than one large burn. An implementation work plan will be prepared prior to each phase of work. The implementation plan will include a burn plan. This burn plan will describe the locations and widths of temporary and permanent fuel breaks, and the number and size of burns that will be required. The text will be revised to clarify the basis for the proposed acreage, and provide additional details on the implementation plan.

**Comment 2:** **If the RI data and conceptual site model derived from it can be used to determine where the high explosive, penetrating and most dangerous munitions are likely to be in the subsurface, should the Army consider trying to do some spot subsurface clearance to remove these dangerous munitions thereby giving more long term protection? Or if upon the surface removal it is clear that dangerous items are just below the surface – should the FS discuss the possibility of removing them?**

**Response 2:** The response actions will be conducted in stages as described in the FS. A site specific implementation work plan will be developed for each phase of work. The plan will describe the anticipated distribution of MEC, the vegetation clearance plan, and the method for completion of the response. It is anticipated that following the surface removal, the digital geophysical scan will be completed and the data will be presented to the BCT. The BCT will review the data and determine if additional actions (subsurface removal) are necessary. The review will include an evaluation of whether additional actions are consistent with the ARARs including the HMP and Biological Opinions. The text of the FS will be revised to include additional information on this proposed approach. A Technical Memorandum will be prepared documenting the decision reached in the BCT. To avoid impacts to the rare, threatened and endangered species seed bank, completion of the TM will need to be expedited to allow any additional actions to be executed before the next growing season. Additional details on the BCT review step will be added to the FS. In general, factors that would be considered when determining whether additional action, such as subsurface removal are required, include, but are not limited to:

- Type of MEC encountered and danger associated with the MEC
- Proximity to potential receptors
- Density of items
- Consistency with ARARs.

The text of the FS will be revised to include additional information on this proposed approach.

**Comment 3:** The Track 3 RI/FS should note upfront that only the physical hazards from MEC are being assessed and addressed (for example, the last sentence on page 82 – include this same sentence on page 1.)

Response 3: The information appears on page 2, but will also be added to page 1.

**Comment 4:** The Track 3 RI/FS uses MEC data from Ranges 43-48 and emphasizes that it likely represent a worst case MEC scenario in terms of nature of items and densities. If this is the case, the RI may overestimate MEC densities and hazards in the 6560 acre Track 3 RI/FS impact area and hence may overestimate the costs of cleanup as well. Since the major difference between the various alternatives in the Draft Track 3 RI/FS is cost, EPA wants assurances that the cost estimates are reasonable and supported. After reviewing the FS, EPA is not in full agreement with the cost assumptions and is concerned that costs for Alternatives 3 and 4 are not reasonable and may be too high. Also see general Comment 9 below about revising the FS to ensure it is clear that more than just cost distinguishes the FS Alternatives 2-4.

Response 4: The text will be revised to provide additional discussion on the basis for the cost assumptions and differences between the alternatives based on the other criteria.

**Comment 5:** Ensure updated 43-48 data from final Technical Information Paper (TIP) is included in the revised RI/FS for Track 3.

Response 5: The report will be updated to incorporate data from the most recent version of the Ranges 43 through 48 TIP.

**Comment 6:** EPA would like to discuss the possibility of the revised FS including an alternative with a MEC-cleared buffer along the impact area perimeter fence proximate to adjacent residential areas to protect them from MEC in the event of a wildfire and to better protect potential trespassers near the fence-line. A buffer might also protect firefighters responding to wildfire. EPA understands that preliminary cost estimates for such a buffer are high and that as a result the buffer would likely be no more than 100-200 foot wide.

Response 6: The Draft Final Track 3 MR RI/FS includes, as part of Alternative 4, a 100 foot-wide removal-to-depth buffer along the inside of the habitat-development border of the Impact Area MRA. This buffer would act as an additional safety zone that would give firefighters an ability to fight wildfires that might occur within the Impact Area. The firefighters would be able to temporarily widen fuelbreaks under such circumstances, to protect life and property on the development side of the border.

- Comment 7:** Because of the prescribed burn/relocation history, The Army should provide a detailed explanation as to why relocation was not considered in any of the FS alternatives or perhaps include it in an alternative and thus through the 9 criteria analysis show why it is not necessary. Otherwise the public is left to wonder.
- Response 7:** The text will be revised to provide additional discussion of the reasons relocation was not included as a component of prescribed burning.
- Comment 8:** For alternatives including the preferred alternative where MEC is left in place in the subsurface, there should be a prohibition on unrestricted uses such as residential.
- Response 8:** The text will be revised to include the prohibition on unrestricted uses such as residential.
- Comment 9:** For the FS alternatives and comparative analysis of alternatives, the primary difference between the alternatives is cost. Please provide additional discussion and summary in Table 2 to more clearly separate the various alternatives and provide clearer support for the preferred alternative. For example, Alternatives 2-4 are all protective but clearly just removing surface MEC could be interpreted as less protective particularly for potential subsurface users than an alternative that proposes removing all MEC to depth. Same with long term effectiveness – the more MEC that is left in place, the more long term controls will be required to protect future users. Also, for Alternative 3, there may be so called special case areas (SCAs) that cannot be fully excavated due to the high density of anomalies. As a result Alternative 3 may not be as protective in the long term or as implementable. Also it is probably worthwhile stating that as far as implementability, Alternative 3 is not highly implementable or likely to be in full compliance with endangered species ARARs because of the likely necessary destruction of endangered habitat. Also, it would be reasonable to provide assumptions for state (regulatory) and community acceptance. For example it is likely that the community would support cleaning up more MEC but not the destruction of endangered habitat. Also may want to note that the members of the community have voiced concerns with prescribed burns in the past so Alternative 3 which proposes many more years of prescribed burning would likely be less acceptable to the community. Any of the alternatives with prescribed burning will likely result in some community concern because relocation is not being offered but the community should also support the overall goal of removing dangerous MEC form the impact area. For the state (regulatory) acceptance, more cleanup (BLM, DTSC) is preferred but destruction of habitat is not (USF&W). State/regulatory acceptance could also discuss that DTSC will likely want and support alternatives with institutional

**controls like construction support and land use controls (e.g., prohibiting unrestricted uses) that provide additional protection for future users. These are just some initial thoughts on revisions to the alternatives discussion in the RI/FS. Please revise the FS alternatives sections to include more information by which to compare the alternatives vs. the 9 criteria and each other.**

Response 9: The text and associated tables will be revised to provide additional discussion on the differences between the alternatives based on the 9 criteria.

## **VOLUME 1 OF 2, REMEDIAL INVESTIGATION**

**Comment 1: Page 1, second paragraph, Second word. Typographical error, “distinguess” – is it supposed to be distinguishes or designates?**

Response 1: The text will be revised to correct the error to be “distinguishes”.

**Comment 2: Page 9, section 2.1.2, first sentence: add “in 1991,” after “Fort Ord.”**

Response 2: The text will be revised as suggested.

**Comment 3: Page 10, Summary of Existing MR Program. Shouldn’t this also include interim actions at 43-48 and MRS-16 and various RI/FSs on Tracks 0-2? Otherwise, change the title of the section to better clarify.**

Response 3: The text will be revised to include information on the Interim Action ROD and actions taken at Ranges 43 through 48 and MRS-16.

**Comment 4: Page 12, Section 2.2.3.3. SUMP (1995b) – please provide additional information on this document. This is a USACE document about how BLM will manage the site? How does it relate to the 2004 Draft Proposed Management Plan by BLM Hollister office? Also may want to include the Draft BLM 2004 plan as an appendix to the Track 3 RI/FS.**

Response 4: Since base closure, the Army has been coordinating with BLM regarding the management of habitat reserve within the former Impact Area. The 1995 SUMP and 1997 HMP outline agreements on conceptual reuse and management of the Impact Area based on MEC cleanup expectations at the time. Since then, BLM has provided several updates on its plans for reuse and habitat management. These documents include the 2004 draft Proposed Management Plan, 2006 Proposed Resource Management Plan/Final Environmental Statement, and 2006 draft HCP (provided as part of the BLM comments to the draft Track 3 MR RI/FS). The Army recognizes that detailed plan for managing the habitat reserve in the Impact Area may change as new information becomes available during the HCP process.

However, this RI/FS considers all available information in order to construct a remedial alternative that ensures habitat management requirements of the HMP/HCP can be implemented within the Impact Area habitat reserve. The text will be revised to include additional information on the SUMP as well as the draft HCP which replaces the Draft BLM 2004 plan.

**Comment 5:** Page 13, first paragraph –“three unique future reuse designations” – the text appears to mention 4. Also the unrestricted/ urban development designation per the first bullet needs additional detail here – what is BLM proposing?

Response 5: The text will be revised to eliminate the reference to unrestricted/urban development reuse. This reuse is not planned for the Impact Area MRA.

**Comment 6:** Page 14, second paragraph, first sentence. Regarding 2004 BLM Proposed Management Plan. Note that this was BLM’s first, draft attempt at proposing potential future uses for the former impact area in response to the Army’s request. Note that the plan is draft and may change.

Response 6: The Draft 2004 BLM Proposed Management Plan was not the first attempt by BLM to propose potential uses within the Impact Area. The SUMP was developed in close coordination and signed by BLM as the first attempt to identify potential uses of future BLM lands within the Impact Area. The text will be revised to reference the document as draft. The HCP is draft, and the BLM resource plan is final (*BLM, 2006*). Please also see response to Comment 4 above.

**Comment 7:** Page 20, Regulatory background. Note USF&W/HMP? Refer back to page 17?

Response 7: The text will be revised to include a discussion on the regulatory participation by the U.S. Fish and Wildlife Service (USFWS). Consultation with the USFWS on remediation of MEC has been completed resulting in a biological opinion including incidental take limits. If the Track 3 RI/FS results in impacts to HMP species not previously considered, the Army will consult with the USFWS in accordance with the Endangered Species Act.

**Comment 8:** Page 21, second and third paragraphs. Please provide additional detail in the text regarding the November 1998 and April 2000 agreements. Please note who the agreements are with, etc.

Response 8: The text will be revised to provide additional detail regarding the agreements.

**Comment 9:** Page 24, Impact Area Investigations, first bullet. Where was the 100 percent sampling performed? Is it the grid pattern shown on Plate 2? If so, these include the excluded areas of the Track 3 RI/FS impact area. Also, the 43-48 grids are not shown.



- Response 9: The 100 percent sampling is shown on the map. The grids completed within the Track 3 Impact Area Munitions Response Area will be presented in a different color than grids completed outside the boundary. The grids completed at Ranges 43 through 48 will be added to Plate 2.
- Comment 10: Page 28. First paragraph. The impact area is described here as being 6560 acres in size. In other documents EPA has seen it described as 8000 acres and 7000 acres. If one adds up the individual acreage noted in the polygon map (10/31/03) it is closer to 7500. So what is the acreage? Is the 6560 in the RI/FS excluding the various parcels like Seaside 1-4? Please clarify. Also, it would be helpful to have a map clearly showing the excluding parcels and their acreage.**
- Response 10: The 6,560 acre number excludes the parcels inside the Impact Area that would not be transferred to BLM. A new map will be generated to better show the areas of the Impact Area that are included in the Impact Area MRA.
- Comment 11: Page 28, section 3.1 vs. Page 30, second paragraph, last sentence: At time of base closure – 30 ranges or 29 ranges active? Earlier in the RI, 30 ranges was used (page 11, last sentence).**
- Response 11: Based on review of the October 7, 2002 Standard Operating Procedures (SOP) 28 ranges were active at Base Closure.
- Comment 12: Plates 3 and 4. If possible, please ensure that the titles of these plates are visible while folded the clear sleeves in the document.**
- Response 12: The plate folds will be modified to ensure that the titles of the plates are visible within the sleeves.
- Comment 13: Page 32-33, Fuel breaks. Fuel breaks are 45-50 feet in width. At MRS-16 the perimeter fuel breaks were 150 feet wide. The Track 3 RI/FS should also include clearance of fuel breaks to 150 feet.**
- Response 13: Permanent fuel breaks within the Impact Area are maintained at 45 to 50 feet wide. However, wider temporary fuel breaks are created by cutting vegetation (not grubbing or disking) within a distance established by the Fire Department to reduce risk of an escape. In the case of MRS-16, a 150-foot wide perimeter surrounding the MRS site was cleared of vegetation with larger oak trees being pruned. Three sides of MRS-16 were also bounded by asphalt roads creating a total of approximately 200 feet of “fuel break.” These wider breaks are temporary and will not prevent protected habitat and species from recovering per the requirements of the HMP.

Please see response to Supplemental EPA Comments, General Comment 1.

**Comment 14: Page 36-38. Discuss high density special case areas. Ensure this section is updated based on the final 43-48 TIP.**

Response 14: The text will be revised to include a discussion of the high density MEC areas and incorporate data from the most recent version of the Technical Information Paper.

**Comment 15: Page 41, last bullet. Is Badger Flats on Plate 2 or another plate? Not sure where it is.**

Response 15: Badger Flats will be added to Plate 2 and subsequent plates.

**Comment 16: Page 42, Range 36A. Please update in revised RI/FS.**

Response 16: The text will be revised to include a discussion of the most recent information regarding Range 36A.

**Comment 17: Page 52, second paragraph. Please show BRA areas in the impact area sampled for chemical contamination on a map/plate.**

Response 17: An additional plate will be provided to the report showing the areas of the Impact Area that were sampled. The plate will also show areas where site walks were completed.

**Comment 18: Page 82, Section 3.6.3. Need more information on area of coverage. Map/plate?**

Response 18: Please see Response to Comment 17. A plate will be prepared showing the areas where sampling and reconnaissance have been completed.

**Comment 19: Page 85, last paragraph, reference to Attachment A. Where is this attachment? Did the Army mean to reference Appendix B?**

Response 19: The data were going to be provided as Attachment A following final QC; however, they are now provided as Table B12 to avoid providing the same information in two locations.

**Comment 20: Pages 93 and 99 – typo – delete extra period: “from E to A..”**

Response 20: The text will be revised as suggested.

**Comment 21: Page 97, Section 4.2. Update BRA information. Please give more detail on BRA areas in the impact area sampled and evaluated for chemical contamination threats. Note when the document is due to be completed etc.**

**Also note in this section that threats to groundwater from MEC in impact area not a concern because concentrations not high enough, groundwater is very deep, etc. – just be clear that this pathway was considered.**

**Response 21:** A plate will be prepared that identifies the areas that have been sampled, and will be added to the report. A Feasibility Study for Site 39 is being prepared that will describe the remedial actions anticipated for the site. This document is scheduled for 2007. The threat to groundwater from MEC was considered as part of the 1994 Basewide RI/FS. This is not a concern because groundwater is very deep and sampling indicated that the impacts to soil are generally confined to the top foot.

**Comment 22:** Page 103, second bullet. Is this statement true for 43-48 so-called special case areas? Please clarify as the report argues that 43-48 is a worst case for MEC in the impact area.

**Response 22:** It is anticipated that the conditions will be similar in the special case areas; however, because removals to depth have not been completed in the special case areas, the depth distribution in the SCAs cannot be determined. A statement will be added to the text stating that the vertical distribution in the SCA is unknown.

**Comment 23:** Appendix A – are these SOPs still appropriate for reference as HLA no longer involved. These SOPs are 5 to 6 years old. Please clarify.

**Response 23:** The SOPs are still being used for addition of data to the GIS. The SOPs will be updated as MACTEC documents.

**Comment 24:** Appendix B, Again please update as appropriate based upon final TIP data.

**Response 24:** The Appendix was updated to include the TIP data.

**Comment 25:** Appendix D, Note that After Action Reports (AARs) are available online or if not all are place an asterisk next to those that are available online. Also please note the Army's Fort Ord cleanup website address.

**Response 25:** Appendix D will be revised as suggested.

## **VOLUME 2 OF 2, FEASIBILITY STUDY**

**Comment 1:** Page 1, Section 1.1. Note in the objectives that this document only addresses physical MEC risks.

**Response 1:** The text will be revised as suggested.

**Comment 2:** Page 4, first sentence. Should "potentially" be potential?

- Response 2: “potentially remaining MEC risks” is the intended terminology.
- Comment 3: Page 6, Impact area acres – please clarify per comment RI above. Also show acreage on Plate 2 or another plate if possible. Note in text at bottom of page 6, the acreage for Eucalyptus Fire and the WGB areas.**
- Response 3: The text will be revised as suggested.
- Comment 4: Pages 7-8, Section 2.2, Please just state: “the RAOs for Track 3 are:” This section as written is confusing.**
- Response 4: The text will be revised as suggested.
- Comment 5: Page 11, third paragraph and elsewhere in FS. Instead of using term visual surface clearance, just use surface clearance. The surface clearance should be instrument aided or at least include the option of using an instrument.**
- Response 5: The surface only removal would include use of a hand held magnetometer or equivalent instrument in areas where the ground surface is not visible such as areas covered with ash. The use of the hand held magnetometer will be added to the description of the surface removal provided in the FS.
- Comment 6: Page 13, second paragraph, item (3) containment of MEC. Please explain what is meant here by containment of MEC.**
- Response 6: Containment of MEC would consist of placement of physical barriers to prevent contact.
- Comment 7: Page 13, Section 2.2.2, last sentence, reference to Section 4.5. Section 4.5 doesn’t actually have anything in it. It says look at Table 1. Should you have more discussion in Section 4.5?**
- Response 7: The text will be revised to provide additional detail and clarify references to potential ARARs that are presented in Table 1.
- Comment 8: Page 14, Chemical specific ARARs. Do these even apply if only looking at physical hazards in this RI/FS. Please clarify.**
- Response 8: The text will be revised to provide additional detail and clarify references to potential ARARs that are presented in Table 1, including the chemical-specific (MEC-specific) ARARs identified in the table.
- Comment 9: Page 20-21 (DTSC LUC policy) and 22-24 (deed notices etc) – Please better clarify how applicable to a Fed to Fed transfer and better define the**

**“Assignment” vehicle. Is there a deed at the time of transfer – how do restrictions run with the land? Also 5-year review – the reviews are every 5 years as long as waste remains on site so not just conducting a 5 year review once within 5 years of the remedy implementation. Also note the next Fort Ord basewide 5 year review is 2007.**

Response 9: The text will be revised as suggested to clarify the scope of the Assignment and basewide five-year review schedule.

Comment 10: **Page 24, Second paragraph on community involvement – note the Fort Ord web site address after the web site is referenced in the text.**

Response 10: The text will be revised as suggested.

Comment 11: **Page 24, Local and state Ordinances. Need more here. These would not apply to impact area because Fed to Fed transfer? Or could explain that outer portions of impact area (Seaside, etc.) and MOUT will go to municipalities etc and so they would be covered.**

Response 11: The text will be revised as suggested to clarify the applicability of local and State ordinances.

Comment 12: **Page 26. First bullet and 3.2.1. Again more needed on “assignment”. Who enforces? Another important land use control if go with preferred alternative: No unrestricted reuse.**

Response 12: The text will be revised as suggested to clarify the scope of the Assignment and restrictions on reuse.

Comment 13: **Page 27, section 3.2.2. If items left below surface as per the preferred alternative, will need escort and construction support.**

Response 13: The text will be revised to clarify how each of the stand alone components described are combined in the development of comprehensive remedial alternatives.

Comment 14: **Page 28, section 3.2.2, last sentence. Please delete. Can’t be discontinued, as too much MEC will remain in subsurface.**

Response 14: The text will be revised to clarify the decision process regarding long term requirements for MEC recognition and safety training.

Comment 15: **Page 28-29, section 3.2.3. 5-year review – the reviews are every 5 years as long as waste remains on site. Also, would not expect the cessation of construction monitoring if MEC remains in subsurface – please delete or revise.**

- Response 15: The text will be revised to clarify the decision process regarding long term requirements for construction monitoring.
- Comment 16: Page 29, section 3.2.4, second sentence, “may be” should be “will be” as MEC will remain below surface.**
- Response 16: The text will be revised to clarify how the range of options described that may be implemented are combined in the development of comprehensive remedial alternatives.
- Comment 17: Page 31, third paragraph. Selection of vegetation clearance also depends on type and density of surface and shallow subsurface MEC.**
- Response 17: The selection of vegetation clearance methods will be driven by the requirement to conduct prescribed burning in Central Maritime Chaparral Habitat. The type and density of surface munitions will be considered, but is not the driver on the method of vegetation clearance suggested.
- Comment 18: Page 32, first bullet. Up to 800 acres proposed for burns per year need more detail on basis for this annual acreage amount.**
- Response 18: Please see Response to Supplemental EPA General Comment 1 that indicates the text will be revised to clarify the basis for the proposed acreage, and that it is anticipated that the prescribed burns will be conducted in stages and that several small burns will be conducted rather than one large burn.
- Comment 19: Page 34, first paragraph. Give more details on notification. Also include the language that smoke not good for your health (per earlier fact sheets/reports prepared by the Army for prescribed burns) and ways the community can take precautions to minimize impacts (staying indoors, relocating themselves, etc).**
- Response 19: The text will be revised as suggested to provide additional information regarding notification.
- Comment 20: Page 35, Worker safety and top of page 36 – instead of “suitable distance” use minimum safe distance based upon MEC. Workers would not be harmed if minimum safe distance maintained.**
- Response 20: The text will be revised as suggested.
- Comment 21: Page 38, second paragraph – revise – sentence cites section below which is actually in the paragraph above to emphasize history of successful prescribed burns as discussed in the second paragraph.**

Response 21: The text will be revised as suggested.

**Comment 22: Page 39, section 3.3.2 – Again – source/basis of 800 acres – please explain.**

Response 22 Please see Response to Comment 18 and Supplemental EPA General Comment 1 that indicates the text will be revised to clarify the basis for the proposed acreage, and that it is anticipated that the prescribed burns will be conducted in stages and that several small burns will be conducted rather than one large burn.

**Comment 23: Page 40, section 3.3.2.1.1. Visual surface clearance can include instrumentation.**

Response 23: See response to EPA Supplemental Comments, Volume 2 of 2, Feasibility Study, Comment 5.

**Comment 24: Page 44, section 3.3.2.3. Digital Mapping – please better explain purpose of this mapping and how it is of benefit to future users.**

Response 24: The text will be revised as suggested to provide additional details regarding the purpose and benefits of digital mapping.

**Comment 25: Page 46-47, section 4.1. Should this be in Section 4.0? If yes then why is it included the first section of the development of alternatives discussion? Also – again need more information if possible on “Assignment.”. Also, 5-year review – per CERCLA, 5 year reviews continue as long as waste remains on site.**

Response 25: The description of Long Term Management Measures Specific to the Impact Area MRA in Section 4.1 is specific to the site and is a component included in the development of remedial alternatives discussed in Section 4.0. The text will be revised as suggested to provide additional details regarding the Assignment and 5 year review process.

**Comment 26: Page 48, second bullet – basis for 800 acres?**

Response 26: Please see Response to Comment 18 and Supplemental EPA General Comment 1 that indicates the text will be revised to clarify the basis for the proposed acreage, and that it is anticipated that the prescribed burns will be conducted in stages and that several small burns will be conducted rather than one large burn.

**Comment 27: Page 50, fuel breaks. Should remedial alternatives include 150 foot wide fuel breaks as were developed for MRS-16?**

Response 27: Please see Response to Supplemental EPA General Comment 1 that indicates the text will be revised to provide additional details regarding the implementation plan that will describe the proposed widths of MEC removals on temporary fuel breaks.

**Comment 28:** Pages 50-56, For FS alternatives (2 and 4 and maybe even 3 if SCAs) where MEC is left in place in the subsurface, there should be a prohibition on unrestricted uses such as residential.

Response 28: Please see Response to Supplemental EPA General Comment 8.

**Comment 29:** Page 52, section 4.4.3, Alternative 3. Explain that just as at 43-48, there may be SCAs that due to high density and MEC hazard, cannot be excavated. This will help explain, in addition to cost, why Alternative 3 is not preferred.

Response 29: The text will be revised as suggested, and include a discussion of potential ecological impacts.

**Comment 30:** Page 53, Section 4.4.4, Alternative 4. Regarding the up to 10% additional MEC clearance to depth – does this include existing roads and trails? The 10% would be approximately 656 acres of the 6560 total impact area acreage. Please note in the text of this section the total acreage of the existing roads and trails. Also may want to mention a buffer clearance and thus increase the percentage to include buffer acreage, perhaps 100 feet along inside of perimeter fence where it is adjacent to residential areas.

Response 30: The text will be revised to clarify the types of areas within the Impact Area MRA where MEC removal to depth would be implemented under Alternative 4.

**Comment 31:** Page 55, bullets. Add bullet(s) to address possible buffer clearance and possible removal of HE, highly dangerous shallow subsurface MEC items as appropriate.

Response 31: Please see response to EPA Supplemental General Comments 2 and 6. The text will be revised to include removal to depth within a 100 foot wide buffer adjacent to development areas and to describe the BCT review process that could result in the subsurface removal in areas such as those containing highly dangerous shallow subsurface MEC items, as appropriate.

**Comment 32:** Page 56, Section 4.5 and Table 1. See comment 7 above. Also are BLMs policies To Be Considered (TBC) that should be noted and discussed? Are the state's land use control policies also TBCs?

Response 32: The text will be revised to provide additional detail and clarify references to potential TBCs and potential ARARs that are presented in Table 1.

**Comment 33:** Page 57- 83, Section 5 and Section 6, Evaluation and comparison of Alternatives and Preferred Alternative. See general comments above



**particularly general comment 9. Preferred alternative should include a prohibition on unrestricted reuse.**

Response 33: The text will be revised to include the prohibition on unrestricted uses such as residential. Please see response to Supplemental EPA General Comments 8 and 9.

**Comment 34: Page 84, Section 7. Should this be renamed Track 3 RI/FS Next Steps?**

Response 34: The section title is consistent with EPA's *Guidance for Conducting Remedial Investigation/Feasibility Studies Under CERCLA*.

**Comment 35: Appendix A, Tables. Please include the Alternative number in the titles. Also need more information on cost assumptions as the costs for Alternatives 3 and 4 seem too high even for estimates and given the +50/-30 allowed for FS cost estimates under CERCLA.**

Response 35: The titles will be revised as suggested, and additional details will be provided to clarify cost assumptions.

Department of Toxic Substances Control  
Letter dated October 31, 2006  
COMMENTS

**Comment 1:** The document uses data from prior removal actions conducted mostly outside the Impact Area boundary. The Ranges 43-48 Interim Action Munitions Response data is extensive, but the data have not been validated by Quality Assurance. A large portion of acreage located within the Impact Area does not have adequate data collected or the data was collected without the benefit of Data Quality Objectives being in place at the time. The Impact Area has many unknowns regarding the density and location of Munitions and Explosives of Concern (MEC) that must be fully evaluated. The Feasibility study should not be based on data that do not give an accurate representation of the entire site.

**Response 1:** The Army acknowledges that the available characterization data is limited to surface removals over a portion of the site, subsurface removal actions primarily on roads and trails, and site walks conducted as part of the basewide range assessment; however the Army maintains that there is sufficient data to prepare a risk assessment using the Fort Ord Risk Protocol and to prepare a feasibility study for removal of MEC.

Much of the subsurface data was gathered during fuel break and roads and trails removal actions. The fuel breaks cross east west and north south and are similar to running transects across the site. The fuel break data in conjunction with the surface removal data, historical records, and basewide range assessment data do provide data from across the Impact Area and indicate that MEC is present throughout the Impact Area. Based on the constraints of the HMP it is not feasible to collect additional characterization data to further refine characterization areas. Much of the Impact Area not previously visited, sampled, or cleared is within thick maritime chaparral which would require burning to access. Once burned, the area could not be burned again to facilitate removal for more than a decade. This would greatly impact the ability to complete a timely characterization or removal action.

To address concerns raised on the characterization of the site, the report will be revised to better represent the current conceptual site model and the probable distribution of MEC based on historical documentation and sampling and surface and subsurface removals conducted within the Impact Area. In addition, the historical sampling, removal actions and site walks will be illustrated on additional plates.

**Comment 2:** DTSC recommends that the Impact Area be divided into operable units of a more manageable size. The "plug-in" concept may be appropriate, in this case. One possibility would be to use the existing defensible polygons as area

boundaries. Once the first of these areas is surface cleared, then the evaluation of that area can occur. The MEC found on the surface should guide the additional investigation and cleanup work. The cleanup work should be based upon the amount of MEC found, proximity to popular trails and population, the explosive hazard of the MEC items, etc. Characterization of each area in this manner will provide more meaningful data versus a generalized assumption of unknowns based on incomplete data. The BCT can learn from each subsequent area investigated and cleaned up. The intensity of the investigation and cleanup can be modified as the areas are addressed.

Response 2: The response actions will be conducted in stages as described in the FS. A site specific implementation work plan will be developed for each phase of work. The plan will describe the anticipated distribution of MEC, the vegetation clearance plan, and the method for completion of the response. It is anticipated that following the surface removal, the digital geophysical scan will be completed and the data will be presented to the BCT. The BCT will review the data and determine if additional actions (subsurface removal) are necessary. The review will include an evaluation of whether additional actions are consistent with the ARARs including the HMP and Biological Opinions. The text of the FS will be revised to include additional information on this proposed approach. A Technical Memorandum will be prepared documenting the decision reached in the BCT. To avoid impacts to the rare, threatened and endangered species seed bank, completion of the TM will need to be expedited to allow any additional actions to be executed before the next growing season. Additional details on the BCT review step will be added to the FS. In general, factors that would be considered when determining whether additional action, such as subsurface removal are required, include, but are not limited to:

- Type of MEC encountered and danger associated with the MEC
- Proximity to potential receptors
- Density of items
- Consistency with ARARs.

The text of the FS will be revised to include additional information on this proposed approach.

Comment 3: The document states that the Army will clear MEC to depth in a 200 foot “buffer zone” around each defensible polygon. DTSC’s position is that the width of this “buffer zone” may not be adequate to be protective of proposed nearby development, including residential. Please provide more information regarding how proposed residential and commercial development will be protected during prescribed burns and Munitions Removal actions.

Response 3: It is anticipated that temporary fuel breaks will be cut and surface cleared around each burn area prior to burning. This could include cutting a wider fuel break

along the development boundary prior to conducting the burn. In addition, safety set back distances will be identified that will protect the public during vegetation clearance activities. The details of these measures will be documented in the Implementation Work Plan. In addition, the Army proposes a removal to depth in a 100 foot wide zone adjacent to development areas to reduce the potential impacts of wildfires on the surrounding area.

**Comment 4:** In its preferred remedy, the Army proposes to provide a surface clearance and limited (10 percent) clearance to depth for most of the Impact Area. Because these cleared areas will be subject to erosion and other soil moving forces, frequent “operation and maintenance”, in the form of additional surface clearance, will be needed. If the areas are cleared to depth, this additional surface clearance will not be needed. Please include this analysis in the Feasibility Study.

**Response 4:** The description and estimated costs for Alternative 2 in the FS will be revised to include a post-removal erosion survey and monitoring for each area. The initial survey within 1 year of MEC removal would be performed to identify areas where erosion may be occurring and MEC may be present at the surface. Follow up monitoring would be conducted yearly until the vegetation grows back. Any areas where erosion and/or MEC were identified would then be placed in a monitoring program and additional surface removal would be conducted as appropriate.

**Comment 5:** The conceptual Site Model assumptions are based on limited sampling and transect surveys in the Impact Area. We question whether there is enough information to construct the Conceptual Site Model.

**Response 5:** The conceptual site models presented in the RI/FS are based on the existing historical information (maps, aerial photographs, reports, and range SOPs) and the surface and subsurface removals completed within and adjacent to the site boundaries. The Army maintains that this is sufficient information to construct a CSM. The CSM may be refined as new information becomes available from remedy implementation.

**Comment 6:** Volume 2, Feasibility Study, Pages 19-21. Please revise the first sentence in the last partial paragraph to read: “...Section 1472, which allows an owner of....”

**Response 6:** The text will be revised as suggested.

**Comment 7:** Please revise the first sentence in the first full paragraph on page 20 to read: “These regulations specify that a Land Use Covenant....”

**Response 7:** The text will be revised to be consistent with the regulations.

**Comment 8:** Please revise the last partial paragraph on page 20 to read: “For sites requiring land use covenants, DTSC policy and Title 22, Division 4.5, Chapter 39, Section 67391.1 require that the property owner....”

Response 8: The text will be revised to be consistent with the regulations.

**Comment 9:** Please revise the last paragraph on page 21 to read: “...would be described in further detail in the Record of Decision and in the Land Use Control....”

Response 9: The text will be revised as suggested.

**Comment 10:** Please add a final sentence to last paragraph on page 21: “The Army intends that this will comply with Title 22, Division 4.5, Chapter 39, Section 67391.1(e)(2).”

Response 10: The text will be revised as suggested.

**Comment 11:** Special Case Areas (SCAs) and Pending Areas in the Impact Area have not been fully evaluated. The Interim Action Munitions removal at Ranges 43-48 identified approximately 264 acres of SCAs and Pending Areas. The Army states that Ranges 43-48 can be assumed to be the worst case example of what might be in the Impact Area, so it is realistic to assume that other areas within the Impact Area will also be designated as Special Case or Pending Area. How will the Army address SCAs?

Response 11: It is possible that additional areas of high anomaly density will be identified within the Impact Area. As described in response to EPA Comments 1 and 2 and DTSC Comment 2, a process will be developed to evaluate areas after the surface removal is completed to determine whether additional removals are required. High density areas identified in the future would be addressed through this process.

**Comment 12:** The current fence and signage is a deterrent that cannot be considered adequate to protect the community. The Army states that the fences and signs will be maintained in addition to security patrols. Given that significant additional human population will move to the developments adjacent to the Impact Area, additional site security measures (enhanced fencing, patrols, etc.) will likely be needed. Please elaborate on how these security measures will be enhanced.

Response 12: Site security will continue as an Army function until the property is transferred. The site security program is updated as necessary to reflect any additional security measures that may be needed in the future to ensure the safety of nearby populations. At the time the property is transferred or reassigned, it is expected that a site security plan will also be prepared by the property recipient and that the

agencies will have an opportunity to review and comment on the plan. The text will be revised to indicate that the site security plan will be modified as necessary due to changes in the nearby human populations.

**Comment 13:** Volume 2, Feasibility Study, Section 3.3.1, Vegetation Clearance via Prescribed Burning. The Army lists additional vegetation clearance activities that have been studied or require further study, such as Crush and Burn; however, for the purposes of this Feasibility Study the Army assumes that prescribed burning will be implemented using a phased approach of burns and MEC removal of up to 800 acres per year of the 6,560 acre Impact Area. Each prescribed burn would not exceed 400 acres with a minimum of 25 acres of separation. Previous discussing in BCT and SMART meetings, following the 2003 prescribed burn at Ranges 43-48, have focused on conducting more frequent smaller (100 acres or less) burns per year. Please explain the rationale for the increase in acreage.

Response 13: Please see response to Supplemental EPA Comment 1.

**Comment 14:** Volume 2, Feasibility Study, Section 3.3.2.1.2 Removal to Depth and Section 3.3.2.3 Digital Mapping of Anomalies. Section 3.3.2.3 states that a digital geophysical survey will be provided to the future recipient, yet Section 3.3.2.1.2 states that a digital geophysical survey may not be conducted due to site conditions and difficult terrain features that would prevent equipment use. Please discuss how will these areas be addressed in the future to support reuse, since MEC can be expected in shallow soils below the surface?

Response 14: The text will be revised as suggested to clarify that any areas where a digital survey can not be conducted will be noted in the record provided for planning purposes for future reuses, and additional long term management measures will be evaluated for the area.

Human and Ecological Risk Division  
(Department of Toxic Substances Control)  
Letter dated October 31, 2006  
COMMENTS

GENERAL COMMENTS

**Comment 1: Relationship to evaluation of munitions constituents.**

- A. A major source of confusion in the document is precisely what areas are covered (General Comment 2) and how these areas relate to areas evaluated for munitions constituents. For the most part, this document refers only to the “*Track 3 Impact Area*”. Section 4.2 does mention “*the impact area (Site 39)*”. The relationship between “*Track 3 Impact Area*” and “*Site 39*” should be explicitly stated.
- B. Human health risk assessment for chemical toxicity is discussed in Section 4.2. This apparently includes both munitions constituents (chemicals directly related to munitions) and other contaminants. Curiously, the Department of Defense term “*munitions constituents*” doesn’t appear in the text.
- C. The discussion of human health risk assessment for chemical toxicity (Section 4.2) refers to the Basewide Range Assessment program, the Basewide Remedial Investigation/Feasibility Study and the ensuing Record of Decision. The text should explicitly state what portions of the impact area were covered in these documents.
- D. The text in Section 4.2 begins with the statement that “*The potential for risk to human receptors from the exposure to chemicals associated with MEC is being addressed as part of the Basewide Range Assessment program (BRA).*” Presumably, the present tense verb refers to the additional sampling that was done when the reuse plan was changed. According to the last paragraph in Section 4.2, “*The results of this sampling are being evaluated under the BRA.*” The status of the human health risk assessment for chemical toxicity should be explicitly stated.
- E. We describe deficiencies in the Conceptual Site Model in General Comment 7. The Conceptual Site Model for MEC should be very similar to that prepared for the human health risk assessment.
- F. Ecological risk assessment for chemical toxicity is discussed in Section 4.3. The text states that evaluation “*will continue*” under the Basewide Range

**Assessment program for Ranges 33, 36, 43, 45, and 48. This suggests that ecological risk assessment is ongoing for these ranges.**

- Response 1: Relationship to evaluation of munitions constituents.
- A. The report will be revised to more clearly define the area that is being evaluated as part of the RI/FS. The relationship between Site 39 and the Track 3 Impact Area will be explained in the text.
  - B. Munitions constituents are defined on page 1 of the document. The text in Section 4.2 will be revised to clearly identify that the chemical hazards consist of both munitions constituents and other chemicals such as TPH.
  - C. The BRA includes all of the historic Impact Area as well as areas outside the historic Impact Area that were, or were potentially, used for military munitions training (e.g., Parker Flats). A plate has been added to the report showing the site walk and locations of samples collected within the Impact Area.
  - D. The text will be revised to state that “The results of this sampling are being evaluated under the BRA to determine if any changes to the cleanup goals presented in the Basewide RI/FS and Basewide ROD (Army 1997) are necessary. The primary focus of the BRA for areas within the Impact Area is to further characterize the extent of explosive compound and lead contamination related to military training and to collect data for assessment of the risk to ecological receptors from munitions constituents.”
  - E. The Conceptual Site Model will be modified to include additional information that was provided in the BRA. It is expected that there will be differences in the Conceptual Site Model for the physical hazards associated with MEC based on the exposure pathway differences between MEC exposure and munitions constituent exposures.
  - F. The ecological risk assessments for ranges within the Impact Area including Ranges 33, 36, 43, 44, and 48 are ongoing. Additional soil samples are still being collected. Revision 1C to the Comprehensive Basewide Range Assessment includes additional sample results and was recently released for review. Soil values for metals and explosive constituents protective of ecological receptors throughout the Impact Area are being developed in the Site 39 Feasibility Study Addendum.

**Comment 2: Descriptions of the Subject Areas.**

- A. **This report only addresses part of the Impact Area. Although the description in Section 1.0 references Plate 2, it is difficult to understand which portions are included and which are excluded.**



- B. The text in Section 1.0 states that the portion of the Impact Area addressed in this report is the “*Habitat Reserve in the Installation-Wide Multispecies Habitat Management Plan (HMP)(Plate 2)*”. In spite of this specific reference in the text, neither the *Habitat Reserve in the Installation-Wide Multispecies Habitat Management* nor “*HMP*” is shown on Plate 2
- C. The text in Section 1.0 states that MRS-SEA.1 through MRS-SEA.4, MRS-DRO.1 and DRO.2, MRS-MOCO 1 and 2, MRS-46, MRS-47, and a list of other areas are excluded from this report. Plate 2 has an area labeled “*MRS-15 SEA 01*”, which may or may not be the same as “*MRS-SEA.1*”. Similarly, “*MRS-15 SEA 04*” may or may not be the same as “*MRS-SEA.4*”. None of the designations we checked in the text in Section 1.0 correspond to the designations in Plate 2.
- D. The text in Section 1.0 states that “*The area does include the Eucalyptus Fire and Watkins Gate burn Area (Plate 2).*” We assume that this means that the Eucalyptus Fire Area and the Watkins Gate Burn Area are addressed in the report. This should be clarified. Also, the legend for Plate 2 indicates both areas in the same color, so that the reader cannot tell which is which. The two areas are distinguished in Plate 5.
- E. The legends for Plate 2 and other plates indicate “*Fuel Breaks*”, but they don’t appear on the map itself. The term “*Fuel Breaks*” is also used in Section 2.3.2. Please provide a definition and please locate the “*Fuel Breaks*” on Plate 2.
- F. The locations of the firing ranges are discussed in Section 2.2.1 with a reference to Plate 2. Ninety-nine firing ranges are listed in Tables 3.1 and 3.2. Plate 2 shows the location of one firing range (Range 30A).

Response 2: Descriptions of the Subject Areas.

- A. Plate 2 will be modified and shading will be added to highlight the portions of the Impact Area included in this RI/FS. This RI/FS only includes the portion of the Impact Area currently identified for transfer to BLM.
- B. The HMP is the habitat management plan. The plan identifies areas designated as habitat reserve within the boundaries of the former Fort Ord. A note will be added to Plate 2 indicating that the shaded area is a habitat reserve area identified in the HMP and that the area is currently identified for transfer to BLM.
- C. The naming conventions for sites have undergone modification during the past year. The text and plates will be modified to use the same site naming conventions.

- D. The text will be modified to clarify that the Eucalyptus Fire Area and Watkins Gate Burn Area are included in the Impact Area MRA. Plate 2 will be modified to show a different color or pattern for each of the burned areas.
- E. Section 2.3.2 will be modified to provide a definition of fuel breaks including both permanent maintained fuel breaks and temporary fuel breaks that may be created prior to prescribed burns. The permanent fuel breaks are shown on Plate 2, but the color is difficult to distinguish. A different color will be used for the fuel breaks so they stand out. A definition of the fuel breaks will be provided in the text.
- F. The reference will be changed to Plates 3 and 4 that show the historical ranges.

**Comment 3: Abbreviations.**

- A. Little is gained and much comprehension is lost by the unrelenting use of abbreviations. For example, one single sentence in Section 1.2.1 includes “RI”, “MR”, “AARs”, “TIPs”, “ASRs” and “ODDS”.
- B. This overuse of abbreviations is exacerbated by inconsistencies. For example, a particular area is referred to as “MRS-SEA.1” in Section 1.0, as “MRS-SEA.01” in Section 3.1, and as “MRS-15 SEA 01” in Plate 2. See also General Comment 2, C.

**Response 3: Abbreviations**

- A. The abbreviations are defined upon first use and an acronyms list is provided in the document. Most of the abbreviations are related to program titles and report types. The use of abbreviations will continue.
- B. Please see response to Comment 2C. The site names will be made consistent between the text, tables, and plates.

**Comment 4: Site Characterization.**

- A. The report (Section 4.1.1) lists four areas where surface removal was carried out. These areas consisted of 1,005 acres in the Watkins Gate Burn area, 367 acres in the Eucalyptus Fire Area, 295 acres in the fuel breaks and roads and trails, and 499 acres in Ranges 43 through 48, for a total of 2,166 acres. This is only 33% of the total impact area (6,560 acres, as reported in Section 3.1).
- B. The report (Section 4.1.1) lists two areas where subsurface removal was carried out. These areas consisted of 133 acres in the fuel breaks and roads

and trails and 272 acres in Ranges 43 through 48, for a total of 405 acres. This is 6% of the total impact area (6,560 acres).

- C. However, the report (Section 4.1.1) states that *“It should be noted that only a portion of MRS-Range 43 through 48 is included with the Track 3 Impact Area MR RI/FS boundaries and that most of the subsurface removal occurred outside of the area addressed in the RI/FS (Plate 2).”* Thus, it appears that most of the impact area has not been characterized at all with respect to subsurface MEC.
- D. The discussion of uncertainty (Section 4.1.5) states that *“The data used in performing this risk assessment may not represent all areas of the Impact Area MRS [EMPHASIS ADDED] as noted above.”* This is a startling understatement.
- E. The report states that the Base Realignment and Closure Cleanup Team (BCT) decided that *“...the full removal data set from Ranges 43 through 48 could be used for this risk assessment....”* Please clarify precisely what the BCT recommended, what the BCT’s rationale was, and provide a reference to document the BCT decisions.

Response 4:

- A. Comment noted.
- B. Comment noted.
- C. The roads and trails transect through most of the Impact Area and can be interpreted to represent the areas between the roads. In addition, the historical information (training maps, aerial photographs, and SOPs) when compared to the existing data indicates that for munitions used after World War II are found within the range fans where the items were authorized for use. Please see Response to DTSC Comment 2 which outlines a procedure for presenting additional data to the BCT following surface removal and digital geophysical mapping.
- D. The Army agrees that the Ranges 43 through 48 data set does not represent all areas of the Impact Area; however, as stated in the report, the density of high explosives within Ranges 43 through 48 is expected to be one of, if not the highest, in the historical Impact Area, based on the historical usage of the ranges and observations by UXO Safety Specialists working within the Impact Area. Because, as noted in comments A and B, the data set for the area within the Track 3 Impact Area MRA boundaries is limited, the Ranges 43 through 48 data set was used to perform the risk assessment. Additional detail will be added to the text to better explain the statement referenced above.

- E. The use of the Ranges 43 through 48 data set for the risk assessment was discussed at an August 30th 2005 Technical Approach meeting attended by the Army, EPA, and DTSC. At the meeting the rationale for using the Ranges 43 through 48 data set was discussed. The rationale was that the Ranges 43 through 48 area represent a high density area and that running a separate risk assessment for lower density areas, small arms training areas on the outer edges of the Impact Area and areas between range fans) within the Impact Area was not necessary because the results would not vary (The risk would still be an E based on the presence of some Type 3 items). Other areas within the Impact Area have the same risk type items and the density would not vary enough to change the score.

**Comment 5: Data Quality.**

- A. The *“Data Usability”* discussion in Section 3.3.3 concludes that *“Based on the QA/QC procedures described above and a review of the after action reports associated with the activities performed within the Impact Area MRS, the existing Impact Area MRS data are of sufficient quality for use in the risk assessment and feasibility study.”* This appears to include the data from the Ranges 43 through 48 Interim Action.
- B. The *“Data Usability”* discussion in Section 5.1.2 in the *“Conclusions and Recommendations”* section (5.) consists of one sentence, almost identical to that quoted above from Section 3.3.3. One curious difference is that Section 3.3.3 states that the data are appropriate for the risk assessment and feasibility study, while Section 5.1.2 states that the data are appropriate for the risk assessment and the remedial investigation.
- C. The *“Data Usability”* discussion in Section 4.1.1 states that all data in the Military Munitions Response Program database have gone through Quality Control/Quality Assurance (QC/QA) but that the data from Ranges 43 through 48 Interim Action are excluded from the database because they have not yet been evaluated. This appears to directly contradict the statements in both Sections 3.3.3 and 5.1.2. Please make the appropriate corrections.
- D. Please clarify the status of the data used in the risk assessment with respect to QC/QA.
- E. The text in Section 4.1.1 suggests that *“Although it is possible that some data may need correction during the upcoming data QC/QA process, it is anticipated that the updates would not result in significant changes that could alter the input factors used in the risk assessment.”* Please provide a rationale to justify this suggestion in both Sections 4.1.1 and 4.1.5.1.

- F. **Data quality Objectives (DQOs) are not mentioned in Section 4.1.1, but Section 3.3.4 references DQOs for the Basewide Range Assessment and for the site reconnaissance phase of the current Munitions Response site investigation program. Please state explicitly whether DQOs were developed for the data used in the risk assessments in this report. If they were not, please discuss the implications.**
- G. **Please state explicitly whether the BCT has evaluated the QC/QA. If it has, please summarize its conclusions and provide a reference to document the BCT decisions.**

Response 5: Data Quality

- A. This section includes a description of the Ranges 43 through 48 QC/QA procedures, and the data usability statement includes use of the Ranges 43 through 48 data.
- B. The text will be revised to state in both sections that the data are appropriate for preparing the Remedial Investigation, Risk Assessment, and Feasibility Study.
- C. The QC and QA for the Ranges 43-through -48 data set have been completed. The QC/QA section will be updated to reflect the most current information.
- D. Please see Response to Comment 5C. The text will be updated to reflect the most current QC/QA status.
- E. The Ranges 43 through 48 data set has completed the QC process and QA of previous data sets has not resulted in significant changes to the data set. Most of the changes to historical data sets have occurred during the QC process. The report will be updated to include the most current data set. The status of the QC/QA process will be documented in the next version of the RI/FS.
- F. Specific DQO sections were not provided in the work plans for the Munitions Response activities completed within the Impact Area; however the work plans do document quality control requirements and contractual requirements. The QA/QC and contractual requirements fulfill the same purpose as DQO sections in HTW work plans.
- G. The BCT has reviewed the After Action Reports, Technical Information Papers, and Technical Memoranda associated with data collected within the Impact Area MRA.

**Comment 6: Conservatism:**

- A. The report repeatedly characterizes the risk assessment for MEC as “conservative”. This characterization appears no less than four times in Section 4.1.1 alone. The assertion also appears in Section 4.1.5.1 and in the first bullet in the conclusions section. The characterization as “conservative” appears to be unwarranted.
- B. The premise of the assertion of “*conservatism*” is that the risk assessment was based on the types and densities of MEC removed from Ranges 43 through 48 and the assumption that these ranges are the most impacted. There are several problems with this premise.
- (1) The portions of Ranges 43 through 48 from which MEC were removed lie mostly outside the Impact Area (General Comment 4C). Therefore, use of these data is neither “*conservative*” nor “*liberal*”. It appears to be mostly irrelevant.
  - (2) Even if these data were relevant to the Impact Area, it is not “*conservative*” to apply them across a large area. The use of data from one area to characterize a different area is not “*conservative*”. It is misleading and could well underestimate risks.
  - (3) The text in Section 4.1.1 states that “*It is suspected, based on historical information, that MRS-Ranges 43 through 48 may represent one of the highest MEC density areas within the Impact Area.*” The text in Section 4.1.5.1 has been changed to the bolder statement that “*The MRS-Ranges 43 through 48 dataset most likely represents one of the highest MEC density areas present within the historical Impact Area based on the length of use (from at least 1945 through base closure), and the type so military munitions that were used (mostly HE).*” Finally, the first bullet in the Conclusions section states that “*The use of this data is considered conservative because it is expected that areas between range fans will have lower MEC densities than were present within MRS-Ranges 43 through 48.*” Thus, the careful statement that “*It is SUSPECTED, BASED ON HISTORICAL INFORMATION [EMPHASIS ADDED].*”, that “*...MRS-Ranges 43 through 48 MAY [EMPHASIS ADDED].represent ONE OF THE HIGHEST [EMPHASIS ADDED].MEC density areas within the Impact Area.*” has evolved throughout the report to be replaced with an overreaching conclusion. The word “*suspected*” has become “*most likely*” or “*expected*” and the verb “*may*” has become “*will*”. Furthermore, instead of characterizing Ranges 43 through 48 as “*one of the highest MEC density areas*”, the conclusion implies that Ranges 43 through 48 will have the highest MEC density of any area.

- (4) Please revise the report to identify the considerable uncertainties with what has been done. Please provide a consistent and defensible description of the data for Ranges 43 through 48.**

**Response 6: Conservatism**

- A. The Army believes the description of the assumptions used in the Risk Assessment Protocol, and the basis for each factor considered that are described in the Risk Assessment sections of the report are conservative.
- B1. MRS-Ranges 43 through 48 is within the historical Impact Area. The majority of MRS-Ranges 43 through 48 are not included in this RI/FS because portions are not being transferred to BLM, and this RI/FS only includes the portions of the historical Impact Area that are proposed for transfer to BLM as habitat reserve. The text will be revised to clarify that Ranges 43 through 48 are within the boundaries of the historical Impact Area and that based on review of historical information and data collected within the Impact Area the area does represent one of the highest use areas.
- B2. The Army believes the risks calculated throughout the rest of the Impact Area based on the Ranges 43 through 48 data would potentially overestimate risk.
- B3. The text will be revised to use consistent terminology throughout the report.
- B4. Please see Responses to Comments B2 and B3 above.

**Comment 7: Conceptual Site Model.**

- A. The text (Section 3.6) discusses the Conceptual Site Model. It references Plate 15 as presenting “...a conceptual site model showing previous use and proposed reuse of the Impact Area.” Neither the text in Section 3.6 nor Plate 15 presents a complete Conceptual Site Model. Plate 15 provides useful information about past use and proposed future use, but is insufficient as a Conceptual Site Model. The text discusses planned reuse, human receptors, and “*Potential Human Exposure Routes*” for physical hazards and for chemical hazards.
- B. We strongly recommend U.S. EPA literature, such as [www.epa.gov/superfund/resources/soil/attacha.pdf](http://www.epa.gov/superfund/resources/soil/attacha.pdf) for the elements of a complete Conceptual Site Model.
- C. We recommend that the authors of this report coordinate with the authors of the Conceptual Site Model for the chemical risk assessment in the Basewide Range Assessment Report. The Conceptual Site Models in the two reports should be consistent.

D. In risk assessment, “*Potential Human Exposure Routes*” are the ways in which chemicals enter the human body (U.S. EPA, 1989). These routes are through ingestion, inhalation or dermal contact. What is intended in Section 3.6 is “*Potential Human Exposure Pathways*”. An exposure pathway is the way that a chemical moves from its point of release to a receptor (U.S. EPA, 1981). In this case (Section 3.6), an exposure pathway is the way in which a receptor comes into contact with a MEC item.

- Response 7:
- A. Additional information will be added to the text to present a more detailed conceptual site model. The sections will be reorganized to clearly indicate that all of the required sections are present.
  - B. The provided reference was reviewed. Most of the information is related to developing conceptual site models for potential chemical releases associated with HTW sites.
  - C. The conceptual site models in the BRA will be reviewed and the conceptual site model provided in this document will be updated as necessary.
  - D. The heading of Section 3.6.2 will be revised to “Potential Human Exposure Pathways – Physical Hazards”.

**Comment 8: Future Land Use.**

- A. The text (Section 2.2.3.3) states that “*The SUMP identified three unique future reuse designations with the Impact Area MRA. These designations include unrestricted/BLM areas, limited-access areas, and restricted/administration areas.*” The text then lists four anticipated future reuse designations, which are the three previously listed plus “*Unrestricted*”. The unrestricted designation includes “*Urban development, recreation development, and transportation*”. Please clarify: (1) whether there are three or four designations for the BLM Site Use Management Plan and what the designations are, and (2) how there can be “*Urban development*” on BLM land.
- B. The text (Section 2.2.3.3) also states that “*A general goal of the HMP is to promote preservation, enhancement, and restoration of habitat and populations of HMP species while allowing development on selected properties on the former Fort Ord, which promotes economic recovery after base closure. Parcels designated for development are intended for economic recovery and have no restrictions in terms of habitat management.*” Please clarify this apparent contradiction. We do not understand how the general goal of promoting “*Preservation, enhancement, and restoration of habitat and populations of HMP species*” can be consistent with allowing “*development*”



*on selected” and with having “no restrictions in terms of habitat management”.*

- C. In contrast to Section 2.2.3.3, the Conceptual Site Model discussion (Section 3.6.1) lists six categories of planned reuse. The diagram of “*Reuses after Property Transfer*” (Plate 15) shows a small arms range and a “*Military Operations in Urban Terrain (MOUT)*”. Neither of these is mentioned in Section 2.2.3.3 or Section 3.6.1.
- D. Please clarify the planned reuses and ensure that the report is internally consistent.

- Response 8:
- A. There are only three designations. The text will be revised to eliminate the reference to urban development.
  - B. The referenced sentence was copied from the HMP. The HMP is designed to accommodate disposal and reuse of property by defining development areas where loss of species and habitat is allowed. Those losses are offset by requiring habitat conservation measures in other areas and designating large areas as habitat reserve. The successful management of habitat reserve is essential for economic recovery through development of designated parts of the former Fort Ord.
  - C. The MOUT and the small arms range are not part of the Impact Area MRA and were not included in the discussion of proposed reuses within the MRA. Plate 15 will be modified to indicate that these parcels are not part of the Impact Area MRA.
  - D. The report will be modified to ensure that the descriptions of the planned reuses are consistent throughout the report.

**Comment 9: Receptors.**

- A. The report (Sections 3.6.2 and 4.1.2) lists five groups of receptors. Two of these groups (trespassers and construction workers) are actually receptor groups. The other three groups are “*surface only receptors, shallow intruding receptors, deeper intruding receptors*”. These categories by intrusion depth are inconsistent with general risk assessment practice and inconsistent with Appendix E of the Fort Ord Ordnance and Explosives Risk Assessment Protocol (Malcolm Pirnie, 2002). The report provides no rationale for this unorthodox approach.
- B. One problem with the approach is that the categories are overlapping. The trespasser is also a shallow intruding receptor. The construction worker is also a deeper intruding receptor.

- C. **The first paragraph in Section 3.6.2 states that “It is expected that contact with shallow soil would be the most likely exposure route for chemicals within the Impact Area.” This is true for many receptors, but not for construction workers or trench workers.**
- D. **The last paragraph in Section 3.6.2 discusses the construction worker. It asserts that the construction worker is a likely receptor during the initial development of the area, but is unlikely following development. We disagree with this statement. Because land use may change, or buildings may be remodeled, expanded, or replaced, construction will be a concern into the future. Furthermore, the construction worker represents other workers who perform intrusive activities. Trenching for utilities is an example of such activities and such trenching can occur at any time.**
- E. **We recommend that once a complete Conceptual Site Model has been completed, it should be used to identify the appropriate human receptors.**

- Response 9:
- A. Grouping of receptors by intrusion depth was discussed in a conference call on June 26, 2006 with EPA and DTSC. Verbal approval was received by DTSC to group receptors by intrusion depth on June 29, 2006. Because the approach to receptor groupings in this Risk Assessment is different than identified in the protocol, additional text will be added to the document explaining the grouping of receptors.
  - B. The trespasser was identified as a separate receptor group because they are not expected to enter the site as frequently as the other receptors or to intrude as deeply. The construction work intrusion depth is deeper than the deeper intruding receptor (5 feet vs. 3 feet) and was therefore grouped separately from the deeper intruding receptor.
  - C. The construction worker and trench workers would still be in contact with the shallow soil. In addition, based on the sampling results the contamination is present at the highest levels in the top 1 foot.
  - D. The text will be revised to identify the possibility that construction may occur following initial development, but would not be expected to be as intensive as the initial development phase.
  - E. The potential human receptors are identified in Section 3.6.2. This section will be updated based on comments received on the draft report.

**Comment 10. Ecological Receptors and MEC.**

- A. **The text (Section 4.1) states that “*The explosive risks to plants and animals are not addressed in the risk assessment protocol and are expected to be low. Based on BCT concurrence, the explosive risk to plants and animals are not addressed in this document.*”**
- B. **Please provide an explanation of why the explosive risks to plants and animals are expected to be low.**
- C. **Please provide a reference to document the BCT concurrence with excluding ecological receptors.**
- D. **It is true that the Ford Ord Ordnance and Explosives Risk Assessment Protocol (Malcolm Pirnie, 2002) does not address ecological receptors. However, the Munitions Response Site Prioritization Protocol (Department of Defense, 2005) includes ecological receptors in all three aspects of munitions sites (explosives, chemical warfare agents, chemical toxicity). Please provide a rationale for not evaluating the risks to ecological receptors from explosives at the impact area.**

- Response 10:
- A. The text will be revised to include observational data on why the risks are expected to be low. In addition, a statement will be added to the report indicating that specific studies are not available for use in addressing the potential risk to plants and animals.
  - B. Please see Response to Comment A. Observational data will be provided to support the statement.
  - C. The exclusion of physical risks to ecological receptors was discussed in a scoping meeting with the EPA and DTSC on August 30, 2005. During the meeting it was agreed that physical hazards of MEC are not a concern for ecological receptors.
  - D. As stated above the impacts to ecological receptors from physical hazards are expected to be low. Observational data will be added to the text to support this statement.

**Comment 11: After Action Risk Assessment.**

- A. **Two after action risk assessments were performed (Section 4.1.4.2), one assuming surface clearance only and the second assuming removal of MEC to depth. It should be explicitly stated that both risk assessments are hypothetical, based on assumed actions and assumed results.**

- B. **The risk assessment for subsurface removal assumes (pages 92 and 99) that “nearly all MEC in the zero to one foot bgs is expected to be removed”. The Parker Flats work demonstrated that for some MEC items, this is an inappropriate assumption.**
- C. **The risk assessment for subsurface removal assumes 32% detection efficiency for MEC densities deeper than one foot (page 92), based on the Parker Flats work. Please provide a rationale for why Parker Flats data can be applied to the Impact Area.**
- D. **The text (Section 4.1.4.2) states that “The use of a ‘6’ for receptors below 1 foot and use of a ‘1’ for MEC below ground surface is based on BCT concurrence for use of this assumption for the Track 2 Parker Flats site.”**
  - (1) **Please clarify what is being scored with the “6” and the “1”.**
  - (2) **Please provide a reference to document the BCT concurrence with these choices.**
  - (3) **Please provide a rationale for extrapolating this decision from the Parker Flats risk assessment to this risk assessment.**

- Response 11:
- A. The text will be revised to state that the after action risk assessments are hypothetical.
  - B. It is anticipated that work completed in the future will be done with the best available technology which could include both analog and digital equipment. This should result in better detection rates than those demonstrated for Parker Flats. The work will be completed according to agency approved work plans that have appropriate DQOs and would therefore receive a “1” for MEC below ground surface and density based on the protocol.
  - C. The detection efficiencies used for Parker Flats were considered conservative because the Parker Flats removal action was completed using a handheld magnetometer whereas it is anticipated that future subsurface removals completed within the Impact Area will be conducted using the Best Available Technology which could include a dual instrument survey and increased QA/QC. Therefore, the Army maintains that the use of the Parker Flats data is conservative. It should be noted that using any number for detection efficiency other than 100 percent would result in the same calculated risk score if type 3 items are included.
  - D1 The 1 is for MEC depth below ground surface for shallow intruding receptors (receptors intruding less than 1 foot) and the 6 is used for MEC depth below

ground surface for deeper intruding receptors (receptors intruding below 1 foot). The text will be modified to make the score selection more clear.

- D2 Discussions were conducted with the BCT on June 26, 2006. Concurrence was received following the discussions.
- D3 The Army believes a conservative approach was used. According to the risk assessment protocol a score of "1" could be used for OE density and depth below ground surface for all intruding receptors based on the risk assessment protocol which states that a "1" is likely to occur when considering alternatives in the feasibility study for OE density and depth below ground surface factors. Use of the "1" will result in a score of A for all intruding receptors in the after action risk assessment (as demonstrated by EPA General Comment 4).

### SPECIFIC COMMENTS

**Comment 1:** Section 1.2. The text states that *"This section describes the elements and the purpose of the Track 3 Impact Area Munitions Response Area (Impact Area MRA) and presents background information on the information that will be included in the MR RI/FS."* First, *"the elements and purpose"* do not pertain to the area. They pertain to the RI/FS. Second, the *"...background information on the information...."* should be rephrased.

**Response 1:** The sentence will be revised as follows: "This section describes the elements and the purpose of the Track 3 Impact Area Munitions Response Area (Impact Area MRA) RI/FS."

**Comment 2:** Page 23; Impact Area Investigations. The paragraph needs clarification. First, the significance of the second sentence is presumably that none of the sampling was in fact in the Impact Area, since MRS-47 is excluded from the Impact Area. This should be explicitly stated. Second, the last sentence presumably means that the exact locations of the grids are unknown, since the first sentence states that they were located" *...in and around the southeastern portion of the Impact Area MRA."*

**Response 2:** The text will be revised as follows. "Review of the HFA After Action Report (HFA, 1994) indicates that 80 grids were established in and around the southeastern portion of the Impact Area MRA. Of the 80 grids established, 3 grids were sampled; however, all of the sampled grids are outside of the Impact Area MRA boundary. The exact locations of the established grids and whether any were established within the Impact Area MRA boundary are unknown."

**Comment 3:** Section 3.6.3. The text here and elsewhere refers to the Draft Final Comprehensive Basewide Range Assessment Report. Please add the appropriate reference to the text and to the reference list in Section 6.0.

Response 3: The reference will be added to the text.

**Comment 4:** Section 4.1.4.2. The text states that a score of “7” was assigned for MEC depth below ground surface for all receptors. As defined in the Fort Ord Ordnance and Explosives Risk Assessment Protocol (Malcolm Pirnie, 2002), this score indicates that there is no MEC on the surface but that there is MEC below the surface. This seems appropriate based on the assumptions. However, the text argues that a score of “1” would be valid for MEC depth below ground surface. As defined in the Fort Ord Protocol, this score requires 100% removal of detected MEC, considering data quality for the sector. Given the questions about DQOs and QA/QC (General Comment 5), this score seems unlikely.

Response 4: According to the Risk Assessment Protocol a score of 1 is likely for MEC depth below ground surface and MEC density when used for an after action risk assessment for a surface removal scenario.

**Comment 5:** Section 4.3. The text includes a reference to “EPA (1997)”. Please add the appropriate citation to the reference list in Section 6.0.

Response 5: The reference will be added to the text.

## **CONCLUSIONS**

**Comment 1:** The text should clearly define what areas are included in the assessment and which are not.

Response 1: Plate 2 will be revised to provide a better graphic illustration of the areas included in the Impact Area MRA.

**Comment 2:** The relationship between the Impact Area and Site 39 should be explicitly stated.

Response 2: The relationship between the Impact Area and Site 39 will be added to the text.

**Comment 3:** It appears that most of the Impact Area has not been characterized for MEC.

Response 3: Please see Response to DTSC Comment 1 and HERD Comment 4.

**Comment 4:** The data for MEC used in the risk assessment are not representative of the Impact Area. Therefore the risk assessment results are not representative of the Impact Area.

**Response 4:** Please see Response to HERD Comment 6. Ranges 43 through 48 are within the historical Impact Area and based on historical information and observational data appear to represent one of the most heavily used areas of the Impact Area. The Army agrees that the Ranges 43 through 48 data do not represent the entire Impact Area, but rather represent one of the highest density areas with regards to high explosive items; therefore the results of the risk assessment would be considered conservative when applied across the Impact Area.

**Comment 5:** We do not agree with the report that it is “*conservative*” to apply MEC data from one area (MRS-Ranges 43 through 48) to the entire Impact Area. Much of the area of these ranges is outside the Impact Area. The assumption that these ranges are the most problematic with respect to MEC may or may not be correct. Finally, it is simply uninformative to apply data from one area to another.

**Response 5:** Please see Response to Conclusion Comment 4

**Comment 6:** The risk assessments suffer from the lack of a complete Conceptual Site Model.

**Response 6:** The conceptual site model will be revised to include additional information.

**Comment 7:** The baseline risk assessment concludes that the risk is at level “E” for all receptors. Given the nature of the Impact Area, this, the highest risk level, seems appropriate.

**Response 7:** Comment noted.

**Comment 8:** The after action risk assessment, assuming visual surface clearance found that the risk was reduced to medium or “C” for receptors who do not intrude below the surface, while all receptors with intrusive activities remain at the highest risk level or “E”. Similarly, the after action risk assessment which assumed subsurface clearance found that the risk was reduced to lowest or “A” for receptors intruding to less than one foot below the surface or not at all, but remained at highest risk (level “E”) for all receptors who intrude to greater depths.

- A. The reduction in risk level from “E” to “A” for receptors intruding to less than one foot below the surface results from the assumption that “*nearly all MEC in the zero to one foot bgs is expected to be removed*”. This assumption is questionable (General Comment 11).

- B. In spite of the considerable uncertainties in these risk assessments, they demonstrate that risks from intrusive activities will remain high after clearance. This is because of the inability to ensure that all MEC has been removed.**

Response 8: Please see response to General Comment 11.

**Comment 9: In its present form the risk assessments are not acceptable. We recommend that the approach be reconsidered, beginning with the all important issue of site characterization.**

Response 9: As stated above, the Army maintains that there is sufficient characterization to prepare the Remedial Investigation, Risk Assessment, and Feasibility Study. The approach for remediation has been revised to include a second review step following surface removal, so that additional subsurface removal could be considered and implemented if deemed necessary by the BCT.



United States Department of the Interior  
Fish and Wildlife Service  
Letter dated November 1, 2006  
COMMENTS

**Comment 1:** The Service is supportive of prescribed burning as the vegetation clearance technique, as specified in Alternatives 2 through 4. Prescribed burning, as opposed to clearing by other techniques, is essential for the long-term management of listed and sensitive species on Fort Ord because maritime chaparral is a fire-adapted ecological system that regenerates more completely after disturbance by fire than after other physical disturbances that do not utilize fire (like mechanical clearing).

**Response 1:** Comment noted.

**Comment 2:** Environmental Effects Analysis: The draft document does not sufficiently address the environmental effects of the various alternatives outlined in the Track 3 Remedial Investigation/Feasibility Study (RI/FS). We recommend you include additional analysis of the following potential environmental effects:

(a) The increased difficulty in conducting prescribed burns due to land access limitations where only surface clearance is proposed and/or increased difficulty in responding to non-prescribed burns. For example, the document should describe the changes in fire fighting capabilities that would occur and how this might influence fire prevention or suppression measures, such as fuel break size.

(b) The ways in which long-term plant monitoring, restoration, weed control, and erosion control would be altered where only surface clearance is proposed, including an increased reliance on herbicide for invasive plant control rather than hand removal methods.

**Response 2:** Prescribed burning can be designed to be surface-activity with appropriate planning. A combination of fire management methods can be applied to manage the risk of wildfires that could occur in the Impact Area, including fuels management and developing an ability to fight fires from the perimeter to protect life and property. The Army is committed to developing a remedial alternative that would support effective management of the area as a habitat reserve, including prescribed burning as a critical component of the management strategy.

The Army acknowledges the concerns related to increased costs associated with planned management activities in areas where removal actions are limited to

surface removal only. However, the Army maintains that habitat management activities can be completed using alternative methods that would likely involve UXO escort and support. The costs of MEC removal and long-term UXO support are presented for a 30 year period in the FS consistent with USEPA Guidance for preparing cost estimates in the FS.

**Comment 3:** **Cost Analysis:** As we indicated above, the Service is working with numerous entities on the HCP for former Fort Ord. The 6,500 acres of Track 3 MRAs are a substantial part of the conservation strategy identified in that HCP. It is a requirement of all HCPs that they identify the estimated costs of implementing their proposed conservation strategy. Up to this point, the draft HCP for former Fort Ord has anticipated that the 6,500 acres of Track 3 would be transferred to BLM and managed in a manner similar to the lands supporting maritime chaparral that have already been transferred to them. Under an alternative where Munitions and Explosives of Concern (MEC) are left beneath the ground surface, it appears that construction support and escorts would be required for even simple activities, such as the corner-staking of plant monitoring plots. The document should estimate the increased costs of habitat management activities (annually and for the next 100 years) that are likely to be associated with lands that have a surface clearance rather than clearance to depth.

The cost estimates included in the draft RI/FS for implementation of remedial alternatives do not appear to sufficiently address differences in costs between surface clearance only (Alternative 2) versus clearance to depth (alternative 3) or the combination of surface clearance plus clearance to depth in high priority areas (Alternative 4). For example, the cost of land use controls (such as construction monitoring and escorted access) are the same under all three alternatives (Alternatives 2, 3, and 4). We would expect that land use controls would be more expensive on lands that have not been cleared of MEC-to-depth. Likewise, one would think the 5-year reviews should be more complex and expensive for lands that had not been cleared of MEC.

The "Habitat Management" section of the cost estimates varies (years 2-13 for Alternative 2, years 2-27 for alternative 3, and years 2 to 18 for Alternative 4); yet habitat management will presumably be required for the entire 30-year period analyzed under all of the alternatives. We recommend you include the Federal government costs (whether BLM or Army) for habitat management for the entire period for all alternatives.

**Response 3:** Please see Response to DTSC Comment 4 and DFG Comment 2. The cost assumptions will be revised to clarify the components and durations of monitoring, maintenance, land use controls, erosion monitoring, and UXO support and services for each of the alternatives. The cost estimate for each alternative includes

estimated costs and durations of habitat management activities required by the HMP.

**Comment 4:** The Army states that Alternative 4 complies with Applicable or Relevant and Appropriate Requirements (ARARs), the Habitat Management Plan (HMP), and the biological opinions from the Service. However, it is not clear that the management actions specified in the HMP, biological opinions, and draft HCP (which are intended to comply with the Endangered Species Act, an ARAR) can be carried out as intended if the habitat management area is left with subsurface MEC. Our primary concern is whether the additional costs of executing the required habitat management activities when subsurface MEC is present can reasonably be expected to be funded over the long term. Please describe how this issue can be addressed.

**Response 4:** Long-term UXO safety support to assist implementation of post-disposal habitat management is identified as a component of each remedial alternative. Estimated cost of long-term UXO safety support is included in the FS. Please also see Response to Comment 3 and DFG Comment 2. Procedures for requesting funding of cleanup and long-term monitoring requirements are in place and will be followed for actions identified as part of the selected remedy.

**Comment 5:** For Alternatives 3 and 4, the draft document assumes (Tables A4, A5) that 30 acres of lands will require “excavation/sifting” due to the high density of anomalies. Our understanding (from the Track 3 meeting at Fort Ord on September 6, 2006) is that high density areas may be abundant and excavation and sifting could be needed in 50 percent or more of Track 3 under alternative 3 (i.e., 3,200 acres of the 6,500-acre area) and up to 50 percent of the estimated 650 acres selected for clearance to depth in Alternative 4. Please provide a more detailed description of the assumptions used to estimate the area requiring excavation/sifting in alternatives 3 and 4, and proposed means to reduce the uncertainty associated with this issue. Excavation and sifting on large scales could have a significant effect on listed species and the plant communities in which they occur.

**Response 5:** It is not possible at this time to quantify the exact number of high anomaly density areas that could be present in the Impact Area. However, for costing purposes in the FS, the Army has assumed 30 acres. As part of the approach to further refine removal options for each polygon, an additional step has been proposed as outlined in Response to Supplemental EPA Comment 2. The text will also be revised to clarify the impacts on habitat that would be significant for areas that may be subjected to excavation/sifting. Please also see Response to DFG Comments 3 and 4.

**Comment 6:** We recommend the Army consider an alternative that clears to depth all areas except those “special case” areas that require excavation and sifting. This

would allow a greater level of freedom for BLM, as the future land managers, to conduct habitat management activities as required. It appears that the costs and time to completion would be intermediate between Alternatives 2 and 3, but long-term habitat management costs and MEC monitoring costs should be reduced. The “special case” areas would still require access controls.

Response 6: Please see Response to Supplemental EPA Comment 2 and BLM Comment 5.

**Comment 7:** The estimated time required to implement the various alternatives may influence the decision of which alternative is ultimately chosen. The time estimate for the alternatives that involve surface clearance only (Alternatives 2 and 4) seem short, given the challenges of prescribed burning in the Monterey Bay area. Please include the assumptions on which the time estimates for the various alternatives are based.

Response 7: The text will be revised to clarify the basis for assumptions on the time required to implement prescribed burning.

**Comment 8:** The Service would like to see or discuss planning, scheduling, and environmental analysis that integrates the plans for chemical (e.g., lead) remediation, explosive compounds remediation, and MEC removal activities on lands where more than one of the three is required.

Response 8: Based on the Basewide Range Assessment (BRA) program, soil contamination areas that would require remediation have largely been identified. The Army has consulted with U.S. Fish and Wildlife service on the ecological impacts from identified soil characterization and remediation activities. The Army intends to enter into consultation with the U.S. Fish and Wildlife Service on the cleanup of metals and explosives compounds when the Draft Feasibility Study on Site 39 and the Draft Final Ecological Risk Assessment for Site 39 are completed. It is anticipated that these documents will be completed in 2007. The consultation would request agreement on what metals and explosive constituents need to be removed from Site 39 and what could remain.

**Comment 9:** Alternative 4, the preferred alternative, specifies clearing the vegetation by burning followed by surface clearance only (except for fuel breaks and roads and other select areas), then scanning the remaining areas for subsurface anomalies and digitally mapping them. Alternative 3, the removal-to-depth alternative, requires the additional step of removing the subsurface anomalies. We request that you include a discussion in the text that isolates the costs of the actual subsurface removal under Alternative 3 and compares it to the increased costs that the long-term management of the habitat reserve would require under Alternative 4’s surface-only MEC clearance. Discussing these relative costs in the text will help reviewers compare the alternatives.

**Assuming Alternative 4 is selected, if at any point in the future further subsurface MEC removal becomes required( e.g., due to desire for increased recreational access or refined risk assessment) then the costs to clear the vegetation will have to be re-incurred, along with the administrative costs of returning. These additional potential costs of selection Alternative 4 should be acknowledged in the text.**

Response 9: The cost assumptions will be revised to clarify the components and durations of monitoring, maintenance, land use controls, erosion monitoring, and UXO support and services for each of the alternatives. The description of Alternative 4 will be modified in the FS to incorporate a process to further refine removal options for each polygon, in order to address priority areas as outlined in Response to Supplemental EPA Comment 2. Please also see Response to DTSC Comment 4 and DFG Comment 2.

Department of Fish and Game  
Letter dated November 2, 2006

COMMENTS

**Comment 1:** The HMP and the HCP (which is still in draft form) identify a number of listed and sensitive species which will be conserved and managed in habitat areas, providing mitigation for impacts of development base-wide. A significant portion of the habitat area (approximately 6,500 acres) is part of the Impact Area which is addressed in the RI/FS, and provides habitat for a number of the target species and sensitive natural communities which are the focus of the HMP and HCP. Both the HMP and the HCP commit to management of the maritime chaparral and other plant communities on the former Fort Ord via the use of prescribed fire: restoration of habitat utilizing direct planting of seeds and plants; control of non-native invasive exotic plants; and monitoring of the effects of prescribed fire on the target species and natural communities.

**Response 1:** Comment noted.

**Comment 2:** We are concerned that the Preferred Remedial Alternative identified in your document, Alternative 4, would compromise the ability of future managers of that area from implementing management that is a required element of the HMP and the HCP, such as prescribed fire management, vegetative restoration and control of exotic plant species. Surface-only clean up of habitat areas would severely restrict many of the planned management activities in the habitat area, such as the ability of fire crews from providing pre-treatments; aggressively controlling prescribed fires and wildfires, except from a distance; providing exotic plant control efforts; implementing habitat restoration activities; and monitoring the effects of management on target species and communities. In addition, the cost of planning, conducting and monitoring prescribed burns and exotic plant removal in these areas would be higher given the need for escorts for any work on the ground. These costs need to be factored into the analysis of the alternatives, over the 50-100 year life of the HMP/HCP.

**Response 2:** The Army acknowledges the concerns related to increased costs associated with planned management activities in areas where removal actions are limited to surface removal only. However, the Army maintains that habitat management activities can be completed using alternative methods that would likely involve UXO escort and support. The costs of MEC removal and long-term UXO support are presented for a 30 year period in the FS consistent with USEPA Guidance for preparing cost estimates in the FS.

**Comment 3:** Alternatives 3 and 4 also specify that some areas would need excavation/sifting for adequate remediation. We are concerned that remediation via excavation/sifting would require a much higher level of effort to restore those areas to high quality habitat. The impacts of excavation/sifting on the habitats and species of interest in the habitat areas and costs identified for efforts needed to fully mitigate the impacts of that style of remediation should be evaluated.

**Response 3:** The text will be revised as suggested to clarify the impacts on habitat that would be significant for areas that may be subjected to excavation/sifting, and incorporate the clarifications in the evaluation and comparison of alternatives.

**Comment 4:** Additionally, we are concerned that the analysis of MEC in the Impact Area is based on information from an area which has more munitions, and may overestimate remediation needs, including the “special case” areas which need excavation/sifting. This in turn may overestimate the effort and cost which would be needed for remediation to depth over a larger portion of the Impact Area. The RI/FS should identify a refined methodology for estimating remediation needs over the entire 6,500-acre habitat area, and clarify how “special case” areas were identified and quantified. This could modify the cost figures which are presented in the RI/FS, and given the as yet undisclosed increased costs for management of the habitat areas over the next 50-100 years, could change the preference given to Alternative 4.

**Response 4:** It is not possible at this time to quantify the exact number of high anomaly density areas that could be present in the Impact Area. However, for costing purposes in the FS, the Army has assumed 317 acres for Alternative 3 and 85 acres for Alternative 4. As part of the approach to further refine removal options for each polygon, an additional step has been proposed as outlined in Response to Supplemental EPA Comment 2.

**Comment 5:** We recommend that the Army refine the estimate of remediation needs, including “special case” areas. This would facilitate the habitat management required by the HMP, and anticipated in the IICP, to be conducted over the long term, and would lessen costs for such management except in the “special case” areas.

**Response 5:** Please see Responses to Comments 3 and 4.

California Department of Fish and Game, Office of Spill Prevention and Response,  
Resource Assessment Program  
Letter dated October 24, 2006

COMMENTS

**Comment 1:** The Impact Area risk assessment in the RI is based on site characterization data from the portion of the Impact Area that has been burned. Thus, there is a great deal of uncertainty regarding how well the assessment applies to the uncharacterized portions of the Impact Area. It is stated that the existing data likely overestimate the density of items containing MEC (Section 4.1.1). DFG-OSPR is concerned that relying on existing data to make decisions for the entire MRA may result in limiting MEC remediation to depth in less contaminated area and unnecessarily restricting activities. The RI/FS should outline a process for adjusting remedial decisions as more site-related data becomes available.

**Response 1:** Please see Response to Supplemental EPA Comment 2. A process will be developed to allow for review of the surface removal data by the BCT to further refine removal options for each polygon. This process will be described in the FS and further refined in follow on work plans.

**Comment 2:** The RI focuses on physical risks to humans and does not address potential physical risks to wildlife. A statement on page 84 (Section 4.1) indicates that the explosive risks to plants and animals are expected to be low but no discussion is provided to support this conclusion. Additionally, the proposed access management measures and MEC recognition training will not prevent wildlife exposure to MEC items. We recommend that additional discussion be included to outline and address physical hazards to wildlife from MEC.

**Response 2:** The text will be revised to include observational data on why the risks are expected to be low. Please also see Response to HERD Comment 10D.

**Comment 3:** The RI/FS only addresses physical risks and does not evaluate potential chemical hazards to humans or wildlife (Section 3.63.). In order to fully evaluate potential risks and remedial alternatives, the results of the ecological risk assessment for the Impact Area should be integrated into the RI/FS to support the decision-making process.

**Response 3:** As stated in the RI/FS, the chemical hazards to humans and ecological receptors are being evaluated as part of the Basewide Range Assessment. At this time, there are areas of the Impact Area that cannot be fully evaluated due to the presence of thick vegetation and MEC. Completing the RI/FS for the physical hazards related to MEC and conducting remedial action would allow further evaluation of



chemical hazards in such areas to take place. The programs are designed to work together and progress on addressing the physical risks associated with MEC will result in further progress in addressing the chemical risks in the same area.

**Comment 4:** Please add the Fish and Game Commission Wetlands Policy as a “to be considered” polity under the potential applicable or relevant and appropriate requirements (ARARs) listed in Table 1.

**Response 4:** This policy will be included in the table of potential ARARs as TBCs, as suggested.

**Comment 5:** Staff of the Central Coast Region of DFG will be providing comments on the significance of habitat destruction and restoration alternatives in the Impact Area and implications for the ongoing development of the Habitat Conservation Plan. Comments from the Region will be sent under separate cover directly to the Army. The Regional contact is Deborah Hillyard, Staff Environmental Scientist; she may be reached by phone (805) 722-4318 or email ([dhillyard@dfg.ca.gov](mailto:dhillyard@dfg.ca.gov)).

**Response 5:** Responses to Central Coast Region comments are provided below.

**Conclusion:** DFG-OSPR believes the key limitation of the RI/FS is the selection of a remedial alternative for the MRA before all areas have been characterized, human and ecological hazards have been identified, and potential ecological impacts from remedial activities have been described. We look forward to reviewing the revised RI/FS that addresses our concerns, as provided herein. If you have any questions or require further details, please contact Patty Velez by phone (831-649-2876) or email ([pvelez@ospr.dfg.ca.gov](mailto:pvelez@ospr.dfg.ca.gov)).

**Response:** Please see Response to Supplemental EPA Comment 2.

**EcoMunition Corporation**  
**Letter dated October 27, 2006**  
**COMMENTS**

**Comment 1:** Fifty-eight references are made to 40mm projectiles throughout the document. Please be specific by nomenclature or type. The 40mm projectiles range by type from antiaircraft to grenades. The differences in materials, functioning, fillers, and hazards are significant.

**Response 1:** The type of 40mm projectiles present will be added to the text as appropriate.

**Comment 2:** Section 3.3.2.3, Shaw Environmental, first bullet, change waking to walking.

**Response 2:** The text will be revised as suggested.

**Comment 3:** The usability of ranges 43 through 48 data is suspect. References are made to the data as not being in database, not QC/QA, preliminary, and possibility requiring correction. Additionally, the draft MRS 43-48 IA TIP does not contain the required digital QA report which addresses the quality of digital QC and the MEC removal. Why is suspect data being analyzed to form significant determinations concerning the occurrence and removal of MEC?

**Response 3:** Please see Response to HERD Comment 5. The digital QA report is included in the draft final MRS-Ranges 43-48 Interim Action Technical Information Paper dated October 31, 2006.

**Comment 4:** Section 4, Risk Assessment, does not address receptor exposure to physical hazards contained within MEC uncleared and MEC partially cleared land such as Special Concern Areas (SCAs) that are adjacent to, or contained within, MEC cleared grids.

**Response 4:** The Baseline Risk Assessments assume that all of the MEC removed from Ranges 43 through 48 is still present. Although high density MEC areas were not considered as separate items in the risk assessment, the density of MEC removed and the type of MEC removed results in the highest risk score, an E for the Baseline risks. Assuming a higher density due to high density areas would not result in a change to the Baseline Risks.

In calculating the theoretical After Action Risks for use in the Feasibility Study, for the removal to depth scenario, the assumption was made that all detected surface MEC would be removed and that all detected MEC present between the surface and 1 foot would be removed. It was assumed that some MEC would remain below 1 foot. Following a removal action in a specific area of the Impact Area the

After Action Risks would be evaluated using the removal specific data. If high density MEC areas are present and not removed, this information would be factored into the evaluation.

**Comment 5:** Section 3.3.2.2, Parsons, addresses analog QA but does not contain digital QA results. The digital QA findings should indicate the overall quality of the MEC removal process. It should be noted that draft MRS 43-48 IA TIP also does not address digital QA results.

Response 5: This information is included in the draft final MRS-Ranges 43-48 Interim Action Technical Information Paper dated October 31, 2006.

**Comment 6:** Section 3.5.3.1, Spatial Distribution, Fuzes, is not consistent with Section 3.5.1, Training Practices, Fuzes. The M48 fuze is used primarily in high explosive (HE) projectiles. It is commonly found installed in 75mm, 76mm, 90mm, and 105mm HE projectiles. It should be assumed that a functioned M48 fuze has functioned a more hazardous high explosive projectile unless evidence presents otherwise.

Response 6: The text will be revised to indicate that prior to WWII the M48 fuze was used primarily in high explosive projectiles; however, after WWII the fuze was used primarily in smoke producing and training items.

**United States Department of the Interior, Bureau of Land Management  
Letter dated October 13, 2006**

In the case of the Track 3 RI/FS, the document will need to disclose the likely consequences of implementing the various remedial alternatives to determine whether the clean up options will lead to a MEC remediation that the BLM can support. This is consistent with the National Contingency Pla[n] that explains that the RI/FS remedies must be evaluated in relation to how they are protective of human health and the environment. In this regard, the BLM recommends that the RI/FS clearly disclose the following:

**Comment 1: What is the risk of implementing the various remedial alternatives on the MEC clean up crews and contractors performing the remedies?**

**Discussion:** While the Track 3 RI/FS discloses the MEC risks to some re-users of the area, there is no discussion of the risk to clean up teams performing the remedial actions. As such, we assume that all remedial options are feasible from a safety standpoint and that MEC clean up risks can be alleviated to an acceptable level using procedures and equipment that would minimize MEC exposures. Should this not be the case, the Track 3 RI/FS should disclose the associated risks to clean up crews so that the options can be better compared.

**Response 1:** Information will be provided on the potential risks to MEC cleanup crews; however, it should be noted that the clean up is performed by specially trained individuals within the requirements of a site specific health and safety plan.

**Comment 2: What are the likely short-term (i.e. less than 10 years) and long-term effects of the various remedial alternatives on species protected under the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California (HMP)* and the pending *Fort Ord Habitat Conservation Plan (HCP)*?**

**Discussion:** The Track 3 RI/FS does not disclose the anticipated short-term and long-term effects of the remedial options on the natural environment. For alternatives that prescribe excavations for MEC remediation, the Track 3 RI/FS should disclose how many acres of various habitat types might be subjected to such procedures. We recognize that the remedial program is part of the reuse scenario evaluated by the Army within the Environmental Impact Statement covering the 1997 Supplemental Disposal and Reuse Plan; however, that plan does not differentiate between remedial options for the Track 3 Area and does not provide the level of detail necessary to evaluate the environmental effects of the individual options.

We recognize that the Track 3 RI/FS is striving to comply with the HMP and

subsequent U.S. Fish and Wildlife Service Biological Opinions related to such, and included the HMP as an applicable or relevant and appropriate requirement (ARAR). While the HMP provides a solid foundation to help guide the remediation, the Track 3 RI/FS discloses that alternatives 2-4 all comply with the HMP. Because there is no disclosure of short-term and long-term environmental effects on HMP/HCP species, there is no way to judge one option as being more protective of the environment over another option.

It is our experience based upon 10 years of habitat restoration activities at the former Fort Ord, that the maritime chaparral habitats are fairly resilient. Small to medium-sized areas that require full excavations for MEC cleanup can usually be restored with some effort as long as the seedbed is protected. The seedbed can be protected by ensuring that the vegetation is removed through prescribed burning (as opposed to large scale cutting) and by using the sifted topsoil to reclaim the site. Some of these areas may require plan[t]ing maritime chaparral seedlings to speed the recovery. Weed abatement of invasive species is very important following the disturbance to ensure that vegetation recovery is form target species.

For large-scale sifting operations at Fort Ord, there is little information available to determine how long the denudation effects persist. It is reasonable to assume that it would take over 5-10 years for large sites to begin to reflect the species diversity and relative abundance that was found in the reference (pre-existing) community. As an ARAR, the HMP's goal of restoring habitat to pre-remedial conditions within 5 years of the cleanup is problematical. The BLM is supportive of a longer time frame to be used in evaluating restoration success for a remediation effort.

Response 2: The text will be revised as suggested to clarify the impacts on habitat would be significant for areas that may be subjected to excavation/sifting, and incorporate the clarifications in the evaluation and comparison of alternatives. Please also see Response to DFG Comment 3.

Comment 3: **Comments on the Description of the Future Land-Use (Volume 1, Section 2.2.3.3 and Section 3.6.1).** On July 30, 2004, we provided the Army a copy of a Draft Proposed Management Plan, Multiple Range Area, Former Fort Ord, California. That management plan has been refined over the last two years to better describe our management intentions at the former Fort Ord. Working with the Fort Ord Reuse Authority (FOR A), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDF&G), local governments and others, we have revised the management program that we hope soon will be released for public review within the HCP. The current HCP management program for the BLM lands in the Natural Resource Management Area is provided in Attachment A. Please refer to that management program as it will supersede the management program within

the HMP that formulates our current generic direction.

Furthermore, the Track 3 RI/FS should disclose the 1,000-foot-wide study corridor for consideration of a new State Route 68 running along the southern boundary of the project area. While this alignment may never be used for a transportation system, the fact that the easement is in place should be disclosed and assessed within the document. Should this alignment ever be needed by the State Department of Transportation (CalTrans), the reuse would certainly be considered a “deeper intruding receptor” within the easement (see below).

Response 3: The Risk Assessment will be updated to more accurately reflect the types of activities anticipated for management of the habitat reserve based on information provided by BLM. The Highway 68 Easement will be described in the report; however, the current anticipated reuse for that area is habitat reserve because of the uncertainties involved with the project. The Army would still maintain responsibility for completing any necessary removal actions that would be associated with any future construction of the highway.

Comment 4: Comments on the Description of Human Exposure Routes (Volume 1, Section 3.6.2). The Track 3 RI/FS describes potential MEC receptors based upon the identified reuse options and classifies the receptors as being either: trespassers, surface only receptors, shallow intruding receptors or deeper intruding receptors. The description and classification of these receptors should be reevaluated to more accurately reflect the types of land-management activities necessary for implementation of the HMP and HCP. Below are a few examples. Refer to Attachment A for a more complete list of HCP management actions/activities that should be included in the Track 3 RI/FS.

The list of activities found under the header “surface only receptors” should be modified as follows: 1) Fire-fighters conducting prescribed burns will frequently need to scratch hand lines around spot fires that ignite beyond the containment lines, or “chunk” (i.e. pick away at with hand tools such as pulaskis) smoldering logs that remain within burn units. These types of activities are more appropriately described as “shallow receptors”. While some fire-fighting operations are less intrusive on the ground (i.e. hand crews). Successful prescribed burning at Fort Ord involves use of both hand crews and fire engines. 2) Habitat monitors will frequently need to penetrate the soil when performing plant and animal inventories and should be listed as “shallow receptors”. For example, surveys for black legless lizards often include “cover board” surveys where biologists look under plywood squares and scratch under the squares to unearth black legless lizards that are attracted to the micro habitats under the cover boards. Similarly, HMP/HCP animal monitors will likely require inspection of underground burrows that

involves some penetration of the subsurface. Also, plant monitors often use pin flags to mark plant locations, or set up transects that involve palcing stakes in the ground. These types of activities are more appropriately described as “shallow receptors”.

The list of activities found under the header “shallow intruding receptors” should be modified to include the following common land management activities: 1) Weed abatement using handtools includes digging out plants and their root systems. On the existing BLM lands at Fort Ord, herbicide spraying (a surface only receptor) accounts for only a small percentage of our efforts in controlling noxious weeds. For example, in 2005 the BLM spent 2,144 hours in weed abatement at Fort Ord – of which, 12% was herbicide use, 82% was manual removal (shallow intruding receptor), and 6% using other techniques (i.e. flaming). 2) Fire-fighters (conducting prescribed fire operations and fighting wildfire) frequently scratch away at the surface to develop firebreaks. While there are about 50 miles of existing fuelbreak in the Track 3 Assessment Area, additional firebreaks will be needed to support burn operations. Fuelbreaks are constructed using both hand crews and rotary mowers (such as an ASV machine). Both types of fuelbreak operations scarify and penetrate the soil to some extent. 3) Habitat restoration workers dig holes to plant native plants on restoration sites. While some holes are shallow (i.e. planting rose-pot sized seedlings) other shrubs may require digging holes below 12 inches (i.e. planting one gallon pot sized plants).

Response 4: The Risk Assessment will be updated to more accurately reflect the types of activities anticipated for management of the habitat reserve based on information provided by BLM.

Comment 5: Comments on the Remedial Options Evaluated (Volume 2, Section 4.4). The suite of remedial options evaluated includes Alternative 1 (No Further Action), Alternative 2 (Visual Surface MEC Remediation), Alternative 3 (Removal to Depth MEC Remediation), and Alternative 4 (Combination of Visual Surface Removal and Removal to Depth MEC Remediation). Based upon the Army’s experience in the Ranges 43-48 remedial response, it is unclear whether Alternative 3 would include a complete subsurface removal, or only a surface removal in some areas that were considered “special case” areas. In the case of the response within Ranges 43-48, the Army only surface cleared several areas (most notably Range 47) that were designated as “special case areas” although the *Record of Decision for the Interim Action for Ordnance and Explosives at Ranges 43-48, Range 30A, and Site OE-16* called for a removal to depth over the entire site.

Perhaps another alternative could be evaluated that would be a modification of Alternative 3 – we will call this Alternative 3b. This additional alternative would prescribe a removal to depth MEC remediation for the entire area;

however, only a surface removal in areas designated as “special case area”. “Special case areas” would need to be clearly defined but would presumably mean areas that would: 1) expose clean-up workers to unacceptable risk from exposure when performing a subsurface remediation; or 2) require large-scale subsurface sifting operations over rare plant and animal habitats that could not be reasonably restored within a given timeframe (we recommend something longer than 5 years); or 3) be excessively expensive to clean-up subsurface areas on a per unit basis. Army munitions experts would need to make an informed estimate of how many acres would be classified as such for purposes of cost estimating and disclosing impacts.

The Army’s preferred Alternative 4 describes a MEC clearance to depth of up to 10% to support fuelbreaks and other limited areas. It is unclear, however, where this 10% figure is derived. For example, in volume 2 – Section 4.3, the Track 3 RI/FS explains that fuelbreak MEC clearances might include 200’ widths on either side of a 15’ wide fuelbreak road. If there are about 50 miles of fuelbreaks (our estimate) within the 6,560 acre study area, then this would mean that the MEC removal to depth within and near the fuelbreaks would be 2,039 acres of 31% of the study area.

Response 5: Please see Response to DTSC Comments 2 and 11, and Supplemental EPA Comments 2 and 6. The text will be revised to clarify the types of areas within the Impact Area MRA where MEC removal to depth would be implemented under Alternative 4. It is possible that additional areas of high anomaly density will be identified within the Impact Area; a process will be developed to evaluate areas after the surface removal is completed to determine whether additional removals are required. High density areas identified in the future would be addressed through his process.

Comment 6: Comments on the Complexities of Managing Surface Cleared Areas Only. One of the balancing criteria that the Army uses to evaluate the effectiveness of a remediation is the long-term effectiveness and permanence of the action. Areas that are known to contain subsurface MEC and undergo only a surface clearance are challenging to manage even under the most custodial of management programs. As mentioned above (and shown in Attachment A), many of our habitat enhancement, monitoring and protection programs involve scratching below the surface from time to time. On the sandy soils of the range areas, even the act of walking from one point to another reasonably penetrates the soil surface to some extent.

Soil movement is a common phenomenon in the maritime environment – with wind and rain causing erosion and deposition of sandy soil particles. This soil movement would likely cause some subsurface MEC to become exposed through time, and other MEC to become further buried through depositional processes. The Track 3 RI/FS discloses that soil loss may be 3/100 inches per



year in some places under Section 4.1.3.1. However, more massive, usually storm-related, erosion events and gully formation processes have been observed to occur on Fort Ord at much faster rates with the result that MEC could be expected to occasionally be exposed on the ground surface. The document does not disclose how long Alternative 2 (Visual Surface MEC Remediation) and Alternative 4 (Combination of Visual Surface Removal and Removal to Depth MEC Remediation) would remain effective. It is reasonable to assume that after some period of time, additional surface MEC remediation would be required to maintain a surface MEC remediation.

Response 6: The Risk Assessment will be updated to more accurately reflect the types of activities anticipated for management of the habitat reserve. The Army does not consider the activity of walking on the surface as a subsurface activity; therefore, for potential receptors that may only walk the site, surface only receptors will be retained for consideration in the risk assessment.

The description and estimated costs for Alternatives 2 and 4 will be revised to include a post-removal erosion survey and monitoring for surface removal areas. Please also see Response to DTSC Comment 4.

Please see Response to USFWS Comment 9 that indicates the text will be revised to provide additional detail on the aspects of the remedial alternative costs associated with long term maintenance, monitoring, and land use controls and UXO services and support. The Army acknowledges the concerns related to increased costs associated with planned management activities in areas where removal actions are limited to surface removal only; however, the Army maintains that the activities required can be completed using alternative methods that will include UXO services and support.

Comment 7: Summary.

The BLM appreciates the efforts of the Army in their MEC remediation efforts at the former Fort Ord. The Track 3 RI/FS is an important step in developing a MEC remediation that can accommodate a reuse program that will be effective. To assist our agency in making an informed decision on the transfer of additional lands at Fort Ord, we request a more thorough review of the environmental consequences of implementing the various options – including a map and estimate of acres showing suspected “special case areas” and known or suspected locations of HMP animal and plant species. We also feel that there should be consideration of an additional alternative ( i.e. Alternative 3B) that would include a subsurface MEC remediation, but only a surface remediation in “special case areas”. We encourage the Army to evaluate within the Track 3 RI/FS our prescribed management programs under the pending HCP that are shown in Attachment A. Finally, we encourage the Army to consider the long-term effectiveness of the various remedial options.

Response 7: Please see Responses to EPA General Comments 1 and 2. The Army is committed to developing a remedial alternative that would support effective management of the area as a habitat reserve. The RI/FS will incorporate updated descriptions of habitat management activities provided by BLM. Additional information about potential impacts to the habitat, and mitigations, will be included in the discussion of each alternative.

**Monterey Bay Unified Air Pollution Control District  
Letter dated October 25, 2006  
COMMENTS**

- Comment 1:** Volume 1, Section 2.2 “Physical Setting”, p. 10: To adequately describe the physical setting of the project, mention should be made of the close proximity of residential areas to the areas being remediated.
- Response 1:** The text will be revised to include this information. It is included in Section 2.2.1 Location.
- Comment 2:** Volume 1, Section 2.2.4 “Site Features”, p. 15: There is not an adequate discussion of air and meteorological features, including detailed local wind characteristics, since these are critical elements in determining the transport of emissions from the methods chosen for vegetation clearing and disposal of MECs.
- Response 2:** The text will be revised to include this information.
- Comment 3:** Volume 2, Section 3.3.1 “Vegetation Clearance Via Prescribed Burning”, p. 31, para. 2: The methods included in Table 12 of the “Vegetation Clearance Technical Memorandum” should be retained for future consideration.
- Response 3:** The text will be revised to clarify that the other methods would be retained for consideration on a limited basis depending on area-specific conditions identified in the work plan for each area.
- Comment 4:** Volume 2, Section 3.3.1, pp. 31-32: The options briefly presented but not further considered should be included in a periodic re-evaluation of potential options as part of the remediation process. For example, since the efficacy and rebound of vegetation after a cut and burn scenario has not been determined, it seems premature to exclude its future re-evaluation as an option.
- Response 4:** The text will be revised to clarify that the other methods would be retained for consideration on a limited basis depending on area-specific conditions identified in the work plan for each area.
- Comment 5:** Volume 2, Section 3.3.1, p. 32, first bullet and throughout the document: It has not been successfully demonstrated that annual removal of such large amounts (up to 800 acres) of vegetation by prescribed burning is feasible without adverse impacts to the surrounding communities.

Response 5: Please see Response to Supplemental EPA Comment 1. It is anticipated that the vegetation will be removed in several small burns as was completed for MRS-16. Details of the burn plan for each year will be provided in an Implementation Work Plan. This work plan will be available for review and comment.

**Comment 6:** volume 2, Section 3.3.1., p. 32, second bullet and throughout the document: It has not been successfully demonstrated that the clearance of 400 acres of vegetation by one prescribed burn is feasible without adverse impacts to the surrounding communities. In addition, the width of necessary firebreaks might be a better measure of separation, rather than acres.

Response 6: Please see Response to Comment 5.

**Comment 7:** Volume 2, Section 3.3.1.1, "Potential Impacts to the Public", p. 34: The smoke levels recorded during the October 2003 event exceeded state and federal standards for particulates. There are increased risks for adverse health affects associated with such high rates of smoke exposure to even healthy individuals. Please refer to the document "Wildfire Smoke: A Guide for Public Health Officials", published by the U.S. EPA, Region X. In addition, a recent study (March 8, 2006) published in the Journal of the American Medical Association by Francesca Dominici at Johns Hopkins University pointed out a strong correlation between increased daily hospital admission rates (for cardiovascular diseases and respiratory diseases) and increases in the concentration of particulate matter from one day to the next.

Response 7: Please see Response to Supplemental EPA Comments 18 and 19 on Volume 2. The text will be revised to provide additional detail on potential impacts to the public associated with conducting prescribed burns.

**Comment 8:** Volume 2, Section 3.3.1.1, p. 35, middle paragraph: Historically, smoke impacts have been the problem. Unlike normal prescribed burns, burns for the clearance of vegetation in preparation for removal of MECs typically cannot be safely or easily terminated.

Response 8: Please see Response to Comment 7 that indicates the FS will be revised to provide a more detailed discussion of the potential impacts to the public associated with conducting prescribed burns, including smoke impacts and preparations and protocols that will be implemented for safe management of the burns.

**Comment 9:** Volume 2, Section 3.3.1.1, p. 36, para. 2: It is unclear whether this would be several consecutive days of continuous burning or several discrete burns.

Response 9: Please see Response to Comment 5 and Supplemental EPA Comment 1.

**Comment 10:** Volume 2, Section 3.3.1.1, p. 38, para. 2: It is unclear whether the frequency of escapes is for general prescribed burns or for those specific to Fort Ord; if the latter, that would not be consistent with the District's records. There is a definite difference when there is no MEC involved.

Response 10: Please see Response to Comment 8.

**Comment 11:** Volume 2, Section 5.2.7 "Cost", p. 77, last para. and Table 3: It does not appear that relocation (listed under the Remarks for row 2 on p. 3 of Table 1) costs were included in these estimates. See also District comment 13 below.

Response 11: The text will be revised to provide additional discussion of the reasons voluntary temporary relocation program was not included as a component of prescribed burning, and Table 1 will be revised to delete the reference to relocation as a potential component under the Remarks.

**Comment 12:** Volume 2, Section 6.0, items (5) and (7), p. 82: Due to the complexity of the project, 800 acres per year for a period of 8 years is not a realistic objective.

Response 12: Please see Response to Supplemental EPA Comment 1.

**Comment 13:** Volume 2, Table 1, pp. 3 and 5: Relocation is mentioned in the Table as a mitigation measure to minimize public exposure to smoke. It is not mentioned elsewhere in this document.

Response 13: Please see Response to Comment 11.

**Fort Ord Environmental Justice Network (FOEJN)**  
**Letter dated October 31, 2006**  
**(Prepared by Environmental Stewardship Concepts [ESC])**  
**COMMENTS**

**RECOMMENDATIONS**

**Comment 1:** The Army should discontinue its use of prescribed burns as a method of vegetation clearance. Contrary to the claims in the report, any action that involves prescribed burns like those proposed will not gain public acceptance.

Response 1: Comment noted. Based on the results of the RI/FS, the Army believes prescribed burns conducted in phases to clear vegetation and allow for MEC removal in a manner that is safe for workers is the best vegetation clearance method for implementation in the Impact Area MRA. The Army acknowledges the concerns identified by some members of the public regarding the potential impacts of conducting the burns, and will address those concerns through area-specific plans.

**Comment 2:** The risk assessments for “surface only receptors,” or individuals working on the surface but not performing activities in deeper soil, cannot be trusted in the area where limited surface removals occurred in Mortar Alley and MRS-30A. No formal inspections were documented for these removals, a process usually done through a quality assurance/quality control (QA/QC) analysis.

Response 2: The surface removals completed in Mortar Alley and Range 30A were conducted as time critical removal actions to address the MEC most likely to be encountered by an individual trespassing in the Impact Area. Vegetation was not removed so less than 100% of the areas were inspected. These areas are not considered completed, and are part of the Impact Area MRA that is being addressed in this RI/FS. These areas will be subject to additional removal actions.

**Comment 3:** Site security still needs significant improvement, shown by the security failures in 2005.

Response 3: Please see Response to DTSC Comment 12. The Site security plan continues to be updated and improved based on past experience. The Army will continue to provide site security until the property is transferred.

**Comment 4:** All workers performing intrusive activities in the entire Fort Ord should be required to receive MEC (munitions and explosives of concern) recognition and safety training just as the workers in the Impact Area now receive.

Response 4: This RI/FS addresses only the Impact Area MRA. Areas outside the Impact Area MRA are addressed under separate documents. If appropriate, these documents

address the requirements for intrusive worker training in areas outside the Impact Area. In addition, the Army offers ordnance recognition training to anyone who requests it, and all future Fort Ord deeds will include a contact number and instructions about what to do in case of a discovery of military munitions.

## **DOCUMENT SUMMARY:**

**Track 3 sites are those “areas where MEC (munitions and explosives of concern) is suspected or known to exist, but investigations are not yet complete or need to be initiated, or an area identified in the future.” These sites present a significant hazard to public health through possible exposure to unexploded ordnance, which can be potentially fatal. The remedial investigation and feasibility study (RI/FS) is a review of previous investigations and actions from which various alternatives for cleanup are identified and selected based on risk analysis and other criteria.**

Using data primarily from MRS Ranges 43-48 where the prescribed burn/uncontrolled burn took place in 2003, the Army evaluated potential risks to individuals performing activities both on the ground surface and digging beneath the surface, involving significant penetration into the soil. Visual surface removals were determined to only reduce risks to individuals working on the surface to be “medium” while removals to depth reduced risks to these receptors’ risks to the “lowest” designation. Individuals performing intrusive activities greater than one foot below the surface remained at the “highest” designation, no matter the remedial action taken. Based on this information, the RI/FS recommends that a combination of surface removals and removals to depth (removing all identified items no matter their depth) to clean up UXO (unexploded ordnance) from within the impact area. The Army’s preferred method of vegetation clearance for these removal actions remains prescribed burning, which is not acceptable.

## **GENERAL COMMENTS**

**Comment 1: ESC agrees with the Track 3 RI/FS document that individuals performing intrusive activities are at high risk of harm, principally from unexploded ordnance (UXO). While many of the conclusions regarding risk are based on the heavily used MRS-Ranges 43-48 (where some of the highest densities of UXO have been found) and therefore can be considered to be fairly conservative, they have significant implications for other areas where removal actions have taken place. According to this document, deeper intrusions under any area where any removal action has taken place will place individuals at a high risk because of the failure rates and uncertainties surrounding even the best available detection methods of UXO. ESC has noted the problems that the Schonstadt magnetometer has in detecting deeper items in previous comments, and appreciates the Army acknowledging these issues.**

**Given this information, we again recommend that all workers performing soil**

intrusive activities within the boundaries of the former Fort Ord receive a required MEC recognition and safety training. No removal action or investigation can completely assure that workers will not be exposed to UXO during these sub-soil activities. Therefore, there remains a great deal of uncertainty regarding the use of many areas of the base throughout its entire history, and consequently all such workers should be aware of the precautions needed to be taken in such areas. This training is not extensive (only 30 minutes) and should not be a burden to the future development of the base. The lack of such training could result in the injury or death of one or more workers and grind future redevelopment efforts to a halt. Given the minimal amount of effort required to prevent such an event, there is no justification for not explicitly requiring these safety measures.

Response 1: Please see Response to Comment 4 above.

**Comment 2:** Another issue involving uncertainty is determining the risk for individuals entering the areas designated as “Mortar Alley” and MRS-30A. Page 45 of the RI/FS notes that these two areas were subjected to limited surface removals, but that the relevant documents do not indicate if formal inspections were performed (QA/QC inspections). Until it can be established that these two areas did in fact undergo a thorough QA/QC process, risks to “surface only receptors” in the area should be ranked as “E” (highest) instead of the medium level that would otherwise be assigned to them based on the limited surface removal actions. If no QA/QC inspections took place at either of these sites, one should be performed as soon as possible to insure that the removal actions were sufficient.

Response 2: Please see Response to Comment 2 above.

**Comment 3:** The high levels of risk to surface only receptors identified within the report in areas where no UXO removal action have taken place, further demonstrates the need for better site security at Fort Ord. Numerous security breaches have taken place, some of which like those outlined in the “Draft MRS Ranges 43-48 Technical Information Paper” have been severe. The lack of security puts trespassers at risk, but more importantly it also puts the general public at risk if trespassers take UXO or MEC from the site. The RI/FS should note these security breaches and offer suggestions as to how to improve site security.

Response 4: Please see Response to Comment 3 above.

**Comment 4:** Prescribed Burns: ESC, FOEJN, and the public are dismayed that the Army continues to be unwilling to consider options for vegetation clearance other than prescribed burns. The public is strongly opposed to these burns since the 2003 burn escaped the control of the Army and its contractors and burned



three times the intended area. The Army has not acknowledged this opposition in any meaningful way, continuing to rely on the very short and incomplete (only 19 page including tables and figures) ATSDR report of 2005, and the 2002 Record of Decision where many of its core assumptions regarding the cost, safety, and effectiveness of prescribed burns were disproved by the 2003 burn of MRS Ranges 43-48. These assumptions are repeated in this RI/FS, which is an ideal venue to reexamine methods of vegetation clearance at Fort Ord. Unfortunately, the document makes no such effort.

Despite the objections noted above, the Army continues to maintain in this RI/FS that remediation options including prescribed burns are “likely acceptable to the public and other stakeholders.” The 2005 “Community Relations Plan” noted that the prescribed burn generated the most interest of all topics, most of it in opposition to the 2003 and future burns. The evidence and record of the safety and effectiveness of prescribed burns at Fort Ord is dubious and the public is well aware of this fact.

The draft MRS Ranges 43-48 Technical Information Paper earlier this year confirmed the public’s concern over the burning and the belief that burning is more expensive. One passage in particular demonstrates the failure of prescribed burns to even effectively clear vegetation. According to Table 12-1 of that report, nearly \$850,000 worth of extra expenditures were required to “mechanically and manually cut the unburned brush and leftover standing burnt stems and branches from the surface cleared grids.” With these costs, it can be safely assumed that the mechanical clearance of vegetation and debris did not occur on a small scale and was not a side effect of that burn’s escape from containment. The scale of this manual clearance is not noted and the text minimizes these implications in the RI/FS, stating only that it “may be conducted if necessary” in one sentence of the entire document. In the same paragraph prior to this tacit acknowledgement, the Army asserts that:

*“Safety procedures require the vegetation be cleared to bare ground of approximately 6 inches above the ground surface....This level of clearance would be achievable using burning. Fire clears the vegetation and leaves the range in a condition that typically provides MEC with a clear, unobstructed view of the ground surface.” (Vol 2, pg 39)*

These statements are in direct contradiction with the evidence from the draft Technical Paper. The clearance of unburned vegetation and more commonly the burnt stems and branches appears to be inevitable, implying that a more accurate title for removing vegetation via prescribed burns would be “prescribed burns with additional manual clearance.” Local residents and visitors understand and support the Army in trying to protect its contractors and clean up MEC at Fort Ord in the most expeditious manner possible. But

**the Army must accept reality over official documents like the ROD when selecting solutions.**

**The first listed Threshold Criterion in Section 5 of the Feasibility Study is “Overall Protection of Human Health and the Environment,” and its definition states that “An alternative must eliminate, reduce, or control potential threats to public health and the environment through treatment or institutional controls.” Prescribed burning at locations like Fort Ord which are adjacent to densely populated residential areas fails to meet this requirement because it actually *creates* risk where there was none before. Even excluding the adverse health effects caused by smoke, the alternative still creates risk by creating situations where fires can burn out of control and threaten communities as they did in 2003. No matter the precautions taken, the risks remain and past experience supports this fact. These risks are compounded when the adverse health effects of smoke are considered.**

**ESC has noted in numerous comments and official correspondence the well documented risks associated with exposure to smoke. Increased chances of asthma, respiratory difficulty, cardiovascular disease, and other long term health effects are all well documented in the literature, including studies that have been sent directly to the Army by ESC. To date, none of the technical data presented by ESC in comments or correspondence regarding the toxicity of smoke have been refuted by either the Army or ATSDR. The Army’s only response appears to be noting that ATSDR is a federal public health agency, and that the Army must rely on their opinions as stated in the health consultation.**

**This approach fails to note that the information presented by ESC is from numerous articles from a variety of peer reviewed journals, while ATSDR’s consultation has not undergone such a review and would likely fail such a test with assumptions dismissing high concentrations of respiratory irritants because “...the pungent smell combined with its irritant effect on the eyes and nose [means] it is likely that someone breathing acroliein would make an effort to avoid further exposure to smoke from the prescribed burn” (ATSCR Health Consultation: Former Fort Ord Site, pg. 4). The ATSDR report does not mention that by the time concentrations of acroliein have reached the levels where its smell is apparent, an individual may already be having respiratory difficulty. As stated in previous comments, the ATSDR Health Consultation was flawed, incomplete, and inaccurate. ESC would have come to this conclusion even if ATSDR were not a federal agency.**

**Even with voluntary relocation programs, some portions of the population will not be able to avoid smoke exposure and will therefore be put at risk for severe asthma attacks and cardiovascular complications such as heart attacks. Noting that future burns will be smaller than the 2003 event is irrelevant to**

this face, because it should be remembered that the 2003 burn was intended to be significantly smaller as well. Combining these facts with the demonstrated ineffectiveness of prescribed burns in removing brush without significant additional mechanical clearance, the major difference that prescribed burns have over other methods is its impact to ecological habitat.

ESC does not dispute the fact that fire is a naturally occurring event in chaparral communities. However, if this is the only reason for using prescribed burns over other options then it is not acceptable. It places the short term health of the ecosystem over the long term health of the community (as demonstrated in the Leikauf 2002 paper in Environmental Health Perspectives, which has been previously forwarded to the Army by ESC). While burned chaparral may recover faster than clear cut areas, it is not clear that in the long term mechanically cut areas of chaparral would fare any worse than if they were burned. The Army, the Bureau of Land Management, and the US Fish and Wildlife Service should all examine this question and how it pertains to the development of alternative vegetation clearance methods such as the “crush and burn” method cited in both the Track 3 RI/FS and the HMP.

The Track 3 RI/FS provides an excellent opportunity to examine these alternatives. Considering the known health effects of smoke and the Army’s poor track record in containing prescribed burns, there is no reason not to at least reevaluate these methods. In the aftermath of the escaped 2003 burn, no formal failure analysis was conducted and prescribed burning was not compared with other alternatives using the results of the burn. These analyses should not have to wait for the five year review of the ROD to be performed. It is disappointing that they were not here.

FOEJN & Communities around Fort Ord are willing to work with the Army to solve these problems and find a solution that is acceptable to all parties. However, before any meaningful discussions can take place the Army must first begin to accept the reality of prescribed burns: they are:

- a) Not as effective in clearing vegetation as previously thought, and
- b) Smoke from these burns poses a hazard to public health. Communities want to be dealt with openly and honestly, and while the Army continues to dispute these very clear facts local community members will not feel like they are.

Response 4: Please see Response to Comment 1. The comment regarding the assumption that some manual vegetation removal is inevitable after a prescribed burn is accurate. Cutting of vegetation after a prescribed burn on an MRS is often necessary for the safety of workers and for the effective operation of MEC detection equipment. Manual and mechanical cutting of maritime chaparral immediately following a

prescribed burn is protective of the seedbank and is consistent with the HMP and Biological Opinions. Cutting alone as a vegetation removal technique is not only unsafe to workers and result in conditions unsuitable for the application of the best available technology for digital mapping, it is also contrary to the HMP and the Biological opinions. The cost estimates provided in the FS present assumptions regarding the level of effort anticipated for manual vegetation removal after a burn based on recent Fort Ord-specific data.

In response to the comment “while burned chaparral may recover faster than clear cut areas, it is not clear that in the long-term mechanically cut areas of chaparral would fare any worse than if they were burned,” the FS summarizes information that supports prescribed burning as the primary vegetation removal method in maritime chaparral that contains several rare, threatened and endangered plants at the site. In addition, the Army refers the commenter to a trends analysis which specifically evaluated the trends in the recovery of maritime chaparral using annual monitoring results of vegetation impacted by prescribed burning, manual/mechanical cutting, and UXO removal at the former Fort Ord. Based on this and other information USFWS concluded that “adequate evidence exists that large-scale mechanical and manual clearing of vegetation, in the absence of fire, is a management option likely to result in the degradation of the Monterey-area maritime chaparral community and loss of key species of concern that occur there.”

The comment regarding prescribed burning creating risk where there was none before is noted. As stated in the FS, the Army and regulatory agencies believe these health risks need to be balanced with health and safety risks to MEC removal workers. Conducting a prescribed burn within the Impact Area MRA is not expected to have significant adverse impacts on the public. The prescribed burn would be conducted under optimal climatic conditions to minimize smoke and control the burn within its intended boundaries. Burns may cause smoke impacts under most meteorological conditions; however, development of the burn prescription would include assessment of meteorological conditions and design of the prescription to minimize potential impacts to the public. Prior public notification and smoke management while conducting the burn would minimize potential impacts from smoke.

In addition, the following information is provided in response to the comment concerning the 2005 Community Relations Plan and the level of public interest about the 2003 and future prescribed burns. The response below provides additional breakdown on the survey results.

Surveys and interviews for the Fort Ord Community Relations Plan (finalized in 2006) were collected from January through December 31, 2005. In addition to these surveys, seventeen community members participated in the interviews. The number in the parenthesis indicate the number of times each interest was

mentioned in the 200 surveys. Key areas of community interest are identified from these surveys and interviews:

- The presence of unexploded ordnance (UXO) on the former Fort Ord (122)
- The location and impact of contaminated groundwater (116)
- The suitability of property for transfer and reuse (97)
- Soil contamination (90)
- Vegetation burning (85)

In the 2005 survey, respondents who expressed interest in vegetation burning had opinions ranging from opposition to vegetation burning to support for more burns as well as support for burns related to habitat management. The analysis of the survey results in the Community Relations plan did not conclude that most of the community interest was in opposition to the 2003 and the future burns. Other community members participating in this survey also expressed concern about the potential health effects of smoke from vegetation burning associated with munitions and explosives of concern removal activities.

Because of the community interest in the prescribed burns the Army held many special outreach events related to burning that included publication of Community Bulletins sent to over 50,000 Salinas Valley-Monterey Bay addresses, special meetings, as well as phone and email notifications regarding fire status. For the 2003 and 2006 prescribed burns, the Army reimbursed individuals who relocated outside of Monterey County during the fire.

## SPECIFIC COMMENTS

### Volume 1:

**Comment 1:** Section 3.5.3.1: It may be better to organize this section by location rather than ordnance. Reorganizing it in this manner would be much more useful to obtain information about the spatial distribution of UXO and MEC.

**Response 1:** The graphics will be modified to provide a better representation of where different MEC types might be expected based on the MEC sampling and removal data available and historical information. The text will be revised to include a section that describes the distribution anticipated in each of 4 sections of the Impact Area.

**Comment 2:** Section 4.1.4.2, page 93: The table at the top of this page should be given a title and number. It would also be useful to include examples of Type 1, 2, and 3 munitions in an additional column.

Response 2: The Table will be given a title and number as suggested. Examples of the Type 1, 2, and 3 munitions will also be provided.

**Volume 2:**

**Comment 1: Section 2.3, page 24, Community Involvement: ESC and FOEJN note that these community involvement measures have proven inadequate, as demonstrated by the low public turnout at these Army sponsored events.**

Response 1: Community outreach and notification meets or exceeds all CERCLA (Superfund) outreach requirements. The Fort Ord cleanup outreach program continues to look for ways to increase accessibility, provide opportunities for the public to learn about the cleanup and provide a variety of ways for the public to participate.

Various outreach events and community participation (attendance) are included in the Community Involvement Record in Appendix J in the Fort Ord Community Relations Plan. In addition, the Fort Ord newsletters are regularly distributed to numerous businesses and residences in the surrounding Fort Ord communities including churches, schools, restaurants, and grocery stores.

**Comment 2: Section 5.1.9: Again we emphasize that any alternative involving prescribed burns is not likely to be acceptable to the public. Statements to the contrary are inappropriate as they assume the public backs a position favorable to the Army's when there is ample evidence they do not. The document should note these objections here.**

Response 2: This comment is noted.