	Table A MRS Background Information						
DIR	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 MRS Summary , 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.					n is Ible XO, cal thylene) lude a	
Mun	itions Response	Site Name: FTBL	-005-R-05;	Intert N	line Testing Area at	t Range 5A	
Inst	allation/Property	Name: Fort Belvo	ir - Fort Belv	voir Nort	h Area (FBNA)		
Loca	ation (City, Coun	ty, State): Fort Bel	voir, Virginia	a, Fairfa	x County	7	
Site		me (Project No.): r	·IBL-005-K	<-U5; г	IQAES: 51105.1071	(
Date Poin Proje	Information Enter it of Contact (Name ect Phase (check o	ed/Updated: 9 Janu /Phone): Chris Ma nly one):	ary 2023 anikas, (70	3) 806-	0030		
	D PA	□ SI	🗆 RI		□ FS	🗖 RD	
	RA-C		🛛 RA-O			🖄 LTM	
Med	ia Evaluated (chec	k all that apply):					
	Groundwater			🛛 Sedi	ment (human receptor)]
	Surface soil			Surfa	ace Water (ecological	receptor)	
	Sediment (ecolo	gical receptor)		🛛 Surfa	ace Water (human rec	eptor)	
MR	MRS Summary:						
FBNA was used for testing a wide range of engineering equipment and supplies, such as methods and equipment for the deployment, detection, and neutralization of land mines, as wells as anti-intrusion and counter-barrier systems and techniques. M-33 is located in former Range 5A on the western portion of FBNA, adjacent to M-32 (DD, Section 2.1, Page 2-1).							
Acco 199	According to a 2003 Explosive Safety Submission, six M20 mines were removed from Range 5A during a 1992 removal action (DD, Section 2.2.1, Page 2-1).						
The Site sma	The Selected Remedy for M-33 also encompasses groundwater affected by the adjacent site M-32. Site M-32 consists of Building 5091, a former bunker that contained a steel cutting pit and was targeted for small arms fire. The M-32 area was included in the overall MEC/MD clearance activities for M-33 and FBNA						

(DD, Section 2.2.1, Page 2-1). Based on the historical use of the site as a test range, buried MEC was identified as the most likely source of the groundwater contamination at M-33. MEC remediation activities in this area began with a removal action completed in 1992. Following the implementation of the BRAC program at FTBL, several grids in the middle of former Range 5A were cleared of MEC in 2006 - 2007. USACE swept former Range 5A and the

middle of former Range 5A were cleared of MEC in 2006 - 2007. USACE swept former Range 5A and the surrounding area in January 2008 to identify any remaining grids that required MEC clearance. These grids were cleared of MEC in fall 2008. The USACE clearance activities did not identify the presence additional burial pits. (DD, Section 2.2.3, Page 2-2).

EHE is Rated as NLR: A final action to obtain a 100% clearance of M-33 and M-32 areas for MEC was completed in 2010 (DD, Section 2.2.3, Page 2-2).

CHE is Rated as NKSH: There is no historical use of CWM at the M33 MRS.

HHE is Rated as NLR: The remedial objectives set in DD have been met and the site is in LTM (DD, Section 2.10.2 and Section 2.13, Pages 2-9, 2-10, 2-13, and 2-14).

Table A Continued

Via email, the installation notified regulators as to the opportunity to review MRSPP packages (see email attachment).

Notice of availability to public of PP published in October 2014. Actions completed on M32/M33 site areas conducted in partnership with USEPA and VADEQ. Fort Belvoir does not have an established RAB. The Army solicited public comment on the preferred remedial alternative. A Proposed Plan for M-33 was released to the public at the following repositories: Kingstowne Library Lorton Library. A 30-day public comment period occurred from October 24, 2014, to November 24, 2014. The Army published a notice of availability of the Proposed Plan in The Washington Post- Fairfax County Extra, the Mount Vernon Voice, the Fairfax County Times, the Belvoir Eagle, and on the Fort Belvoir Facebook page (DD, Section 2.3, Page 2-3).

The Army is soliciting public comment on the preferred remedial alternative. A 30-day public comment period will occur from October 24, 2014, to November 24, 2014. The Army has published a notice of availability of this Proposed Plan in The Washington Post - Extra, the Mount Vernon Voice, and the Fairfax County Times and will hold a public meeting to discuss this Proposed Plan on November 17, 2014, at 7:00 p.m. at the Fairfax County's South County Government Center, 8350 Richmond Highway, Alexandria, Virginia, 22039, in the large conference room (PP. Section 9.0, Page 14).

Description of Pathways for Human and Ecological Receptors: Primary pathway for human receptors is through groundwater exposure. The use of untreated groundwater use as a potable source is prohibited on Fort Belvoir. Although significant habitat is present on SWMU M-33 for ecological receptors, the groundwater pathway is incomplete. Surface water/sediment pathways not established for M-33 MRS.

Description of Receptors (Human and Ecological): Potential human receptors that were evaluated for SWMU M-33 consist of a hypothetical future resident (child, adult, age-adjusted); Future Industrial Worker (adult); Future Construction Worker. There is no resident population on SWMU M-33 and the entire footprint for the site will be incorporated into a MILCON project to be completed in 2025.

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	 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). Hand grenades containing energetic filler. Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard. 	30
High explosive (used or damaged)	 UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." DMM containing a high-explosive filler that have: Been damaged by burning or detonation Deteriorated to the point of instability. 	25
Pyrotechnic (used or damaged)	 UXO containing a pyrotechnic filler other than white phosphorus (e.g., flares, signals, simulators, smoke grenades). DMM containing a pyrotechnic filler other than white phosphorus (e.g., flares, signals, simulators, smoke grenades) that have: Been damaged by burning or detonation Deteriorated to the point of instability. 	20
High explosive (unused)	 DMM containing a high-explosive filler that: Have not been damaged by burning or detonation Are not deteriorated to the point of instability. 	15
Propellant	 UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor). DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor) that are: Damaged by burning or detonation Deteriorated to the point of instability. 	15
Bulk secondary high explosives, pyrotechnics, or propellant	 DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor). 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. 	10
Pyrotechnic (not used or damaged)	 DMM containing a pyrotechnic filler (i.e., red phosphorus), other than white phosphorus filler, that: Have not been damaged by burning or detonation Are not deteriorated to the point of instability. 	10
Practice	 UXO that are practice munitions that are not associated with a sensitive fuze. DMM that are practice munitions that are not associated with a sensitive fuze and that have not: Been damaged by burning or detonation Deteriorated to the point of instability. 	5
Riot control	• UXO or DMM containing a riot control agent filler (e.g., tear gas).	3
Small arms	 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.) 	2
Evidence of no munitions	 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. 	0
MUNITIONS TYPE	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 30).	25

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

According to a 2003 Explosive Safety Submission, six M20 mines were removed from Range 5A during a 1992 removal action (DD, Section 2.2.1, Page 2-1).

Table 2 EHE Module: Source of Hazard Data Element Table

DIRECTIONS: Below are 11 classifications describing sources of explosive hazards. Circle the scores that correspond with <u>all</u> the sources of explosive hazards known or suspected to be present at the MRS.

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

Classification	Description	Score
Former range	 The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include impact or target areas and associated buffer and safety zones. 	10
Former munitions treatment (i.e., OB/OD) unit	 The MRS is a location where UXO or DMM (e.g., munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal. 	8
Former practice munitions range	The MRS is a former military range on which only practice munitions without sensitive fuzes were used.	6
Former maneuver area	 The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category. 	5
Former burial pit or other disposal area	 The MRS is a location where DMM were buried or disposed of (e.g., disposed of into a water body) without prior thermal treatment. 	5
Former industrial operating facilities	 The MRS is a location that is a former munitions maintenance, manufacturing, or demilitarization facility. 	4
Former firing points	 The MRS is a firing point, where the firing point is delineated as an MRS separate from the rest of a former military range. 	4
Former missile or air defense artillery emplacements	 The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a military range. 	2
Former storage or transfer points	• The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (e.g., rail to truck, truck to weapon system).	2
Former small arms range	 The MRS is a former military range where only small arms ammunition was used. (There must be evidence that no other types of munitions [e.g., grenades] were used or are present to place an MRS into this category.) 	1
Evidence of no munitions	 Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present. 	0
SOURCE OF HAZARD	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 10).	10

DIRECTIONS: Document any MRS-specific data used in selecting the **Source of Hazard** classifications in the space provided.

FBNA was used for testing a wide range of engineering equipment and supplies, such as methods and equipment for the deployment, detection, and neutralization of land mines, as wells as antiintrusion and counter-barrier systems and techniques. M-33 is located in former Range 5A on the western portion of FBNA, adjacent to M-32 (DD, Section 2.1, Page 2-1).

Table 3 EHE Module: Location of Munitions Data Element Table

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

Note: The terms confirmed, surface, subsurface, small arms ammunition, physical evidence, and historical evidence are defined in Appendix C of the Primer.

Classification	Description	Score
Confirmed surface	 Physical evidence indicates that there are UXO or DMM on the surface of the MRS. Historical evidence (i.e., a confirmed report such as an explosive ordnance disposal [EOD], police, or fire department report that an incident or accident that involved UXO or DMM occurred) indicates there are UXO or DMM on the surface of the MRS. 	25
Confirmed subsurface, active	 Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM. Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM. 	20
Confirmed subsurface, stable	 Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed. Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed. Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed. 	15
Suspected (physical evidence)	 There is physical evidence (e.g., munitions debris such as fragments, penetrators, projectiles, shell casings, links, fins), other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS. 	10
Suspected (historical evidence)	• There is historical evidence indicating that UXO or DMM may be present at the MRS.	5
Subsurface, physical constraint	• There is physical or historical evidence indicating that UXO or DMM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2
Small arms (regardless of location)	• The presence of small arms ammunition is confirmed or suspected, regardless of other factors such as geological stability. (There must be evidence that no other types of munitions [e.g., grenades] were used or are present at the MRS to place an MRS into this category.)	1
Evidence of no munitions	 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. 	0
LOCATION OF MUNITIONS	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 25).	15

DIRECTIONS: Document any MRS-specific data used in selecting the Location of Munitions classifications

Based on the historical use of the site as a test range, buried MEC was identified as the most likely source of the groundwater contamination at M-33. MEC remediation activities in this area began with a removal action completed in 1992. Following the implementation of the BRAC program at FTBL, several grids in the middle of former Range 5A were cleared of MEC in 2006 - 2007. USACE swept former Range 5A and the surrounding area in January 2008 to identify any remaining grids that required MEC clearance. These grids were cleared of MEC in fall 2008. The USACE clearance activities did not identify the presence additional burial pits. (DD, Section 2.2.3, Page 2-2).

Table 4 EHE Module: Ease of Access Data Element Table

DIRECTIONS: Below are four classifications of barrier types that can surround an MRS and their descriptions. The barrier type is directly related to the ease of public access to the MRS. Circle the score that corresponds with the ease of access to the MRS.

Note: The term *barrier* is defined in Appendix C of the Primer.

Classification	Description	Score
No barrier	 There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible). 	10
Barrier to MRS access is incomplete	 There is a barrier preventing access to parts of the MRS, but not the entire MRS. 	8
Barrier to MRS access is complete but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0
EASE OF ACCESS	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 10).	10
DIRECTIONS: Document any MRS-specific data used in selecting the <i>Ease of Access</i> classification in the space provided.		

MRS is located within the former Engineer Proving Ground (EPG) MRA. The EPG has a security fence that is partially breached by fallen trees. Access to the EPG is uncontrolled with surveillance as gates are generally open to vehicular traffic. Access to the M-33 MRS is open with no signage and no fencing.

Table 5 EHE Module: Status of Property Data Element Table

DIRECTIONS: Below are three classifications of the status of a property within the Department of Defense (DoD) and their descriptions. Circle the score that corresponds with the status of property at the MRS.

Classification	Description	Score	
Non-DoD control	 The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies. The MRS is at a location that is owned by DoD, but that DoD has leased to another entity and for which DoD does not control access 24 hours per day. 	5	
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD, and DoD plans to transfer that land or water body to the control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the Protocol is applied.	3	
DoD control	 The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD. With respect to property that is leased or otherwise possessed, DoD must control access to the MRS 24 hours per day, every day of the calendar year. 	0	
STATUS OF PROPERTY	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).	0	
DIRECTIONS: Document any MRS-specific data used in selecting the Status of Property classification			

FBNA, an 820-acre tract of land 1.5 miles northwest of the Main Post of Fort Belvoir, is bounded by Interstate 95 on the east, by commercial properties to the south, and by residential properties on the west and north. Accotink Creek bisects FBNA into areas identified as FBNA East and FBNA West. The layout of FBNA is shown on Figure 1-2. Historically, FBNA was used for testing a wide range of engineering equipment and supplies, such as methods and equipment for the deployment, detection, and neutralization of land mines, as wells as anti-intrusion and counter-barrier systems and techniques. M-33 is located in former Range 5A on the western portion of FBNA, adjacent to M-32 (DD, Section 2.1, Page 2-1).

EHE Module: Population Density Data Element Table

DIRECTIONS: Below are three classifications for population density and their descriptions. Determine the population density per square mile that most closely corresponds with the population of the MRS, including the area within a two-mile radius of the MRS's perimeter. Circle the most appropriate score.

Note: Use the U.S. Census Bureau tract data available to capture the <u>highest</u> population density within a two-mile radius of the perimeter of the MRS.

Classification	Description	Score	
> 500 persons per square mile	There are more than 500 persons per square mile in the U.S. Census Bureau tract in which the MRS is located.	5	
100–500 persons per square mile	There are 100 to 500 persons per square mile in the U.S. Census Bureau tract in which the MRS is located.	3	
< 100 persons per square mile	There are fewer than 100 persons per square mile in the U.S. Census Bureau tract in which the MRS is located.	1	
POPULATION DENSITY	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).	5	
DIRECTIONS: Document any MRS-specific data used in selecting the <i>Population Density</i> classification in the space provided.			
The population per square mile at Fort Belvoir is 862.7.			
https://www.census.gov/quickfacts/fact/table/fortbelvoircdpvirginia/PST045221			

EHE Module: Population Near Hazard Data Element Table

DIRECTIONS: Below are six classifications describing the number of inhabited structures near the MRS. The number of inhabited buildings relates to the potential population near the MRS. Determine the number of inhabited structures within two miles of the MRS boundary and circle the score that corresponds with the number of inhabited structures.

Note: The term *inhabited structures* is defined in Appendix C of the Primer.

Classification	Description	Score
26 or more inhabited structures	 There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both. 	5
16 to 25 inhabited structures	 There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both. 	4
11 to 15 inhabited structures	 There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both. 	3
6 to 10 inhabited structures	 There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both. 	2
1 to 5 inhabited structures	 There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both. 	1
0 inhabited structures	There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0
POPULATION NEAR HAZARD	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).	5

DIRECTIONS: Document any MRS-specific data used in selecting the *Population Near Hazard* classification in the space provided.

There are more than 26 inhabited structures within two miles of M33. See the maps in the DD or go to this link at Google Earth:

https://earth.google.com/web/@38.75322463,-77.19192525,72.77186487a,4667.00543545d,35y,35.9479262h,0t,0r

EHE Module: Types of Activities/Structures Data Element Table

DIRECTIONS: Below are five classifications of activities and/or inhabited structures and their descriptions. Review the types of activities that occur and/or structures that are present within two miles of the MRS and circle the scores that correspond with <u>all</u> the activities/structure classifications at the MRS.

Note: The term *inhabited structure* is defined in Appendix C of the Primer.

Classification	Description	Score
Residential, educational, commercial, or subsistence	 Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering. 	5
Parks and recreational areas	 Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses. 	4
Agricultural, forestry	 Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry. 	3
Industrial or warehousing	 Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with industrial activities or warehousing. 	2
No known or recurring activities	 There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary. 	1
TYPES OF ACTIVITIES/STRUCTURES	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).	5

DIRECTIONS: Document any MRS-specific data used in selecting the *Types of Activities/Structures* classifications in the space provided.

There are residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites.

See the maps in the DD or go to this link at Google Earth:

https://earth.google.com/web/@38.75322463,-77.19192525,72.77186487a,4667.00543545d,35y,35.9479262h,0t,0r

EHE Module: Ecological and/or Cultural Resources Data Element Table

DIRECTIONS: Below are four classifications of ecological and/or cultural resources and their descriptions. Review the types of resources present and circle the score that corresponds with the ecological and/or cultural resources present on the MRS.

Note: The terms *ecological resources* and *cultural resources* are defined in Appendix C of the Primer.

Classification	Description	Score	
Ecological and cultural resources present	There are both ecological and cultural resources present on the MRS.	5	
Ecological resources present	 There are ecological resources present on the MRS. 	3	
Cultural resources present	There are cultural resources present on the MRS.	3	
No ecological or cultural resources present	 There are no ecological resources or cultural resources present on the MRS. 	0	
ECOLOGICAL AND/OR CULTURAL RESOURCES	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).	3	

DIRECTIONS: Document any MRS-specific data used in selecting the *Ecological and/or Cultural Resources* classification in the space provided.

M-33 is located approx, 1,000' west of Accotink Creek. Smaller tributaries to Accotink Creek are located approx. 500' north and 500' southeast of M-33. At FBNA, Accotink Creek generally trends from the northwest to the southeast, with water flow toward the southeast, discharging into Accotink Bay. Fort Belvoir and FBNA make up approximately 2.5% of the entire Accotink Creek drainage basin. A small portion of FBNA drains directly offsite into other watersheds. The groundwater table at M-33 is typically located at approximately 10-20' bgs. (DD, Section 2.5.1, Page 2-4)

Table 10 Determining the EHE Module Rating

DIRECTIONS:

- 1. From Tables 1–9, record the data element scores in the **Score** boxes to the right.
- 2. Add the **Score** boxes for each of the three factors and record this number in the **Value** boxes to the right.
- Add the three Value boxes and record this number in the EHE Module Total box below.
- 4. Circle the appropriate range for the **EHE Module Total** below.
- 5. Circle the EHE Module Rating that corresponds to the range selected and record this value in the EHE Module Rating box found at the bottom of the table.

Note:

An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

the EHE Module Rating					
	Source	Score	Value		
Explosive Hazard Factor Data Elements					
Munitions Type	Table 1	25	35		
Source of Hazard	Table 2	10			
Accessibility Factor Data Elements					
Location of Munitions	Table 3	15			
Ease of Access	Table 4	10	25		
Status of Property	Table 5	0			
Receptor Factor Data Elements					
Population Density	Table 6	5			
Population Near Hazard	Table 7	5	18		
Types of Activities/Structures	Table 8	5	10		
Ecological and/or Cultural Resources	Table 9	3			
EHE	MODULE	TOTAL	78		
EHE Module Total EHE Module Rati		ating			
92 to 100		А			
82 to 91		В			
71 to 81	81 C				
60 to 70 D		-			
60 to 70		D			
60 to 70 48 to 59		D			
60 to 70 48 to 59 38 to 47		D E F			
60 to 70 48 to 59 38 to 47 less than 38		D E F G			
60 to 70 48 to 59 38 to 47 less than 38	Eva	D E F G Iuation Pend	ding		
60 to 70 48 to 59 38 to 47 less than 38 Alternative Module Ratings	Eva No Lo	D E F G Iuation Pend	ding quired		
60 to 70 48 to 59 38 to 47 less than 38 Alternative Module Ratings	Eva No Lo No Kn Ex	D E F G Iuation Pend nger Red own or Susp polosive Haza	ding quired pected ard		

EHE is Rated as NLR: A final action to obtain a 100% clearance of M-33 and M-32 areas for MEC was completed in 2010 (DD, Section 2.2.3, Page 2-2).

Table 11 CHE Module: CWM Configuration Data Element Table

DIRECTIONS: Below are seven classifications of CWM configuration and their descriptions. Circle the scores that correspond with <u>all</u> the CWM configurations known or suspected to be present at the MRS.
 Note: The terms *CWM/UXO*, *CWM/DMM*, *physical evidence*, and *historical evidence* are defined in Appendix C of the

Primer.

Classification	Description	Score
CWM, that are either UXO, or explosively configured damaged DMM	 The CWM known or suspected of being present at the MRS are: CWM that are UXO (i.e., CWM/UXO) Explosively configured CWM that are DMM (i.e., CWM/DMM) that have been damaged. 	30
CWM mixed with UXO	 The CWM known or suspected of being present at the MRS are undamaged CWM/DMM or CWM not configured as a munition that are commingled with conventional munitions that are UXO. 	25
CWM, explosive configuration that are undamaged DMM	 The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged. 	20
CWM/DMM, not explosively configured or CWM, bulk container	 The CWM known or suspected of being present at the MRS are: Nonexplosively configured CWM/DMM either damaged or undamaged Bulk CWM (e.g., ton container). 	15
CAIS K941 and CAIS K942	 The CWM/DMM known or suspected of being present at the MRS are CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M- 2/E11. 	12
CAIS (chemical agent identification sets)	 CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS. 	10
Evidence of no CWM	 Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS. 	0
CWM CONFIGURATION	DIRECTIONS: 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 **CWM Configuration** classifications in the space provided.

CHE is Rated as NKSH: There is no historical use of CWM at the M33 MRS.

Tables 12-19 are omitted IAW Army Guidance

Table 20 Determining the CHE Module Rating

		Source	Score	Value
_	CWM Hazard Factor Data Elemer	nts		
	CWM Configuration	Table 11	0	
ord the he	Sources of CWM	Table 12		0
t.	Accessibility Factor Data Elemer	nts		
r each	Location of CWM	Table 13		
record e boxes	Ease of Access	Table 14		
	Status of Property	Table 15		
kes and	Receptor Factor Data Elements	I	I	
V.	Population Density	Table 16		
inge for	Population Near Hazard	Table 17		
below.	Types of Activities/Structures	Table 18		
Rating	Ecological and/or Cultural Resources	Table 19		
value in box	CHE	MODULI	E TOTAL	0
ne table.	CHE Module Total	CHE	Module R	ating
	92 to 100		А	
ay be rating is	82 to 91		В	
nodule	71 to 81		С	
ata	60 to 70	D		
MRS was is no	48 to 59	E		
on was	38 to 47	F		
	less than 38	G		
		Evaluation Pendin		ding
	Alternative Module Ratings	No I	Longer Requ	uired
		No Known or Susp CWM Hazard		spected d
	CHE MODULE RATING	No Kno C	wn or Sus WM Hazai	spected d

DIRECTIONS:

- From Tables 11–19, record the data element scores in the Score boxes to the right.
- 2. Add the **Score** boxes for each of the three factors and record this number in the **Value** boxes to the right.
- 3. Add the three **Value** boxes and record this number in the **CHE Module Total** box below.
- 4. Circle the appropriate range for the **CHE Module Total** below.
- Circle the CHE Module Rating that corresponds to the range selected and record this value in the CHE Module Rating box found at the bottom of the table.

Note:

An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

HHE Module: Groundwater Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the maximum concentrations of all contaminants in the MRS's groundwater and their comparison values (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the ratios for each contaminant by dividing the maximum concentration by the comparison value. Determine the CHF by adding the contaminant ratios together, including any additional groundwater contaminants recorded on Table 27. Based on the CHF, use the CHF Scale to determine and record the CHF Value. If there is no known or suspected MC hazard present in the groundwater, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (μg/L)	Ratios	
RDX	73	47	1.553	
2,6-Dinitrotoluene	2.7	4.2	.643	
2,4-Dinitrotoluene	.45	20	.023	
2,4-/2,6-Dinitrotoluene Mixtu	re 2.88	Not in Appendix B-1	N / A	
1,2-Dinitrobenzene	118	1.5	78.667	
CHF Scale	CHF Value	Sum The Ratios	80.886	
CHF > 100	H (High)	Maximum Concentration of C	ontaminantl	
100 > CHF > 2	M (Medium)	$CHF = \sum_{i=1}^{n} \frac{1}{(Comparison Value for Control$	minontl	
2 > CHF	L (Low)	[Companson value for Conta	aminantj	
CONTAMINANT	DIRECTIONS: Record <u>the CHF Value</u> (maximum value = H)	from above in the box to the right	М	
DIRECTIONS: Circle th	Migratory Pathway Factor DIRECTIONS: Circle the value that corresponds most closely to the groundwater migratory pathway at the MRS.			
Classification	Dese	cription	Value	
Evident	Analytical data or observable evidence indicates that contamination in the groundwater is present at, moving toward, or has moved to a point of exposure.		Н	
Potential	Contamination in groundwater has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.			
Confined	Information indicates a low potential for contaminant migration from the source via the groundwater to a potential point of exposure (possibly due to the presence of geological structures or physical controls).			
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the single high right (maximum value =	nest value from above in the box to the = H).	М	
DIRECTIONS: Circle th Classification	Receptor Fa ne value that corresponds most closely to Desc	actor the groundwater receptors at the MRS. cription	Value	
Identified	There is a threatened water supply well downgras source of drinking water or source of water for oth (equivalent to Class I or IIA aquifer).	dient of the source and the groundwater is a current her beneficial uses such as irrigation/agriculture	Н	
Potential	There is no threatened water supply well downgradient of the source and the groundwater is currently or potentially usable for drinking water, irrigation, or agriculture (equivalent to Class I, IIA, or IIB aquifer).		М	
Limited	There is no potentially threatened water supply well downgradient of the source and the groundwater is not considered a potential source of drinking water and is of limited beneficial use (equivalent to Class IIIA or IIIB aquifer, or where perched aquifer exists only).		L	
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).			
No Known or Suspected Groundwater MC Hazard				

HHE Module:	Surface Water –	Human Endpoint	Data Element Table
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Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the maximum concentrations of all contaminants in the MRS's surface water and their comparison values (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the ratios for each contaminant by dividing the maximum concentration by the comparison value. Determine the CHF by adding the contaminant ratios together, including any additional surface water contaminants recorded on Table 27. Based on the CHF, use the CHF Scale to determine and record the CHF Value. If there is no known or suspected MC hazard with human endpoints present in the surface water, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	CHF Value	Sum The Ratios	
CHF > 100	H (High)	— Maximum Concentration of C	ontominantl
100 > CHF > 2	M (Medium)		ontarininaritj
2 > CHF	L (Low)	[Comparison Value for Conta	iminant]
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> (maximum value = H).	from above in the box to the right	
	- Migratory Pathy		
DIRECTIONS: Circle the value that corresponds most closely to the surface water migratory pathway at the N			
Classification	Desc	cription	Value
Evident	Analytical data or observable evidence indicates t moving toward, or has moved to a point of exposit	that contamination in the surface water is present at, ure.	Н
Potential	Contamination in surface water has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.		М
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to the presence of geological structures or physical controls).		L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the single high right (maximum value =	test value from above in the box to the H).	
	Receptor F	actor	
DIRECTIONS: Circle t	he value that corresponds most closely to	the surface water receptors at the MRS.	
Classification	Desc	cription	Value
Identified	Identified receptors have access to surface water	to which contamination has moved or can move.	Н
Potential	Potential for receptors to have access to surface move.	water to which contamination has moved or can	М
Limited	Little or no potential for receptors to have access or can move.	to surface water to which contamination has moved	L
RECEPTOR FACTOR	DIRECTIONS: Record the single high the right (maximum valu	nest value from above in the box to $n = H$.	

No Known or Suspected Surface Water (Human Endpoint) MC Hazard

HHE Module: Sediment – Human Endpoint Data Element Tab
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Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the maximum concentrations of all contaminants in the MRS's sediment and their comparison values (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the ratios for each contaminant by dividing the maximum concentration by the comparison value. Determine the CHF by adding the contaminant ratios together, including any additional sediment contaminants recorded on Table 27. Based on the CHF, use the CHF Scale to determine and record the CHF Value. If there is no known or suspected MC hazard with human endpoints present in the sediment, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	CHF Value	Sum The Ratios	
CHF > 100	H (High)	Maximum Concentration of Co	ontaminantl
100 > CHF > 2	M (Medium)	$CHF = \sum_{i=1}^{n} \frac{1}{10000000000000000000000000000000000$	minantl
			minanij
HAZARD FACTOR	maximum value = H).	from above in the box to the right	
Migratory Pathway Factor DIRECTIONS: Circle the value that corresponds most closely to the sediment migratory pathway at the MRS			3.
Classification	Des	cription	Value
Evident	Analytical data or observable evidence indicates moving toward, or has moved to a point of expos	that contamination in the sediment is present at, ure.	Н
Potential	Contamination in sediment has moved only sligh but is not moving appreciably, or information is no Confined.	tly beyond the source (i.e., tens of feet), could move ot sufficient to make a determination of Evident or	М
Confined	Information indicates a low potential for contamin potential point of exposure (possibly due to the p	ant migration from the source via the sediment to a resence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the single high right (maximum value =	n <u>est value</u> from above in the box to the = H).	
Receptor Factor DIRECTIONS: Circle the value that corresponds most closely to the sediment receptors at the MRS.			
Classification	Des	cription	Value
Identified	Identified receptors have access to sediment to v	which contamination has moved or can move.	Н
Potential	Potential for receptors to have access to sedimer	nt to which contamination has moved or can move.	М
Limited	Little or no potential for receptors to have access can move.	to sediment to which contamination has moved or	L
RECEPTOR FACTOR	DIRECTIONS: Record the single high the right (maximum val	nest value from above in the box to ue = H).	
No Known or Suspected Sediment (Human Endpoint) MC Hazard			

Only GW Sampling was conducted. See the Semi-Annual GW Monitoring Report.

HHE Module: Surface Water – Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the maximum concentrations of all contaminants in the MRS's surface water and their comparison values (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the ratios for each contaminant by dividing the maximum concentration by the comparison value. Determine the CHF by adding the contaminant ratios together, including any additional surface water contaminants recorded on Table 27. Based on the CHF, use the CHF Scale to determine and record the CHF Value. If there is no known or suspected MC hazard with ecological endpoints present in the surface water, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)		ontaminantl
100 > CHF > 2	M (Medium)	$CHF = \sum_{i=1}^{n} \frac{1}{10000000000000000000000000000000000$	aminantl
		from above in the bay to the right	
HAZARD FACTOR	(maximum value = H).	nom above in the box to the right	
	Migratory Pathw	vay Factor	
DIRECTIONS: Circle th	he value that corresponds most closely to	the surface water migratory pathway at the	MRS.
Classification	Dese	cription	Value
Evident	Analytical data or observable evidence indicates moving toward, or has moved to a point of expos	that contamination in the surface water is present at, ure.	Н
Potential	Contamination in surface water has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.		М
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to the presence of geological structures or physical controls).		L
MIGRATORY PATHWAY FACTOR	IGRATORY ATHWAY FACTORDIRECTIONS: Record the single highest value right (maximum value = H).from above in the box to the right (maximum value = H).		
DIRECTIONS: Circle th	- <u>Receptor Fa</u> he value that corresponds most closely to	actor o the surface water receptors at the MRS.	
Classification	Desc	cription	Value
Identified	Identified receptors have access to surface water	to which contamination has moved or can move.	Н
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.		М
Limited	Little or no potential for receptors to have access or can move.	to surface water to which contamination has moved	L
RECEPTOR FACTOR	DIRECTIONS: Record the single high right (maximum value =	n <u>est value</u> from above in the box to the = H).	
No Known or Suspected Surface Water (Ecological Endpoint) MC Hazard			

Table 25			
HHE Module: Sediment – Ecological Endpoint Data Element Table			
Contaminant Hazard Factor (CHF) DIRECTIONS: Record the maximum concentrations of all contaminants in the MRS's sediment and their convalues (from Appendix B of the Primer) in the table below. Additional contaminants can be recordable 27. Calculate and record the ratios for each contaminant by dividing the maximum concentration by the comparison value. Determine the CHF by adding the contaminant ration to gether, including any additional sediment contaminants recorded on Table 27. Based on the the CHF Scale to determine and record the CHF Value. If there is no known or suspected MC with ecological endpoints present in the sediment, select the box at the bottom of the table.			
Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)	$CHE - \mathbf{\nabla}$ [Maximum Concentration of Co	ontaminant]
2 > CHF	L (Low)	[Comparison Value for Conta	minant]
CONTAMINANT HAZARD FACTOR	CONTAMINANT DIRECTIONS: Record the CHF Value from above in the box to the right (maximum value = H).		
DIRECTIONS: Circle the	Migratory Pathway Factor DIRECTIONS: Circle the value that corresponds most closely to the sediment migratory pathway at the MRS.		
Classification	Description		Value
Evident	Analytical data or observable evidence indicates moving toward, or has moved to a point of expo	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure	
	Contamination in sediment has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.		н
Potential	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined.	sure. htly beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or	H M
Potential Confined	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the	sure. htly beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls).	H M L
Potential Confined MIGRATORY PATHWAY FACTOR	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hic</u> right (maximum value)	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). hest value from above in the box to the = H).	H M L
Potential Confined MIGRATORY PATHWAY FACTOR DIRECTIONS: Circle t	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hig</u> right (maximum value <u>Receptor I</u> ne value that corresponds most closely	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). thest value from above in the box to the = H). Factor to the sediment receptors at the MRS.	H M L
Potential Confined MIGRATORY PATHWAY FACTOR DIRECTIONS: Circle the Classification	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hig</u> right (maximum value ne value that corresponds most closely Determine the state of the single high the state of the single high the state of the single high the state of the state	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). thest value from above in the box to the = H). Factor to the sediment receptors at the MRS. scription	H M L Value
Potential Confined MIGRATORY PATHWAY FACTOR DIRECTIONS: Circle the Classification Identified	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hig</u> right (maximum value ne value that corresponds most closely Des Identified receptors have access to sediment to	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). thest value from above in the box to the = H). Factor to the sediment receptors at the MRS. scription which contamination has moved or can move.	H M L Value H
Potential Confined MIGRATORY PATHWAY FACTOR DIRECTIONS: Circle the Classification Identified Potential	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hig</u> right (maximum value ne value that corresponds most closely Des Identified receptors have access to sediment to Potential for receptors to have access to sediment	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). thest value from above in the box to the = H). Factor to the sediment receptors at the MRS. scription which contamination has moved or can move. ent to which contamination has moved or can move.	H M L Value H M
Potential Confined MIGRATORY PATHWAY FACTOR DIRECTIONS: Circle th Classification Identified Potential Limited	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hig</u> right (maximum value ne value that corresponds most closely Determined receptors have access to sediment to Potential for receptors to have access to sediment Little or no potential for receptors to have access can move.	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). thest value from above in the box to the = H). Factor to the sediment receptors at the MRS. scription which contamination has moved or can move. ent to which contamination has moved or can move. s to sediment to which contamination has moved or	H M L Value H M L
Potential Confined MIGRATORY PATHWAY FACTOR DIRECTIONS: Circle th Classification Identified Potential Limited RECEPTOR FACTOR	Contamination in sediment has moved only slig but is not moving appreciably, or information is Confined. Information indicates a low potential for contami potential point of exposure (possibly due to the DIRECTIONS: Record <u>the single hig</u> right (maximum value he value that corresponds most closely Identified receptors have access to sediment to Potential for receptors to have access to sediment Little or no potential for receptors to have access can move. DIRECTIONS: Record <u>the single hig</u> right (maximum value	sure. http beyond the source (i.e., tens of feet), could move not sufficient to make a determination of Evident or inant migration from the source via the sediment to a presence of geological structures or physical controls). thest value from above in the box to the = H). Factor to the sediment receptors at the MRS. scription which contamination has moved or can move. ent to which contamination has moved or can move. as to sediment to which contamination has moved or thest value from above in the box to the = H).	H M L Value H M L

Table 26 HHE Module: Surface Soil Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS:	Record the maximum concentrations of all contaminants in the MRS's surface soil and their
	comparison values (from Appendix B of the Primer) in the table below. Additional contaminants can be
	recorded on Table 27. Calculate and record the ratios for each contaminant by dividing the maximum
	concentration by the comparison value. Determine the CHF by adding the contaminant ratios
	together, including any additional surface soil contaminants recorded on Table 27. Based on the CHF,
	use the CHF Scale to determine and record the CHF Value. If there is no known or suspected MC
	hazard present in the surface soil, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratio
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High) M (Medium)	$CHE - \Sigma$ [Maximum Concentration of C	ontaminant]
2 > CHF	L (Low)	[Comparison Value for Contaminant	
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> (maximum value = H)	ue from above in the box to the right).	

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface soil migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface soil is present at, moving toward, or has moved to a point of exposure.	Н
Potential	Contamination in surface soil has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	М
Confined	Information indicates a low potential for contaminant migration from the source via the surface soil to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface soil receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface soil to which contamination has moved or can move.	Н
Potential	Potential for receptors to have access to surface soil to which contamination has moved or can move.	М
Limited	Little or no potential for receptors to have access to surface soil to which contamination has moved or can move.	L
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	
	No Known or Suspected Surface Soil MC Hazard	

HHE Module: Supplemental Contaminant Hazard Factor Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Only use this table if there are more than five contaminants in any given medium present at the MRS. This is a supplemental table designed to hold information about contaminants that do not fit in the previous tables. Indicate the media in which these contaminants are present. Then record all contaminants, their maximum concentrations and their comparison values (from Appendix B of the Primer) in the table below. Calculate and record the ratio for each contaminant by dividing the maximum concentration by the comparison value. Determine the CHF for each medium on the appropriate media-specific tables.

Note: Do not add ratios from different media.

Media	Contaminant	Maximum Concentration	Comparison Value	Ratio

Table 28 Determining the HHE Module Rating

DIRECTIONS:

- 1. Record the letter values (H, M, L) for the **Contaminant Hazard**, **Migration Pathway**, and **Receptor Factors** for the media (from Tables 21–26) in the corresponding boxes below.
- 2. Record the media's three-letter combinations in the **Three-Letter Combination** boxes below (three-letter combinations are arranged from Hs to Ms to Ls).
- 3. Using the **HHE Ratings** provided below, determine each media's rating (A–G) and record the letter in the corresponding **Media Rating** box below.

Media (Source)	Contaminant Hazard Factor Value	Migratory Pathway Factor Value	Receptor Factor Value		Three-Letter Combination (Hs-Ms-Ls)		Media Rating (A-G)
Groundwater (Table 21)	М	М	М		MMM		D
Surface Water/Human Endpoint (Table 22)							
Sediment/Human Endpoint (Table 23)							
Surface Water/Ecological Endpoint (Table 24)							
Sediment/Ecological Endpoint (Table 25)							
Surface Soil (Table 26)							
DIRECTIONS (cont.):			HHE MODULE RATING			NG	NLR
 4. Select the single highest Media Rating (A is highest; G is lowest) and enter the letter in the HHE Module Rating box. Note: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more media, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS. 			HHE Ratings (for reference only)				
			Combination			Rating	
			ННН			A	
			HHI				C
			НММ				
			HML			D	
			MMM				
			HLL				E
			MML				
						G	
			Alternative Module Ratings				Evaluation Pending
		-					
			Alternat	ive N	Module Ratings	N	o Longer Required

HHE is Rated as NLR: The remedial objectives set in DD have been met and the site is in LTM (DD, Section 2.10.2 and Section 2.13, Pages 2-9, 2-10, 2-13, and 2-14).

Table 29 MRS Priority

- **DIRECTIONS:** In the chart below, circle the letter **rating** for each module recorded in Table 10 (EHE), Table 20 (CHE), and Table 28 (HHE). Circle the corresponding numerical **priority** for each module. If information to determine the module rating is not available, choose the appropriate alternative module rating. The MRS Priority is the single highest priority; record this relative priority in the **MRS Priority or Alternative MRS Rating** at the bottom of the table.
- **Note:** An MRS assigned Priority 1 has the highest relative priority; an MRS assigned Priority 8 has the lowest relative priority. Only an MRS with CWM known or suspected to be present can be assigned Priority 1; an MRS that has CWM known or suspected to be present cannot be assigned Priority 8.

EHE Rating	Priority	CHE Rating	Priority	HHE Rating	Priority
		A	1		
A	2	В	2	A	2
В	3	С	3	В	3
C	4	D	4	C	4
D	5	E	5	D	5
E	6	F	6	E	6
F	7	G	7	F	7
G	8			G	8
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Longer Required		No Longer Required		No Longer Required	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	
MRS PRIORITY or ALTERNATIVE MRS RATING				No Longe	er Required