Final Remedial Investigation/Feasibility Study Report
Former Camp Maxey, Paris, Texas
Appendix E

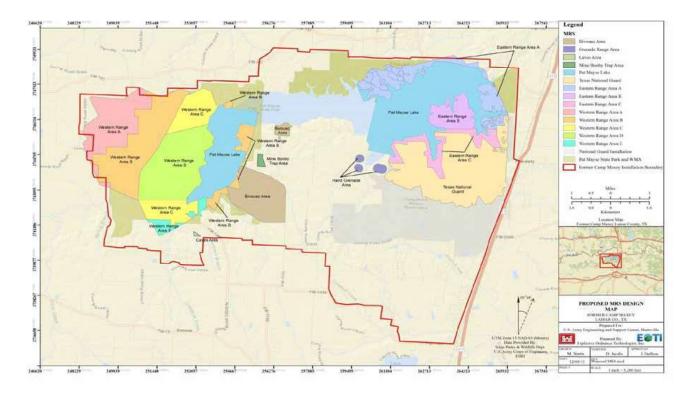
## APPENDIX E: MUNITIONS AND EXPLOSIVES OF CONCERN HAZARD ASSESSMENT MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FORMER CAMP MAXEY
Paris, Texas

#### **MEC HA Summary Information**

			Comments
Site ID:	Eastern Range Area A		
Date:	4/7/2014		
	ntify the single specific area to be assessed in this hazard asses	•	
	to "site" or "MRS" refer to the specific area that you have defi	nea.	
	a unique identifier for the site:		
Eastern	Range Area A		
Provide a	list of information sources used for this hazard assessment. As	s you are completing the	
worksheet	rs, use the "Select Ref(s)" buttons at the ends of each subsection sources from the list below.		
Ref. No.	Title (include version, publication date)		
	Final RI/FS Report (April 2014)		
	Non-Time Critical Removal Action Report (2010)		
	Report (2007)		
	Investigation, and Removal Report (2002)		
	Removal Action Site Specific Final Report (200		
	Engineering Evaluation/Cost Analysis Report (2	2000)	
	Explosives Sampling Report (1998)		
	Report (1997)		
	Archive Search Report (1994)		
10			
11			
12			
	describe the site:		
(	nclude units): 1124 acres		
	unitions-related use:		
Target A			
	t land-use activities (list all that occur):		
	se State Park	NI -	
	anges to the future land-use planned?	No	
	s the basis for the site boundaries?		
FUDSMIS	ertain are the site boundaries?		
	ies are speculative based on historical informa	tion.	
Reference	(s) for Part B:		
Final RI/	FS Report (April 2014)		
C. Histor	rical Clearances		
1. Have tl	here been any historical clearances at the site?	Yes, subsurface clearance	
2. If a cle	arance occurred:		
	a. What year was the clearance performed?	1997 and 2010	
	b. Provide a description of the clearance activity (e.g., extent related items removed, types and sizes of removed items, and used):		
	1997: From January 27th through April 10th, 19 Applications, Inc. (HFA) conducted a Time-Crit on 381 acres in the rocket and grenade impact and Bivouac Area A) on the north shore of Pat DACA87-95-D-0027, Task Order 0007). During thi rockets and 10 M-9 rifle grenades were recover Area.	cical-Removal-Action (TCRA) area (East Impact Area C Mayse Lakes (Contract No. Ls effort 2,170 2.36in	
	2010: USAE completed surface clearance of 13 grids/341.5 acres. A total of 170 MEC items, rockets, M9 rifle grenades, and MK II hand gredisposed of through explosive disposal operations.	including 2.36-inch enades, were located and	
Reference	(s) for Part C:		
Final RI/	FS Report (April 2014)		

#### D. Attach maps of the site below (select 'Insert/Picture' on the



Site ID: Eastern Range Area A
Date: 4/7/2014

# **Cased Munitions Information**

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Munition Size Units Mark/ Model	Energetic Material Type	Is Munition Fuzing Fuzed? Type	Fuzing Type	Fuze	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
-	Rockets	2.36	inches	2.36-inch Rockets	High Explosive	UNK	UNK	UNK	0	Surface and O Subsurface	Depth of munitions not specified in 2010 report. UXO assumed to have been found on ground surface to remain conservative.
2	Grenades			M9 Rifle Grenades	High Explosive	UNK	UNK	UNK	0	Surface and 0 Subsurface	Depth of munitions not specified in 2010 report. UXO assumed to have been found on ground surface to remain conservative.
ო	Grenades			MKII Hand Grenades	High Explosive	UNK	UNK	UNK	0	Surface and O Subsurface	Depth of munitions not specified in 2010 report. UXO assumed to have been found on ground surface to remain conservative.
4 =	4 Artillery	37	37 mm	37mm APHE	High Explosive	UNK	UNK	UNK	0.1	Surface and Subsurface	
12 13 13											
14	# 10										
16	2										
17											
19											
20											

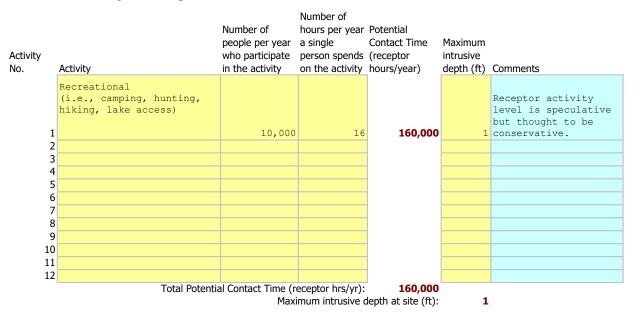
Reference(s) for table above:

Final RI/FS Report (April 2014)

Public Review Draft - Do Not Cite or Quote Munitions, Bulk Explosive Info Worksheet Site ID: Eastern Range Area A

Date: 4/7/2014

#### **Activities Currently Occurring at the Site**



Reference(s) for table above:

Final RI/FS Report (April 2014)

Site ID: Eastern Range Area A
Date: 4/7/2014

Planned Remedial or Removal Actions

		Expected Resulting		Will land use activities change if this		
Response Action No	Response Action No. Response Action Description	Minimum MEC Depth (ft)	Expected Resulting Site Accessibility	response action is implemented?	What is the expected scope of deanup? Comments	Comments
	1 No DoD Action Indicated	0	Full 0 Accessibility	No	No MEC cleanup	
	2 LUCs; 100 Percent Surface Clearance	0.1	Full 0.1 Accessibility	NO ON	cleanup of MECs located on the surface only	
	LUCS; Focused Surface and Subsurface 3 Clearance	0.5	Full 0.5 Accessibility	NO	cleanup of MECs located both on the surface and subsurface	
•	4 Unlimited Use/Access	Ю	Full 3 Accessibility	No	cleanup of MECs located both on the surface and subsurface	
	9					

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Final RI/FS Report (April 2014)

Public Review Draft - Do Not Cite or Quote Remedial-Removal Action Worksheet Site ID: Eastern Range Area A

Date: 4/7/2014

#### **Energetic Material Type Input Factor Categories**

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting			
Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'.

Score

Score

30

30

30

 Baseline Conditions:
 100

 Surface Cleanup:
 100

 Subsurface Cleanup:
 100

#### **Location of Additional Human Receptors Input Factor Categories**

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS?



2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc?

3. Please describe the facility or feature.

WMA buildings

MEC Item(s) used to calculate the ESQD for current use activities

#### Item #3. Artillery (155mm, High Explosive)

The following table is used to determine scores associated with the location of additional human receptors (current use activities):



Outside of the ESQD arc 0 0 4. Current use activities are 'Inside the MRS or inside the ESQD arc', based on Question

2.'
Baseline Conditions:

Baseline Conditions: Surface Cleanup: Subsurface Cleanup:

	Input Factor Categories sed to determine scores associated with	n site accessil Baseline	bility: Surface	Subsurface		
	Description	Conditions		Cleanup		
	•	Conditions	Cicariup	Cicariup		
Full Accessibility	No barriers to entry, including signage but no fencing	80	0	80	80	
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	5	55	55	
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	5	15	15	
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	į	5	5	5	
Current Use Activit					Score	
	: best describes the site accessibility un	der the curre	nt use sce	nario:	30016	
Full Accessibility		aci die care	iii use see	nario.		
Baseline Conditions:	-					80
Surface Cleanup:						80
Subsurface Cleanup:						80
to 'Full Accessibility'. Baseline Conditions: Surface Cleanup: Subsurface Cleanup:						80 80 80
Based on the 'Planne to 'Full Accessibility'. Baseline Conditions:	ive No. 2: LUCs; 100 Percent Sund Remedial or Removal Actions' V			native will lea	ad	80
Surface Cleanup: Subsurface Cleanup:						80 80
	ive No. 3: LUCS; Focused Surface dd Remedial or Removal Actions' W				ad	
Baseline Conditions:						80
Surface Cleanup:						80
Subsurface Cleanup:						80
Based on the 'Planne to 'Full Accessibility'.	ive No. 4: Unlimited Use/Acces. d Remedial or Removal Actions' V		:his alter	native will lea	ad	
Baseline Conditions:						80
Surface Cleanup:						80 80
Subsurface Cleanup:						80

#### **Potential Contact Hours Input Factor Categories**

Current Use Activities:

The following table is us	ed to determine scores associated with	n the total pot	ential conta	ct time:	
J	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup	
Many Hours	≥1,000,000 receptor-hrs/yr	120	90		30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50		20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20		10
Very Few Hours	<10 000 recentor-brs/vr	15	10		5

Input factors are only determined for baseline conditions for current use activities. Based on the	recepto
'Current and Future Activities' Worksheet, the Total Potential Contact Time is:	160,000 hrs/yr
Based on the table above, this corresponds to a input factor score for baseline conditions of: Response Alternative No. 1: No DoD Action Indicated	<b>70</b> Score

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will
not change if this alternative is implemented.
Total Potential Contact Time, based on the contact time listed for current use activities

(see 'Current and Future Activities' Worksheet)	160,000
Based on the table above, this corresponds to input factor scores of:	Score
Baseline Conditions:	70
Surface Cleanup:	50
Subsurface Cleanup:	20

Response Alternative No.	o. 2: LUCs: 100 Percent Surface Clearance

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will
not change if this alternative is implemented.
Total Potential Contact Time, based on the contact time listed for current use activities

(see 'Current and Future Activities' Worksheet)		160,000
Based on the table above, this corresponds to input factor scores of:	Score	
Baseline Conditions:		70
Surface Cleanup:		50
Subsurface Cleanup:		20

#### Response Alternative No. 3: LUCS; Focused Surface and Subsurface

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities		
(see 'Current and Future Activities' Worksheet)		160,000
Based on the table above, this corresponds to input factor scores of:	Score	
Baseline Conditions:		70
Surface Cleanup:		50
Subsurface Cleanup:		20

#### Subsurface Cleanup: Response Alternative No. 4: Unlimited Use/Access

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities		
(see 'Current and Future Activities' Worksheet)		160,000
Based on the table above, this corresponds to input factor scores of:	Score	

Based on the table above, this corresponds to input factor scores of:	Score
Baseline Conditions:	70
Surface Cleanup:	50
Subsurface Cleanup:	20

#### **Amount of MEC Input Factor Categories**

The fellowing table is used to	determine scores associated	with the American of MEC.
The following table is used to	) determine scores associated	WITH THE AMOUNT OF MIEC.:

The following table is t	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	•	•
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the *most hazardous* amount of MEC: Score

 Target Area

 Baseline Conditions:
 180

 Surface Cleanup:
 120

 Subsurface Cleanup:
 30

### Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: The deepest intrusive depth:

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

maximum intrusive depth:			
·	Baseline Conditions		Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' For 'Current Use Activities', only Baseline Conditions are considered.

240 Score

0 ft

#### Future Use Activities Deepest intrusive depth: Not enough information has been entered to determine the input factor category. Score Response Alternative No. 1: No DoD Action Indicated Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0** ft Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented. Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use **1** ft activities (see 'Current and Future Activities' Worksheet) Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' Score Baseline Conditions: 240 Surface Cleanup: Subsurface Cleanup: Response Alternative No. 2: LUCs; 100 Percent Surface Clearance Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): 0.1 ft Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented. Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **1** ft Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' Score Baseline Conditions: Surface Cleanup: 150 Subsurface Cleanup: Response Alternative No. 3: LUCS; Focused Surface and Subsurface Clearance Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0.5** ft Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented. Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **1** ft Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' Score Baseline Conditions: Surface Cleanup: 95 Subsurface Cleanup: Response Alternative No. 4: Unlimited Use/Access **3** ft Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will

Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet)

Because the shallowest minimum MEC depth is greater than the deepest intrusive depth, the intrusive depth does not overlap. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface,

After Cleanup: Intrusive depth does not overlap with subsurface MEC.'

**1** ft

25

Score

not change if this alternative is implemented.

Input Factors Worksheet

Baseline Conditions: Surface Cleanup: Subsurface Cleanup:

**Migration Potential Input Factor Categories**Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

The following table is used to determine scores associated with the migration potential:

	Baseline	Surface	Subsurface	
	Conditions	Cleanup	Cleanup	
Possible	30	30	i	10
Unlikely	10	10	ł	10

Score
30
30
10

Reference(s) for above information:

#### Final RI/FS Report (April 2014)

#### **MEC Classification Input Factor Categories**

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.



Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet:

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- Munitions with white phosphorus fillerHigh explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

The following table is used to determine scores associated with MEC classification categories:

		Baseline	Surface	Subsurface
	UXO Special Case	Conditions	Cleanup	Cleanup
UXO Special Case		180	180	180
UXO		110	110	110
Fuzed DMM Special Case		105	105	105
Fuzed DMM		55	55	55
Unfuzed DMM		45	45	45
Bulk Explosives		45	45	45

Based on your answers above, the MEC classification is 'UXO Special Case'.	Score
Baseline Conditions:	180
Surface Cleanup:	180
Subsurface Cleanup:	180





#### **MEC Size Input Factor Categories**

The following table is used to determine scores associated with MEC Size:

Subsurface Baseline Surface Conditions Cleanup Cleanup Description

Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and

Small 40 40 initiate a detonation

All munitions weigh more than 90 lbs; too large to move without equipment Large 0 0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive

Info' Worksheet), the MEC Size Input Factor is:

Score Baseline Conditions: 40 Surface Cleanup: 40 Subsurface Cleanup:

40

#### Scoring Summary

Site ID:	Eastern Range Area A	a. Scoring Summary for Current Use Activities	
Date:	4/7/2014	Response Action Cleanup:	No Response Action
	Input Factor	Input Factor Category	Score
I. Ene	rgetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III.	Site Accessibility	Full Accessibility	80
IV. Pot	tential Contact Hours	100,000 to 999,999 receptor hrs/yr	70
V.	Amount of MEC	Target Area	180
VI. Minimum MEC De		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240
VII.	Migration Potential	Possible	30
VIII.	MEC Classification	UXO Special Case	180
	IX. MEC Size	Small	40
		Total Score	950
		Hazard Level Category	1

Site ID: Eastern Range Area A		c. Scoring Summary for Response Alternative 1: No DoD Action Indi	cated
Date:	4/7/2014	Response Action Cleanup:	No MEC cleanup
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	. Site Accessibility	Full Accessibility	80
IV. Po	tential Contact Hours	100,000 to 999,999 receptor hrs/yr	70
V	. Amount of MEC	Target Area	180
VI. Minimum MEC D		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240
VII.	Migration Potential	Possible	30
VIII	. MEC Classification	UXO Special Case	180
	IX. MEC Size	Small	40
		Total Score	950
		Hazard Level Category	1

Site ID: E	astern Range Area A	d. Scoring Summary for Response Alternative 2: LUCs; 100 Percent	Surface Clearance
Date:	4/7/2014		cleanup of MECs located on the surface only
I	nput Factor	Input Factor Category	Score
I. Energ	getic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of A	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III. S	Site Accessibility	Full Accessibility	80
IV. Pote	ential Contact Hours	100,000 to 999,999 receptor hrs/yr	50
V. <i>F</i>	Amount of MEC	Target Area	120
VI. Minimum MEC Dep		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	150
VII. M	ligration Potential	Possible	30
VIII. N	MEC Classification	UXO Special Case	180
I	IX. MEC Size	Small	40
		Total Score	780
		Hazard Level Category	2

Site ID:	Eastern Range Area A	e. Scoring Summary for Response Alternative 3: LUCS; Focused Sur	face and Subsurface Clearance
Date:	4/7/2014		cleanup of MECs located both on the surface and subsurface
	Input Factor	Input Factor Category	Score
I. Ene	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	. Site Accessibility	Full Accessibility	80
IV. Po	tential Contact Hours	100,000 to 999,999 receptor hrs/yr	20
V	. Amount of MEC	Target Area	30
VI. Minimum MEC D		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	95
VII.	Migration Potential	Possible	10
VIII	. MEC Classification	UXO Special Case	180
	IX. MEC Size	Small	40
		Total Score	585
		Hazard Level Category	3

Site ID:	Eastern Range Area A	f. Scoring Summary for Response Alternative 4: Unlimited Use/Acce	ess
Date:	4/7/2014		cleanup of MECs located both on the surface and subsurface
	Input Factor	Input Factor Category	Score
I. Ene	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	. Site Accessibility	Full Accessibility	80
IV. Po	tential Contact Hours	100,000 to 999,999 receptor hrs/yr	20
٧	. Amount of MEC	Target Area	30
VI. Minimum MEC D		Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	25
VII.	Migration Potential	Possible	10
VIII	. MEC Classification	UXO Special Case	180
	IX. MEC Size	Small	40
		Total Score	515
		Hazard Level Category	4

MEC HA Hazard Level Determination	on	
Site ID: Eastern Range Area A		
Date: 4/7/2014		
	Hazard Level Category	Score
a. Current Use Activities	1	950
b. Response Alternative 1: No DoD Action Indicated	1	950
c. Response Alternative 2: LUCs; 100 Percent Surface Clearance	2	780
d. Response Alternative 3: LUCS; Focused Surface and Subsurface Clearance	3	585
e. Response Alternative 4: Unlimited Use/Access	4	515
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?	Ye	es
Are cultural resources located within the MRS or within the ESQD arc?	Ye	es
Are significant ecological resources located within the MRS or within the ESQD arc?	Ye	es

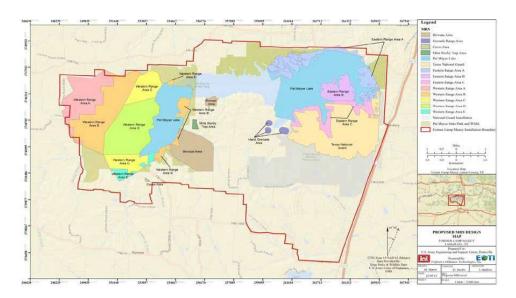
#### **MEC HA Summary Information** Comments Site ID: Eastern Range Area B Date: Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined. A. Enter a unique identifier for the site: Eastern Range Area B Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below. Ref. No. Title (include version, publication date) 1 Final RI/FS Report (April 2014) 2 Non-Time Critical Removal Action Report (2010) 3 Report (2007) 4 Investigation, and Removal Report (2002) 5 Removal Action Site Specific Final Report (2001) 6 Engineering Evaluation/Cost Analysis Report (2000) 7 Explosives Sampling Report (1998) 8 Report (1997) 9 Archive Search Report (1994) 10 11 12 B. Briefly describe the site: 1. Area (include units): 540 acres 2. Past munitions-related use: 3. Current land-use activities (list all that occur): Public property used for hunting and private campgrounds. 4. Are changes to the future land-use planned? No 5. What is the basis for the site boundaries? 6. How certain are the site boundaries? oundaries are speculative based on historical information. Reference(s) for Part B: Final RI/FS Report (April 2014) C. Historical Clearances 1. Have there been any historical clearances at the site? Yes, subsurface clearance 2. If a clearance occurred: a. What year was the clearance performed? 2001 b. Provide a description of the clearance activity (e.g., extent, depth, amount of munitions-related items removed, types and sizes of removed items, and whether metal detectors were used): 41 parcels totaling 243.3 acres were surveyed, geomapped, and cleared; 50 parcels totaling 82.3 acres were surveyed and geo-mapped; and 13 parcels totaling 21.9 acres were surveyed (Contract No. DACA87-97-D-0006, Delivery Order 17). MEC items recovered include: 19 37mm projectiles and 2 75mm. Reference(s) for Part C:

Final RI/FS Report (April 2014)

Summary Info Worksheet

Public Review Draft - Do Not Cite or Quote

#### D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)



Summary Info Worksheet Public Review Draft - Do Not Cite or Quote

Site ID: Eastern Range Area B
Date: 4/7/2014

# **Cased Munitions Information**

						Is			Minimum Depth for		Comments (include rationale
9	Munition Type (e.g., mortar, Munition Item No. projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Munition Type Fuzing Type	Munition Fuzed?	Fuzing Type	Fuze Munition Condition (ft)	Munition (ft)	e Munition Location of findition (ft) Munitions "	for munitions that are "subsurface only")
-	1 Artillery	37	mm	37mm APHE	High Explosive	UNK	UNK	UNK	0.1	Surface and 0.1 Subsurface	
7	2 Artillerv	37	mm	37mm HE	High	UNK	UNK	UNK	0.25	0.25 Subsurface	
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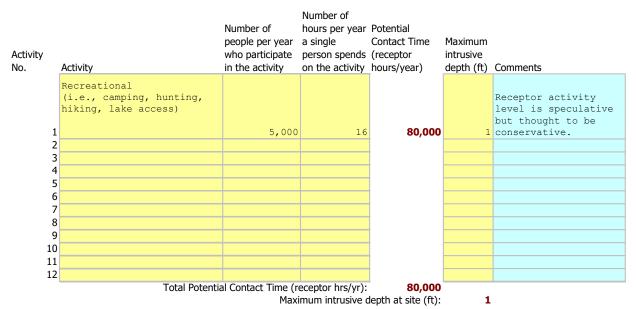
Reference(s) for table above:

Final RI/FS Report (April 2014)

Site ID: Eastern Range Area B

Date: 4/7/2014

#### **Activities Currently Occurring at the Site**



Reference(s) for table above:

Final RI/FS Report (April 2014)

Actions
or Remova
Remedia
Planned

		Expected Resulting		Will land use activities		
Action No.	response Action No. Response Action Description	Depth (ft)	Expected Resulting Site Accessibility	Expected Resulting Citatige II this response Site Accessibility action is implemented?	criange in this response action is implemented? What is the expected scope of cleanup?	Comments
	1 No DoD Action Indicated	0.1	Moderate 0.1 Accessibility	No	No MEC cleanup	
•	2 LUCs, Focused Surface Clearance	0.1	Moderate 0.1 Accessibility	No	cleanup of MECs located on the surface only	
. ,	LUCs; 100 Percent Surface and 3 Subsurface Clearance	1	Moderate Accessibility	No	cleanup of MECs located both on the surface and subsurface	
,	4 Unlimited Use/Access	3	Moderate Accessibility	No	cleanup of MECs located both on the surface and subsurface	
	2					
_	9					

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Final RI/FS Report (April 2014)

Public Review Draft - Do Not Cite or Quote Remedial-Removal Action Worksheet

Site ID: Eastern Range Area B 4/7/2014 Date: **Energetic Material Type Input Factor Categories** Comments The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous. Baseline Surface Subsurface Conditions Cleanup Cleanup High Explosive and Low Explosive Filler in Fragmenting 100 100 Rounds 100 70 70 70 White Phosphorus Pyrotechnic 60 60 60 Propellant 50 50 50 40 40 40 Spotting Charge Incendiary 30 30 30 The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'. Score 100 Baseline Conditions: Surface Cleanup: 100 100 Subsurface Cleanup: **Location of Additional Human Receptors Input Factor Categories** 1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS? 337 feet 2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? Yes 3. Please describe the facility or feature. Building associated with private campgrounds. MEC Item(s) used to calculate the ESQD for current use activities Item #3. Artillery (155mm, High Explosive) The following table is used to determine scores associated with the location of additional human receptors (current use activities): Baseline Subsurface Surface

Conditions

4. Current use activities are 'Inside the MRS or inside the ESQD arc', based on Question

30

0

Inside the MRS or inside the ESQD arc

Outside of the ESQD arc

2.

Baseline Conditions: Surface Cleanup:

Subsurface Cleanup:

Cleanup

30

0

Cleanup

30

Score

30

30 30

	Input Factor Categories					
The following table is i	used to determine scores associated w	ith site acces Baseline	ssibility: Surface	Subsurface		
	Description	Conditions		Cleanup		
	No barriers to entry, including	Conditions	cicunup	Ciculiup		
Full Accessibility	signage but no fencing	80	) 80	) 80		
Tuli Accessionicy	signage but no rending	00	,	, 00		
	Some barriers to entry, such as					
Moderate Accessibility	barbed wire fencing or rough terrain	55	5 55	5 55		
	Significant barriers to entry, such as					
	unguarded chain link fence or					
	requirements for special					
Limited Accessibility	transportation to reach the site	15	5 15	5 15		
	A site with guarded chain link fence					
	or terrain that requires special					
Very Limited	equipment and skills (e.g., rock	_	_	_		
Accessibility	climbing) to access	5	5 .	5 5		
Current Use Activi					Score	
	at best describes the site accessibility u	inder the cu	rrent use so	cenario:	1	
Moderate Accessi	oility				55	
Baseline Conditions:					55 55	
Surface Cleanup:					55 55	
Subsurface Cleanup:					33	
	tive No. 1: No DoD Action Indic		Alala alkam			
lead to 'Moderate A	ed Remedial or Removal Actions'	worksneet,	this aiter	native will		
Baseline Conditions:	ccessionity :				55	
Surface Cleanup:					55	
Subsurface Cleanup:					55	
Subsurface cicariup.						
Pachanca Altarna	tive No. 2: LUCs, Focused Surfa	ca Claarar	100			
	ed Remedial or Removal Actions'			native will		
lead to 'Moderate A		WOI KSHCCC,	, tills tilter	nauve wiii		
Baseline Conditions:					55	
Surface Cleanup:					55	
Subsurface Cleanup:					55	
	tive No. 3: LUCs; 100 Percent S	urface and	l Subsurf	ace		
Clearance				<del>-</del>		
		Worksheet.	this alter	native will		
Based on the 'Plann	ed Remedial or Removal Actions'					
	ed Remedial or Removal Actions' ' ccessibility'.					
Based on the 'Plann lead to 'Moderate A Baseline Conditions:					55	
lead to 'Moderate A					55 55	
<b>lead to 'Moderate A</b> Baseline Conditions:						
lead to 'Moderate A Baseline Conditions: Surface Cleanup:					55	
lead to 'Moderate Ar Baseline Conditions: Surface Cleanup: Subsurface Cleanup:	ccessibility'.	is			55	
lead to 'Moderate A Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternation			, this alter	native will	55	
lead to 'Moderate A Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternation	ccessibility'.  Elve No. 4: Unlimited Use/Accesed Remedial or Removal Actions'		, this alter	native will	55	
lead to 'Moderate A Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alterna Based on the 'Plann	ccessibility'.  Elve No. 4: Unlimited Use/Accesed Remedial or Removal Actions'		, this alter	native will	55 55 55	
lead to 'Moderate A Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Plann lead to 'Moderate A	ccessibility'.  Elve No. 4: Unlimited Use/Accesed Remedial or Removal Actions'		, this alter	native will	55 55	

Potential Contac	ct Hours Input Factor Categori	es				
The following table is		Baseline Surf	ace Subsu	rface		
Many Hours	Description ( ≥1,000,000 receptor-hrs/yr	Conditions Clea 120	nup Cleanu 90	30 Jp		
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20		
Few Hours Very Few Hours	10,000 to 99,999 receptor-hrs/yr <10,000 receptor-hrs/yr	40 15	20 10	10 5		
Current Use Activit	ies:					
Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is:  Based on the table above, this corresponds to a input factor score for baseline conditions of:  Response Alternative No. 1: No DoD Action Indicated  receptor  80,000 hrs/yr  40 Score						
not change if this a Total Potential Con (see 'Current and F	ned Remedial or Removal Actions' Walternative is implemented.  Stact Time, based on the contact times  Suture Activities' Worksheet)	e listed for cur		ivities	80,000	
Based on the table at Baseline Conditions:	pove, this corresponds to input factor sco	res of:		Score	40	
Surface Cleanup: Subsurface Cleanup:					20 10	
•	ive No. 2: LUCs, Focused Surface Cle ned Remedial or Removal Actions' W		l use activiti	es will		
Total Potential Con	Ilternative is implemented. Itact Time, based on the contact tim Tuture Activities' Worksheet)	e listed for cur	rent use act	ivities	80,000	
•	pove, this corresponds to input factor sco	res of:		Score	40	
Surface Cleanup:					20	
Subsurface Cleanup: Response Alternation	ive No. 3: LUCs; 100 Percent Surface	and Subsurfa	ce		10	
	ned Remedial or Removal Actions' Walternative is implemented.	orksheet, land	l use activiti	es will		
(see 'Current and F	tact Time, based on the contact time tuture Activities' Worksheet)		rent use act		80,000	
Based on the table at Baseline Conditions:	pove, this corresponds to input factor sco	res of:		Score	40	
Surface Cleanup:					20	
Subsurface Cleanup: Response Alternation	ive No. 4: Unlimited Use/Access				10	
Based on the 'Plan	ned Remedial or Removal Actions' Walternative is implemented.	orksheet, land	l use activiti	es will		
Total Potential Con	tact Time, based on the contact time	e listed for cur	rent use act	ivities	80,000	
•	<b>iuture Activities' Worksheet)</b> bove, this corresponds to input factor sco	res of:		Score		
Baseline Conditions: Surface Cleanup:					40 20	
Subsurface Cleanup:					10	

#### **Amount of MEC Input Factor Categories**

The following table is used to determine scores associated with the Amount of MEC: Baseline Subsurface Surface Conditions Cleanup Cleanup Description Areas at which munitions fire was 180 Target Area 120 30 directed Sites where munitions were disposed of by open burn or open detonation methods. This category OB/OD Area refers to the core activity area of an 180 110 30 OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs. Areas where the serviceability of stored munitions or weapons systems are tested. Testing may Function Test Range 90 165 25 include components, partial functioning or complete functioning of stockpile or developmental items. The location of a burial of large **Burial Pit** 140 140 10 quantities of MEC items. Areas used for conducting military Maneuver Areas exercises in a simulated conflict area 15 5 115 or war zone The location from which a projectile, grenade, ground signal, rocket, Firing Points 75 10 5 guided missile, or other device is to be ignited, propelled, or released. Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to Safety Buffer Areas 30 10 5 contain munitions that do not hit targets or to contain kick-outs from OB/OD areas. Any facility used for the storage of military munitions, such as earthcovered magazines, above-ground Storage 25 10 5 magazines, and open-air storage areas. Former munitions manufacturing or Explosive-Related demilitarization sites and TNT 5 20 10 Industrial Facility production plants Score Select the category that best describes the *most hazardous* amount of MEC: Target Area Baseline Conditions: 180 120 Surface Cleanup: 30 Subsurface Cleanup:

Minimum MEC Depth Relative to the Maximu Factor Categories Current Use Activities	ım Intrusive	e Depth	Input			
The shallowest minimum MEC depth, based on the 'Cased The deepest intrusive depth:	Munitions Infor	mation' W	orksheet:	(	<b>0.1</b> ft <b>1</b> ft	
The table below is used to determine scores associated wit the maximum intrusive depth:	h the minimum	MEC dep	th relative to			
	Baseline Conditions	Surface Cleanup	Subsurface Cleanup			
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	0 95			
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with	240	-	25			
subsurface MEC.  Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with		50				
minimum MEC depth.  Baseline Condition: MEC located only subsurface. Baseline	150	N/A	A 95			
Condition or After Cleanup: Intrusive depth does not overlawith minimum MEC depth.	ip 50	N/A	A 25			
intrusive depth, the intrusive depth will overlap afte subsurface, based on the 'Munitions, Bulk Explosive category for this input factor is 'Baseline Condition: Baseline Condition or After Cleanup: Intrusive depth depth.' For 'Current Use Activities', only Baseline Confuture Use Activities  Deepest intrusive depth:	Info' Worksho MEC located of overlaps with	eet. The only subs h minimu	refore, the surface. ım MEC	1	<b>.50</b> <i>Score</i> ft	
Not enough information has been entered to determ		factor ca	itegory.		Score	
Response Alternative No. 1: No DoD Action Indicate Expected minimum MEC depth (from the 'Planned Remedial Based on the 'Planned Remedial or Removal Actions	l or Removal Ad		,	-	<b>0.1</b> ft	
not change if this alternative is implemented.  Maximum Intrusive Depth, based on the maximum i	•					
use activities (see 'Current and Future Activities' Wo Because the shallowest minimum MEC depth is less intrusive depth, the intrusive depth overlaps. MECs on the 'Munitions, Bulk Explosive Info' Worksheet. input factor is 'Baseline Condition: MEC located only After Cleanup: Intrusive depth overlaps with minimum	orksheet) than or equal are located or Therefore, the subsurface.	to the de nly subsu categor Baseline	eepest urface, based y for this	Seem	<b>1</b> ft	
Baseline Conditions:				Score 1	.50	
Surface Cleanup: Subsurface Cleanup:						

Bonnana Altarnativa No. 2, UICa Forward Curfora Clarena		
Response Alternative No. 2: LUCs, Focused Surface Clearance	<b>0.1</b> ft	
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):		
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current		
use activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located only subsurface, based		
on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this		
input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or		
After Cleanup: Intrusive depth overlaps with minimum MEC depth.'		
	Score	
Baseline Conditions:		
	N/A	
Surface Cleanup:	N/A	
Subsurface Cleanup:		
Response Alternative No. 3: LUCs; 100 Percent Surface and Subsurface Clearance		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>1</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current		
use activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located only subsurface, based		
on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this		
input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or		
After Cleanup: Intrusive depth overlaps with minimum MEC depth.'		
	Score	
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:	95	
·	93	
Response Alternative No. 4: Unlimited Use/Access	2.0	
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>3</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current		
use activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is greater than the deepest intrusive		
depth, the intrusive depth does not overlap. MECs are located only subsurface, based		
on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this		
input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or		
After Cleanup: Intrusive depth does not overlap with minimum MEC depth.'		
	Score	
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:	25	
Subsurface Cleanup.	25	

Migration	<b>Potential</b>	Innut	Factor	Cated	ories
mulauvii	rotellual	TIIPUL	ı actor	Catey	OI 163

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?

Yes

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

#### Erosion

Possible Unlikely

The following table is used to determine scores associated with the migration potential:

Baseline	Surface	Subsurface	
Conditions	Cleanup	Cleanup	
30	30		10
10	10		10

Based on the question above, migration potential is 'Possible.' Score

Baseline Conditions:	•	_	-	3	80
Surface Cleanup:				3	80
Subsurface Cleanup:				1	0

Reference(s) for above information:



#### **MEC Classification Input Factor Categories**

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Target Area'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Has a technical assessment shown that MEC in the OR/OD Area is DMM2

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet:

No

- Submunitions
  - · Rifle-propelled 40mm projectiles (often called 40mm grenades)
  - · Munitions with white phosphorus filler
  - · High explosive anti-tank (HEAT) rounds
  - Hand grenades
  - Fuzes
  - Mortars

None of the items listed in the 'Munitions, Bulk Explosive Info' Worksheet were identified as

The following table is used to determine scores associated with MEC classification categories:

			Baseline	Surface	Subsurface	•
		UXO	Conditions	Cleanup	Cleanup	
U۷	(O Special Case		180	180	1	180
U۷	O		110	110	1	110
Fu	zed DMM Special Case		105	105	1	105
Fu	zed DMM		55	55		55
Ur	nfuzed DMM		45	45		45
Bu	ılk Explosives		45	45		45

Based on your answers above, the MEC classification is 'UXO'. Score

based on your unswers above, the Piec classification is ono.	000,0	
Baseline Conditions:		110
Surface Cleanup:		110
Subsurface Cleanup:		110

#### **MEC Size Input Factor Categories**

The following table is used to determine scores associated with MEC Size:

The following cable is	discussion determine seores associated vi	Baseline	Surface	Subsurface	
	Description	Conditions	Cleanup	Cleanup	
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	) 40	) 4	0
	All munitions weigh more than 90 lbs; too large to move without				
Large	equipment	(	) (	)	0
	ons above and the types of munitions a sheet), the MEC Size Input Factor is:	t the site (se	e 'Munition	s, Bulk	Small

Score
Baseline Conditions:
Surface Cleanup:

Subsurface Cleanup:

10

110

410

#### Scoring Summary

IV. Potential Contact Hours
V. Amount of MEC
VI. Minimum MEC Depth Relative to Maximum Intrusive
Depth

VII. Migration Potential VIII. MEC Classification IX. MEC Size

Scoring Summa	ŗy		
Site ID:	Eastern Range Area B	a. Scoring Summary for Current Use Activities	
Date:		Response Action Cleanup:	No Response Action
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
	I. Site Accessibility	Moderate Accessibility	55
	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	40
VI. Minimum MEC D	/. Amount of MEC Depth Relative to Maximum Intrusive	Target Area Baseline Condition: MEC located only subsurface. Baseline Condition or After	180
V11 1 11111111111111111111111111111111	Depth	Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
	. Migration Potential	Possible	30
VIII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score Hazard Level Category	
			I
Site ID:	Eastern Range Area B	c. Scoring Summary for Response Alternative 1: No DoD Action Indi	cated
Date:	4/7/2014	Response Action Cleanup:	
T En	Input Factor ergetic Material Type	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds	Score 100
	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
	I. Site Accessibility	Moderate Accessibility	55
	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr Target Area	40
	/. Amount of MEC Depth Relative to Maximum Intrusive	Baseline Condition: MEC located only subsurface. Baseline Condition or After	180
VI. PHILITIANI PIEC D	Depth Depth	Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII.	Migration Potential	Possible	30
VIII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score Hazard Level Category	
		nazaru Lever Category	
Site ID:	Eastern Range Area B	d. Scoring Summary for Response Alternative 2: LUCs, Focused Surf	ace Clearance
		,,,,	
Date:	4/7/2014	Response Action Cleanup:	cleanup of MECs located on the surface only
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
	I. Site Accessibility	Moderate Accessibility	55
	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	20
	/. Amount of MEC	Target Area	120
VI. MINIMUM MEC L	Pepth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	N/A
VII.	. Migration Potential	Possible	30
VIII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score Hazard Level Category	
		nazaru Lever Category	
Site ID:	Eastern Range Area B	e. Scoring Summary for Response Alternative 3: LUCs; 100 Percent	Surface and Subsurface Clearance
			cleanup of MECs located both on the surface and
Date:		Response Action Cleanup:	
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
II	I. Site Accessibility	Moderate Accessibility	55
	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	10
	/. Amount of MEC Depth Relative to Maximum Intrusive	Target Area Baseline Condition: MEC located only subsurface. Baseline Condition or After	30
VI. Pillillidili PILC D	Depth	Cleanup: Intrusive depth overlaps with minimum MEC depth.	95
VII.	. Migration Potential	Possible	10
	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score Hazard Level Category	1-1
		inazaru Level Category	<u> </u>
Site ID:	Eastern Range Area B	f. Scoring Summary for Response Alternative 4: Unlimited Use/Acce	iss
			cleanup of MECs located both on the surface and
Date:		Response Action Cleanup:	
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
	I. Site Accessibility	Moderate Accessibility	55
	and the second s	10,000 to 99,999 receptor-hrs/yr	10
	otential Contact Hours  /. Amount of MEC	Target Area	30

Scoring Summaries Worksheet

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Total Score Hazard Level Category

Target Area
Baseline Condition: MEC located only subsurface. Baseline Condition or After
Cleanup: Intrusive depth does not overlap with minimum MEC depth.

Possible

UXO Small

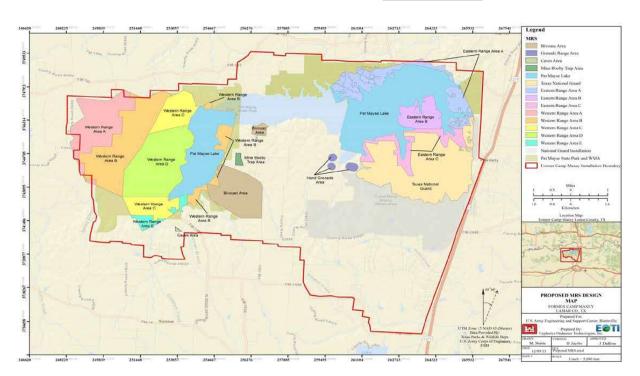
MEC HA Hazard Level Determination					
Site ID: Eastern Range Area B					
Date: 4/7/2014					
	Hazard Level Category	Score			
a. Current Use Activities	2	735			
b. Response Alternative 1: No DoD Action Indicated	2	735			
c. Response Alternative 2: LUCs, Focused Surface Clearance	4	505			
d. Response Alternative 3: LUCs; 100 Percent Surface and Subsurface Clearance	4	480			
e. Response Alternative 4: Unlimited Use/Access	4	410			
Characteristics of the MRS					
Is critical infrastructure located within the MRS or within the ESQD arc?	Y	es			
Are cultural resources located within the MRS or within the ESQD arc?	Y	es			
Are significant ecological resources located within the MRS or within the ESQD arc?	Ye	es			

#### **MEC HA Summary Information**

			Comments
Site ID:	Eastern Range Area C		
Date:	4/7/2014		
Dloaco ido	ntify the single specific area to be assessed in this hazard assessment. From	this point forward all	
	to "site" or "MRS" refer to the specific area that you have defined.	ulis politi forwaru, ali	
	a unique identifier for the site:		
	Range Area B		
Eastein	Range Area b		
	ist of information sources used for this hazard assessment. As you are compl	,	
	elect Ref(s)" buttons at the ends of each subsection to select the applicable in	nformation sources	
from the li			
Ref. No.	Title (include version, publication date)		
	Final RI/FS Report (April 2014)		
	Non-Time Critical Removal Action Report (2010)		
	Report (2007)		
	Investigation, and Removal Report (2002)		
	Removal Action Site Specific Final Report (2001)		
	Engineering Evaluation/Cost Analysis Report (2000)		
	Explosives Sampling Report (1998)		
	Report (1997)		
	Archive Search Report (1994)		
10			
11			
12			
	describe the site:		
	nclude units): 563 acres		
	unitions-related use:		
Target A			
3. Current	land-use activities (list all that occur):		
	roperty used for hunting.		
		lo .	
	the basis for the site boundaries?		
FUDSMIS			
	rtain are the site boundaries?		
	es are speculative based on historical information.		
Reference(	(s) for Part B:		
rinai K1/	FS Report (April 2014)		
	1-101		
	ical Clearances		
	•	o, none	
Z. If a cie	arance occurred:		
	a. What year was the clearance performed?		
	b. Provide a description of the clearance activity (e.g., extent, depth, amour		
	items removed, types and sizes of removed items, and whether metal detect	ors were used):	
D - 6	(a) for Post C		
keterence(	(s) for Part C:	_	
Election (	FO D + (4 1) 204 4)		
rinai KI/	FS Report (April 2014)		

Summary Info Worksheet Public Review Draft - Do Not Cite or Quote

#### D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)



Summary Info Worksheet Public Review Draft - Do Not Cite or Quote

Site ID: Eastern Range Area C
Date: 4/7/2014

#### **Cased Munitions Information**

Munition Type (e.g., mortar, Munition Munition Energetic Material Munition Fuze Munition Location of for r	
Item No. projectile, etc.) Size Size Units Mark/ Model Type Fuzed? Fuzing Type Condition (ft) Munitions "sub-	omments (include rationale
High Surface and	r munitions that are ubsurface only")
High Surface and	
2 Artillery 37 mm 37mm HE Explosive UNK UNK UNK 0.1 Subsurface	
3	
4	
5	
6	
8	
9	
10	
11	
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18	
20	

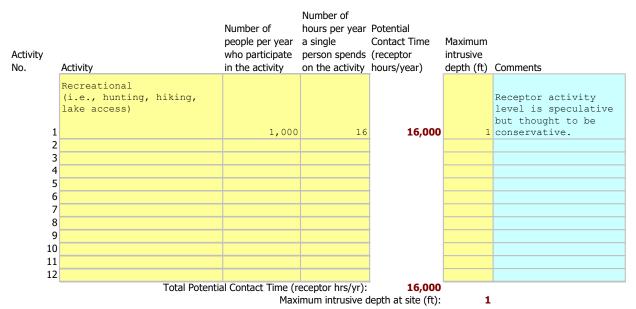
Reference(s) for table above:

Final RI/FS Report (April 2014)

Munitions, Bulk Explosive Info Worksheet Public Review Draft - Do Not Cite or Quote Site ID: Eastern Range Area C

Date: 4/7/2014

#### **Activities Currently Occurring at the Site**



Reference(s) for table above:

Final RI/FS Report (April 2014)

Eastern Range Area C 4/7/2014 Site ID: Date:

#### **Planned Remedial or Removal Actions**

inse I No. Response Action Description		Expected Resulting Site Accessibility	Will land use activities change if this response action is implemented?	What is the expected scope of cleanup?	Comments
1 No DoD Action Indicated	0.1	Full Accessibility	No	No MEC cleanup	
2 LUCs	0.1	Full Accessibility	No	No MEC cleanup	
3 LUCs; Focused Surface Removal	0.1	Full Accessibility	No	cleanup of MECs located on the surface only	
4 LUCs; 100 Percent Surface Removal	0.5	Full Accessibility	No	cleanup of MECs located on the surface only	
5 Unlimited Use/Access	3	Full Accessibility	No	cleanup of MECs located both on the surface and subsurface	
6					

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Final RI/FS Report (April 2014)

Date: 4/7/2014 **Energetic Material Type Input Factor Categories** Comments The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous. Baseline Surface Subsurface Conditions Cleanup Cleanup High Explosive and Low Explosive Filler in Fragmenting 100 100 Rounds 100 70 70 70 White Phosphorus Pyrotechnic 60 60 60 Propellant 50 50 50 40 40 40 Spotting Charge Incendiary 30 30 30 The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'. Score 100 Baseline Conditions: 100 Surface Cleanup: 100 Subsurface Cleanup: **Location of Additional Human Receptors Input Factor Categories** 1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the 337 feet Explosive Safety Submission for the MRS? 2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? Yes 3. Please describe the facility or feature. Building associated with private campgrounds. MEC Item(s) used to calculate the ESQD for current use activities Item #3. Artillery (155mm, High Explosive) The following table is used to determine scores associated with the location of additional human receptors (current use activities): Surface Subsurface Baseline Conditions Cleanup Cleanup Inside the MRS or inside the ESQD arc 30 30 30 Outside of the ESQD arc 0 0 4. Current use activities are 'Inside the MRS or inside the ESQD arc', based on Question Score

30

30 30

Baseline Conditions: Surface Cleanup:

Subsurface Cleanup:

Site ID:

Eastern Range Area C

	Input Factor Categories				
The following table is u					
-	sed to determine scores associated w		,	Culparintaga	
	Description	Baseline	Surface Cleanup	Subsurface Cleanup	
	No barriers to entry, including	Conditions	Clearup	Cleanup	
Full Accessibility	signage but no fencing	۶	30 8	30 80	1
i dii / tecessibility	signage but no rending	,	,		•
	Some barriers to entry, such as				
Moderate Accessibility	barbed wire fencing or rough terrain	5	55 !	55 55	i
	Significant barriers to entry, such as				
	unguarded chain link fence or				
	requirements for special				
Limited Accessibility	transportation to reach the site	1	15	15 15	i
	A site with guarded chain link fence				
	or terrain that requires special				
Very Limited	equipment and skills (e.g., rock				
Accessibility	climbing) to access		5	5 5	i
Current Use Activit					Score
	t best describes the site accessibility u	under the c	urrent use	cenario:	-
Full Accessibilit	У				
Baseline Conditions:					
Surface Cleanup:					
Subsurface Cleanup:					
		_			
	ive No. 1: No DoD Action Indic				
	ed Remedial or Removal Actions'	Workshee	t, this alte	rnative will	
lead to 'Full Accessit	onity.				
Baseline Conditions:					
Surface Cleanup:					
Subsurface Cleanup:					
Response Alternat					
	ed Remedial or Removal Actions'	worksnee	t, this alte	rnative will	
lead to 'Full Accessit		worksnee	t, this alte	rnative will	
Baseline Conditions:		worksnee	t, this alte	rnative will	
Baseline Conditions: Surface Cleanup:		worksnee	t, this alte	rnative will	
Baseline Conditions: Surface Cleanup:		worksnee	t, this alte	rnative will	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:	ility'.			rnative will	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  **Response Alternat**	oility'. Ive No. 3: LUCs; Focused Surfa	ce Remo	val		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat Based on the 'Planne	oility'. Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' V	ce Remo	val		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne lead to 'Full Accessib	oility'. Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' V	ce Remo	val		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions:	oility'. Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' V	ce Remo	val		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions: Surface Cleanup:	oility'. Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' V	ce Remo	val		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions:	oility'. Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' V	ce Remo	val		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions: Surface Cleanup: Subsurface Cleanup:	oility'.  Ave No. 3: LUCs; Focused Surfacted Remedial or Removal Actions' Visitity'.	<i>ce Remo</i> Workshee	<i>val</i> t, this alte		
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Response Alternat	oility'.  Ive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Violity'.  Ive No. 4: LUCs; 100 Percent Si	ce Remo Workshee	val t, this alte	rnative will	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne Based on the 'Planne	ility'.  Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' v ility'.  Ive No. 4: LUCs; 100 Percent S ed Remedial or Removal Actions' v	ce Remo Workshee	val t, this alte	rnative will	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne lead to 'Full Accessit	ility'.  Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' v ility'.  Ive No. 4: LUCs; 100 Percent S ed Remedial or Removal Actions' v	ce Remo Workshee	val t, this alte	rnative will	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Planne lead to 'Full Accessit Baseline Conditions:	ility'.  Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' v ility'.  Ive No. 4: LUCs; 100 Percent S ed Remedial or Removal Actions' v	ce Remo Workshee	val t, this alte	rnative will	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Plannal lead to 'Full Accessit Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Plannal lead to 'Full Accessit	ility'.  Ive No. 3: LUCs; Focused Surfa ed Remedial or Removal Actions' v ility'.  Ive No. 4: LUCs; 100 Percent S ed Remedial or Removal Actions' v	ce Remo Workshee	val t, this alte	rnative will	

Potential Contact	ct Hours Input Factor Categor	ies				
The following table is	used to determine scores associated wi	th the total poten Baseline Surfa				
Many Hours	Description ≥1,000,000 receptor-hrs/yr	Conditions Clear 120	nup Clean 90	nup 30		
Some Hours		70	50	20		
	100,000 to 999,999 receptor hrs/yr					
Few Hours Very Few Hours	10,000 to 99,999 receptor-hrs/yr <10,000 receptor-hrs/yr	40 15	20 10	10 5		
Current Use Activit	ies:					
'Current and Future A	determined for baseline conditions for ctivities' Worksheet, the Total Potential	Contact Time is:			receptor <b>16,000</b> hrs/yr	
	ove, this corresponds to a input factor in the corresponds to a input factor in the corresponding to the correspon	score for baseline	conditions o	of:	<b>40</b> Score	
	ned Remedial or Removal Actions' \ Ilternative is implemented.	Worksheet, land	use activit	ties will		
Total Potential Con (see 'Current and F	tact Time, based on the contact tin uture Activities' Worksheet)		rent use ac		16,000	
Based on the table at Baseline Conditions:	pove, this corresponds to input factor sc	ores of:		Score	40	
Surface Cleanup:					20	
Subsurface Cleanup: Response Alternation	ve No. 2: LUCs				10	
	ned Remedial or Removal Actions' \	Worksheet, land	use activit	ties will		
•	Iternative is implemented. tact Time, based on the contact tin	ne listed for curi	rent use ac	tivities		
•	uture Activities' Worksheet)			Score	16,000	
Baseline Conditions:	pove, this corresponds to input factor sc	ores or:		Score	40	
Surface Cleanup:					20	
Subsurface Cleanup:  Response Alternation	ve No. 3: LUCs; Focused Surface Re	emoval			10	
Based on the 'Plani	ned Remedial or Removal Actions' \		use activit	ties will		
•	Iternative is implemented.			Ali dalaa		
	tact Time, based on the contact tin uture Activities' Worksheet)	ie listea for curi	rent use ac	tivities	16,000	
	pove, this corresponds to input factor sc	ores of:		Score		
Baseline Conditions:					40	
Surface Cleanup: Subsurface Cleanup:					20 10	
•	ve No. 4: LUCs; 100 Percent Surfac	e Removal			10	
	ned Remedial or Removal Actions' \	Worksheet, land	use activit	ties will		
•	Iternative is implemented. tact Time, based on the contact tin	ne listed for curr	rent use ac	tivities		
	uture Activities' Worksheet)				16,000	
	pove, this corresponds to input factor sc	ores of:		Score	40	
Baseline Conditions: Surface Cleanup:					40 20	
Subsurface Cleanup:					10	

### **Amount of MEC Input Factor Categories**

The following table is used to determine scores associated with the Amount of MEC: Baseline Surface Subsurface Conditions Cleanup Cleanup Description Areas at which munitions fire was Target Area 180 120 30 directed Sites where munitions were disposed of by open burn or open detonation methods. This category OB/OD Area refers to the core activity area of an 180 110 30 OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs. Areas where the serviceability of stored munitions or weapons systems are tested. Testing may 90 25 Function Test Range 165 include components, partial functioning or complete functioning of stockpile or developmental items. The location of a burial of large Burial Pit 140 140 10 quantities of MEC items. Areas used for conducting military Maneuver Areas exercises in a simulated conflict area 115 15 5 or war zone The location from which a projectile, grenade, ground signal, rocket, Firing Points 75 10 5 guided missile, or other device is to be ignited, propelled, or released. Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to Safety Buffer Areas 30 10 5 contain munitions that do not hit targets or to contain kick-outs from OB/OD areas. Any facility used for the storage of military munitions, such as earthcovered magazines, above-ground Storage 25 10 5 magazines, and open-air storage areas. Former munitions manufacturing or Explosive-Related demilitarization sites and TNT 20 10 5 Industrial Facility production plants

Select the category that best describes the <i>most hazardous</i> amount of MEC:	Score
Target Area	

Baseline Conditions:	180
Surface Cleanup:	120
Subsurface Cleanup:	30

Minimum MEC Depth Relative to the Maximu Factor Categories Current Use Activities	ım Intrusiv	ve Dept	h Input			
The shallowest minimum MEC depth, based on the 'Cased I' The deepest intrusive depth:	Munitions Info	rmation' V	Vorksheet:		<b>0.1</b> ft <b>1</b> ft	
The table below is used to determine scores associated with the maximum intrusive depth:	n the minimur	n MEC dep	oth relative to			
	Baseline Conditions	Surface Cleanup	Subsurface Cleanup			
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	) 15	50 9:	5		
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	) 5	50 2	5		
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	) N/	'A 9:	5		
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlawith minimum MEC depth.	p 50	) N/	'A 2!	5		
subsurface, based on the 'Munitions, Bulk Explosive category for this input factor is 'Baseline Condition: Baseline Condition or After Cleanup: Intrusive depth depth.' For 'Current Use Activities', only Baseline Co Future Use Activities  Deepest intrusive depth:	MEC located overlaps wi	only sub th minim	surface. um MEC		150 Score	
Not enough information has been entered to determ Response Alternative No. 1: No DoD Action Indicate		t factor c	ategory.		Score	
Expected minimum MEC depth (from the 'Planned Remedia Based on the 'Planned Remedial or Removal Actions' not change if this alternative is implemented. Maximum Intrusive Depth, based on the maximum i	or Removal A Worksheet,	land use	activities wil	ı	<b>0.1</b> ft	
use activities (see 'Current and Future Activities' Wo Because the shallowest minimum MEC depth is less intrusive depth, the intrusive depth overlaps. MECs on the 'Munitions, Bulk Explosive Info' Worksheet. I input factor is 'Baseline Condition: MEC located only After Cleanup: Intrusive depth overlaps with minimum.	rksheet) than or equa are located of Therefore, the subsurface.	ol to the conly subs ne catego Baseline	leepest urface, based ry for this		<b>1</b> ft	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:					150	

Response Alternative No. 2: LUCs		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0.1</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current		
use activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest	110	
· · · · · · · · · · · · · · · · · · ·		
intrusive depth, the intrusive depth overlaps. MECs are located only subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this		
input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or		
After Cleanup: Intrusive depth overlaps with minimum MEC depth.'	Score	
- n m		
Baseline Conditions:	150	
Surface Cleanup:		
Subsurface Cleanup:		
Response Alternative No. 3: LUCs; Focused Surface Removal		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0.1</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current		
use activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located only subsurface, based		
on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this		
input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or		
After Cleanup: Intrusive depth overlaps with minimum MEC depth.'		
	Score	
Baseline Conditions:		
Surface Cleanup:	N/A	
Subsurface Cleanup:		
Response Alternative No. 4: LUCs; 100 Percent Surface Removal		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0.5</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current		
use activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located only subsurface, based		
on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this		
input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or		
After Cleanup: Intrusive depth overlaps with minimum MEC depth.'		
	Score	
Baseline Conditions:	555.5	
	N/A	
Surface Cleanup:	13/4	
Subsurface Cleanup:		

Migration	Dotontial	Innut	Eactor	Catoo	aria
Midration	Potentiai	Indut	ractor	Cated	ories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?

Yes

Score

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

#### Erosion

Possible Unlikely

The following table is used to determine scores associated with the migration potential:

Baseline	Surface	Subsurface	
Conditions	Cleanup	Cleanup	
30	30	1	0
10	10	1	0

Based on the question above, migration potential is 'Possible.'

Baseline Conditions:	30
Surface Cleanup:	30
Subsurface Cleanup:	10

Reference(s) for above information:

### Draft Final RI/FS Report (February 2014)



### **MEC Classification Input Factor Categories**

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Target Area'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Has a technical assessment shown that MEC in the OR/OD Area is DMM?

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet:

No

- Submunitions
  - Rifle-propelled 40mm projectiles (often called 40mm grenades)
  - · Munitions with white phosphorus filler
  - High explosive anti-tank (HEAT) rounds
  - Hand grenades
  - Fuzes
  - Mortars

None of the items listed in the 'Munitions, Bulk Explosive Info' Worksheet were identified as

The following table is used to determine scores associated with MEC classification categories:

		Baseline	Surrace	Subsurface
	UXO	Conditions	Cleanup	Cleanup
UXO Special Case		180	180	180
UXO		110	110	110
Fuzed DMM Special Case		105	105	105
Fuzed DMM		55	55	55
Unfuzed DMM		45	45	45
Bulk Explosives		45	45	45

Based on your answers above, the MEC classification is 'UXO'. Score

buscu on your unswers above, the ribe classification is ovo.	500,0	
Baseline Conditions:		110
Surface Cleanup:		110
Subsurface Cleanup:		110

MEC Size Inp	out Factor Categories						
The following tab	le is used to determine scores associated wi						
	Description	Conditions	Cleanup	Cleanup			
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to	40	) 40	۱ 4	0		
Silidii	move and initiate a detonation	40	, 40	' 7	U		
	All munitions weigh more than 90 lbs; too large to move without						
Large	equipment	C	) 0	)	0		
Based on the defi	initions above and the types of munitions at	the site (se	e 'Munitions	s, Bulk			
Explosive Info' W	orksheet), the MEC Size Input Factor is:				Small		
					Score		
Baseline Conditio	ns:					40	
Surface Cleanup:						40	
Subsurface Clean	un					40	

### Scoring Summary

Site ID:	Eastern Range Area C	a. Scoring Summary for Current Use Activities	
Date:	4/7/2014	Response Action Cleanup:	No Response Action
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
II	I. Site Accessibility	Full Accessibility	80
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	40
V	. Amount of MEC	Target Area	180
VI. Minimum MEC D	lepth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII.	Migration Potential	Possible	30
VII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score Hazard Level Category	760 2

Site ID:	Eastern Range Area C	c. Scoring Summary for Response Alternative 1: No DoD Action Indic	ated
Date:	4/7/2014	Response Action Cleanup:	No MEC cleanup
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	I. Site Accessibility	Full Accessibility	80
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	40
V	. Amount of MEC	Target Area	180
VI. Minimum MEC D		Baseline Condition: MEC located only subsurface. Baseline Condition or After	
	Depth	Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII.	Migration Potential	Possible	30
VIII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score	760
		Hazard Level Category	2

Site ID:	Eastern Range Area C	d. Scoring Summary for Response Alternative 2: LUCs	
Date:	4/7/2014	Response Action Cleanup:	No MEC cleanup
	Input Factor	Input Factor Category	Score
I. Ene	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	. Site Accessibility	Full Accessibility	80
IV. Po	tential Contact Hours	10,000 to 99,999 receptor-hrs/yr	40
V	. Amount of MEC	Target Area	180
VI. Minimum MEC D		Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII.	Migration Potential	Possible	30
VIII	. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score	760
I		Hazard Level Category	2

Site ID:	Eastern Range Area C	e. Scoring Summary for Response Alternative 3: LUCs; Focused Surf	ace Removal
Date:	4/7/2014	Response Action Cleanup:	cleanup of MECs located on the surface only
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	I. Site Accessibility	Full Accessibility	80
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	20
V	. Amount of MEC	Target Area	120
VI. Minimum MEC D	epth Relative to Maximum Intrusive	Baseline Condition: MEC located only subsurface. Baseline Condition or After	
	Depth	Cleanup: Intrusive depth overlaps with minimum MEC depth.	N/A
VII.	Migration Potential	Possible	30
VIII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score	530
		Hazard Level Category	3

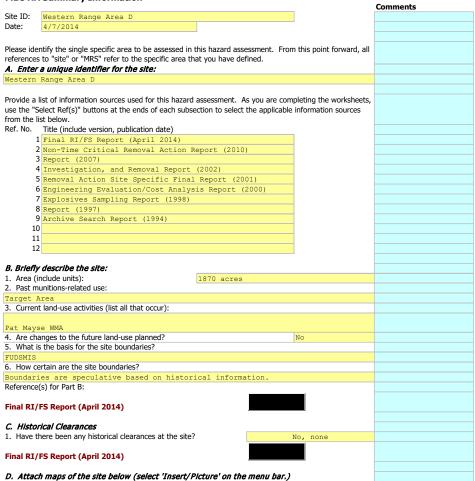
Site ID:	Eastern Range Area C	f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent S	urface Removal
Date:	4/7/2014		cleanup of MECs located on the surface only
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
II	I. Site Accessibility	Full Accessibility	80
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	20
V	. Amount of MEC	Target Area	120
VI. Minimum MEC D		Baseline Condition: MEC located only subsurface. Baseline Condition or After	
	Depth	Cleanup: Intrusive depth overlaps with minimum MEC depth.	N/A
VII	Migration Potential	Possible	30
VII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score	530
		Hazard Level Category	3

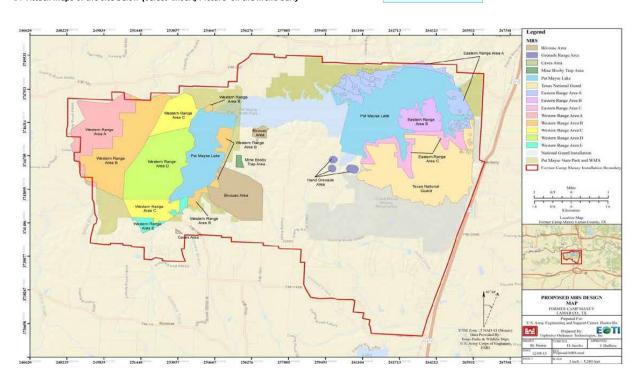
Site ID:	Eastern Range Area C	<ul> <li>g. Scoring Summary for Response Alternative 5: Unlimited Use/Acce</li> </ul>	
			cleanup of MECs located both on the
Date:			
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
II	I. Site Accessibility	Full Accessibility	80
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	10
\	/. Amount of MEC	Target Area	30
VI. Minimum MEC D		Baseline Condition: MEC located only subsurface. Baseline Condition or After	
	Depth	Cleanup: Intrusive depth does not overlap with minimum MEC depth.	25
VII	. Migration Potential	Possible	10
VII	I. MEC Classification	UXO	110
	IX. MEC Size	Small	40
		Total Score	
		Hazard Level Category	4

Scoring Summaries Worksheet

MEC HA Hazard Level Determinati	ion	
Site ID: Eastern Range Area C		
Date: 4/7/2014	<u> </u>	
	Hazard Level Category	Score
a. Current Use Activities	2	760
c. Response Alternative 1: No DoD Action Indicated	2	760
d. Response Alternative 2: LUCs	2	760
e. Response Alternative 3: LUCs; Focused Surface Removal	3	530
f. Response Alternative 4: LUCs; 100 Percent Surface Removal	3	530
g. Response Alternative 5: Unlimited Use/Access	4	435
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?	Ye	es
Are cultural resources located within the MRS or within the ESQD arc?	Ye	es
Are significant ecological resources located within the MRS or within the ESQD arc?	Ye	es

# **MEC HA Summary Information**





Summary Info Worksheet Public Review Draft - Do Not Cite or Quote

**Cased Munitions Information** 

					<u> 2</u>			Minimum Denth for		Comments (include rationale
Munition Type (e.g., mortar, Munition Item No. projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Munition Type Fuzed?	Munition Fuzed?	Munition Fuzed? Fuzing Type	Fuze Condition		Munition Location of (ft) Munitions	for munitions that are "subsurface only")
λν++1] Δν++1	7	75 mm	76 mm APHE	High Explosive	INK	X E	UNK		Surface and	
2 Artillery	155	155 mm	155mm HE	High Explosive	UNK	UNK	UNK	0.33	Surface and 0.33 Subsurface	
3 Pyrotechnic	105	105 mm	105mm Smoke Canister	Pyrotechnic	UNK	UNK	UNK	0	Surface and 0 Subsurface	Surface and during geophysical Subsurface operations.
Rockets	2.36	2.36 inches	2.36-inch Rocket Motor High with Fuze Expl	High Explosive	Yes	UNK	UNK	0	Surface and O Subsurface	Found on transect during geophysical operations.

Reference(s) for table above:

Final RI/FS Report (April 2014)

Public Review Draft - Do Not Cite or Quote Munitions, Bulk Explosive Info Worksheet Site ID: Western Range Area D

Date: 4/7/2014

### **Activities Currently Occurring at the Site**

Activity No.	Activity	Number of people per year who participate in the activity	_	Contact Time (receptor	Maximum intrusive depth (ft)	Comments
1	Recreational (i.e., hunting, hiking, lake access)	4,000	16	64,000	1	Receptor activity level is speculative but thought to be conservative.
2				, , , , , ,		
4						
6						
8						
9 10						
11 12						
	Total Potenti	al Contact Time (r Maxi		<b>64,000</b> depth at site (ft):		

Reference(s) for table above:

Final RI/FS Report (April 2014)

Actions
r Remova
Remedial o
Planned F

		Expected Resulting		Will land use activities		
Response Action No. Respo	Response Action No. Response Action Description	Minimum MEC Depth (ft)	Expected Resulting Site Accessibility		change if this response action is implemented? What is the expected scope of cleanup?	Comments
1 No Do	No DoD Action Indicated	0	Full Accessibility	No	No MEC cleanup	
2 Clean	LUCs; 100 Percent Surface Clearance	0.33	0.33 Accessibility	No	cleanup of MECs located on the surface only	
3 Subst	LUCs; Focused Surface and 3 Subsurface Clearance	1	Full Accessibility	No	cleanup of MECs located both on the surface and subsurface	
4 Unlin	Unlimited Use/Access	e	Full Accessibility	No	cleanup of MECs located both on the surface and subsurface	
20 02						

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Final RI/FS Report (April 2014)

Public Review Draft - Do Not Cite or Quote Remedial-Removal Action Worksheet

Date: 4/7/2014 **Energetic Material Type Input Factor Categories** Comments The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous. Baseline Surface Subsurface Conditions Cleanup Cleanup High Explosive and Low Explosive Filler in Fragmenting 100 100 100 Rounds White Phosphorus 70 70 70 60 60 60 Pyrotechnic 50 50 Propellant 50 Spotting Charge 40 40 40 Incendiary 30 30 30 The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Score Baseline Conditions: 100 Surface Cleanup: 100 100 Subsurface Cleanup: **Location of Additional Human Receptors Input Factor Categories** 1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the 337 feet Explosive Safety Submission for the MRS? 2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? 3. Please describe the facility or feature. Residential MEC Item(s) used to calculate the ESQD for current use activities Item #3. Artillery (155mm, High Explosive) The following table is used to determine scores associated with the location of additional human receptors (current use activities): Baseline Surface Subsurface Conditions Cleanup Cleanup Inside the MRS or inside the ESQD arc 30 30 0 0 Outside of the ESQD arc 4. Current use activities are 'Inside the MRS or inside the ESQD arc', based on Question Score Baseline Conditions: 30

30

30

Surface Cleanup:

Subsurface Cleanup:

Site ID:

Western Range Area D

The following table is							
	used to determine scores associated wi	th site acces	sibility:				
		Baseline	Surface	Subsurface			
	Description	Conditions	Cleanup	Cleanup			
	No barriers to entry, including						
full Accessibility	signage but no fencing	80	) 80	8 (	)		
•	3 3 3						
	Some barriers to entry, such as						
Noderate Accessibility		55	5 5!	5 5	5		
•	Significant barriers to entry, such as						
	unguarded chain link fence or						
	requirements for special						
imited Accessibility	transportation to reach the site	15	5 1	5 1	5		
ca / tecessis	•			-			
	A site with guarded chain link fence						
on Limited	or terrain that requires special						
ery Limited	equipment and skills (e.g., rock		- ,	5	5		
ccessibility	climbing) to access	į	) :	•	)		
Current Use Activi					Score		
elect the category tha	at best describes the site accessibility u	nder the cur	rent use sc	enario:	_		
ull Accessibili	ty						
aseline Conditions:					_	80	
urface Cleanup:						80	
ubsurface Cleanup:						80	
Dognanca Altarna	tive No. 1: No DoD Action India	atad					
	tive No. 1: No DoD Action Indica ed Remedial or Removal Actions' V		this altow				
		voi kaneet,	tilis aitei	native will			
		voi kancet,	tilis aitei	native will		80	
aseline Conditions:		roi Kaneer,	tilis alteri	native will		80	
aseline Conditions: urface Cleanup:		voi kaneec,	tills alter	native will		80	
aseline Conditions: Jurface Cleanup:		voi kaneed,	tills alter	native Will			
aseline Conditions: urface Cleanup:		voi kaneed,	tiis atter	native Will		80	
aseline Conditions: Jurface Cleanup: Jubsurface Cleanup:		·		native Will		80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alterna	bility'.	urface Cle	arance			80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternati ased on the 'Plann	bility'. <i>tive No. 2: LUCs; 100 Percent Si</i> ed Remedial or Removal Actions' N	urface Cle	arance			80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternal tased on the 'Planne ed to 'Full Accessi	bility'. <i>tive No. 2: LUCs; 100 Percent Si</i> ed Remedial or Removal Actions' N	urface Cle	arance			80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternat ased on the 'Plann had to 'Full Accessi aseline Conditions:	bility'. <i>tive No. 2: LUCs; 100 Percent Si</i> ed Remedial or Removal Actions' N	urface Cle	arance			80 80	
aseline Conditions: urface Cleanup: ubsurface Cleanup:  Response Alternal ased on the 'Plann and to 'Full Accessi aseline Conditions: urface Cleanup:	bility'. <i>tive No. 2: LUCs; 100 Percent Si</i> ed Remedial or Removal Actions' N	urface Cle	arance			80 80	
aseline Conditions: urface Cleanup: ubsurface Cleanup:  Response Alternal tased on the 'Plann ead to 'Full Accessi aseline Conditions: urface Cleanup:	bility'. <i>tive No. 2: LUCs; 100 Percent Si</i> ed Remedial or Removal Actions' N	urface Cle	arance			80 80 80 80	
aseline Conditions: iurface Cleanup: iubsurface Cleanup: Response Alternal Based on the 'Plann Based to 'Full Accessi iaseline Conditions: iurface Cleanup: iubsurface Cleanup:	bility'. tive No. 2: LUCs; 100 Percent Si ed Remedial or Removal Actions' N bility'.	<i>urface Cle</i> . Vorksheet,	<i>arance</i> this alter	native will		80 80 80 80	
Baseline Conditions: Burface Cleanup: Bussurface Alternations Bussurface Cleanup Bussurface Alternations Bussurface Cleanup Bussurface Cleanup	bility'.  tive No. 2: LUCs; 100 Percent Si ed Remedial or Removal Actions' V bility'.  tive No. 3: LUCs; Focused Surfac	urface Cle. Vorksheet,	arance this alteri	native will  Clearance		80 80 80 80	
Baseline Conditions: Burface Cleanup: Bussurface Cleanup: Bussurface Cleanup: Bussurface Cleanup: Bussed on the 'Plannead to 'Full Accession Busseline Conditions: Bussurface Cleanup: Bus	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle. Vorksheet,	arance this alteri	native will  Clearance		80 80 80 80	
Baseline Conditions: Burface Cleanup: Bussurface Cleanup: Based on the 'Planned to 'Full Accession Conditions: Burface Cleanup: Bussurface Cleanup	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle. Vorksheet, ce and Sui	arance this alteri	native will  Clearance		80 80 80 80 80 80	
aseline Conditions: iurface Cleanup: iubsurface Cleanup: iubsurface Cleanup: Response Alternation based on the 'Plann ead to 'Full Accession iurface Cleanup: iubsurface Cleanup: iubsurface Cleanup: iubsurface Cleanup: iussurface Cleanup: iussurfa	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle. Vorksheet, ce and Sui	arance this alteri	native will  Clearance		80 80 80 80 80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternatiased on the 'Plannead to 'Full Accessiaseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternatiased on the 'Plannead to 'Full Accessiaseline Conditions: urface Cleanup:	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle. Vorksheet, ce and Sui	arance this alteri	native will  Clearance		80 80 80 80 80 80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternatiased on the 'Plannead to 'Full Accessiaseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternatiased on the 'Plannead to 'Full Accessiaseline Conditions: urface Cleanup:	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle. Vorksheet, ce and Sui	arance this alteri	native will  Clearance		80 80 80 80 80	
aseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternatiased on the 'Plannead to 'Full Accessiaseline Conditions: urface Cleanup: ubsurface Cleanup: Response Alternatiased on the 'Plannead to 'Full Accessiaseline Conditions: urface Cleanup:	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle. Vorksheet, ce and Sui	arance this alteri	native will  Clearance		80 80 80 80 80 80	
Baseline Conditions: Burface Cleanup: Bubsurface Cleanup: Bubsurface Cleanup: Based on the 'Plannead to 'Full Accessions Conditions: Bubsurface Cleanup: Bubsurface Cleanup: Based on the 'Plannead to 'Full Accessions Conditions: Bubsurface Cleanup: Baseline Conditions: Burface Cleanup: Bubsurface Cleanup: Bubsurface Cleanup: Bubsurface Cleanup:	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Cle Vorksheet, ce and Sui Vorksheet,	arance this alteri	native will  Clearance		80 80 80 80 80 80	
Baseline Conditions: Burface Cleanup: Bubsurface Cleanup: Bubsurface Cleanup: Based on the 'Planned to 'Full Accession Conditions: Bubsurface Cleanup:	bility'.  tive No. 2: LUCs; 100 Percent Steed Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Clea Vorksheet, ce and Sur Vorksheet,	arance this alter bsurface this alter	native will  Clearance native will		80 80 80 80 80 80	
Baseline Conditions: Burface Cleanup: Busburface Cleanup: Busburface Cleanup: Based on the 'Plannead to 'Full Accessi Baseline Conditions: Burface Cleanup: Busburface Cleanup:	bility'.  tive No. 2: LUCs; 100 Percent Sted Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Clea Vorksheet, ce and Sur Vorksheet,	arance this alter bsurface this alter	native will  Clearance native will		80 80 80 80 80 80	
Baseline Conditions: Burface Cleanup: Bubsurface Cleanup: Bubsurface Cleanup: Based on the 'Planne ead to 'Full Accessi Baseline Conditions: Burface Cleanup: Bubsurface Cleanup: Bubsurface Cleanup: Based on the 'Planne ead to 'Full Accessi Baseline Conditions: Burface Cleanup: Bubsurface Cleanup: Bubsurfa	bility'.  tive No. 2: LUCs; 100 Percent Sted Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Clea Vorksheet, ce and Sur Vorksheet,	arance this alter bsurface this alter	native will  Clearance native will		80 80 80 80 80 80	
Based on the 'Plann ead to 'Full Accessi Baseline Conditions: Subsurface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Plann lead to 'Full Accessi Busurface Cleanup: Subsurface Cleanup: Subsurface Cleanup: Subsurface Cleanup: Response Alternat Based on the 'Plann lead to 'Full Accessi Baseline Conditions:	bility'.  tive No. 2: LUCs; 100 Percent Sted Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Clea Vorksheet, ce and Sur Vorksheet,	arance this alter bsurface this alter	native will  Clearance native will		80 80 80 80 80 80 80	
Baseline Conditions: Burface Cleanup: Busburface Cleanup: Busburface Cleanup: Based on the 'Plannead to 'Full Accessi Baseline Conditions: Burface Cleanup: Busburface	bility'.  tive No. 2: LUCs; 100 Percent Sted Remedial or Removal Actions' Vibility'.  tive No. 3: LUCs; Focused Surfaced Remedial or Removal Actions' Vibility'.	urface Clea Vorksheet, ce and Sur Vorksheet,	arance this alter bsurface this alter	native will  Clearance native will		80 80 80 80 80 80 80	

Potential Contac	ct Hours Input Factor Catego	ies				
The following table is	used to determine scores associated wi	th the total potent Baseline Surfa				
	Description	Conditions Clear				
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30		
,	=1/000/000 (Coopto, 1115/ ).					
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20		
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10		
Very Few Hours	<10,000 to 99,999 receptor-ms/yr	15	10	5		
very rew riours	10,000 receptor 1113/yr	13	10	3		
Current Use Activit	eles:					
	determined for baseline conditions for		es. Based o	n the	receptor	
	ctivities' Worksheet, the Total Potential				<b>64,000</b> hrs/yr	
	ove, this corresponds to a input factor s	score for baseline of	conditions of	:	40 Score	
Response Alternati	ve No. 1: No DoD Action Indicated					
Based on the 'Plant	ned Remedial or Removal Actions' \	Worksheet, land	use activit	ies will		
	Iternative is implemented.	•				
-	tact Time, based on the contact tin	e listed for curre	ent use act	ivities		
(see 'Current and F	uture Activities' Worksheet)				64,000	
•	pove, this corresponds to input factor so	ores of:		Score		
Baseline Conditions:					40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	
Response Alternati	ve No. 2: LUCs; 100 Percent Surfac	e Clearance				
Raced on the 'Dlane	ned Remedial or Removal Actions' \	Norkshoot land	use activit	iec will		
	Iternative is implemented.	worksneed, land	use activit	ics will		
•	tact Time, based on the contact tin	a listed for curr	ant usa act	ivities		
	uture Activities' Worksheet)	ic listed for curry	ciit use act	ivides	64,000	
•	pove, this corresponds to input factor so	ores of:		Score	0.,000	
Baseline Conditions:	vove, this corresponds to input factor se	3103 011		5557.5	40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	
	ive No. 3: LUCs; Focused Surface an	d Subsurface				
•	ned Remedial or Removal Actions' \		uco activit	ioc will		
	Ilternative is implemented.	TO RSHEEL, IANU	use activit	ICS WIII		
•	tact Time, based on the contact tin	e listed for curr	ent lise act	ivities		
	uture Activities' Worksheet)	ic iisted for curre	ciic use act		64,000	
•	pove, this corresponds to input factor so	ores of:		Score	,	
Baseline Conditions:	, and corresponds to input factor se			222,0	40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	
	ve No. 4: Unlimited Use/Access					
·	ned Remedial or Removal Actions' \	Norkehoot land	use activit	ioe will		
	ned Remedial of Removal Actions ( Alternative is implemented.	worksneet, land	use activit	ics Will		
•	tact Time, based on the contact tin	a listed for curr	ant use act	ivities		
	uture Activities' Worksheet)	ic nated for CUFF	use act	.v.ues	64,000	
•	pove, this corresponds to input factor so	ores of		Score	3.1,000	
Baseline Conditions:	ove, and corresponds to input factor se	J. C.J. 01.		23070	40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	
Sabsuriace Cleanup.						

### **Amount of MEC Input Factor Categories**

The following table is used to determine scores associated with the Amount of MEC: Baseline Surface Subsurface

	Description	Conditions	Cleanup	Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kickouts.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category	that best describes the	most hazardous	amount of MEC:	Score
belect the category	ל נוומנ טבאנ עבאנווטבא נוופ	: IIIUSL IIAZAI UUUS	arribuilt of PILC.	50010

Target Area
Baseline Conditions: 180 Surface Cleanup: Subsurface Cleanup: 120 30

Minimum MEC Depth Relative to the Maximu Factor Categories Current Use Activities	ım Intrusiv	e Depth	1 Input		
The shallowest minimum MEC depth, based on the 'Cased M' The deepest intrusive depth:  The table below is used to determine scores associated with maximum intrusive depth:				0 ft 1 ft	
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface	Conditions	·	Cleanup		
MEC.  Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with	240	150	0 95		
subsurface MEC.  Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with	240				
minimum MEC depth.  Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap					
with minimum MEC depth.	. 50	,			
Because the shallowest minimum MEC depth is less t intrusive depth, the intrusive depth will overlap after the surface and subsurface, based on the 'Munitions, Therefore, the category for this input factor is 'Baseli and subsurface. After Cleanup: Intrusive depth over	cleanup. M Bulk Explos ne Conditior laps with sul	ECs are lo ive Info' \ n: MEC loc	ocated at both Worksheet. ated surface		
'Current Use Activities', only Baseline Conditions are Future Use Activities  Deepest intrusive	considered.			240 Score	
depth:				ft	
Not enough information has been entered to determi Response Alternative No. 1: No DoD Action Indicated		factor ca	tegory.	Score	
Expected minimum MEC depth (from the 'Planned Remedial Based on the 'Planned Remedial or Removal Actions' not change if this alternative is implemented.  Maximum Intrusive Depth, based on the maximum in	or Removal A Worksheet,	land use	activities will	<b>0</b> ft	
activities (see 'Current and Future Activities' Worksh Because the shallowest minimum MEC depth is less t intrusive depth, the intrusive depth overlaps. MECs subsurface, based on the 'Munitions, Bulk Explosive I category for this input factor is 'Baseline Condition: N	eet) han or equa are located a Info' Worksh IEC located	to the de t both the eet. Ther surface ar	eepest e surface and refore, the nd	<b>1</b> ft	
subsurface. After Cleanup: Intrusive depth overlaps	with subsur	race MEC.	-	Score	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:				240	

Response Alternative No. 2: LUCs; 100 Percent Surface Clearance		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0.33</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use		
activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and		
subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the		
category for this input factor is 'Baseline Condition: MEC located surface and		
subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'		
·	Score	
Baseline Conditions:		
Surface Cleanup:	150	
Subsurface Cleanup:		
Response Alternative No. 3: LUCs; Focused Surface and Subsurface Clearance		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>1</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use		
activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
	-10	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and		
subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and		
•		
subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'	Cana	
Desilies Condition	Score	
Baseline Conditions:		
Surface Cleanup:	0.5	
Subsurface Cleanup:	95	
Response Alternative No. 4: Unlimited Use/Access		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>3</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use		
activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is greater than the deepest intrusive		
depth, the intrusive depth does not overlap. MECs are located at both the surface and		
subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the		
category for this input factor is 'Baseline Condition: MEC located surface and		
subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.'	_	
	Score	
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:	25	
Migration Potential Input Factor Categories		
Is there any physical or historical evidence that indicates it is possible for natural physical forces in		
the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or		
subsurface MEC items?	Yes	
If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g.,		
overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a		
separate worksheet).		
Erosion		
The following table is used to determine scores associated with the migration potential:		
Baseline Surface Subsurface		
Conditions Cleanup Cleanup		
Possible 30 30 10	1	
Unlikely 10 10 10		
Based on the question above, migration potential is 'Possible.'	Score	
Baseline Conditions:	30	
Surface Cleanup:	30	
Subsurface Cleanup:	10	
•		
Reference(s) for above information:		
Final RI/FS Report (April 2014)		
Thia Report (April 2014)		

### **MEC Classification Input Factor Categories**

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Target Area'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet:

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- · Munitions with white phosphorus filler
- · High explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

At least one item listed in the 'Munitions, Bulk Explosive Info' Worksheet was identified as

The following table is used to determine scores associated with MEC classification categories:

		Baseline	Surrace	Subsurrace
	UXO Special Case	Conditions	Cleanup	Cleanup
UXO Special Case		180	180	180
UXO		110	110	110
Fuzed DMM Special Case		105	105	105
Fuzed DMM		55	55	55
Unfuzed DMM		45	45	45
Bulk Explosives		45	45	45

Based on your answers above, the MEC classification is 'UXO Special Case'. Score

Baseline Conditions: 180 Surface Cleanup: 180 180 Subsurface Cleanup:

### **MEC Size Input Factor Categories**

The following table is used to determine scores associated with MEC Size:

Surface Subsurface Baseline Conditions Cleanup Cleanup Description

40

Small

Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move Small and initiate a detonation 40 40 All munitions weigh more than 90

lbs; too large to move without 0 0 Large equipment 0 Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive

Info' Worksheet), the MEC Size Input Factor is: Score Baseline Conditions: 40

Surface Cleanup: 40 Subsurface Cleanup: 40

### Scoring Summary

Site ID:	Western Range Area D	a. Scoring Summary for Current Use Activities	
Date:	4/7/2014	Response Action Cleanup:	No Response Action
	Input Factor	Input Factor Category	Score
I. Ene	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of	Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III	. Site Accessibility	Full Accessibility	80
IV. Po	tential Contact Hours	10,000 to 99,999 receptor-hrs/yr	40
		Target Area	180
VI. Minimum MEC D	epth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240
VII.	Migration Potential	Possible	30
VIII	. MEC Classification	UXO Special Case	180
	IX. MEC Size	Small	40
		Total Score	920
		Hazard Level Category	1

Site ID: Western	Range Area D	c. Scoring Summary for Response Alternative 1: No DoD Action Indicated		
Date:	4/7/2014	Response Action Cleanup: Input Factor Category	No MEC cleanup Score	
I. Energetic Ma		High Explosive and Low Explosive Filler in Fragmenting Rounds	100	
II. Location of Additiona	, , , , , , , , , , , , , , , , , , ,	Inside the MRS or inside the ESQD arc	30	
III. Site Acco	essibility	Full Accessibility	80	
IV. Potential Co	ntact Hours	10,000 to 99,999 receptor-hrs/yr	40	
V. Amount	of MEC	Target Area	180	
VI. Minimum MEC Depth Relation		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	
VII. Migration	Potential	Possible	30	
VIII. MEC Cla	ssification	UXO Special Case	180	
IX. MEC	Size	Small	40	
		Total Score	920	
		Hazard Level Category	1	

Site ID: Western Range Area D		d. Scoring Summary for Response Alternative 2: LUCs; 100 Percent Surface Clearance		
Date:	4/7/2014	Response Action Cleanup:	cleanup of MECs located on the surface only	
	Input Factor	Input Factor Category	Score	
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100	
II. Location of	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30	
III	I. Site Accessibility	Full Accessibility	80	
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	20	
V	. Amount of MEC	Target Area	120	
VI. Minimum MEC D		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	150	
VII.		Possible	30	
VIII	. MEC Classification	UXO Special Case	180	
	IX. MEC Size	Small	40	
	-	Total Score	750	
		Hazard Level Category	2	

Site ID: Western Range Area D	e. Scoring Summary for Response Alternative 3: LUCs; Focused Sur	face and Subsurface Clearance
		cleanup of MECs located both on the surface and
Date: 4/7/201	Response Action Cleanup:	subsurface
Input Factor	Input Factor Category	Score
I. Energetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III. Site Accessibility	Full Accessibility	80
IV. Potential Contact Hours	10,000 to 99,999 receptor-hrs/yr	10
V. Amount of MEC	Target Area	30
VI. Minimum MEC Depth Relative to Maximum Intrusive	Baseline Condition: MEC located surface and subsurface. After Cleanup:	
Depth	Intrusive depth overlaps with subsurface MEC.	95
VII. Migration Potential	Possible	10
VIII. MEC Classification	UXO Special Case	180
IX. MEC Size	Small	40
	Total Score	
	Hazard Level Category	3

Site ID:	Western Range Area D	f. Scoring Summary for Response Alternative 4: Unlimited Use/Acco	ess
			cleanup of MECs located both on the surface and
Date:	4/7/2014	Response Action Cleanup:	subsurface
	Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location o	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
II	I. Site Accessibility	Full Accessibility	80
IV. Po	otential Contact Hours	10,000 to 99,999 receptor-hrs/yr	10
٧	/. Amount of MEC	Target Area	30
VI. Minimum MEC D	Pepth Relative to Maximum Intrusive	Baseline Condition: MEC located surface and subsurface, After Cleanup:	
	Depth	Intrusive depth does not overlap with subsurface MEC.	25
VII.	. Migration Potential	Possible	10
VIII	I. MEC Classification	UXO Special Case	180
	IX. MEC Size	Small	40
	·	Total Score	505
		Hazard Level Category	4

Scoring Summaries Worksheet Public Review Draft - Do Not Cite or Quote

MEC HA Hazard Level Determination					
Site ID: Western Range Area D					
Date: 4/7/2014					
	Hazard Level Category	Score			
a. Current Use Activities	1	920			
b. Response Alternative 1: No DoD Action Indicated	1	920			
c. Response Alternative 2: LUCs; 100 Percent Surface Clearance	2	750			
d. Response Alternative 3: LUCs; Focused Surface and Subsurface Clearance	3	575			
e. Response Alternative 4: Unlimited Use/Access	4	505			
Characteristics of the MRS					
Is critical infrastructure located within the MRS or within the ESQD arc?	Y	es			
Are cultural resources located within the MRS or within the ESQD arc?	Y	es			
Are significant ecological resources located within the MRS or within the ESQD arc?	Υ	es			

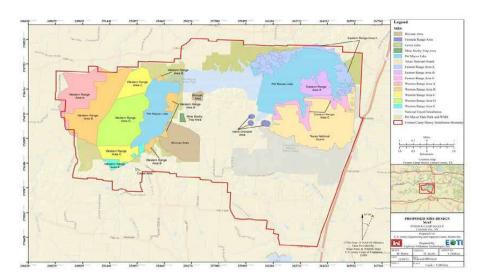
### **MEC HA Summary Information** Comments Site ID: Grenade Range Area 4/7/2014 Date: Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined. A. Enter a unique identifier for the site: Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below. Ref. No. Title (include version, publication date) 1 Final RI/FS Report (April 2014) 2 Non-Time Critical Removal Action Report (2010) 3 Report (2007) 4 Investigation, and Removal Report (2002) 5 Removal Action Site Specific Final Report (2001) 6 Engineering Evaluation/Cost Analysis Report (2000) 7 Explosives Sampling Report (1998) 8 Report (1997) 9 Archive Search Report (1994) B. Briefly describe the site: 1. Area (include units): 97 acres 2. Past munitions-related use: 3. Current land-use activities (list all that occur): Public property available for hunting. 4. Are changes to the future land-use planned? 5. What is the basis for the site boundaries? No 6. How certain are the site boundaries? Boundaries are speculative based on historical information. Reference(s) for Part B: Final RI/FS Report (April 2014) C. Historical Clearances Have there been any historical clearances at the site? Reference(s) for Part C:

Final RI/FS Report (April 2014)

No, none

Summary Info Worksheet Public Review Draft - Do Not Cite or Quote

### D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)



Summary Info Worksheet Public Review Draft - Do Not Cite or Quote

Site ID: Grenade Range Area
Date: 4/7/2014

# **Cased Munitions Information**

						SI			Minimum Depth for	Minimum Depth for	Comments (include rationale
No.	Munition Type (e.g., mortar, Munition Item No. projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Munition Type Fuzed?	Munition Fuzed?	Munition Fuze Munition Fuzed? Fuzing Type Condition (ft)	Fuze Condition	Munition (ft)		for munitions that are "subsurface only")
_	I Grenades				High	UNK	UNK	UNK	0.1	Surface and 0.1 Subsurface	
~	2 Rockets	2.3	2.36 inches	2.36-inch Rocket	High Explosive	UNK	UNK	UNK	0	Found on gressian surface and geophysical Subsurface operations.	Found on ground surface during geophysical operations.
4	W 4										
_, w											
	7										
w	8										
Ji	0										
10	0										
=======================================											
15	2										

Reference(s) for table above:

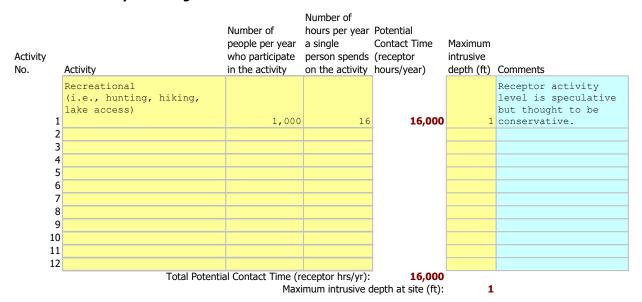
Final RI/FS Report (April 2014)

Munitions, Bulk Explosive Info Worksheet

Site ID: Grenade Range Area

Date: 4/7/2014

### **Activities Currently Occurring at the Site**



Reference(s) for table above:

Final RI/FS Report (April 2014)

Site ID: Date: Grenade Range Area 4/7/2014

### **Planned Remedial or Removal Actions**

oonse	Response Action Description	Expected Resulting Minimum MEC Depth (ft)	Expected Resulting Site Accessibility	Will land use activities change if this response action is implemented?	What is the expected scope of cleanup?	Comments
1	No DoD Action Indicated	0	Full Accessibility	No	No MEC cleanup	
2	LUCs	0	Full Accessibility	No	No MEC cleanup	
3	LUCs; Focused Surface Clearance	0.1	Full Accessibility	No	cleanup of MECs located on the surface only	
	LUCs; 100 Percent Surface Clearance	0.5	Full Accessibility	No	cleanup of MECs located on the surface only	
5	Unlimited Use/Access	3	Full Accessibility	No	cleanup of MECs located both on the surface and subsurface	
6						

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Final RI/FS Report (April 2014)

Remedial-Removal Action Worksheet

Date: 4/7/2014 **Energetic Material Type Input Factor Categories** Comments The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous. Baseline Surface Subsurface Conditions Cleanup Cleanup High Explosive and Low Explosive Filler in Fragmenting 100 100 100 Rounds White Phosphorus 70 70 70 60 60 60 Pyrotechnic 50 50 Propellant 50 Spotting Charge 40 40 40 Incendiary 30 30 30 The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Score Baseline Conditions: 100 Surface Cleanup: 100 100 Subsurface Cleanup: **Location of Additional Human Receptors Input Factor Categories** 1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the 337 feet Explosive Safety Submission for the MRS? 2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? 3. Please describe the facility or feature. Residential MEC Item(s) used to calculate the ESQD for current use activities Item #3. Artillery (155mm, High Explosive) The following table is used to determine scores associated with the location of additional human receptors (current use activities): Baseline Surface Subsurface Conditions Cleanup Cleanup Inside the MRS or inside the ESQD arc 30 30 0 0 Outside of the ESQD arc 4. Current use activities are 'Inside the MRS or inside the ESQD arc', based on Question Score Baseline Conditions: 30

30

30

Surface Cleanup:

Subsurface Cleanup:

Site ID:

**Grenade Range Area** 

A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access 5 5 5  Current Use Activities Sectet the category that best describes the site accessibility under the current use scenario: Full Accessibility Baseline Conditions: Subsurface Cleanup: Seasonse Alternative No. 1: No DoD Action Indicated Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will ead to 'Full Accessibility' Baseline Conditions: Subsurface Cleanup: Subsurface Cl							
Description Description Poscription Poscription Description No barriers to certy, including signage but no fencing signage si							
Description Conditions Cleanup Cleanup  No barriers to entry, Include  Some barriers to entry, such as Come to terminate that requires special Correct that the requires special Correct that equipment and skills (e.g., rock Correct that category that best describes the site accessibility under the current use scenario: Correct that Category that best describes the site accessibility under the current use scenario: Correct that Category that best describes the site accessibility under the current use scenario: Correct that Category that best describes the site accessibility under the current use scenario: Correct that Category that best describes the site accessibility under the current use scenario: Correct that Category that best describes the site accessibility under the current use scenario: Correct that Category that best describes the site accessibility under the current use scenario: Correct Cleanup: Cor	The following table is u	ised to determine scores associated w			Cubaurfaaa		
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imited Accessibility Irrasportation to reach the site A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access  Score		Significant barriers to entry, such as					
A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock excessibility climing) to access 5 5 5 5  Current Use Activities Score  Current Use Activities Select the category that best describes the site accessibility under the current use scenario: Path 1 Accessibility Saseline Conditions: Surface Cleanup: Subsurface Cle		unguarded chain link fence or					
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Accessibility dimbing) to access 5 5 5  Current Use Activities  Current Use Activities  Score  Select the category that best describes the site accessibility under the current use scenario:  Pull Accessibility  Saseline Conditions:  Surface Cleanup:  Subsurface		A site with guarded chain link fence					
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Baseline Conditions: 80 Surface Cleanup: 80				,			
Surface Cleanup: 80	Baseline Conditions:	•				80	
Subsurface Cleanup: 80	Surface Cleanup:					80	
	Subsurface Cleanup:					80	

Potential Contac	ct Hours Input Factor Catego	ries				
The following table is	used to determine scores associated w	ith the total potentia Baseline Surfac		time: surface		
	Description	Conditions Clean		anup		
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30		
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20		
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10		
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5		
Current Use Activiti	les:					
Innut factors are only	determined for baseline conditions for	current use activitie	s Based	on the	receptor	
	ctivities' Worksheet, the Total Potential		o. Dasca	on the	<b>16,000</b> hrs/yr	
Based on the table ab	ove, this corresponds to a input factor	score for baseline co	onditions	of:	40 Score	
Response Alternati	ve No. 1: No DoD Action Indicated					
Based on the 'Plann	ned Remedial or Removal Actions'	Worksheet, land u	se activ	ities will		
not change if this a	Iternative is implemented.					
Total Potential Con	tact Time, based on the contact tin	ne listed for curre	nt use a	ctivities		
•	uture Activities' Worksheet)				16,000	
	ove, this corresponds to input factor sc	ores of:		Score	40	
Baseline Conditions:					40 20	
Surface Cleanup: Subsurface Cleanup:					20 10	
Response Alternation	ve No. 2:111Cs				10	
•		Maulanka ak Jawal		Mana		
	ned Remedial or Removal Actions' Value of the least of th	worksneet, land u	ise activ	ities will		
•	tact Time, based on the contact tin	ne listed for curre	nt use a	rtivities		
	uture Activities' Worksheet)	ic listed for carre	iic asc a	carracs	16,000	
•	ove, this corresponds to input factor so	ores of:		Score	•	
Baseline Conditions:					40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	
•	ve No. 3: LUCs; Focused Surface Cl					
	ned Remedial or Removal Actions'	Worksheet, land u	se activ	ities will		
•	Iternative is implemented. tact Time, based on the contact tin	so listed for survey	nt uco -	ctivities		
	tact Time, based on the contact tin uture Activities' Worksheet)	ne listed for curre	nt use a	ctivities	16,000	
•	ove, this corresponds to input factor sc	ores of:		Score	10,000	
Baseline Conditions:	ove, and concepting to input ructor so	0.00 0		-	40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	
Response Alternati	ve No. 4: LUCs; 100 Percent Surfac	e Clearance				
	ned Remedial or Removal Actions' liternative is implemented.	Worksheet, land u	se activ	ities will		
•	tact Time, based on the contact tin	ne listed for curre	nt use a	ctivities		
	uture Activities' Worksheet)				16,000	
	ove, this corresponds to input factor sc	ores of:		Score		
Baseline Conditions:					40	
Surface Cleanup:					20	
Subsurface Cleanup:					10	

### **Amount of MEC Input Factor Categories**

The following table is used to determine scores associated with the Amount of MEC: Baseline Surface Subsurface

	Description	Conditions	Cleanup	Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kickouts.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category	that best describes the	most hazardous	amount of MEC:	Score
belect the category	ל נוומנ טבאנ עבאנווטבא נוופ	: IIIUSL IIAZAI UUUS	arribuilt of PILC.	50010

Target Area
Baseline Conditions: 180 Surface Cleanup: Subsurface Cleanup: 120 30

Minimum MEC Depth Relative to the Maximu Factor Categories Current Use Activities	ım Intrusiv	e Depth	1 Input		
The shallowest minimum MEC depth, based on the 'Cased M' The deepest intrusive depth:  The table below is used to determine scores associated with maximum intrusive depth:				0 ft 1 ft	
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface	Conditions	·	Cleanup		
MEC.  Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with	240	150	0 95		
subsurface MEC.  Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with	240				
minimum MEC depth.  Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap					
with minimum MEC depth.	. 50	,			
Because the shallowest minimum MEC depth is less t intrusive depth, the intrusive depth will overlap after the surface and subsurface, based on the 'Munitions, Therefore, the category for this input factor is 'Baseli and subsurface. After Cleanup: Intrusive depth over	cleanup. M Bulk Explos ne Conditior laps with sul	ECs are lo ive Info' \ n: MEC loc	ocated at both Worksheet. ated surface		
'Current Use Activities', only Baseline Conditions are Future Use Activities  Deepest intrusive	considered.			240 Score	
depth:				ft	
Not enough information has been entered to determi Response Alternative No. 1: No DoD Action Indicated		factor ca	tegory.	Score	
Expected minimum MEC depth (from the 'Planned Remedial Based on the 'Planned Remedial or Removal Actions' not change if this alternative is implemented.  Maximum Intrusive Depth, based on the maximum in	or Removal A Worksheet,	land use	activities will	<b>0</b> ft	
activities (see 'Current and Future Activities' Worksh Because the shallowest minimum MEC depth is less t intrusive depth, the intrusive depth overlaps. MECs subsurface, based on the 'Munitions, Bulk Explosive I category for this input factor is 'Baseline Condition: N	eet) han or equa are located a Info' Worksh IEC located	to the de t both the eet. Ther surface ar	eepest e surface and refore, the nd	<b>1</b> ft	
subsurface. After Cleanup: Intrusive depth overlaps	with subsur	race MEC.	-	Score	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:				240	

Response Alternative No. 2: LUCs		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use		
activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
· · · · · · · · · · · · · · · · · · ·		
intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and		
subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the		
category for this input factor is 'Baseline Condition: MEC located surface and		
subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.		
Substituted Activities and asset activities with Substitute New	Score	
Baseline Conditions:	240	
Surface Cleanup:		
·		
Subsurface Cleanup:		
Response Alternative No. 3: LUCs; Focused Surface Clearance		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0.1</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use	l e e e e e e e e e e e e e e e e e e e	
activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
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subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the		
category for this input factor is 'Baseline Condition: MEC located surface and		
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subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	_	
	Score	
Baseline Conditions:		
Surface Cleanup:	150	
	150	
Subsurface Cleanup:		
Response Alternative No. 4: LUCs; 100 Percent Surface Clearance		
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet):	<b>0.5</b> ft	
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will		
·		
not change if this alternative is implemented.		
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use		
activities (see 'Current and Future Activities' Worksheet)	<b>1</b> ft	
Because the shallowest minimum MEC depth is less than or equal to the deepest		
intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and		
subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the		
category for this input factor is 'Baseline Condition: MEC located surface and		
subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'		
subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'	Score	
	Score	
Baseline Conditions:		
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Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).  Erosion	150	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).  Erosion The following table is used to determine scores associated with the migration potential:	150	
Baseline Conditions: Surface Cleanup: Subsurface Cleanup:  Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?  If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).  Erosion  The following table is used to determine scores associated with the migration potential:  Baseline Surface Subsurface	150	
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Baseline Conditions: Surface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?  If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).  Erosion  The following table is used to determine scores associated with the migration potential:  Baseline Surface Subsurface Conditions Cleanup  Possible 30 30 10  Unlikely 10 10 10 10  Based on the question above, migration potential is 'Possible.'  Baseline Conditions:	Yes Score 30	
Baseline Conditions: Surface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?  If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).    Erosion   Baseline   Surface   Subsurface   Conditions   Cleanup   Cleanup	150 Yes Score 30 30	
Baseline Conditions: Surface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?  If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).  Erosion  The following table is used to determine scores associated with the migration potential:  Baseline Surface Subsurface Conditions Cleanup Cleanup  Possible 30 30 10  Unlikely 10 10 10 10  Based on the question above, migration potential is 'Possible.'  Baseline Conditions: Surface Cleanup:	150 Yes Score 30 30	
Baseline Conditions: Surface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?  If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).    Erosion   Baseline   Surface   Subsurface   Conditions   Cleanup   Cleanup	150 Yes Score 30 30	
Baseline Conditions: Surface Cleanup: Migration Potential Input Factor Categories Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items?  If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).    Erosion   Baseline   Surface   Subsurface   Conditions   Cleanup   Cleanup	150 Yes Score 30 30	

### **MEC Classification Input Factor Categories**

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Target Area'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet:

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- · Munitions with white phosphorus filler
- · High explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

None of the items listed in the 'Munitions, Bulk Explosive Info' Worksheet were identified as

The following table is used to determine scores associated with MEC classification categories:

		Baseline	Surrace	Subsurrace
	UXO Special Case	Conditions	Cleanup	Cleanup
UXO Special Case		180	180	180
UXO		110	110	110
Fuzed DMM Special Case		105	105	105
Fuzed DMM		55	55	55
Unfuzed DMM		45	45	45
Bulk Explosives		45	45	45

Based on your answers above, the MEC classification is 'UXO Special Case'. Score Baseline Conditions:

180 Surface Cleanup: 180 180 Subsurface Cleanup:

### **MEC Size Input Factor Categories**

Small

The following table is used to determine scores associated with MEC Size:

Surface Subsurface Baseline Conditions Cleanup Cleanup Description

40

40

Small

Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation 40 All munitions weigh more than 90

lbs; too large to move without 0 equipment

0 Large 0 Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is:

Score Baseline Conditions: 40 Surface Cleanup: 40 Subsurface Cleanup: 40

Cito ID:	ry Grenade Range Area	a. Scoring Summary for Current Use Activities	
Date:			No Response Action
1.5-	Input Factor	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds	Score
	ergetic Material Type		100
	f Additional Human Receptors  I. Site Accessibility	Inside the MRS or inside the ESQD arc Full Accessibility	30 80
IV. Po	tential Contact Hours	10,000 to 99,999 receptor-hrs/yr Target Area	40
VI. Minimum MEC D	. Amount of MEC lepth Relative to Maximum Intrusive	Baseline Condition: MEC located surface and subsurface. After Cleanup:	180
VII.	Depth Migration Potential	Intrusive depth overlaps with subsurface MEC. Possible	240
	. MEC Classification	UXO Special Case Small	180
	IX. MEC Size	Small Total Score	40 <b>920</b>
		Hazard Level Category	1
Site ID:	Grenade Range Area	c. Scoring Summary for Response Alternative 1: No DoD Action Ind	icated
	4/7/204		N. MEG. J.
Date:	4/7/2014 Input Factor	Input Factor Category	Score
I. En	ergetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
	f Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
	I. Site Accessibility otential Contact Hours	Full Accessibility 10,000 to 99,999 receptor-hrs/yr	80
	. Amount of MEC	Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup:	180
VI. Minimum MEC D	lepth Relative to Maximum Intrusive Depth	Intrusive depth overlaps with subsurface MEC.	240
	Migration Potential  MEC Classification	Possible UXO Special Case	30 180
VIII	IX. MEC Size	Small	40
		Total Score Hazard Level Category	920 1
			•
Site ID:	Grenade Range Area	d. Scoring Summary for Response Alternative 2: LUCs	
Date:	4/7/2014	Response Action Cleanup:	No MEC cleanup
I Fn	Input Factor ergetic Material Type	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds	Score 100
	f Additional Human Receptors  I. Site Accessibility	Inside the MRS or inside the ESQD arc Full Accessibility	30 80
IV. Po	tential Contact Hours	10,000 to 99,999 receptor-hrs/yr	40
	. Amount of MEC lepth Relative to Maximum Intrusive	Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup:	180
	Depth	Intrusive depth overlaps with subsurface MEC.	240
	Migration Potential  MEC Classification	Possible UXO Special Case	30 180
	IX. MEC Size	Small	40
		Total Score Hazard Level Category	920 1
Site ID:	Grenade Range Area	e. Scoring Summary for Response Alternative 3: LUCs; Focused Surl	face Clearance
			cleanup of MECs located on the
Date:			
	4/7/2014 Input Factor		Score Score
I. En	Input Factor ergetic Material Type	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds	
II. Location of	Input Factor ergetic Material Type f Additional Human Receptors	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc	Score 100
II. Location of	Input Factor ergetic Material Type  f Additional Human Receptors I. Site Accessibility	High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility	Score 100 30 80
II. Location of	Input Factor ergetic Material Type f Additional Human Receptors i. Site Accessibility stential Contact Hours . Amount of MEC	High Explosive and Low Explosive Filler in Fragmenting Rounds  Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 eceptor-hrs/yr Target Area	Score 100
II. Location of	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr	Score 100 30 80 20
II. Location of III IV. Po VI. Minimum MEC D VII.	Input Factor ergetic Material Type  f Additional Human Receptors  f. Site Accessibility  stential Contact Hours  Amount of MEC  septh Relative to Maximum Intrusive  Depth  Migration Potential	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible	\$core
II. Location of III IV. Po VI. Minimum MEC D VII.	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility stential Contact Hours . Amount of MEC peth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	Score 1000 300 800 200 1200 1500 1500 1500 1500 1500 150
II. Location of III IV. Po VI. Minimum MEC D VII.	Input Factor ergetic Material Type  f Additional Human Receptors  f. Site Accessibility  stential Contact Hours  Amount of MEC  septh Relative to Maximum Intrusive  Depth  Migration Potential	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score	Score  100 30 80 20 120 150 30 180 180 400 756
II. Location of III IV. Po VI. Minimum MEC D VII.	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility stential Contact Hours . Amount of MEC peth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 ecceptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small	Score 100 30 88 22 120 150 150 150 175 188 188
II. Location of III IV. Po V VI. Minimum MEC D VII. VIII	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential MEC Classification IX. MEC Size	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent	Score
II. Location of III IV. Po V VI. Minimum MEC D VII. VIII	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential MEC Classification IX. MEC Size	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent	Score   100   30   30   30   30   30   30   3
II. Location of III IV. Pe VI. Minimum MEC D VII. VIII Site ID:	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential J. MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pec V VI. Minimum MEC D  VII.  VIII  Site ID:  Date:	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential J. MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  F. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pe V VI. Minimum MEC D  VII.  VIII  Site ID:  Date:  I. En II. Location of	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pec V VI. Minimum MEC D  VII.  VIII  Site ID:  Date:  II. Location of IIII  IV. Pec	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility tential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification . IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors . Site Accessibility tential Contact Hours	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr	Score   100   30   30   30   30   30   30   3
II. Location of III IV. Pe VI. Minimum MEC D VII. VIII. Site ID: Date: II. Location of III IV. Pe V. Pe	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors L. Site Accessibility tential Contact Hours . Amount of MEC	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pec VI. Minimum MEC D  VII.  Site ID:  Date:  I. Location of III  IV. Pec VII. Minimum MEC D  VII. VIII  Site ID:  VIII. Location of III  VIII. VIII  VIII. VIII  VIII. Location of III  VIII. VIII	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Meditional Human Receptors . Amount of MEC epth Relative to Maximum Intrusive Depth	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	Score
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VII.  VII. VII.	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential J. MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors S. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small Total Score Hazard Level Category  F. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible	Score   100   33   36   36   37   37   37   37   37
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VII.  VII. VII.	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility stential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Meditional Human Receptors . Amount of MEC epth Relative to Maximum Intrusive Depth	Insut Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small	Score
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VII.  VII. VII.	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility tential Contact Hours . Amount of MEC upoth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors . Site Accessibility tential Contact Hours . Amount of MEC Depth Migration Potential . MEC Classification . MeC Depth Migration Potential . MEC Classification	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VII.  VIII.  VIII.	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential I. MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type regetic Material Type tential Contact Hours I. Site Accessibility tential Contact Hours I. Amount of MEC Depth Relative to Maximum Intrusive Depth Migration Potential I. MEC Classification DX. MEC Size	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  F. Scoring Summary for Response Alternative 4: LUCs; 100 Percent Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category Hazard Level Category Total Score	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VII.  Site ID:  Site ID:  Site ID:  Site ID:  Site ID:  Site ID:	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC peth Relative to Maximum Intrusive Depth Migration Potential I. MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type ergetic Material Type eth Additional Human Receptors I. Site Accessibility stential Contact Hours Amount of MEC Depth Migration Potential IMEC Classification IX. MEC Size  Grenade Range Area	Insut Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  E. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  G. Scoring Summary for Response Alternative 5: Unlimited Use/Acc	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VII.  VIII.  VIII.	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential I. MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type regetic Material Type tential Contact Hours I. Site Accessibility tential Contact Hours I. Amount of MEC Depth Relative to Maximum Intrusive Depth Migration Potential I. MEC Classification DX. MEC Size	Insut Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  6. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  G. Scoring Summary for Response Alternative 5: Unlimited Use/Acc Response Action Cleanup: Input Factor Category	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  Site ID:  Date:  II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VIII.  Site ID:  Date:  Da	Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility tential Contact Hours . Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility tential Contact Hours . Amount of MEC Depth Migration Potential . MEC Size  Grenade Range Area  Linguit Factor ergetic Material Type f Additional Human Receptors f. Site Accessibility tential Contact Hours Depth Migration Potential . MEC Classification IX. MEC Size  Grenade Range Area	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small Total Score Hazard Level Category  g. Scoring Summary for Response Alternative 5: Unlimited Use/Acc	Score   100   30   30   30   30   30   30   3
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II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VIII.  Site ID:  Date:  II. Location of III  VIII.  Site ID:  Site ID:  Len  II. Location of III  VIII.  Site ID:  Len  III. Location of III  VIII.  Site ID:  Len  III. Location of III  IV. Pe VIII.  VIII.  Site ID:  III. Location of III  III. Location of III  III. Location of III	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential INEC Classification IX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors Sie Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential INEC Classification IX. MEC Size	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility UXO Special Case Small Total Score Full Accessibility Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small Total Score Hazard Level Category  g. Scoring Summary for Response Alternative 5: Unlimited Use/Acc Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility	Score   100   30   30   30   30   30   30   3
II. Location of III  IV. Pe VI. Minimum MEC D  VII.  VIII.  Site ID:  Date:  II. Location of III  VIII.  Site ID:  Len  II. Location of III  VIII  VIII  VIII  Site ID:  Len  II. Location of III  VIII  VIII  II. Location of III  VIII  VIII  Site ID:  Len  II. Location of III  III. Location of III  III. Location of III  III. Location of IIII  VIII	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential INEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors S. Site Accessibility tential Contact Hours I. Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential INEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Maximum Intrusive Depth MEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type digitation Potential Input Factor ergetic Material Type digitation Potential Input Factor ergetic Material Type for Material Type digitation Potential Input Factor ergetic Material Type f Additional Human Receptors Light Gontact Hours Lamount of MEC Amount of MEC	Insut Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category  g. Scoring Summary for Response Alternative 5: Unlimited Use/Acc Response Action Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Fill Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area	Score
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II. Location of III  IV. Pec VI. Minimum MEC D  VII.  VII.  Site ID:  II. En  II. Location of III  VIII  VIII  III. Location of III  III. Location of IIII  IV. Pec VII. Minimum MEC D	Input Factor ergetic Material Type f Additional Human Receptors In Site Accessibility tential Contact Hours Amount of MEC espetial Relative to Maximum Intrusive Deptial Relative to Maximum Intrusive	Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small  Total Score Hazard Level Category  6. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UXO Special Case Small  Total Score Hazard Level Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC. Possible Door Possible Possible Place In Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	Score   100   33   34   35   35   35   35   35   35
II. Location of III  IV. Pec VI. Minimum MEC D  VII.  VII.  Site ID:  II. En  II. Location of III  VIII  VIII  III. Location of III  III. Location of IIII  IV. Pec VII. Minimum MEC D	Input Factor ergetic Material Type f Additional Human Receptors I. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Migration Potential INEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type f Additional Human Receptors S. Site Accessibility tential Contact Hours INEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type for Meditional Human Receptors INEC Classification DX. MEC Size  Grenade Range Area  4/7/2014 Input Factor ergetic Material Type for Meditional Human Receptors Additional Human Receptors Additional Human Receptors Additional Human Receptors S. Site Accessibility tential Contact Hours Additional Human Receptors S. Site Accessibility tential Contact Hours Amount of MEC epth Relative to Maximum Intrusive Depth Relative to Maximum Intrusive Depth Page Amount MEC Epth Relative to Maximum Intrusive Depth Page Amount MEC Epth Relative to Maximum Intrusive Depth Page Amount MEC Epth Relative to Maximum Intrusive Depth Page Amount Medition Receptors S. Site Accessibility	Insut Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category  f. Scoring Summary for Response Alternative 4: LUCs; 100 Percent: Response Action Cleanup: Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC. Possible UNO Special Case Small  Total Score Hazard Level Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Input Factor Category High Explosive and Low Explosive Filler in Fragmenting Rounds Inside the MRS or inside the ESQD arc Full Accessibility 10,000 to 99,999 receptor-hrs/yr Target Area Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	Score   100   30   30   30   30   30   30   3

Scoring Summaries Worksheet

Total Score Hazard Level Category

MEC HA Hazard Level Determinat	ion	
Site ID: Grenade Range Area		
Date: 4/7/2014		
	Hazard Level Category	Score
a. Current Use Activities	1	920
c. Response Alternative 1: No DoD Action Indicated	1	920
d. Response Alternative 2: LUCs	1	920
e. Response Alternative 3: LUCs; Focused Surface Clearance	2	750
f. Response Alternative 4: LUCs; 100 Percent Surface Clearance	2	750
g. Response Alternative 5: Unlimited Use/Access	4	505
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?	Y	es
Are cultural resources located within the MRS or within the ESQD arc?	Y	es
Are significant ecological resources located within the MRS or within the ESQD arc?	Y	es

Final Remedial Investigation/Feasibility Study Report
Former Camp Maxey, Paris, Texas
Appendix F

# APPENDIX F: MUNITIONS RESPONSE SITE PRIORITIZATION PROTOCOL MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FORMER CAMP MAXEY
Paris, Texas

# Table A

### **MRS Background Information**

**DIRECTIONS:** Record the background information below for the MRS to be evaluated. Much of this information is

	available from Service and DoD databases. If the MRS is located on a FUDS property, the suitable FUDS property information should be substituted. In the <b>MRS Summary</b> , briefly describe the UXO, DMM, or MC that are known or suspected to be present, the exposure setting (the MRS's physical environment), any other incidental nonmunitions-related contaminants (e.g., benzene, trichloroethylene) found at the MRS, and any potentially exposed human and ecological receptors. If possible, include a map of the MRS.								
	nitions Response Sit	te Name: Western R	ange Area A						
Inst	allation/Property Na	me: Camp Maxey FL	<u>JDS</u>						
	ation (City, County,	•							
Site Name/Project Name (Project No.): Former Camp Maxey (K06TX0305) PRDF/FRMD:									
Poir	e Information Enterent nt of Contact (Name lect Phase (check or	/ <b>Phone)</b> : <u>Layne Youn</u>		1 <u>806)</u>		,			
	□PA	□ SI	✓ RI		√ FS		□RD		
	□ RA-C □ RIP □ RA-O □ RC □ LTM								
to be	: This Draft MRSPP wa eing finalized the MRSP lia Evaluated (check	P will be included in a p					dditional project stakehol w.	ders. Prior	
		an that apply)		D 0 - 40			<u>,                                      </u>	٦	
_	☐ Groundwater				ment (humar			-	
	□ Surface soil				ice Water (e		· ,	4	
	□Sediment (ecologic	cal receptor)		<b>□</b> Surfa	ice Water (h	uman rece	eptor)		
MRS							n, the dates of operations, CWM, and MC by		

This MRS includes 1,310 acres located in the northwest portion of Camp Maxey. It is on private property primarily used for agriculture. There was no access granted to this area during the RI. Historical data indicated that it includes firing points and portions of artillery ranges fans for several ranges. Additional data is still needed to characterize the MRS. (RI/FS Report [EOTI, 2014]; Table 4-1)

Description of Pathways for Human and Ecological Receptors:

Potentially complete pathways exist for residents, trespassers, outdoor site workers, and biota for MEC in the surface and subsurface. Incomplete pathways exist for all human and ecological receptors for MC. (RI/FS Report [EOTI, 2014]; **Section 5.1.2)** 

# Table 1

## **EHE Module: Munitions Type Data Element Table**

**DIRECTIONS:** Below are 11 classifications of munitions and their descriptions. Circle the scores that correspond with <u>all</u> the munitions types known or suspected to be present at the MRS.

**Note:** The terms *practice munitions, small arms ammunition, physical evidence,* and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
Sensitive	<ul> <li>UXO that are considered most likely to function upon any interaction with exposed persons (e.g., submunitions, 40mm high-explosive [HE] grenades, white phosphorus [WP] munitions, high-explosive antitank [HEAT] munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions).</li> <li>Hand grenades containing energetic filler.</li> <li>Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.</li> </ul>	30
High explosive (used or damaged)	<ul> <li>UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive."</li> <li>DMM containing a high-explosive filler that have:         <ul> <li>Been damaged by burning or detonation</li> <li>Deteriorated to the point of instability.</li> </ul> </li> </ul>	25
Pyrotechnic (used or damaged)	<ul> <li>UXO containing a pyrotechnic filler other than white phosphorus (e.g., flares, signals, simulators, smoke grenades).</li> <li>DMM containing a pyrotechnic filler other than white phosphorus (e.g., flares, signals, simulators, smoke grenades) that have:         <ul> <li>Been damaged by burning or detonation</li> <li>Deteriorated to the point of instability.</li> </ul> </li> </ul>	20
High explosive (unused)	<ul> <li>DMM containing a high-explosive filler that:</li> <li>Have not been damaged by burning or detonation</li> <li>Are not deteriorated to the point of instability.</li> </ul>	15
Propellant	<ul> <li>UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor).</li> <li>DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor) that are:         <ul> <li>Damaged by burning or detonation</li> <li>Deteriorated to the point of instability.</li> </ul> </li> </ul>	15
Bulk secondary high explosives, pyrotechnics, or propellant	<ul> <li>DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor).</li> <li>DMM that are bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.</li> </ul>	10
Pyrotechnic (not used or damaged)	<ul> <li>DMM containing a pyrotechnic filler (i.e., red phosphorus), other than white phosphorus filler, that:</li> <li>Have not been damaged by burning or detonation</li> <li>Are not deteriorated to the point of instability.</li> </ul>	10
Practice	<ul> <li>UXO that are practice munitions that are not associated with a sensitive fuze.</li> <li>DMM that are practice munitions that are not associated with a sensitive fuze and that have not:         <ul> <li>Been damaged by burning or detonation</li> <li>Deteriorated to the point of instability.</li> </ul> </li> </ul>	5
Riot control	UXO or DMM containing a riot control agent filler (e.g., tear gas).	3
Small arms	<ul> <li>Used munitions or DMM that are categorized as small arms ammunition. (Physical evidence or historical evidence that no other types of munitions [e.g., grenades, subcaliber training rockets, demolition charges] were used or are present on the MRS is required for selection of this category.)</li> </ul>	2
Evidence of no munitions	<ul> <li>Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.</li> </ul>	0
MUNITIONS TYPE	<b>DIRECTIONS:</b> Record <u>the single highest score</u> from above in the box to the right (maximum score = 30).	0

**DIRECTIONS:** Document any MRS-specific data used in selecting the *Munitions Type* classifications in the space provided.

No munitions or evidence of munitions (MD) has been found in the MRS; however, very limited , if any, investigations have been conducted. (RI/FS Report [EOTI, 2014]; Table 4-1)