Final Responses October 2007

November 2006, Draft Munitions and Explosives of Concern Hazard Assessment Guidance DocumentComment Form									
Comments by: Michael Short, Parsons									
Comment Number	Section of Document	Page Number	Line Number	Comment	Response				
1	Executive Summary	xi	79	Recommend adding "site" between of and hazards.	Editorial. Change made.				
2	1.5	5	288&289	Do not understand this statement	Comment noted. Text describes Figure 1-1.				
3	1.6	7	339	Recommend changing "detonate" to "function as designed"	Editorial. Comment noted. TWG chose to use detonate.				
4	Table 2-1	9		Definition of Severity and Sensitivity. Same as above comment.	Incomplete comment.				
5	2.2.2.1	10	408	Recommend changing "detonate" to "function as designed"	See response above to same comment.				
6	3.2	16	517	Recommend changing "concerning" to "related to"	Editorial. Style issue. No change needed or made.				
7	3.3.2	18	555	Change "opening" to "open".	Editorial. Correction made.				
8	3.3.2	18	574	agreed to by project team. This is a contractual issue and is a stipulated in the contractor's contract. The team cannot arbitrarily change it.	Comment refers to discussion the accuracy of georeferencing on maps. A project team will determine these and other issues prior to the award of a contract.				
9	4.1	26	Box, 3 <sup>rd</sup> bullet	Pyrotechnics. Delete - in training.	Phrase changed to "during training".				
10	4.4	31	779	With the possible exception of state and federal parks, the contact hours is an arbitrary number, a SWAG at best. I believe you place to significant an emphasis on an unkown.	As discussed in the text, the contact hour input needs to reflect the project team estimations and consensus.				

November 20	November 2006, Draft Munitions and Explosives of Concern Hazard Assessment Guidance Document-Comment Form									
Comments by: Michael Short, Parsons										
Comment Number	Section of Document	Page Number	Line Number	Comment	Response					
11	4.5	32	Table 4-9	Wouldn't duration and frequency of range use and, type of target be helpful information in this category	TWG considered including these kinds of aspects. However, due to general lack of consistent records on frequency and duration of use, it was considered problematic to differentiate in this manner.					
12	4.8	37	884	Add "that" between "fuzes" and "are"	Correction made.					
13	Glossary	57		Include definition of "Fuzed DMM Special Case" and "UXO Special Case" as these seem to be new.	Terms added to glossary.					

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.							
Comment Number	Section of Document	Page Number	Line Number	Comment	Response			
14	General			How does the MEC HA deal with human health if only three aspects (severity, accessibility, sensitivity) are involved?	These categories include many other subfactors regarding human explosive safety considerations and potential adverse impacts to humans as discussed in the MEC HA text.			
15	General			How does the MEC HA deal with human health in the absence of environmental assessments as for instance human consumption of contaminated fish and game?	As discussed in the MEC HA, the focus of this guidance is on explosive safety hazards to human receptors. Exposure to environmental contaminants is addressed through existing methods for assessing risks associated with the release of chemicals.			
16	General			Many ranges are likely to contain both MEC and CWM if they were used just prior to or during W.W.I and W.W.II due to the needs to test experimental ordnance. (i.e. Pontiac High Altitude Bombing Range, SC) How does this HA deal with combined use ranges?	The MEC HA only addresses the explosive hazards. There are other existing methods to address CWM.			
17	1.2			Par. 1.2 says that the MEC HA address the NCP direction for site specific assessment of risks to human health or the environment. Par. 1.3 says that the MEC HA does not address MC at levels below explosive concern. How does this allow for health assessments described earlier and in Par. 1.2?	See previous comment on the explosive safety focus of the MEC HA. Health assessments are addressed through existing methods.			

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.								
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18	Figure 1.1			The second bullet on page 19 (figure 1.1) says that "The MEC HA supports the evaluation of remedial alternatives including Land Use Controls (LUCs)the MEC HA provides input to several of the nine criteria including: the protection of human health and the environment" It is difficult to envision a MEC area where land use controls can be effective in protecting the environment and even human health. (i.e. fish and game can ingest toxic substances and migrate offsite to where human contact can occur or the fish and animal species itself can become impacted. This paradox should be made clearer.	As noted earlier, the focus of the MEC HA is explosive safety hazards for human receptors.				

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.							
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19	1.6			The first paragraph in Par. 1.6 it appears to be saying that the MEC HA only addresses safety concerns of human exposure to explosive safety hazards not risks associated with chemical exposure in the environment. This seems contradictory from the earlier statements. If the MEC HA only deals with safety hazards it should clearly say that so that the stakeholders and residents are not confused. Also, I would use constituents rather than chemicals in wording addressing environmental and human health concerns because elemental metals are not chemicals but may pose a significant risk.	As noted earlier, the focus of the MEC HA is explosive safety hazards for human receptors. This is clearly stated in the text.  The term "environmental contaminants" is now used in place of chemical when referring to risks.			
20	1.8			Par. 1.8 finally says clearly that the MEC HA assesses the explosive hazard to human receptors. That makes sense but the earlier language remains muddled.	The first sentence of the Executive Summary states"This guidance document describes the munitions and explosives of concern hazard assessment methodology for assessing potential explosive hazards to human receptors at munitions response sites (MRSs)."			

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Comments b	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.								
Comment	Section of	Page	Line	Comment	Response				
Number	Document	Number	Number	Comment	Response				
21	2.2.1.2			Par.2.2.1.2 uses the term "minimum depth of MEC" Except for a munitions burial site, it is difficult to envision a MEC site where the potential for surface MEC does not exist. While migration (i.e. frost heave and rain washing soil off the top of an item) is covered next, it creates the likelihood of an assessment saying that ordnance is below surface level and human intrusion is not anticipated. (In Europe, several lumberjacks were killed because they built a fire for warmth in the winter that was atop an ordnance item. This is an example of human exposure to a subsurface item without intrusion.)	The MEC HA does not address unusual circumstance like the one described for lumberjacks. It does address likely interactions and provides a qualitative tool for assessing relative reductions in hazards associated with varying degrees of removal and remedial actions.				

November 2006, Draft Munitions and Explosives of Concern Hazard Assessment Guidance DocumentComment Form Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.									
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Comment Number	Section of Document	Page Number	Line Number	Comment	Response				
22	2.2.1.2			Par.2.2.1.2 again uses the MEC depth under the accessibility factor. Aside from the effects of rain and frost heave moving items to the surface, there are many other aspects of ranges that make an analysis based on this factor difficult if not impossible. Even a range that had one type and size of ordnance item fired from one location (i.e. an 81 mm mortar HE round) the depths at which the UXO will be found vary considerably, even in homogeneous soil conditions. One scenario that accounts for this is that shell #1 penetrates two feet but does not detonate. Shell #2 lands in nearly the same spot, now softer disturbed soil. It penetrates three feet and detonates casting shell #1 upward. Similarly, busy ranges have many craters from rounds that detonated. Thus the soil surface is extremely uneven. A shell that does not detonate may have landed in an elevated area between craters. As this higher ground erodes from rain into the adjacent craters, the shell becomes exposed. Only a complete geophysical survey of the range could determine that no shells are above two feet. Indeed, most currently used geophysical instruments are unable to accurately predict depth due to orientation, frag and soil variances, even if only one shell size is on the range.	The TWG agrees that adequate characterization is critical for management of potential explosive safety hazards.				

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Comments	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.								
Comment	Section of	Page	Line	Comment	Dognango				
Number	Document	Number	Number	Comment	Response				
23	2.2.1.3			Par. 2.2.1.3 Needs to add that age impacts sensitivity. Thus DMM (unfused) from W.W. I may be just as sensitive as UXO (fused) from a Vietnam era range. Especially shells filled with cast TNT will weep an exudates into the bottom of the shell where hyper sensitive crystals will grow. The older the shell, the larger and more sensitive the crystals.	The TWG disagrees with the statements regarding DMM (unfuzed) from W.W.I. may be just as sensitive as UXO (fuzed) from a Vietnam era range, and the effects of time on cast TNT in shells. For these reasons, the TWG does not agree that age of items need to be added to the sensitivity category.				

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.								
Comment Number	Section of Document	Page Number	Line Number	Comment	Response				
24	2.2.2.2			Par.2.2.2.2 While the notion of scoring appears to be logically sufficient, there is a fundamental problem. Without excavation of a range impact area, it is impossible to know what all the different ordnance types might be there. Early in W. W. I and W. W. II ordnance development was seriously behind and rapid research and development was necessary. Experimental shells and bombs were deployed on handy ranges, irrespective of the ranges primary use. EPA gave a training session in July 2005, where the instructor Dr. Tom Jenkins related cleaning up a Howitzer range. The range was located in a remote area necessitating a long boring drive in a jeep twice a day. The boredom was alleviated by a bump in the road where they could clear all four of the jeep's wheels. After the range was finished, they examined the bump in the road and found a live 200 pound bomb!	TWG agrees that until a range is assessed there is uncertainty about what is present. The MEC HA is designed to describe site explosive hazards, and provide a methodology for assessing hazard reductions associated with different removal or remedial actions.				

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.								
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25	Table 2-5			Table 2-5 add "fuses" to DMM categories. While the discarded munitions are the biggest problem, they generally are unfused during storage and burial. The fuses are then buried separately. While these are much smaller in total explosive quantity, they are also problematic. First they contain impact sensitive explosives. Second, they are made of non-ferrous metal and cannot be found with the magnetometers generally used for deeper burials.	Individual fuzes will be classified as DMM. Most fuzes do contain ferrous metal and can be found with magnetometers. When fuzes contain no ferrous materials, electromagnetic detectors can be used. These decisions are typically made as part of a geophysical proveout.				
26	3.1			Par. 3.1 second bullet page 16 should add the function of independent development of information and an assessment of the site. Lead agency personnel are often from other areas (i.e. ACOE or EPA regional offices) while the state agency may have more familiarity with local historical societies, newspaper archives, libraries, recorder of deeds offices and other repositories of information regarding the facility.	Table 3-1 is provided as an illustration of potential project team members, not as an all inclusive list. It is outside of the scope of the MEC HA to make statements regarding independent site assessments. Therefore, the requested language was not incorporated in the text.				

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.							
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27	Table 3-2			Table 3-2 note that the sources of data listed are in reality unlikely to be available for most sites. The military is just now compiling a list of all known ranges. The vast majority of these sites have not had historical studies, PAs, Sis, or any of the other documents listed. Therefore, this table should also list the sources of information that would be used to compile such documents.	The DoD is in the process of undertaking PA and SI for the majority of munitions response sites in the inventory required by the U.S. Congress. The list of potential references in the Table will be variable by site based on the level of MMRP work that has been implemented. The Table is not meant to imply that these documents will be available for every site, rather it is an illustration of types of documents where information can be found.			
28	Table 4-1			Table 4-1 should "Energetic Material Type Categories" might include a note that some smoke munitions will spontaneously react with the air when breached, like white phosphorous, producing heat and/or toxic fumes." (For example, titanium tetrachloride, a common military smoke, can scar corneal tissue. As such, it may produce a safety hazard.)	The Table is intended to clearly describe each Energetic Material Types, and contains sufficient detail to do so.			

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.								
Comment Number	Section of Document	Page Number	Line Number	Comment	Response				
29	Table 4-11			Table 4-11 again refers to MEC located only subsurface. For the reasons cited above, it would seem that only in circumstance of a burial pit could this statement be made, unless a very thorough geophysical survey of the site had been conducted. It is unlikely that such a survey would have been conducted, unless remedial action is planned. The MEC HA is being designed as a preliminary tool for the 16,000 ranges for which remedial investigation has yet to occur.	The difference is to account for sites where a surface removal has been completed. This is often a first step for site stabilization.  The MEC HA has not been designed as a preliminary tool. It has been designed to be used at the removal or remedial steps under CERCLA. The TWG is unaware of the reference regarding 16,000 ranges. The FY 06 Defense Environmental Program Report to Congress lists approximately 3300 munitions response sites.				

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Comments l	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.						
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30	4.6.2			Par. 4.6.2 again too much focus is put on a scenario not likely to be common. Even if a site has the assurance that no MEC is on the surface, (i.e. a careful visual survey using roped lanes, not a meandering path, of the entire area without the presence of obscuring vegetation) that condition is likely to change over the years as munitions work to the surface. This is noted in the next paragraph. Secondly, the maximum depth of human intrusion is difficult to foresee (hunters digging a latrine, campers building a bonfire for warmth, or residents excavating for a swimming pool.) Thirdly, if the munitions are all subsurface, by definition it is impossible to know exactly how deep they are. Again, there currently is no reliable metal detector that is capable of accurately sensing depth. One of the best, a pulse induction type of detector, can still be distorted by shell orientation, size differences of various munitions, metal debris in the area such as frag, and soil characteristics.	The text at Section 4.6.2 is provided to illustrate how the Minimum MEC Depth Relative to the Maximum Intrusive Depth category can change with changes to land use activities or cleanups. This is provided to inform project teams on how to properly use the MEC HA.		

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	Comments by: Dr. Richard D. Albright, JD, MS, Ph.D.						
Comment Number	Section of Document	Page Number	Line Number	Comment	Response		
31	4.8			Par. 4.8 states that "UXO items are always more hazardous than DMM". This is probably an accurate statement however, absolutes are tricky in this field. To illustrate, an 81 mm HE mortar shell fired in 1980 and now a UXO item is dangerous. It is fused and the fuse is likely damaged from impact. However, a pit of 1000 unfused 75 mm howitzer shells buried at the end of W. W. I is likely to also be shock sensitive due to age. Another method of analyzing this proposition can be found in the plentiful occurrence of magazines spontaneously detonating. Here properly stored and inspected shells, presumably unfused, just blow up. This document should be careful not to convey that one type of ordnance is safer than another. It's all dangerous.	TWG agrees that all MEC is dangerous.		
32	4.8			Par. 4.8 also makes the distinction for "special case" munitions. It is not clear why the distinction is made. Other than size, there doesn't seem to be any logical reason for including grenades and mortar rounds separate from Howitzer shells.	The first paragraph in Section 4.8 and the category descriptions in the second column of Table 4-15 adequately describe the difference between UXO and UXO special case.		

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Comments l	y: Dr. Richard	D. Albright,	JD, MS, Ph.	D.		
Comment Number	Section of Document	Page Number	Line Number	Comment	Response	
33	4.9			Par. 4.9 is good. However, it also changes the accessibility rating. As happened recently in California, a schoolteacher picked up a 40 mm shell on a hike and brought it back to his classroom. It detonated when he used it to smash a bug. Assuming it was found in a remote area, the accessibility score would be low. Yet its size allowed it to become accessible to many other people. Should this be a factor?	The MEC HA is intended to support the assessment of <b>munitions response sites</b> explosive safety conditions, and the effects of different removal and remedial actions.	
34	4.10			Par. 4.10 the phrase "identification of LUCs that effectively control potential exposure" may not be accurate. Armed guards with dogs and sensing equipment is the only such LUC. The document should caution on the over reliance on LUCs.	Bullet has been changed to: Identification of LUCs that <b>manage</b> potential exposure to any remaining MEC.	

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Comments l	by: Dr. Richard	D. Albright,	JD, MS, Ph.	D.		
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35	Other considerati ons:			Land use is likely to change rapidly in some cases. A remote mountainous BRAC parcel, given to the local government for a public hunting and camping area, suddenly finds a purchaser for a ski resort and subdivision. Newly elected local officials, unaware of previous commitments for limited access, and hungry for economic development, eagerly approve the plan. Houses now exist atop UXO. (Pontiac Bombing Range SC and Camp Wheeler, GA for two recent examples.)	The MEC HA can be readily re-run when land use changes or other new information comes into play.	
36	Other considerati ons:			Tendency by EOD professionals to underrate the hazard. The frequent missuse of the term "inert" to describe UXO to the public.	Comment noted as personal opinion.	

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Comments l	Comments by: U.S. Department of the Interior Consolidated Comments – Advanced Draft						
Comment Number	Section of Document	Page Number	Line Number	Comment	Response		
37	Executive Summary	xi	90-91	"The MEC HA reflects the fundamental difference between assessing chronic chemical exposure risk and assessing acute MEC explosive hazards." This statement is of such critical importance that it should be supported by a graphic or at least highlighted in some manner.	The text has been put in italics for emphasis.		
38	Executive Summary	xiv	148	Insert a sentence about where to find additional MEC HA training (e.g., website).	Training will be developed after the MEC HA is finalized. Currently there is none available, so no reference can be given. The Training Exchange website (www.trainex.org) is a good resource for finding training when it is developed.		
39	Introduction	1	164	Replace "returned back" with "returned"; grammatical revision.	Requested change made to the text		
40	1.5	5	288	After this paragraph, insert Figure 1-1 so the reader can more easily refer to it, especially regarding the text that follows beginning with Line 290.	No change required. Figure immediately follows the text.		
41	1.8	8	356	This section states that the MEC HA addresses only human receptors, and then advises that munitions site response activities can pose hazards to, among others, ecological resources. The U.S. Fish and Wildlife Service is interested in the potential risk to wildlife, and suggest that there be a longer discussion of how UXO activities pose hazards to wildlife and a cross reference to the discussion of "other" receptors.	The MEC HA does not directly include "scoring for cultural resources, ecological resources, or critical infrastructure", but it does include instructions for project teams to address their presence or absence, especially when looking at ESQD, and then to include evaluations in the removal alternatives or remedial alternatives criteria analyses. Also, please see Appendix C Frequently Asked Questions # 13.		

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	Comments by: U.S. Department of the Interior Consolidated Comments – Advanced Draft					
Comment Number	Section of Document	Page Number	Line Number	Comment	Response	
42	2.2.2.2	12	468	It is recommended that the term "LUC" be spelled out rather than use the acronym. It is defined earlier; however, it may be unlikely that the reader of this section has read the Executive Summary or earlier introductory sections. It is important that the reader know that we are talking about Land Use Controls.	Comment noted. TWG is following government style manual where at first use the acronym is spelled out. Subsequent use presents the acronym alone. The term is also included in the Acronym List and the Glossary.	
43	Table 2-6	14	-	What about scores that are less than 125? It should be made clear at this point that 125 is the minimum score that can be achieved. This is not mentioned until section 4.11.	A sentence stating the maximum and minimum scores has been added to section 2.2.2.2.	
44	Table 3-1	15	-	Involvement of federal landowners at NPL and Non-NPL sites is discussed in Footnote a. It is recommended that this discussion should be moved to the body of the text in Section 3.1., or added to the table in a manner similar to their inclusion in the FUDS and BRAC sections.	The term "Federal Land Management Agency" will be added to each of the boxes in row two. Footnote "a" will be converted to text after Table 3-1.	
45	Chapter 4	25	666-668	The text states that Sections $4.1 - 4.9$ will discuss how to select an input factor for scoring for, among others, reasonably anticipated future land uses. It is recommended that the discussion of future use should be expanded in Section $4.2.2$ .	There are discussions of future land use in several of the input factors. Section 4.2.2. would not be an appropriate place to have an expanded discussion on land use. Also, see Frequently Asked Question # 6 in Appendix C.	

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Comments l	y: U.S. Departr	nent of the I	nterior Cons	olidated Comments – Advanced Draft		
Comment		Page	Line	Comment	Response	
Number	Document	Number	Number	Comment	response	
46	4.9.2	42	940-942	It is not clear what is meant here. This section says that the size categories (i.e. "small" and "large") will not change "unless additional information indicates that the selected category is not correct." Does this mean that the MEC HA will be modified to add another category, such as "medium" or "extra small" or does it mean that a the MEC size for a particular assessment will change? If the latter is true, how is this accomplished? This section is extremely vague and should be reviewed to increase clarity. In either event, the process for change (either to the MEC HA or a particular site assessment) should be added.	Text has been revised as follows. "The category chosen for MEC Size will not change unless additional information indicates that the other category should be selected."	

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Comments l	by: U.S. Departr	nent of the I	nterior Cons	olidated Comments – Advanced Draft		
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47	Chapter 5	47	1014- 1022	The first sentence, beginning on Line 1014 states that each MRS AND each alternative response or reuse evaluated for that MRS will have a score. This infers that the MRS will have a score (the determining of which isn't explained) as well as each response or reuse for that MRS will also have a score. This is a confusing concept. Then, in the second paragraph, beginning with Line 1019, it is stated that each MRS may have multiple scores! So, it has been stated that each MRS will have (1) a single score, (2) multiple scores for each response or reuse, and (3) multiple scores for the MRS. This section needs to be reviewed and the conditions that apply explained more clearly.	The second paragraph in the introduction to Chapter 5 has been moved to the end of the introduction for clarity. Additional language has been added to the text to clarify that an MRS may have multiple scores as a result of evaluating different alternatives or different land uses.	

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48	5.1	47	1033	This section states that the Hazard Level determined by the MEC HA is the final result, not the raw score. This is a very important point, and should be addressed in the executive summary as well as early in the MEC HA itself. Reaching the Hazard Level is the point of the effort, so the final goal should be made very clear throughout the document, especially at the beginning.	As a point of clarification, the final goal of the response process is to address potential explosive safety hazard posed by the conditions found at a site. The MEC HA is a tool to support those efforts. The "output" is not "the goal". It is a step in the process.  The text has been revised as follows for clarity.  The Hazard Levels and associated scores represent groupings of sites with common or similar attributes with respect to conditions that constitute the explosive hazards. As noted elsewhere in this guidance, the scores have meaning only with respect to one another. The score ranges for the Hazard Levels were based on sensitivity runs that are documented in Appendix D. Table 5-1 presents the four MEC HA Hazard Levels and score ranges.		
49	5.1.4	49	1094	The text states " that an MEC may" It should be "a" not "an" MEC.	Changed to "a" MEC.		
50	Table 5.3	52	-	Table 5-3, beginning after line 1143. It is suggested that the cells in the table be formatted to have the horizontal alignment be in the center. It is inconsistent as it stands.	Table has been reformatted.		

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Comments by	: Brian Stonebrink	; FUDS/ MM	IRP Project M	Ianager; Arizona Dept of Environmental Qualit	y	
Comment Number	Section of Document	Page Number	Line Number	Comment	Response	
51	Table 2-5	13		The Baseline Condition where MEC is located only in the subsurface is scored as 150 compared to MEC located on the Surface and Subsurface at 240. Wouldn't MEC items that are buried be even more preserved and thus more hazardous than items on the surface that have undergone extensive weathering?	Weathering is a function of many factors. Subsurface munitions are subject to many weathering aspects, as are surface munitions. This input factor does not address weathering. Rather it addresses where the munitions are suspected/expected to be physically located, and is there overlap between those depths and known/potential human activities.	

Original File: Email Comments

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Comments by: Jim Pastorick						
52	Thanks for letting me know about the FR publication. I am already using the MEC HA on several projects so we will hopefully have some feedback soon. I think it is a great product that will be a big help to us in developing consistent responses to MEC across the country.					