APPENDIX D

RESPONSES TO COMMENTS ON THE DRAFT INTERIM ACTION ORDNANCE AND EXPLOSIVES REMEDIAL INVESTIGATION/FEASIBILITY STUDY FOR RANGES 43-48, RANGE 30A, SITE OE-16 (DRAFT IA RI/FS), FORMER FORT ORD, CALIFORNIA, OCTOBER 23, 2001

APPENDIX D

RESPONSE TO COMMENTS ON THE DRAFT INTERIM ACTION ORDNANCE AND EXPLOSIVES REMEDIAL INVESTIGATION/FEASIBILITY STUDY FOR RANGES 43-48, RANGE 30A, SITE OE-16 (DRAFT IA RI/FS) FORMER FORT ORD, CALIFORNIA OCTOBER 23, 2001

I. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IX COMMENTS DATED DECEMBER 7, 2001

The study was prepared to address the ordnance and explosives (OE) located in the listed areas of the facility and to take quick action to: (1) protect human health and the environment from hazards in the short term, pending the development of a final remedial solution, and (2) institute temporary measures to stabilize the site and prevent further migration or degradation. A review of the document has been completed, and the following is submitted:

General Comments:

Comment 1: **Each of the areas studied (Ranges 43-48, Range 30A, Site OE-16) seems to have been treated as almost distinct and homogeneous areas with respect to the Vegetation Clearance and OE Remedial Actions selected. It appears that no consideration was given to evaluating the use of a combination of two or more of the proposed Vegetation Clearance or OE Remedial Actions in any of the specific areas. While there may be sufficient reasons to discount the viability of such actions, these reasons are not presented in the document. If this review of multiple options was accomplished during the study, please include a statement to that effect in an appropriate portion of the document and describe the results. If the use of multiple options was not considered, please identify the reasons.**

Response 1: The Army considered the use of different alternatives and combinations of alternatives for specific areas within each of the IA sites; however, there were sufficient reasons to discount the viability of such actions for vegetation clearance and OE remedial action at the time the Draft IA RI/FS was prepared. For OE detonation, a combination of alternatives was evaluated for specific areas within IA sites containing transportable or nontransportable OE items. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) of the Draft IA RI/FS has been revised to include: 1) a discussion of the process used in evaluating proposed alternatives or combinations of alternatives for specific areas within each of the IA sites, and 2) the rationales for selecting single alternatives for each of the IA sites as summarized below.

Vegetation Clearance: Since preparation of the Draft IA RI/FS and receipt of regulatory agency comments, the Army has reconsidered the use of mechanical clearance in specific areas and has decided to adjust the Ranges 43-48 IA site boundary to exclude an area of

approximately 72 acres planned for future development (Sites OE-15SEA.4 and OE-15MOCO.2 in the northern portion of Ranges 43-48). A non-time critical removal action authority to cleanup OE in this area prior to implementing the interim action is under consideration. According to onsite OE safety personnel, areas behind the firing lines of these OE sites could be safely cleared of vegetation using mechanical clearance methods. The Army has determined the use of mechanical clearance in these areas would comply with the Endangered Species Act (ESA) and Habitat Management Plan (HMP) that restrict the use of mechanical clearance methods in the central maritime chaparral (CMC) habitat present over the majority of land in the current Ranges 43-48 IA site boundary.

The Draft IA RI/FS has been revised to reflect these changes, and Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) of the Draft IA RI/FS has been revised to include: 1) a discussion of the process used in evaluating proposed alternatives or combinations of alternatives for specific areas within each of the IA sites, and 2) the rationales for selecting single alternatives for each of the IA sites as summarized below.

Prescribed burning was selected as the only method for each IA site because it: 1) is the most effective method for reducing vegetation to within six inches of ground surface to allow for safe operation of OE detection equipment during OE remedial action, and 2) is the only method approved for widespread use in CMC habitat present over the majority of the IA sites based on HMP requirements that limit the use of other methods to areas less than 50 acres in size. The use of other vegetation clearance methods would only be applicable to less than 5 percent (50 acres of 1,023 total acres) of the IA sites, would take much longer to implement than burning, and were therefore not selected because significant benefits in adopting a piecemeal approach to vegetation clearance were not identified (except in the 72 acres of development area as described above).

OE Remedial Action: Subsurface OE Removal was selected as the only method for each of the IA sites because it is the most effective in eliminating OE hazards as compared to the other methods that enhance or maintain existing site security measures (fencing, warning signs, security patrols) which have been — and could continue to be — breached by trespassers, even with enhanced site security measures in place. Therefore, use of different methods (i.e., existing or enhanced site security measures) in certain areas was not considered further because significant benefits in adopting a piecemeal approach to OE remedial action were not identified.

Comment 2: **It is not obvious that the entire burn area can be cleared of UXO before vegetation reestablishes itself to a degree that would make UXO clearance hazardous. It is unlikely that a second burn over the same area would be allowed until a mature chaparral system reestablishes itself, which might take a decade or more. A second, unnatural burn that took place before mature chaparral species could produce seeds could destroy the habitat permanently.**

Please assess whether the UXO clearance can be conducted over the entire area of the burn before the vegetation regenerates to a point where UXO clearance would be dangerous.

Response 2: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) of the Draft IA RI/FS has been revised to include estimates of vegetation regrowth and OE Remedial

Action durations. Current estimates indicate OE remedial action at each of the IA sites could be completed before vegetation grows back to a level that would make OE remedial action hazardous. Initial removal of surface OE items is the only activity that must be performed within the timeframe before vegetation grows back. Based on past experience by the Army's OE contractor, surface removal can be performed within the regrowth period of approximately one year for each of the IA sites. Once surface OE has been removed, subsurface OE removal operations can be performed as vegetation gradually grows back and would not disrupt digital geophysical surveys, excavation, and removal of subsurface OE items.

Comment 3: **Many of the subsections of the document are unnumbered. When this absence of numbering is combined with the redundant use of the same titles for the subsections within subsequent sections, the potential for confusion on the part of the reader is amplified. It would improve the readability of the document if the bolded title subsections were numbered. For example, Section 6.1.3, OE Detonation Alternatives has three numbered subsections and six unnumbered subsections and sub-subsections. It is difficult to resolve their respective places in the document's hierarchy of organization. It would be much easier to understand this section if it were reorganized in a manner similar to the following example:**

6.1.3 OE Detonation Alternatives
- **6.1.3.1 OE Detonation Alternatives for OE Items with an Intact Fuze**
- **6.1.3.2 OE Detonation Alternatives for OE Items with No Fuze**
  - **6.1.3.2.1 No Action**
  - **6.1.3.2.2 Detonation with Engineering Controls**
  - **6.1.3.2.3 Detonation Chamber**
  - **6.1.3.2.4 Offsite Destruction**
- **6.1.3.3 OE Detonation Methods Retained for Consideration**
  - **6.1.3.3.1 No Action**
  - **6.1.3.3.2 Detonation with Engineering Controls**
  - **6.1.3.3.3 Detonation Chamber and Detonation with Engineering Controls Combined**

Please review the entire document sectional numbering system and revise it to improve the readability and to better identify the hierarchy of the subsections of the document.

Response 3: The document has been revised to include numbering of all 5th order subsection headings as suggested.

Comment 4: **The glossary contains a number of definitions that are found in 40 CFR Part 260, et al. (The Military Munitions Rule), or U. S. Army Corps of Engineers EP-1110-1-18 (Ordnance and Explosives Response, 24 April 2000), or the Compendium of Department of Defense Acronyms, Terms, and Definitions developed by the Interstate Technology and Regulatory Cooperation Work Group, dated December 2000. Some of those standard definitions found in the glossary have, however, been modified for some unidentified reason. While the use of terms and definitions specific to the former Fort Ord is acceptable, they should be identified as such to prevent the proliferation of differently worded definitions describing the**

same term. Please revise the glossary to either correct all nonstandard definitions or to identify them as such.

Response 4: The glossary has been revised to identify all nonstandard definitions as specific to Fort Ord as suggested. In addition, nonstandard definitions have been replaced with standard definitions as appropriate and all sources have been referenced.

Comment 5: The use of the acronyms "UXO" and "OE" in what appears to be a somewhat interchangeable manner in a number of sections of the document has resulted in a loss of technical preciseness that will likely confuse the reader as to exactly what is intended. For example, on page 85 in Section 6.1.3, OE Detonation Alternatives, subsection 1. "OE Items with an Intact Fuze," UXO is used throughout the discussion, and no reference is made to a non-UXO OE item with an intact fuze. The only reference to OE is in the title of the subsection. No attempt is made to discuss what is to be done concerning the non-UXO OE found with an intact fuze or in its original packing container. This movement back and forth between the terms OE and UXO when referring to the same ordnance items occurs a number of times elsewhere in the document.

Please review the definitions of OE and UXO found in EP 1110-1-18 and/or 40 CFR Part 260, et al., and correct any misapplication of the respective terms throughout the document and its appendices.

Response 5: The text has been revised as appropriate so the terms UXO and OE are consistently used throughout the document and its appendices as suggested. A fired 81mm mortar (HE) with an intact fuze would be "UXO with an intact fuze." An unfired 81mm mortar (HE) with an intact fuze (pin in place) would be "OE with an intact fuze." The same definitions would apply to the items with a damaged fuze or with no fuze at all. Unfired fuzed items in their original packing containers would be classified as OE.

Specific Comments:

Comment 1: Subsection 2.2 Purpose, second sentence, Page 5: This sentence states that "The purpose of this IA RI/FS is to describe the site conditions and the risks posed by OE at Ranges 43-48, Range 30A and Site OE-16, and recommend the most appropriate interim action to address explosive risks based on the criteria specified in the National Contingency Plan and EPA guidance." Generally, the term "explosive," as used by the military, means something that explodes. The term "explosives" usually refers to the substances that are contained in explosive items that cause them to explode.

Since the acronym "OE" has been used in the beginning of the sentence in question, to avoid misunderstanding, the term "explosive" should be replaced with the acronym "OE" in the remainder of the sentence. Please make this change.

Response 1: Section 2.2 (Purpose) and other portions of the document that use the term "explosive risks" or "explosive hazards" have been revised to replace the term with "OE risks or hazards.

Comment 2: **<u>Section 2.3 Objectives, third bullet, Page 6</u>: Procedurally, it is premature for the RI/FS to select the preferred alternative. That is the purpose of the Proposed Plan. However, it would be acceptable if the preferred alternative were preliminarily identified, as described in Section 7. Please change the language in the bullet accordingly.**

Response 2: Section 2.3 (Objectives) and other portions of the document that use the term "preferred alternative" have been revised to replace the term with "preliminarily identified preferred alternative" as suggested.

Comment 3: **<u>Section 3.3 OE RI/FS Background, second paragraph, fourth sentence, Page 21</u>: The sentence states that the Army is performing its activities in compliance with the NCP "removal" process. Please change to "remedial" process, as this is a remedial action.**

Response 3: Section 3.3 (OE RI/FS Background) has been revised to replace the term "removal" with "remedial" as suggested.

Comment 4: **<u>Section 4.0 Interim Action Remedial Investigation, subsection (unnumbered) entitled "Typical OE Related Characteristics," last sentence on the page, Page 22</u>: The sentence states "Although not in use for 8 years or longer, these IA sites still contain large quantities of unexploded ordnance (UXO)." This statement could be interpreted to infer that the lack of use for eight years would have some effect on the quantity of UXO present on the sites, which it doesn't. Please revise the sentence to remove the "although" inference that inactivity somehow reduces the UXO threat on a range.**

Response 4: Section 4.0 (Interim Action Remedial Investigation, Typical OE Related Characteristics) has been revised to clarify the statement as suggested. The statement was intended to indicate even though no OE-related activities have been conducted at the IA sites in eight years, significant potential OE hazards remain at the sites which have not become less significant with the passage of time.

Comment 5: **<u>Section 4.0 Interim Action Remedial Investigation, subsection (unnumbered) entitled "Interim Action Sites at Fort Ord," third bullet, Page 23</u>: In addition to what's presented in Tables 2 through 4, the text of the RI for each area should be enhanced to provide more "OE-Related Information: type, distribution, and quantity," as the bullet describes. Where such information is incomplete at this time, it can be explained that any removal effort will allow the Army to collect information needed to support a finding of protectiveness in the final Record of Decision.**

Response 5: Section 4.0 (Interim Action Remedial Investigation, Interim Action Sites at Fort Ord) has been revised to provide more descriptive information related to type, distribution and quantity of OE at each of the IA sites presented in Tables 2 through 4.

Comment 6: **<u>Section 4.1.1.5 History of Use, subsection (unnumbered) entitled "Ranges 43, 44, 45, 46, 47, and 48," Page 26</u>: This subsection and its bullets are somewhat loose with the nomenclature of the munitions listed as being used on the ranges. For example - what is intended by the term "4.2-inch 60mm and 81mm mortars?" Does this mean practice items only, or were HE, white phosphorous (WP), smoke, or illumination**

also intended? In addition, the term "anti-personnel mines" is used without indicating whether or not practice, HE loaded, or both were used. The term "M72 and 66mm LAW" is used, which is not the normal nomenclature used for the 66mm M72 Light Anti-tank Weapon.

If the intent is to include all or a mixture of types (HE, practice, illumination, etc.), then this should be stated. If the types are unknown, this also should be stated. Otherwise, an erroneous impression as to the hazards present may result.

Please review the subsection and revise the nomenclature to reflect the identity and the correct nomenclature of the ordnance items used on the ranges.

Response 6: Section 4.1.1.5 (History of Use, Ranges 43, 44, 45, 46, 47, and 48) has been revised to clarify the nomenclature of OE items used on the ranges as suggested.

Comment 7: **Section 4.1.3 OE-Related Information, page 31. Please include information from the recent Time-Critical Removal Action which addressed surface OE items.**

Response 7: Section 4.1.3 (OE-Related Information) has been revised to include information from the recent Time-Critical Removal Action that addressed surface OE items as suggested.

Comment 8: **Section 4.2.3.2 Summary of Field Activities Completed to Date, fourth sentence, Page 40: The projectile, 76mm, canister, listed as UXO in this sentence is inert and should not be referred to as UXO. This is also true of the listing of the item on page 19 of Table 3. If a complete round was found, it should be referred to as cartridge, 76mm, canister, M363. It would likely be an OE item (unless it was a misfire, then it should be classed as UXO) containing 5.0 pounds of M6 propellant. If it was only the projectile as stated, it contains no fuze, no tracer, and no other energetic material. Please review and correct this.**

Response 8: Section 4.2.3.2 (Summary of Field Activities Completed to Date) has been revised to clarify designation of OE items as suggested.

Comment 9: **Section 5.1.1 Current Risk from Ordnance and Explosives, second paragraph, second bullet, Page 52: The statement that "smaller items have more sensitive fuzes to ensure detonation upon contact with the target" is a somewhat dangerous generalization that should be deleted. For example, some of the more sensitive types of fuzes are the piezoelectric point initiating base detonating (PIBD) fuzes found on 105mm tank gun HEAT projectiles and 106mm recoilless rifle HEAT projectiles (sometimes referred to as "Lucky" fuzes). These fuzes are especially dangerous due to the addition of a graze sensitive (cocked striker) mechanism to the base portion of the fuze. Please remove the referenced statement from the listed bullet. A more appropriate label for this bullet might be OE type, which includes items with sensitive fuzing, HE, etc.**

In addition, suggest another bullet -- "OE Type" -- be added to this section. "OE Type" is also an important factor in determining OE risk.

Response 9: Section 5.1.1 (Current Risk from Ordnance and Explosives) has been revised to clarify the statement regarding fuzing on smaller items and another bullet has been added that describes OE type as a factor in determining OE risk as suggested.

Comment 10: **<u>Section 5.2.1.1 Imminent Threat and OE-Related Hazards, second paragraph, Page 54</u>: The reference to Title 40, Code of Federal Regulations, Part 300, Section 415, should be changed to Section 430, and the remainder of the paragraph should be deleted or rewritten to describe the early or interim action aspect of a remedial action.**

Response 10: Section 5.2.1.1 (Imminent Threat and OE-Related Hazards) has been revised to cite Section 430 of Title 40, and the remainder of the paragraph has been revised as suggested.

Comment 11: **<u>Section 6.1.1, Vegetation Clearance Alternatives, Page 60</u>: This section should consider the use of a combination of two or more of the proposed Vegetation Clearance alternatives for a specific area. For instance, because the northern portion of Ranges 43-48 is slated for future development, non-burn options are potentially viable from the HMP standpoint. This could be coupled with the burn option for the remainder of Ranges 43-48 where the HMP is more restrictive. While there may be sufficient reasons to discount the viability of a combination of alternatives within areas, these reasons are not presented in the document.**

Response 11: Please see Response to EPA General Comment 1 above. Since preparation of the Draft IA RI/FS and receipt of regulatory agency comments, the Army has reconsidered the use of mechanical clearance in specific areas and has decided to adjust the Ranges 43-48 IA site boundary to exclude an area of approximately 72 acres that is planned for future development (Sites OE-15SEA.4 and OE-15MOCO.2 in the northern portion of Ranges 43-48). A non-time critical removal action authority to cleanup OE in this area prior to implementing the interim action is under consideration. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) of the Draft IA RI/FS has been revised to include: 1) a discussion of the process used in evaluating proposed alternatives or combinations of alternatives for specific areas within each of the IA sites, and 2) the rationales for selecting single alternatives for each of the IA sites as summarized in the Response to EPA General Comment 1.

Comment 12: **<u>Section 6.1.1.2 Prescribed Burning, subsections (unnumbered) entitled "Impacts to the Public," Page 62, and "Air Emissions," Page 64</u>: Please update the status of the air emissions technical memorandum, and incorporate results into the appropriate sections of the report.**

Response 12: Section 6.1.1.2 (Prescribed Burning, Impacts to the Public, and Air Emissions) has been revised to present a summary of the results of the Air Emissions Technical Memorandum.

Comment 13: **<u>Section 6.1.2 OE Remedial Action Alternatives, Page 77</u>: Given the specific IA RI/FS objective of quickly reducing the immediate threat to trespassers, a surface clearance with institutional controls option should be presented. While there may be sufficient reasons to discount the viability of this approach, these reasons are not presented in the document.**

Response 13: Section 6.1.2.3 (Identify and Remove OE) has been revised and Appendix B (OE Depth of Remedial Action Screening) of the Draft Final report has been added to include a screening evaluation of various OE Remedial Action depths for each of the IA sites, a description of each of the OE removal depth scenarios, and the rationale for selection of

Subsurface OE Removal. In addition, please see Response to EPA General Comment 1 above regarding revisions to Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) of the Draft IA RI/FS to include: 1) a discussion of the process used in evaluating proposed alternatives or combinations of alternatives for specific areas within each of the IA sites, and 2) the rationales for selecting single alternatives for each of the IA sites as summarized in the Response to EPA General Comment 1.

Comment 14: **Section 6.1.2.2 Institutional Controls, subsection (unnumbered) entitled "Existing Institutional Controls at the IA Sites," Page 81: This section discusses how administrative institutional controls would be implemented after the OE RI/FS, rather than included as additional institutional controls in the alternatives presented in the subsection entitled "Description of Additional Site-Specific Institutional Controls for Alternative Evaluation," on Page 82. In preparation of the Draft Final IA RI/FS, EPA would like to discuss this approach with the Army.**

Response 14: Section 6.1.2.2 (Institutional Controls, Existing Institutional Controls at the IA Sites) has been revised to 1) eliminate the discussion of administrative institutional controls, which will be determined in the basewide OE RI/FS.

Comment 15: **Section 6.1.2.3 Identify, Excavate, and Remove OE, second bullet on the page, Page 85: The statement "by operating detection equipment to depths of up to 4 feet below ground surface" would seem to indicate that a depth of detection limit has been established based on a distance of 4 feet below the ground surface. This leaves an unanswered question as to the final disposition of any ordnance detected below the 4 foot level and seems to conflict with the statement in the first subparagraph of Section 6.1.2.3 found on page 84. There it is stated that "Remedial Action at IA sites consists of identifying, investigating and excavating all UXO/OE found: ... 3. Below ground surface to the maximum vertical extent possible based on the capabilities of the geophysical detection equipment selected as best suited for the site conditions by the UXO expert."**

Please expand the section referenced to ensure that the process for detecting and removing UXO is better defined with respect to whether or not all suspected UXO will be removed, and whether or not any depth limitations have been established for the removal.

If anything short of removing all UXO is proposed, the feasibility of clearing to various depths (e.g., 1 foot, 2 foot, 4 foot, all), including a combination of depths within a given area, should be evaluated. For instance, the northern portion of Ranges 43-48, which is slated for future mixed use development, may require a different level of cleanup than the remainder of the area which is slated for a future habitat reserve. Also, the institutional controls required for each level of cleanup should also be considered.

Response 15: Section 6.1.2.3 (Identify and Remove OE) has been revised and Appendix B of the Draft Final report (Screening Evaluation of OE Remedial Action Depths) has been added to include a screening evaluation of various OE Remedial Action depths for each of the IA sites and a description of each of the OE removal depth scenarios, the rationale for selection of Subsurface OE Removal.

Comment 16: **<u>Section 6.1.3 OE Detonation Alternatives, Page 85</u>: Please expand the OE detonation alternatives analysis by incorporating information from the related paper recently prepared by the Army in support of SMART Team discussions.**

In addition, this section outlines two conditions that determine how OE detected visually or by instruments are to be "handled," depending upon whether or not the item contains a fuze. It divides OE into two categories: "OE Items with an Intact Fuze" and "OE Items with No Fuze". It does not discuss OE items with a damaged fuze, nor does it make any differentiation between fired items with a fuze and unfired items with a fuze which has all safety pins/devices present/unarmed. It also does not discuss unfired fuzed items in their original packing containers or portions thereof.

Please expand this section to include the detonation alternatives for the omitted categories of OE as discussed above.

Response 16: Section 6.1.3 (OE Detonation Alternatives) has been revised and Appendix B of the Draft Final report (Screening Evaluation of OE Remedial Action Depths) has been added to include a screening evaluation of various OE Remedial Action depths for each of the IA sites, a description of each of the OE removal depth scenarios, the rationale for selection of Subsurface OE Removal. In addition, the text has been revised to 1) include a summary of the OE Detonation Alternatives screening process presented in the paper prepared for internal SMART team discussions, and 2) replace the categories of "OE Items with No Fuze" and " OE Items with an Intact Fuze" with references to whether OE items are "transportable" and can safely be moved by OE personnel, or they are "non-transportable" and cannot be safely moved by OE personnel, and 3) to include citations of technical manuals that present information used in the development of the revised designations as appropriate.

Comment 17: **<u>Section 6.1.3 OE Detonation Alternatives, subsection (unnumbered) entitled "Detonation Chambers," Page 87</u>: Please contact the manufacturer of the Donovan Blast Chamber for the most up-to-date information on Chamber portability and availability, and update this section as necessary.**

Response 17: Section 6.1.3 (OE Detonation Alternatives) has been revised to include additional information on portability and availability of the Donovan Blast Chamber as suggested.

Comment 18: **<u>Section 6.1.3 OE Detonation Alternatives, subsection (unnumbered) entitled "OE Detonation Methods Retained for Further Consideration," Page 89</u>: This subsection outlines three detonation methods that are to be used to dispose of the "OE Items with No Fuze" located on the ranges. These are:**

- **No Action**
- **Detonation with Engineering Controls**
- **Detonation Chamber with Engineering Controls**

The "Offsite Destruction" method previously proposed has been eliminated due to safety concerns and other cogent reasons. The first two bullets correspond with the first two alternatives listed in Section 6.1.3, OE Detonation Alternatives, subsection (unnumbered) entitled "OE Detonation Alternatives for OE with No Fuze," and the

"Offsite Destruction," which was eliminated, corresponds with the fourth alternative in that section. However, the third bullet (Detonation Chamber with Engineering Controls) in the "OE Detonation Methods Retained for Further Consideration" subsection does not have a corresponding method in the list of original alternatives. While the narrative eventually explains that it is a combination of the original alternatives entitled "Detonation with Engineering Controls" and "Detonation Chamber," the title of the new alternative does not reflect this.

Please rename the third bullet in the above referenced subsection (unnumbered) entitled "OE Detonation Methods Retained for Further Consideration" as "Detonation with Engineering Controls and Detonation Chamber Combined," or another similar title that indicates that it is the combination of those two original alternatives. Also rename Subsection 6.1.3.3 in the same manner to better explain the fact that the new method is a combination of those two original alternatives.

Response 18: Section 6.1.3 (OE Detonation Alternatives, OE Detonation Methods Retained for Further Consideration) has been revised to clarify the components of the "Detonation with Engineering Controls" and "Detonation Chamber and Detonation with Engineering Controls Alternatives" as suggested.

Comment 19: <u>Section 6.2.2 Types of ARARs, subsection (unnumbered) entitled "Chemical-Specific ARARs," Page 93</u>: With regard to the sentence "The EPA presently considers standards ... as potential ARARs," please remove the reference to EPA and reword the sentence to identify the listed standards as typical examples of potential chemical-specific ARARs.

Response 19: Section 6.2.2 (Types of ARARs, Chemical-Specific ARARs) has been revised to clarify the listed standards are typical examples of potential chemical-specific ARARs as suggested.

Comment 20: <u>Section 6.2.3 Application of ARARs at Former Fort Ord, Page 94, and Table 5</u>: Table 5 lists potential federal and state ARARs and TBCs. This list should be expanded to include all seemingly potential ARARs and TBCs that were evaluated but determined not to be ARARS or TBCs. For instance, did you consider State hazardous waste regulations? It is appropriate to document all ARARs considered.

Response 20: Section 6.2.3 (Application of ARARs at Former Fort Ord, and Table 5) has been revised to include a listing of all potential ARARs or TBCs considered as suggested, including those identified in recent public meetings.

Comment 21: <u>Section 6.3 Evaluation and Comparison of Interim Action Alternatives, Page 94</u>: The introductory paragraph states that the alternatives are "evaluated and compared to the nine criteria", when in fact they are more generally evaluated under three headings: Effectiveness, Implementability, and Cost. Suggest this section be reworded to more clearly describe how the nine criteria are being used.

Suggest Long-Term Effectiveness and Permanence, and Reduction of Toxicity, Mobility, and Volume be included under the Effectiveness criterion and briefly discussed, even if not applicable.

Please ensure that each criteria included under the Effectiveness criterion is addressed in the detailed analysis discussions of Sections 6.3.1.1, 6.3.2.1, and 6.3.3.1.

It is understood that State acceptance of the preferred remedial alternative will not be known until the State concurs on the ROD, and that community acceptance will not be gauged until after the Proposed Plan public comment period. However, instead of stating that these criteria will not be evaluated in the IA RI/FS, it should be stated explicitly that State acceptance will be evaluated in the ROD, and that community acceptance will be determined after the Proposed Plan is submitted to the public for comment.

Response 21: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to include an expanded discussion of the nine EPA evaluation criteria as suggested.

Comment 22: <u>Section 6.3 Evaluation and Comparison of Interim Action Alternatives, subsection (unnumbered) entitled "Cost," Page 96</u>: Before preparing the Draft Final IA RI/FS, EPA would like to discuss with the Army the approach to calculating costs for the various alternatives. For instance, since this interim action will be reevaluated in the basewide OE RI/FS and ROD just 2.5 years after the interim action ROD, should 30 years be used for certain No Action and Institutional Controls costs?

Response 22: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives, Cost) and associated cost summary tables have been revised based on conducting operations and maintenance (O&M) for an interim period of 5 years until long term O&M needs are determined in the basewide OE RI/FS.

Comment 23: <u>Section 6.3.1.1 Effectiveness, Vegetation Clearance Alternatives, Page 97</u>: Is the sentence, "In addition, cutting at this site could not be conducted in compliance with the substantive elements of ARARs" accurate with respect to the northern portion of Ranges 43-48 that is slated for future mixed-use development? Does the HMP require burning in this area? If not, please adjust the language accordingly.

Response 23: Please see Response to EPA General Comment 1. Section 6.3 (Effectiveness, Vegetation Clearance Alternatives) has been revised to include a discussion of the process used in evaluating vegetation clearance methods in this area.

Comment 24: <u>Tables 6, 7, and 8</u>: As summary tables, they miss several important details. For instance, under the Effectiveness of the Prescribed Burn alternative, please add a statement indicating how smoke impacts will be minimized with mitigation. For the Mechanical and Manual Clearance alternatives, please add that they "do not comply with HMP ARAR." Please reexamine Section 6 to ensure significant elements are included in the summary tables.

Response 24: Tables 6, 7 and 8 have been revised to expand on the discussion presented in Section 6.0 as suggested.

<u>ERRATA</u>:

Comment 1: <u>Acronym List, Page ix, and Section 4.2.1.5 History of Use, first paragraph, fourth sentence, Page 38</u>: The acronym "TP," when used to describe an OE item stands for

"Target Practice." It is currently defined as "Training Practice." Please correct this.

Response 1: The Acronym List and Section 4.2.1.5 (History of Use) have been revised to correct the error as suggested.

Comment 2: **Subsection 3.1.3 Summary of Existing OE Program, last bullet on the page, Page 8: The title of the Department of Defense Explosives Safety Board (DDESB) is incorrectly recorded in this bullet. Please correct this.**

Response 2: Section 3.1.3 (Summary of Existing OE Program) has been revised to correct the error as suggested.

Comment 3: **Section 4.3.3.2 Summary of Field Activities Completed to Date, second paragraph, Page 48: At the end of the paragraph, please correct the reference from Table 2 to Table 4.**

Response 3: Section 3.1.3 (Summary of Existing OE Program) has been revised to correct the error as suggested.

Comment 4: **Section 5.3.1 Ranges 43-38, section title, Page 55: Please correct the title to read "Ranges 43-48."**

Response 4: Section 4.3.3.2 (Summary of Field Activities Completed to Date) has been revised to correct the error as suggested.

Comment 5: **Section 5.3.1 Ranges 43-38, third bullet, first sentence, Page 56: The word "of" is missing from the sentence. Please insert the word "of" between the words "quantities" and "sensitively."**

Response 5: Section 5.3.1 (Ranges 43-38) has been revised to correct the error as suggested.

Comment 6: **Section 6.1.3 OE Detonation Alternatives, Subsection 1 OE Items with an Intact Fuze, first sentence, Page 85: The term "USACE Technical Manual (TM)-60 series publication" is incorrect. It should read "U.S. Army Technical Manual (TM)-60 series publication" instead. Please correct this.**

Response 6: **Section 6.1.3** (OE Detonation Alternatives, Items with an Intact Fuze) has been revised to provide definitions of transportable and nontransportable items; the citation has been deleted from the text.

Comment 7: **Section 6.3 Evaluation and Comparison of Interim Action, Page 94: The second criteria listed (ARARs) has the word "of" where the word "or" should be. Please correct this.**

Response 7: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to correct the error as suggested.

Comment 8: **Section 6.3 Evaluation and Comparison of Interim Action, last sentence, Page 96: Please substitute the reference to Section 6.3 with a reference to Sections 6.3.1 through 6.3.3.**

Response 8: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised as suggested.

Comment 9: **<u>Appendix A, Table of Contents, Page Ai</u>: The titles of the first two headings are incorrect. The first heading should be for Ranges 43-48, not 43-38, and the second heading should be for Range 30A, not Ranges 43-38.**

Response 9: Appendix A (Appendix C in the Draft Final report [Interim Remedial Action Alternative Cost Estimates]) has been revised to correct the error as suggested.

II. CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, DEPARTMENT OF TOXIC SUBSTANCES CONTROL, COMMENTS DATED DECEMBER 7, 2001

General Comments:

Comment 1: ARARs:

The Department of Toxic Substance s Control (DTSC) has made the determination that Ordnance and Explosives (OE)/Unexploded Ordnance (UXO) recovered at closed, transferred and transferring ranges can be considered a hazardous waste pursuant to California Code of Regulations (CCR). As a result, treatment of OE/UXO must be performed in a manner consistent with California hazardous waste treatment requirements specified in CCR, Title 22, Division 4.5, Chapter 14, Article 16 (Miscellaneous Units). Please include the appropriate references in the ARARs.

Response 1: The Army has no objection to citing provisions of Title 22 Hazardous Waste Regulations as ARARs if OE is determined to be a hazardous waste when treated. However, the Miscellaneous Unit requirements merely provide for the issuance of permits with terms and provisions that would apply specific requirements to specific sites. Procedural requirements such as a permit do not qualify as an ARAR and will not be issued for the IA. Table 5 (ARARs) has been revised to include an evaluation of CCR, Title 22, Division 4.5, Chapter 14, Article 16 (Miscellaneous Units).

Comment 2: IA Feasibility Study

This section uses a three tiered approach to evaluate the alternatives for the different components (vegetation removal, OE remedial action, OE detonation) being considered for the interim action. The consideration of the "no action" alternatives for the three components should be combined because selection of the "no action" alternative for one component dictates the selection of "no action" for the other components. For example, if the "no action" alternative is selected as the preferred alternative for the Vegetation Clearance, then no OE remedial action and no OE detonations will occur. Or if no OE detonations will be conducted, then there is no reason to clear vegetation. Discussion of the "no action" alternative for each component is duplicative and does not add any additional information.

Response 2: The Army acknowledges consideration of No Action for each of the three different components of the Interim Action Remedial Alternatives (vegetation removal, OE remedial action, OE detonation) in Section 6.0 (IA Feasibility Study) would only be valid for certain combinations of these components. However, in order to comply with the NCP and EPA's *Guidance for Conducting Remedial Investigation/Feasibility Studies Under CERCLA* (October 1988) and provide a consistent approach to consideration and comparison of each type of alternative, the no action alternative should be included as a baseline for comparison to other alternatives.

Comment 3: Cost Estimates

Please provide the detailed rational and support for the cost estimates provided in Appendix A. Specifically, it appears that the costs for the use of the blast chamber have been overstated, and the costs for the current practices of blow in place and consolidating shots have been understated. Since ordnance clearance operations have occurred for several years now, it is suggested that the Army provide actual expenditures of funds versus number of detonations. All costs should be provided, including (but not limited to) hourly costs for UXO technicians/teams, costs for the fire department presence, brush clearance and time/materials required to perform detonation via tamping procedures.

Response 3: EPA Guidance (*A Guide to Developing and Documenting Cost Estimates During the Feasibility Study - July 2000,* (which supercedes EPA costing guidance from 1987 and the RI/FS guidance from 1988) indicates the level of detail required in FS cost estimates and provides example cost tables. The cost tables in Appendix A (Appendix C of the Draft Final report) follow these guidelines. In order to clarify the basis for these estimates (which have an accuracy of +50 percent/- 30 percent as per EPA Guidance, the tables have been revised to: 1) include a footnote indicating the cost estimates are based on Fort Ord-specific data provided by the Army's OE contractor or vendors as appropriate, 2) provide additional descriptions of the basis for the estimates, 3) update preliminarily identified detonation chamber and engineering control cost estimates in the Draft IA RI/FS (provided by the vendor of the Donovan chamber and the Army's OE contractor) based on any new cost data that is available.

Comment 4: Comparison of OE Detonation Alternatives

The comparison of OE detonation alternatives is biased toward continuation of existing blow in place practices at Fort Ord. The comparison should be revised to include a balanced discussion which includes the advantages of the blast chamber, along with detailed rationale for the cost estimate. For example, how was the length of time for the lease of a chamber estimated for each site and did the estimate account for the cost savings that can be realized because the chamber is deployable on an "as needed basis"?

Response 4: Section 6.3 (Evaluation and Comparison of Action Alternatives, Comparison of OE Detonation Alternatives) has been revised to provide: 1) a more detailed discussion of the advantages and disadvantages of each of the methods considered as suggested, and 2) updated cost and implementation information for the methods as described in Response to DTSC General Comment 3 above.

<u>Specific Comments</u>:

Comment 1: Section 1.0, Introduction, Page 1.

Please delete the latter part of the sentence in the second paragraph starting at "(2) institute temporary measures to stabilize the site and prevent further migration or degradation." This is not the objective of the IA RI/FS.

Response 1: The referenced statement is an objective of the IA RI/FS and is specifically cited in Chapter 8 of *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and*

Other Remedy Selection Decision Documents, EPA 540-R-98-031, July. The alternatives considered in the IA RI/FS do evaluate methods used to "institute temporary measures to stabilize" the IA sites (e.g., OE remedial action) and "prevent further migration or degradation," i.e., prevent potential contact with OE in locations where it could migrate (due to weather, erosion, or handling by trespassers,) or degrade (be destabilized further by weather, erosion, or be detonated by trespassers).

Comment 2: Section 4.1.3.2, Summary of Field Activities Completed To Date, Page 32.

Please discuss the most current removal action activities. Present the data and reference the specific report. This comment also applies to Sections 4.2.3.2 and 4.3.3.2.

Response 2: Sections 4.1.3.2, 4.2.3.2, and 4.3.3.2 (Summary of Field Activities Completed to Date, Ranges 43-48, Range 30A, Site OE-16) have been revised to include a summary of available data collected at the IA sites as a result of recent surface clearance activities.

Comment 3: Section 6.1.1.2, Impacts to the Public, Page 61.

The text states that "conducting a prescribed burn within the IA sites is not expected to have impacts on the public because it would include preparing and relocating affected residents during and for a period after the burn". Please revise the above statement to state that under most meteorological conditions burns have a high likelihood of having impacts to the public. Burns do impact the public due to potential health effects of smoke. Additionally, relocation of the public during and after the burn is considered an impact to the public due to the inconveniences put upon them.

Response 3: Section 6.1.1.2 (Impacts to the Public) has been revised to indicate: 1) burns may have impacts on the public under most meteorological conditions, however, development of the burn prescription would include assessment of meteorological conditions and design of the prescription to minimize impacts to the public, and 2) relocation of individuals during the burn to minimize risks would have an impact on the public in terms of the inconvenience involved.

Comment 4: Section 6.1.1.2, Accidental Detonation of UXO, Page 64.

The discussion regarding preventing public exposure due to accidental detonation of UXO during burns should include references that a Seaside -like Community Safety Plan will be prepared for both accidental detonation of UXO during prescribed burns (if this alternative is selected) and for proposed detonation activities during mitigation.

Response 4: Section 6.1.1.2 (Accidental Detonation of UXO) has been revised to indicate a community safety plan would be provided to present information regarding accidental and intentional detonation of UXO.

Comment 5: Section 6.1.2.3, Identify, Excavate, and Remove OE, page 84:

Item 3 indicates that remedial action will consist of identifying, investigating and excavating all UXO/OE found to the "maximum vertical extent possible". However,

the second bullet on page 85 sets the clearance depth at 4 feet. Please clarify if deeper items will be investigated when detected by the geophysical instruments.

Response 5: Section 6.1.2.3 (Identify and Remove OE) has been revised and Appendix B (Screening Evaluation of OE Remedial Action Depths) of the Draft Final report has been added to include a screening evaluation of various OE Remedial Action depths for each of the IA sites, a description of each of the OE removal depth scenarios, and the rationale for selection of Subsurface OE Removal.

Comment 6: Section 6.1.3, OE Detonation Alternatives, Page 85.

Please include as an attachment the most recent copy of the Evaluation of Detonation Methods for SMART Team (dated October 2001) to the IA RI/FS. This document, when final, will provides the basis for retaining or eliminating technologies for detonating UXO materials.

Response 6: Please see response to EPA Specific Comment 16 above. Section 6.1.3 (OE Detonation Alternatives) has been revised to include a summary of the OE Detonation Alternatives screening process presented in the paper prepared for internal SMART team discussions.

Comment 7: Section 6.1.3, OE Detonation Alternatives, Page 85.

The text states that, because fused UXO items are extremely dangerous and cannot be moved except under some circumstances, detonation-in-place with engineering controls is the selected alternative for all fused UXO items, and is not analyzed further in this FS. DTSC agrees that fuzed UXO items are extremely dangerous. DTSC also recognizes that any determination that ordnance and explosives (OE), including unexploded ordnance (UXO) found at the former Fort Ord, can safely be moved, can only be made on a case by case basis, and only by the appropriate Department of Defense (DOD) qualified Explosive Ordnance Disposal (EOD) technician. However, DTSC disagrees with the statement that evaluation of detonation alternatives for fuzed items should not be further analyzed in the FS.

This decision to eliminate detonation alternatives for fuzed items should be based on site specific data gathered at Fort Ord. The Fort Ord UXO database should be examined to obtain the detailed data required for the analysis in the FS. Additionally, an explanation of the apparent change in field decisions that UXO which has previously been excavated, transported, stored and consolidated for routine demolition now can only be destroyed by blow in place should be provided. Please revise the FS to consider fuzed items for further evaluation in the OE detonation alternatives.

Response 7: Please see response to EPA Specific Comment 16 above. Section 6.1.3 (OE Detonation Alternatives) has been revised to: 1) replace the categories of "OE Items with No Fuze" and " OE Items with an Intact Fuze" with references to whether OE items are "transportable" and can safely be moved by OE personnel, or they are "non-transportable" and cannot be safely moved by OE personnel, and 2) to include citations of technical manuals that present information used in the development of the revised designations.

Comment 8: Section 6.1.3, OE Detonation Alternatives, Page 85.

Please clarify which model was used to predict concentration of air pollutants for open detonation at Fort Ord. Provide references where this information can be found. In addition, please discuss if there are any data on impact to soil and groundwater that may support/oppose open detonation of UXO.

Response 8: The "Open Burn/Open Detonation Dispersion Model (OBODM)" was used to estimate concentrations of air emissions from open detonation at Fort Ord. This model was developed at the West Desert Test Center, U.S. Army Dugway Proving Ground, Dugway, Utah. It can be downloaded from the EPA modeling web site at http://www.epa.gov/ttn/scram/ under Alternative Models. The Ordnance Detonation Sampling and Analysis Plan (Detonation SAP) reviewed available studies which suggest there is little potential for soil or groundwater contamination from detonations.

Comment 9: Section 6.1.3, subsection regarding Detonation with Engineering Controls:

The text should be revised to acknowledge the potential for transport of metals and explosive residual to the soil, surface water and ground water. Additionally, this alternative should include soil and air sampling in accordance with the October 2000 Final Ordnance Detonation Sampling and Analysis Plan.

Response 9: The Basewide Remedial Investigation/Feasibility Study for Fort Ord (October, 1997) evaluated the potential for transport of metals and explosive residue to soil, surface water and groundwater from UXO detonations at Ranges 30A, 37, 43, 44, 45, 47, and 48. A total of 285 samples were analyzed for explosive compounds. Cyclotetramethylene tetranitramine (HMX) was detected in 38 samples and cyclotrimethylenetrinitramine (RDX) was detected in 21 samples. No samples exceeded the target cleanup level for HMX. Only 5 samples exceeded the target cleanup level for RDX. In addition, impacts to soil (and subsequently to surface water or groundwater) and air are proposed for investigation as described in the Final Ordnance Detonation SAP. For air, preliminary modeling results suggest the impacts would be insignificant.

Comment 10: Section 6.1.3, Detonation Chambers, Page 87.

The text states that the Donovan Blast Chamber can not be moved once it is set up and can not be moved around to different locations. This appears to be incorrect. While the manufacturer does not recommend using the blast chamber during transportation, the system is transportable. The Donovan Blast Chamber has demonstrated that it can be transported via range roads at the Massachusetts Military Reservation. Please delete references regarding the stationary nature of the blast chamber, as this is incorrect.

Response 10: Section 6.1.3 (Detonation Chambers) and other sections that discuss the use of the detonation chamber have been revised to provide additional information on its transportability.

Comment 11: Section 6.1.3, Detonation Chambers, Page 87.

The text states that approximately 90 percent of UXO items that are found at Range 30A are fuzed. Please show how these estimates were calculated.

Additionally, provide the data for the remaining IA sites. As discussed above, actual data should be used where available.

Response 11: Section 6.1.3 (Detonation Chambers) and other sections that indicate 90 percent of UXO items at the IA sites are fuzed have been revised to provide actual percentages based on data from recent surface removals. For Ranges 43-48, data from the recent Time Critical Removal Action (TCRA) for surface OE indicate of 2,457 OE items identified, 134 items (approximately 5 percent) were transportable and eligible for detonation in the chamber. For Range 30A and Site OE-16, sufficient data was not available to calculate percentages due to heavy vegetation at these sites that limited accessibility to areas containing OE.

Comment 12: Section 6.1.3, Detonation Chambers with Engineering Controls, Page 89.

Please delete references to non-fuzed UXO items being the only items that can be used in the Donovan Blast Chamber. As discussed in the above comment #7, that UXO items should not be categorized based on fuzing. The discussion should be based on actual site data.

Response 12: Please see Response to EPA Specific Comment 16 and DTSC Specific Comment 7 above. Section 6.1.3 (Detonation Chambers with Engineering Controls) and other sections that categorize UXO items by fuzing have been revised to indicate whether the items are transportable or non-transportable as described in the referenced comment.

Comment 13: Section 6.3, Evaluation and Comparison of Interim Action Alternatives, Page 95.

Please provide the rational for not evaluating the four criteria listed on page 95. Specifically discuss why the Long-Term Effectiveness and Permanence and Reduction of Toxicity, Mobility, and Volume criteria is not evaluated in the IA RI/FS.

Response 13: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) and other sections that discuss the nine EPA criteria have been expanded to include a discussion of additional criteria that can be evaluated prior to the basewide OE RI/FS.

Comment 14: Section 6.3.1.1, OE Detonation Alternatives - Effectiveness, Page 98.

The comparison of OE detonation alternatives is biased toward continuation of existing blow in place practices at Fort Ord. The comparison should be revised to include a balanced discussion which includes the advantages of the blast chamber, along with detailed rationale for the cost estimate. All six bullets describe the detonation chamber as a failure and provide no analysis of the positive impacts it provides in decreasing the costs necessary for soil, water and air sampling during open air detonation, reducing air emissions, and reducing accidental fires. Also, no analysis is provided of the negative impacts from the open air detonations.

The first bullet states that the two alternatives provide the same degree of hazard reduction and the detonation chamber could be only used for 10 percent of the UXO items. This is incorrect. The detonation chamber reduces air emissions, and physical hazards from frag, and accidental burns that open air detonation does not provide. The FS should be revised to discuss the benefits the detonation chamber provides. Additionally, the 10 percent figure used for estimating the number of

UXO items to be detonated in a chamber is minimized. Ten percent may amount to a large number of UXO items that could be detonated within the chamber to minimize the toxic emissions and physical hazardous from open air detonation. Ten percent of the number of UXO items found alone at Ranges 43-48 (to date) add up to 240 items (actual number could be greater) maybe significant by decreasing the air emissions, accidental fires, number of personnel needed for fire suppression, etc.

The second bullet states that the current method for blow in place is considered safe for detonating any type of OE found and the ranges. It may be true that the army has a good record. However, accidental fires do occur occasionally and as recently as last month. The detonation chamber may have eliminated this type of accident for certain types of OE.

The third bullet states that the chamber can only be used for UXO items that are 81mm or less in diameter and are not-fuzed. It also states that the chamber is stationary. The manufacturer of the Donovan Detonation Chamber could provide a system that handles UXO items greater that 81 mm and most UXO items at Fort Ord. Additionally, according to the manufacturer, the chamber is transportable and has been demonstrated at the range roads for the Massachusetts Military Reservation. Please revise this bullet to accurately reflect this information.

The fifth bullet states that the use of the detonation chamber requires handling, moving and storing/stockpiling of UXO which increases the safety hazards to workers. DTSC agrees that handling UXO is dangerous and should be only conducted by the DOD qualified EOD experts. However, review of literature and discussion with the manufacturer of the Donovan Detonation Chamber, indicates that preparing UXO items for consolidated blow in place should be no different than items preparing for detonation in the chamber.

The sixth bullet states that the detonation chamber is not available for purchase and only one chamber is currently available for lease. Please delete this bullet as it does not provide an argument for not using the detonation chamber. According to the manufacturer, the company is willing to bring a detonation chamber on site.

This comment also applies for Range 30A and OE site 16.

Response 14: Please see Responses to DTSC General Comments 3 and 4 and DTSC Specific Comment 7 above. The relevant sections have been revised as suggested to provide additional, updated information on the evaluation of the detonation chamber and detonation with engineering controls alternatives. Although the detonation chamber may prevent accidental fires in some instances, the majority of recent fires at Fort Ord caused by detonation activities were from detonation of nontransportable OE items that could not have been transported for detonation in a chamber.

Comment 15: Section 6.3.1.2 OE Detonation Alternatives - Implementability, Page 100.

The text states that the Detonation Chamber with Engineering Controls Alternative would be difficult to implement because it would require OE that is unsafe to move be transported to a stationary unit and be placed in the chamber. DTSC agrees that sensitive items should not be moved. However, Any UXO item capable of being moved for open air detonation should be considered for detonation in a chamber.

Please remove all language that incorrectly states that the detonation chamber is limited due to the stationary nature of the system. The chamber must remain stationary only while it is operated.

Additionally, The Department of Defense Explosive Safety Board (DDESB) has approved the use of the Donovan Chamber for detonating UXO. Over the several years, the Detonation Chamber has demonstrated it ability to be operated in a safe manner at military and private facilities.

Please revise the FS to provide a fair evaluation of the Detonation Chamber as a viable alternative for use at Fort Ord. This comment also applies for Range 30A and Site OE-16.

Response 15: Please see response to DTSC General Comments 3 and 4 and DTSC Specific Comments 7 and 10 above. The relevant sections have been revised as suggested to provide additional, updated information on the evaluation of the detonation chamber and detonation with engineering controls alternatives.

Comment 16: Section 6.3.1.3, OE Remedial Action Alternatives - Costs, Page 103.

Please provide a cost comparison for the 1 foot, 2 foot and maximum depth cleanup. Fort Ord specific data should be used in calculating the different costs. The US Army with the USA Environmental have conducted such analysis for Site OE-10A After Action Report. This information could be found in the lessons learned section (section F.1.8, page 3-13) of the Final (November 30, 2001) Grid Sampling and OE Removal Inland Range Contract Closure After Action Report.

This comment also applies for Range 30A and Site OE-16.

Response 16: Please see Response to EPA Comment Specific Comment 15 above. Section 6.1.2.3 (Identify and Remove OE) has been revised and Appendix B (Screening Evaluation of OE Remedial Action Depths) of the Draft Final report has been added to include a screening evaluation of various OE Remedial Action depths for each of the IA sites, a description of each of the OE removal depth scenarios, the rationale for selection of Subsurface OE Removal, and a description of site security measures that would be implemented in combination with OE Remedial Action at each of the IA sites.

Comment 17: Section 7.1, Ranges 43-48, OE Detonation Alternative, Page 124.

The FS selected the Detonation with Engineering Controls Alternative as the Preferred OE Detonation Alternative based comparisons made in the Evaluation and Comparison of Alternatives section. However, the Army should also be evaluating and comparing the effectiveness, implementability and costs of a combination of the two alternatives, Detonation With Engineering Controls and Detonation Chamber With Engineering Controls.

DTSC agrees that the Detonation with Engineering Controls should be the preferred alternative for UXO items that can not be moved. The movability of the item should not be categorically written off due to fuze type, but should be evaluated on a case by case basis by a qualified EOD technician.

However, DTSC believes that the IA RI/FS does not provide strong enough rationale to determine that the Detonation With Engineering Controls should be the preferred alternative for UXO items that could be moved. As discussed above, the evaluation of the Detonation Chamber with Engineering Controls should be revised and unbiased comparison with open air detonation made. Please revise the FS accordingly.

This comment applies for Range 30A and OE Site 16.

Response 17: Please see Response to EPA Specific Comment 16 and DTSC Specific Comments 7, 10, 12, and 14. The FS has been revised based on updated information on the use of the detonation chamber.

Comment 18: Appendix A.

Please show all calculations made for tabulating the cost estimates for Tables A1-A24. Provide all references and sources used.

Response 18: Please see Responses to DTSC General Comments 3 and 4 and DTSC Specific Comments 14, 16 and 17. In order to clarify the basis for these estimates (which have an accuracy of +50 percent/- 30 percent), the tables (Appendix C of the Draft Final report) have been revised to: 1) include a footnote indicating the cost estimates are based on Fort Ord-specific data provided by the Army's OE contractor and Donovan chamber vendor, 2) provide additional descriptions of the basis for individual line items in the estimates, 3) update preliminarily identified detonation chamber and engineering control cost estimates in the Draft IA RI/FS (provided by the vendor of the Donovan chamber and the Army's OE contractor) based on any new cost data that is available.

Comment 19: Appendix A, Table A6.

In addition to the costs provided for "identify, Investigate, Excavate OE to the Maximum Depth", please provide additional cost breakdowns for the depths of 1 foot and 2 foot and 4 foot (if the provided cost is not a 4 foot cost). This comment also applies for Range 30A and OE site 16.

Response 19: Please see Responses to EPA Specific Comment 15 and DTSC Specific Comment 16 above. Section 6.1.2.3 (Identify and Remove OE) has been revised and Appendix B of the Draft Final report (Screening Evaluation of OE Remedial Action Depths) has been added to include a screening evaluation of various OE Remedial Action depths for each of the IA sites, a description of each of the OE removal depth scenarios, and the rationale for selection of Subsurface OE Removal.

Comment 20: Section B2.4, Animal Grazing, Page B36.

The assumption used for evaluating animal grazing is unrealistic. The size of the fenced area (2 acres) for the number of goats (350) to be utilized is unpracticable since the workers would need to relocate the goats and the fences on a daily basis based on the rate the goats consume the plants (1.5 acres per day). It is unclear how these assumptions were made. The assumptions must be recalculated to provide a realistic scenario. Please provide all references and materials used to make these assumptions when estimating the number of goats, fenced area and grazing rate.

Response 20: Section A2.4 of Appendix A (Animal Grazing) of the Draft Final report has been revised to include additional discussion of the rationale for assuming the herd sizes based on competitive grazing practices used in the estimates. The assumed herd sizes coincide with other successful animal grazing studies; areas of larger size would allow the goats to selectively graze and have not been shown to be effective in clearing vegetation.

Comment 21: Section B2.5, Herbicide Application, Page B42.

The text is not clear as to what specific herbicides might be best used for the Interim Action site to aid in the required cleanup of the OE. Please discuss in detail the specific types of herbicide that might work best for the indented OE cleanup without long term effects on the vegetation. Provide references for types of herbicides reviewed.

Response 21: Section A2.5 of Appendix A (Herbicide Application) of the Draft Final report has been revised to include additional discussion of the types of herbicides that may be applicable for vegetation found at the IA sites.

Comment 22: Section B3.2.3, Prescribed burning, Page B53.

The text on page B53 states that pre-crushing is eliminated from further considerations as a preparation method for prescribed burning due to higher costs. However, the following page retains pre-crushing for further consideration. Please reconcile the differences. Also, provide the costs associated with pre-crushing.

Response 22: Section A3.2.3 of Appendix A (Prescribed Burning) of the Draft Final report has been revised to correct the typographical error that incorrectly indicated pre-crushing was retained for further consideration.

Comment 23: Section B3.2.4, Animal Grazing, Page B56.

Please delete the lateral part of the last paragraph of the section that discuss the production rate of goats in eliminating the shrubs and retain only the first sentence that discuss the Endangered Species Act.

Response 23: Please see Response to DTSC Specific Comment 20 above. Section A2.4 of Appendix A (Animal Grazing) of the Draft Final report has been revised to include additional discussion of the rationale for assuming the herd sizes based on competitive grazing practices used in the estimates.

III. CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, AIR RESOURCES BOARD, COMMENTS DATED DECEMBER 7, 2001

Thank you for providing the Air Resources Board (ARB) the opportunity to review the *Draft Interim Action Ordnance and Explosive Remedial investigation Feasibility Study For Ranges 43–48, Ranges 30A, Site O~-16 Former Port Ord, California (Draft IA Rl/FS). The Draft IA RIIFS* describes the site conditions and risks posed by ordnance and explosives at specified remediation sites, and to recommend the most appropriate interim action to address explosive risks based on the criteria specified in the National Contingency Plan and U.S. EPA guidance. One of the objectives of the report is to evaluate three-tiered alternatives at each of three interim action sites for: 1) vegetation clearance; 2) ordnance and explosive remedial actions; and 3) ordnance and explosive detonations.

ARB staff has reviewed the document, focusing primarily on the vegetation clearance considerations in the report. The report considers four options for clearing vegetation: a) No action; b) Prescribed burning; c) Mechanical methods; and ci) Manual methods. The report recommends using prescribed burning as the preferred vegetation clearance method. We find that the smoke impacts analysis of this recommendation could be improved. Our specific comments are as follows:

General Comments:

Comment 1: **The report should describe how the proposed process is equivalent to California's title 17 process (California Code of Regulations).**

Response 1: The Army's proposed remedial actions will meet the procedural elements of the California Title 17 process, including: 1) preparation of an operational burn plan, 2) preparation of a smoke management plan, 3) following burn day determinations, 4) public notification of planned burn days, 5) air monitoring and 6) post burn evaluation. Additional efforts would include informing and offering support to affected residents and coordinating relocation of potentially affected residents during and for a period after the burn.

Comment 2: **The report references the need to prepare a burn prescription/burn plan outlining acceptable environmental conditions for the burn. However, the report should discuss the need for a smoke management plan similar to what is required by title 17. The report should also address the need to identify smoke sensitive areas and the prevailing meteorological conditions that would minimize smoke impacts.**

Response 2: If the final vegetation clearance alternative selected in the Record of Decision is selected as prescribed burning, the Army will prepare a Smoke Management Plan and Burn Plan that will identify smoke sensitive areas and meteorological conditions that would minimize impacts from smoke.

Comment 3: **The report should provide estimates of emissions (particulate matter and volatile organic compounds) associated with the proposed vegetation burning, address the various burn scenarios, and describe the various microclimates as well as the prevailing meteorological conditions in the area.**

Response 3: Please see Response to Air Resources Board (ARB) Comment 2 above regarding how these conditions would be considered in the referenced plans. If the final vegetation clearance alternative selected in the Record of Decision is selected as prescribed burning, the Army will estimate air emissions and provide this information in the plans.

Comment 4: Because of the complex terrain and microscale meteorological conditions in the area, it is very difficult to have large scale vegetation burning that does not cause smoke impacts on nearby populated areas. We suggest that you consider adding a requirement for a modeling study that would help to define the maximum number of acres that can be burned with little or no smoke impacts in populated areas under various meteorological conditions. This modeling should include coupled high resolution fire, meteorological, and dispersion considerations that are tuned and validated. Data collected from past burns for this area, or new data from prescribed burns in nearby Bureau of Land Management lands, could be used in the test fire modeling evaluation.

Response 4: Meetings of the working group for the Air Emissions Technical Memorandum consisting of EPA, DTSC, the Army, California Air Resources Board (ARB), and the Monterey Bay Unified Air Pollution Control District (MBUAPCD) will identify any additional modeling as necessary if prescribed burning is selected as the preferred vegetation clearance alternative in the Record of Decision.

Comment 5: The report identifies three action sites for vegetation clearance, Ranges 43-48 (555 acres). Range 30A (388 acres), and Site OE-16 (80 acres). For purposes of vegetation clearance using prescribed burning, the report is not clear if all three sites would be ignited at the same time. Furthermore, we suggest that the number of acres per burn be limited, consistent with ensuring no or minimal impact from smoke on surrounding populated areas.

Response 5: The IA sites will be burned separately if prescribed burning is selected as the preferred vegetation clearance alternative in the Record of Decision. The areas to be burned have been kept to a minimum based on the areas containing hazardous OE items and the risks related to fuel break preparation and the type of vegetation present at the IA sites.

Comment 6: If prescribed burning is conducted, the smallest plot should be ignited first as a test for how well smoke disperses under the meteorological conditions for that day. The smoke dispersal should then be compared to what was expected using dispersion models. This information can be used for assessing the smoke dispersal potential of future burns with similar meteorological conditions.

Response 6: The cleanup is prioritized based on the OE hazard. Based on the current information available, Ranges 43-48 is clearly the most hazardous. Therefore, the Army will conduct cleanup of Ranges 43-48 first, including site preparation activities such as vegetation clearance. After the first prescribed burn, the Army would analyze smoke dispersion, burn prescription and air sampling data and adjust future burns as necessary.

General Comments:

We have several other comments on the report not directly related to the analysis of the vegetation clearance alternative. We note that the Draft IA RI/FS report was

prepared in compliance with the U.S. Environmental Protection Agency (U.S. EPA) documents, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CLRCLA: Interim Final,* October, 1988 and *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents,* July, 1999. These documents list nine criteria that agencies are to comply with when conducting a detailed evaluation of alternatives. Studies can omit complying with a criterion if the agency finds that a criterion is irrelevant to the decision. The Draft IA RI/FS evaluated the alternatives with respect to five criteria, and states that the remaining four criteria will be addressed in future documents. However, we suggest including the State Acceptance and Community Acceptance criteria in the detailed comparative analysis of alternatives prior to selection of a preferred alternative.

Response: Please see Responses to EPA Specific Comment 21 and DTSC Specific Comment 13 above. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to include an expanded discussion of the nine EPA evaluation criteria as suggested. State and community acceptance of the alternatives will be will be evaluated during the Proposed Plan and Record of Decision process. Responses to comments on the Proposed Plan will be presented in the responsiveness summary in the Record of Decision (*EPA, 1988*).

IV. MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT, COMMENTS DATED DECEMBER 6, 2001

The purpose of this letter is to provide our District's comments on the Draft Interim Action Ordnance and Explosives Remedial Investigation/Feasibility Study for Ranges 43-48, Range 30A, Site OE-16, Former Fort Ord, California, called hereafter the Draft IA RI/FS.

General Comments:

Comment 1: **In making these comments, it is important to note that it has been this agency's longstanding position that the Army:**

- **must treat the community's concern regarding health issues as a top priority;**
- **conduct a complete and thorough analysis of the potential health impacts from the predicted air emissions from burning vegetation and ordnance; and**
- **complete a comprehensive review, including a comparison of risk, of alternatives for clearing vegetation.**

These elements are necessary to assure that the Army makes its selection of vegetation clearance methods upon a sound and informed basis.

Response 1: Please see Responses to EPA Specific Comment 21, DTSC Specific Comment 13, and California Air Resources General Comment above. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to include an expanded discussion of the nine EPA evaluation criteria as suggested. The factors outlined in the comment are evaluated under the EPA criteria of Protection of Human Health and the Environment and are discussed in Section 5.1 (Interim Remedial Action Objectives).

Unless otherwise specified, the section and page numbers refer to the Draft IA RI/FS.

Specific Comments:

Comment 1: **Section 3.2.4, p. 15: As we previously have commented, this section (or some other section) of this document must include a description of the specific meteorological and topological features that could lead to difficulties with using the various alternatives. Section 6: Why were combinations of treatments that could reduce fuel loading before prescribed burning not considered among the alternatives? In addition, there are a variety of biotic environments, such as grasslands, included in the areas covered by this IA RI/FS, yet all are treated the same, i.e., as Coastal Maritime Chaparral. These environments present very different considerations relative to vegetation clearing options.**

Response 1: Please see: 1) Response to EPA General Comment 1 regarding revisions to Section 6.3 (Evaluation and Comparison of Alternatives) to clarify the process used in evaluating vegetation clearance alternatives in different areas within the IA sites, and 2) California Air Resources Board (ARB) Comments 2, 3, 4 and 6 regarding meteorological conditions that will be considered if prescribed burning is selected as the preferred alternative in the

Record of Decision. The Burn Plan will contain an evaluation and description of site-specific meteorological conditions based on local historical data and data from the weather stations at Fort Ord.

Comment 2: Section 6: Comparison of potential risk to the public for the various alternatives must be included.

Response 2: Please see Response to General Comment 1, EPA Specific Comment 21, DTSC Specific Comment 13, and California Air Resources General Comment above. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to include an expanded discussion of the nine EPA evaluation criteria as suggested. The factors outlined in the comments are evaluated under the EPA criteria of Protection of Human Health and the Environment and are discussed in Section 5.1 (Interim Remedial Action Objectives).

Comment 3: Section 6.1.1.2, p.62-63: Details of the burn prescription must be discussed. At a minimum, the detailed criteria that will be used to develop the prescription must be discussed.

Response 3: Section 6.1.1.2 (Vegetation Clearance Alternatives, Prescribed Burning) has been revised to include a general description of how the burn prescription would be developed. Specific details of the burn prescription will be determined in the Operational Burn Plan. The burn prescription will be developed by a fire behavior specialist and a fire weather forecast meteorologist. Historical meteorological data, predictive modeling, past fire/smoke behavior are examples of information to be considered when developing the burn prescription.

Comment 4: Section 6.1.1.2, p. 63: There is no discussion of claims that OE are destabilized by high temperatures from prescribed burning. Is there an increased risk of accidental detonation after clearance by burning?

Response 4: The Army acknowledges that OE items that may have been exposed to fire could be extremely dangerous because chemical and physical changes may have occurred that may have rendered the item more sensitive than in its original state (U.S. Army Corps of Engineers EP 385-1-95a). OE safety-related documents to be prepared for the IA sites will address the potential destabilization of OE from fire.

Comment 5: Section 6.1.1.2, p.64: The report needs specific analysis of the air emissions and the likelihood of their causing health and environmental effects.

Response 5: Please see Response to Comment 4 above, and specifically the Response to ARB Comment 3 above, which states that if the final vegetation clearance alternative selected in the Record of Decision is selected as prescribed burning, the Army will estimate air emissions and provide this information in the Burn Plan and Smoke Management Plan. In addition, Section 6.1.1.2 (Prescribed Burning, Impacts to the Public, and Air Emissions) has been revised to present a summary of the results of the Air Emissions Technical Memorandum for Fort Ord.

Comment 6: **Section 6.1.1.2, p. 65: The adverse impacts on the environment from burning vegetation emissions are not included. A discussion of the history and risk of escaped fires or wildfires has not been included.**

Response 6: Section 6.1.1.2 (Vegetation Clearance Alternatives, Prescribed Burning) has been revised to include a discussion of potential impacts on the environment from burning vegetation, including a history of escaped fires or wildfires.

Comment 7: **Section 6.1.1.2, p. 65: There are a variety of biotic environments, such as grasslands, included in the areas covered by this IA RI/FS, yet all are treated the same, i.e., as Coastal Maritime Chaparral. These present very different considerations relative to vegetation clearance options available.**

Response 7: Please see Response to EPA General Comment 1. Sections 6.1.1 (Vegetation Clearance Alternatives) and 6.3 (Evaluation and Comparison of Interim Action Alternatives) of the Draft IA RI/FS have been revised to include: 1) a discussion of the process used in evaluating proposed alternatives or combinations of alternatives for specific areas within each of the IA sites, and 2) the rationales for selecting single alternatives for each of the IA sites as summarized in the Response to EPA General Comment 1.

Comment 8: **Section 6.2.2, p. 92: Ambient air quality standards for criteria pollutants and standards for toxic air contaminants must be included in the ARARs.**

Response 8: The Army has evaluated ambient air quality standards and has concluded those standards are not an ARAR. As ambient standards, the extent of contribution, if any, of IA activities to meeting or exceeding the standards' concentrations versus the contributions of area or regional sources cannot be determined. 17 CCR 70101 states that the standards "provide a basis for preventing or abating the effects of air pollution." The standards themselves do not apply to individual sources.

Comment 9: **Table 5: federal and State Clean Air Act ambient air quality standards for criteria pollutants, and exposure standards for toxic air contaminants must be included among the ARARs listed in the table.**

Response 9: Please see Response to MBUAPCD Comment 8 above.

Comment 10: **Table 6: Include an analysis/comparison of risk and safety (public health) as a column.**

Response 10: Please see Responses to MBUAPCD General Comment 1 and Specific Comment 2, EPA Specific Comment 21, DTSC Specific Comment 13, and California Air Resources General Comment above. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to include an expanded discussion of the nine EPA evaluation criteria as suggested. The factors outlined in the comment are evaluated under the EPA criteria of Protection of Human Health and the Environment and are discussed in Section 5.1 (Interim Remedial Action Objectives).

Thank you for providing this opportunity to comment on the Draft IA RI/FS. If you require further details on our comments, please contact Amy Taketomo at our District offices.

V. UNITED STATES DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, COMMENTS DATED DECEMBER 4, 2001

We have reviewed the subject document, dated October 23, 2001, which we received on October 29, 2001. As the Federal agency responsible for administering the Endangered Species Act of 1973, as amended (Act), and conserving and protecting the Nation's fish and wildlife resources we have been working with the Army on wildlife issues associated with the closure and reuse of Fort Ord for many years. We have the following comments on the subject document:

General Comments:

Comment 1: **The evaluation of alternative vegetation clearance methods and their impacts to protected and other natural resources would be enhanced by citing published research on the effects of fire on chaparral vegetation. The document does discuss the value of fire for the regeneration of endangered, threatened, and special status plant species on former Fort Ord and cites monitoring results from Fort Ord. Having site- and species-specific information is extremely valuable, however there is also abundant published research on the effects of fire on non-sprouting chaparral plant species. The Introduction indicates that a literature review is planned as part of the larger Ordnance and Explosives Remedial Investigation/Feasibility Study. A review of published research would lend further substance to the evaluation in this document, as well. We cited numerous sources on the topic in our April 24, 2000, response to your draft Trends Evaluation.**

Response 1: Section A3.2.3 of Appendix A of the Draft Final report contains an evaluation of prescribed burning based on Fort Ord -specific and wider research sources as noted in the references. As noted in the comment, the Army is conducting a literature review of vegetation clearance methods as part of the basewide Ordnance and Explosives Remedial Investigation/Feasibility Study (basewide OE RI/FS).

Comment 2: **The U. S. Fish and Wildlife Service (Service) supports prescribed burning as the Preferred Vegetation Clearance Alternative. We do not know of any method of vegetation clearance for former Fort Ord other than those that involve prescribed fire, that can meet the goals of the 1997 Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California (HMP) and allow the continued survival and recovery of HMP species. However, the subject document states that, in relation to mechanical and annual clearance "....USFWS would not allow its use on a large scale...." (pp 6-99, 6-108, 6-116). This and similar statements need clarification. As a federal agency, the Army is required, under section 7(a)(2) of the Act, to consult with the Service when its actions may affect listed species. The Army has consulted with the Service on the closure and reuse of former Fort Ord. The HMP describes the Army's activities, including minimization and monitoring measures proposed as part of the Army's action. If the Army's action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in the biological and conference opinion, then the regulations which implement section 7(a)(2) of the Act (50 CFR. 402.16) require that the Army reinitiate consultation. Consequently, it is not correct to indicate that the Service will "...not allow..." the Army to carry out certain activities. The Army**

must comply with the Act, including avoiding jeopardizing threatened or endangered species.

Response 2: Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to clarify the statement regarding USFWS requirements on the use of other vegetation clearance methods besides burning in areas containing listed species.

Comment 3: As you progress in your evaluation, please provide us with additional information on activities associated with your preferred clearance method, prescribed burning. This document specifically mentions the use of fire-suppressant foam and pre-treatments to vegetated areas. In the Screening Evaluation, Appendix B, you do not cite any research on the effects of the Crushing pre-treatment on vegetation regeneration following a prescribed burn. Additionally, although you eliminated the herbicide application ("Browning") pre-treatment from further consideration, the document is unclear in relation to the Crushing pre-treatment. It appears to be eliminated from further consideration on page B53, but is retained for further consideration on page B55.

Response 3: Appendix A (Screening of Vegetation Clearance Methods) of the Draft Final report has been revised to: 1) clarify the rationale used in the selection or elimination of the methods cited from further consideration, and 2) correct the typographical error that indicated pre-crushing was retained for further consideration.

Comment 4: Page 3 - 16, second paragraph, sixth line, incorrectly identifies the name of our agency.

Response 4: Appendix A (Screening of Vegetation Clearance Methods) of the Draft Final report has been revised to correct the error in the name of your agency.

This concludes our comments on this draft document. We appreciate the opportunity to work with you on the revise and closure of the former Fort Ord If you have any questions, please call Diane Steeck, of my staff at (805) 644-1 766.

VI. ROBERT HALE, MONTEREY, CALIFORNIA, COMMENTS DATED DECEMBER 4, 2001

I have the following comments I would like the Army to address in the current Draft IA OE RI/FS.

General Comments:

Comment 1: The potential adverse impacts on long-term health of rare plants and maritime chaparral must be fully studied and documented for all the alternatives to prescribed burning.

Response 1: Please see Responses to EPA Specific Comment 21, DTSC Specific Comment 13, California Air Resources General Comment, and MBUAPCD General Comment 1 above. Section 6.3 (Evaluation and Comparison of Interim Action Alternatives) has been revised to include an expanded discussion of the nine EPA evaluation criteria as suggested. The factors outlined in the comment are evaluated under the EPA criteria of Protection of Human Health and the Environment and are discussed in Section 5.1 (Interim Remedial Action Objectives).

Comment 2: The Army should thoroughly examine other research studies on the role of fire in maintaining chaparral plant community diversity. Include this scientific support for burning in the Draft IA.

Response 2: Please see Response to U.S. Fish and Wildlife Service Comment 1 above. Section A3.2.3 of Appendix A contains an evaluation of prescribed burning based on Fort Ord - specific and wider research sources as noted in the references. As noted in the comment, the Army is conducting a literature review of vegetation clearance methods as part of the Basewide Ordnance and Explosives Remedial Investigation/Feasibility Study (basewide OE RI/FS).

Comment 3: A prime objective of the Draft IA RI/FS should be to find the safest way to burn chaparral. Analyze various scenarios of weather and time of year, etc. for best burning conditions.

Response 3: Please see Response to California Air Resources Board Comment 2 above regarding how these conditions would be considered in the referenced plans. If the final vegetation clearance alternative selected in the Record of Decision is selected as prescribed burning, the Army will estimate air emissions and provide this information in the plans.

I support the use of burning of chaparral for OE removal.

VII. STATE OF CALIFORNIA, DEPARTMENT OF FISH AND GAME, MONTEREY, CALIFORNIA, COMMENTS DATED DECEMBER 13, 2001

The California Department of Fish and Game (DFG) received the "Draft Interim Action Ordnance and Explosives Remedial Investigation/Feasibility Study (Draft IA RI/FS) for Ranges 43-48, Range 30A, Site OE-16, Former Fort Ord, California (October 23, 2001)" on October 30, 2001. This document was prepared by Harding ESE, Inc. for the Department of the Army. DFG appreciates the Army's request of November 6, 2001 to provide a review of this document.

Background:

The former Fort Ord is located near Monterey Bay in northwestern Monterey County, California. Since 1917, portions of the former Fort Ord have been used by the military for maneuvers, target ranges, and other purposes. A wide variety of conventional unexploded ordnance (UXO) items have been located at sites throughout the former Fort Ord, including pyrotechniques and explosives. The purpose of this "Interim Action Remedial Investigation/Feasibility Study" (IA RI/FS) is to address ordnance and explosives (OE) in order to: (1) take quick action to protect human health and the environment from an imminent threat in the short term while a final remedial solution is being developed and (2) institute temporary measures to stabilize the site and prevent further migration or degradation.

The U.S. Army, as the lead agency, has determined that an interim action is appropriate to protect human health from the imminent threat posed by OE at Ranges 43-48, Range 30A and Site OE-16 (see 1.0 Introduction – 2). Although the stated purpose of this Interim Action is predominantly to protect human health, the RI/FS will consider potential residual OE-related risks (see 2.0 Purpose and Objectives – 5) to human health (and the environment). The primary purposes for developing Interim Remedial Action Objectives (RAOs) are to reduce risks to human health and the environment associated with OE (see 5.0 Selection of IA Sites – 52).

<u>Comment and Recommendations on the Draft IA RI/FS</u>:

Department of Fish and Game has reviewed subject report. There are several deficiencies in the Draft Report with respect to interests and natural resource trust responsibilities of Department of Fish and Game in the following areas: a) Adequacy of the Ecological Risk Assessment; b) Assessment of the Effects of the RA on Fish and Wildlife Resources; and c) Consideration of State Applicable or Relevant and Appropriate Requirements (ARARs).

Comment 1: <u>Adequacy of Ecological Risk Assessment (risk to the Environment)</u>

The IA RI/FS does not provide an analysis or evaluation of the potential risk to environmental receptors from the proposed actions. There are two elements of the risk assessment analysis (see US EPA non Time Critical Removal Risk guidance – http://tis.eh.doe.gov/oepa/guidance/cercla/critic.pdf) that should be considered in the final report: 1) catastrophic explosions with risk to fish and wildlife resources; and b) potential hazardous waste release(s) from unexploded and exploded ordnance. The report correctly identifies that the lead agency (Army) may take any appropriate action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or the threat of release. Factors that are to be considered in taking action include threat of fire or explosion and action or potential exposure to human

populations, animals, or the food chain from hazardous substances, pollutants, or contaminants, and other factors (see 5.0 Selection of IA Sites – 55). The draft report did not do this evaluation or make this analysis of risk by these potential threats. The final report should include such an assessment.

Response 1: The Interim Remedial Actions proposed by the Army will not be conducted as Non-Time Critical Removals, and therefore the cited guidance is not applicable to the actions proposed in the Draft IA RI/FS. Ecological risks will be evaluated in the basewide OE RI/FS currently under preparation.

Comment 2: **Assessment of the Effects of the Remedial Action on Fish and Wildlife Resources**

An analysis of the impacts, effects, and their avoidance (i.e., mitigation) for the Interim Action alternatives (including No Action) should be included in the Final Report (see 6.0 IA Feasibility Study – 59). This analysis should address fish, wildlife resources and biota, including their habitats.

Response 2: Please see Response to Comment 2 above regarding ecological (fish and wildlife) risk assessment that will be performed in the basewide OE RI/FS. Mitigation measures described in Chapter 3 of the HMP will be implemented to minimize impacts to fish and wildlife resources.

Comment 3: **Consideration of State Applicable or Relevant and Appropriate Requirements (ARARs)**

The attachment lists the State ARARs for State natural trust resources that are relevant to the IA sites. They should be listed and included in Table 5 (see 6.0 IA Feasibility Study – 94).

Response 3: The Army appreciates the DFG's submittal of recommended ARARs. The proposed ARARs cited have been evaluated for their applicability to the Interim Action and have been included in the appropriate sections of Table 5.

Conclusion:

DFG would like to reiterate our interest in coordinating any natural resource issues should there be any activity at Fort Ord that could affect the State's natural resources. In addition, because the habitat contains protected species at these IA site, DFG would like to see the detailed resource management measures detailed in the Installation-Wide Multispecies Habitat Management Plan (USACE, 1997) be followed. DFG would like to receive a response to the above comments and see these comments addressed in the next revision of this IA RI/FS. We appreciate the opportunity to comment on this review request and look forward to working with you in the future. If you have any questions regarding this review or require further details, please contact me by telephone at (831) 649-2876 or via e-mail: pvelez@ospr**. Dfg.ca.gov.**