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 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, trichlorethylene) found at the MRS, and any potentially exposed human and ecological receptors. If possible, include a map of the MRS.

Componer Installation Location (6	Munitions Response Site Name: ROCKET RANGE AND SMALL ARMS RANGE Component: USACE FUDS/USACE FUDS/NAD/New England District (NAE) Installation/Property Name: MA19799F178100 CP WELLFLEET Location (City, County, State): CHATHAM, BARNSTABLE, MA Site Name/Project Name (Project No.): ROCKET RANGE AND SMALL ARMS RANGE (05)						
	mation Entered/Up ontact (Name/Pho	ne): Public Affairs		8-8238			
	Project Phase (ch	SI	□RI		☑RI/FS	□RD	
	□RA-C	□RIP	□RA-0)	□RC	□LTM	
Media Evaluated (check all that apply):							
☐ Groundwater ☐ Sediment (human receptor)							
✓	☑ Surface soil ☐ Surface Water (ecological receptor)						
	Sediment (ecological receptor)						

MRS Summary:

MRS Description: Describe the munitions-related activities that occurred at the installation, the dates of operation, and the UXO, DMM, or MC known or suspected to be present. When possible, identify munitions, CWM, and MC by type:

Camp Wellfleet training activities occurred from 1942 to 1961. It is currently owned and managed by the National Park Service (NPS) as part of the Cape Cod National Seashore. MRS 05 is a former Rocket Range and Small Arms Range was previously referred to as AOI-05. The small arms range has been completely covered by the large paved parking lot. The southern portion includes a small 5-acre removal action area. Multiple pieces of frag from 3.5" rockets and 105mm projectiles found during the previous investigations or removal action are considered HE frag or MD indicative of MEC (see 2019 RI Section 3.1.1). As this MRS includes a shoreline portion, it may also see munition items washing ashore following storm events.

The following MD indicative of MEC items and MD items were found in the surface or subsurface of MRS 05: D Indicative of MEC: HE frag from 3.5" Rockets and 105mm projectiles. D: 50 cal bullet, miscellaneous scrap. (RI Section 3.1.1 and Table 3-2).

There is no physical or historical evidence indicating that CWM was present at this AOI. Therefore, the CHE module has been assigned the alternative rating of No Known or Suspected CWM Hazard.

For MC characterization, Incremental Soil (IS) sampling of surface soil was conducted from three sampling units (SUs). As described in 2019 RI Table 3-10, SU locations were based on TEC ground scars and/or previous munitions debris finds. Analytical parameters included select metals (antimony, copper, lead, manganese, nickel, and zinc) and select explosives (RDX, TNT, nitroglycerin, 2,4-dinitrotoluene, 2,6-dinitrotoluene, tetryl, and nitroguanidine (See 2019 RI Sections 3.3, 3.4 and 5.3). All metal results except zinc and copper were less than the calculated background values. RI Table 3-4 presents background values. RI table D-12 presents max concentrations for samples in MRS. No background was calculated for explosives. Nitroguanidine detected in one soil sample at 0.21 mg/kg. RI Table D-12. All results were less than the PSLs and the Eco-SSLs. (RI Section 5.4.6). The RI concluded no unacceptable risk due to MC. RI Section 6.1.2.

Stakeholder coordination of the MRSPP was conducted during the RI. The MRSPP tables were included in the RI (Appendix F). MassDEP reviewed and commented on the RI. D01MA003304_03.01_0010

FUDSDocs documentation of stakeholder coordination regarding the MRS score can be found in the "2019 Final Remedial Investigation Report" (D01MA003304_03.10_0004), Appendix F. Documentation of regulator review of the 2019 RI found at (D01MA003304_03.01_0010 Throughout the MRSPP, the cited reference found at the noted FUDSDoc location: "2019 RI refers to the "2019 Final Remedial Investigation Report" (D01MA003304_03.10_0004).

Description of Pathways for Human and Ecological Receptors:

Potential for contact with MEC includes walking over surface MEC, handling/collecting MEC, or contact with subsurface MEC due to any intrusive activities (see 2019 RI Section 3.1.2).

Description of Receptors (Human and Ecological):

Potential receptors to MC in the Former Camp Wellfleet include human populations, animal species, or habitats that may be exposed to site-related MC in soil or groundwater. Human receptors include Recreational Users (including fishermen), Site Workers (including NPS Staff and Road/Utility Workers), and Construction Workers. Ecological receptors include various birds, mammals, invertebrates, flora, and fauna that occur within the Former Camp Wellfleet (see RI Section 3.3.1). However, a complete pathway requires a source of contaminants, and based on site sampling results, no MC contaminant source was identified. The updated CSM (RI Figure 16) shows that there are no complete pathways for MC based on the sample results.

Table 1 EHE Module: Munitions Type Data Element Table

Directions: Below are 11 classifications of munitions and their descriptions. Check the scores that correspond with all the munitions types known or suspected to be present at the MRS.

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

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 mixtrues 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	1 20	
High explosive (unused)	*DMM containing a high-explosirve filler that: *Have not been damaged by burning or detonation *Deteriorated to the point of instability	1 5	
Propellant	*UXO containing mostly singe-, 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 propellent	*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.	1 0	
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.	1 0	
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 a physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	О	
Munitions Type	DIRECTIONS: Record the single highest score 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.) MD Indicative of MEC (HE frag from 3.5" Rockets and 105mm projectiles) has been found (see 2019 RI Table 3-1).

Table 2

EHE Module: Source of Hazard Data Element Table

Directions: Below are 11 classifications describing sources of explosive hazards. Check the scores that correspond with all the sources of explosive hazards known or suspected to be present at the MRS.

Notes: The terms former range, practice munitions, small arms range, physical evidence, and

historical evidence are defined in Appendix C of the Primer.

	motorioal evidence are defined in Appendix e el are i miner			
Classification	Description	Score		
Former range	*The MRS is 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.	1 0		
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.)			
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.	О		
Source of Hazard	DIRECTIONS: Record the single highest score from above in the box to the right(maximum score = 10).	10		
DIRECTIONS: Docume	DIRECTIONS: Document any MRS - specific data used in selecting the Source of Hazard classifications in the space			

DIRECTIONS: Document any MRS - specific data used in selecting the Source of Hazard classifications in the space provided.) AOI-05 is a former Rocket Range (see 2019 RI Section 3.1.1).

Table 3

EHE Module: Location of Munitions Data Element Table

Directions: Below are eight classifications of munitions locations and their descriptions. Check the scores that correspond with all the locations where munitions are known or suspected to be present at the MRS.

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

	The torical evidence are defined in Appendix e of the Filmer.	
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 ordanance 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.	1 25
Confirmed subsurface, active	*Physical evidence indicates the presence of UXO or DMM n 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, constructions, dredging) atthe 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.	1 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 occurrin 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, the the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.	1 5
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.	1 0
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 the single highest score from above in the box to the right(maximum score = 25).	10

DIRECTIONS: Document any MRS - specific data used in selecting the Location of Munitions classifications in the space provided.) MD Indicative of MEC presence has been established with the HE frag (from 3.5" Rockets and 105mm projectiles) recovered from the subsurface (2019 RI Section 3.1.2). This constitutes suspected classification.

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. Check the score that corresponds with the ease of access to the MRS Notes: 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 the single highest score from above in the box to the right(maximum score = 10).	10

DIRECTIONS: Document any MRS - specific data used in selecting the Ease of Access classifications in the space provided.) AOI-05 is a high traffic beach access area. It contains unpaved and paved trails, a paved road and a large paved

parking lot. While there is some semi-dense natural vegetation that limits pedestrian access, there are no man-made barrier restrictions. Access to the beach is open with daily use. See 2019 RI Figures 3 & 4, and Section 2.1.

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. Check the score that corresponds with the status of property at the MRS.

Notes:

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 posessed 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 2 hours per day, every day of the calendar year.	 0
Status of Property	DIRECTIONS: Record the single highest score from above in the box to the right(maximum score = 5).	5

DIRECTIONS: Document any MRS - specific data used in selecting the Status of Property classifications in the space provided.) This is a FUDS, owned and managed by the NPS, with a smaller portion owned and managed by the Town of Wellfleet

(see 2019 RI Sections 1.2 and 1.3).

EHE Module: Population Density Data Element Table

Directions: Below are three classifications for population density and their descriptions.

Deterimine 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. Check the most appropriate score.

Notes: Use the U.S. Census Bureau tract data available to capture the highest 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		
< 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 the single highest score from above in the box to the right(maximum score = 5).	5

DIRECTIONS: Document any MRS - specific data used in selecting the Population Density classifications in the space provided.) The 2020 population density per square mile in the county in which the Former Camp Wellfleet is located (Barnstable) is approximately 581: https://www.census.gov/quickfacts/fact/table/US/PST045222

Table 7

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 check the score that corresponds with the number of inhabited structures.

Notes: 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.	1 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.	1 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.	О
Population Near Hazard	DIRECTIONS: Record the single highest score 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 classifications in the space provided.) There are many more than 26 or more inhabited structures using Google Earth to calculate the total number of inhabited structures within the two-mile radius for this AOI. Inhabited structures include homes, commercial buildings, motels/hotels, and beach houses for use by recreational visitors. https://earth.google.com/web/search/Wellfleet,+MA/@41.9045659,-69.99179634,6.94634744a,13326.65237146d,35y,0h,0t,0r/data=CigiJgokCWt3VxKMP0RAEdUHV1A2MURAGTQpv

kiEdVLAIcpVzssgilLAOgMKATA

Table 8

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 check the scores that correspond with all the activities/structure classifications at the MRS.

Notes: 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 strucutres 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.	1 2	
No known or recurring activities	*There are no known or recurring activities occuring up to two miles from the MRS's boundary or within the MRS's boundary.	1	
Types of Activities/Structures	DIRECTIONS: Record the single highest score from above in the box to the right(maximum score = 5).	5	

Types of Activities/Structures	DIRECTIONS: Record the single highest score from above in the box to the right(maximum score = 5).	5
DIRECTIONS: Docum in the space provided.) buildings, motels/hotel https://earth.google.co	ent any MRS - specific data used in selecting the Types of Activities/Structures of Types of activities/structures within 2 miles include NPS buildings, homes, cos, and beach houses for use by recreational visitors. See RI Figures 1 & 3, and m/web/search/Wellfleet,+MA/@41.9045659,-744a,13326.65237146d,35y,0h,0t,0r/data=CigiJgokCWt3VxKMP0RAEdUHV1/DgMKATA	ommercial d Section 2.1.

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 check the score that corresponds with the ecological and/or cultural resources present on the MRS.

Notes: 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.	О
Ecological and/or Cultural Resources	DIRECTIONS: Record the single highest score 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 classifications in the space provided.) Ecological receptors include various birds, mammals, invertebrates, flora, and fauna that occur within the Former Camp Wellfleet. Wildlife species at the Cape Cod National Seashore include twelve species of amphibians, 370 species of birds, 59 species of mammals, five species of migratory marine turtles, and 13 species of land-based reptiles (NPS

birds, 59 species of mammals, five species of migratory marine turtles, and 13 species of land-based reptiles (NPS website, https://www.nps.gov/caco) (see 2019 RI Section 3.3.1). There are no cultural resources present on the MRS

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. 3. Add the three Value boxes and record this number in the EHE Module Total below. 4. Check 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.

Notes: 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.

ENE					
	Source	Score	Value		
Explosive Hazard Factor Data Elements					
Munitions Type	Table 1	25	35		
Source of Hazard	Table 2	10	ა <u>ა</u>		
Accessibility Factor Data E	lements				
Location of Munitions	Table 3	10			
Ease of Access	Table 4	10	25		
t Status of Property	Table 5	5			
Receptor Factor Data Eleme	ents				
Population Density	Table 6	5			
Population Near Hazard	Table 7	5			
Types of Activities/Structures	Table 8	5	18		
Ecological and/or Cultural Resources	Table 9	3			
	EHE Mod	ule Total	78		
EHE Module Total	EHE Mod	ule Rating			
92 to 100	ļ.	4			
82 to 91	E	3			
71 to 81	(<u> </u>			
60 to 70)			
48 to 59	E				
38 to 47	F	=			
0 to 37	G				
	<u> </u>	Pending			
Alternative Module Ratings	☐ No Longer Required				
, momanie modulo ramige	No Known or Suspected Explosive Hazard				
EHE Module Rating No Known or Suspected Explosive Hazard			plosive		

EHE Module Description (4000 characters max):

CHE Module: CWM Configuration Data Element Table

Directions: Below are seven classification of CWM configuration and their descriptions. Check the scores that correspond with all the CWM configurations known or suspected to be present at the MRS.

Notes: 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.	1 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.	1 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 undamabed *Bulk CWM (e.g., ton container).	1 5
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 M2/E11.	1 2
CAIS (chemical agent identification sets)	*CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	1 0
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.	1 0
CWM Configuration	DIRECTIONS: Record the single highest score from above in the box to the right(maximum score = 30).	0

Directions: 1. 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. Check the appropriate range for the CHE Module Total below. 5. Check 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.

Notes: 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.

СПЕ						
	Source	Score	Value			
CWM Hazard Factor Data Elements						
CWM Configuration	Table 11	0	0			
Sources of CWM	Table 12		0			
Accessibility Factor Data E	lements					
Location of CWM	Table 13					
Ease of Access	Table 14		0			
Status of Property	Table 15					
Receptor Factor Data Elem	ents					
Population Density	Table 16					
Population Near Hazard	Table 17					
Types of Activities/Structures	Table 18		0			
Ecological and/or Cultural Resources	Table 19					
	CHE Mod	lule Total	0			
CHE Module Total	CHE Mod	ule Rating				
92 to 100	ļ ,	4				
82 to 91	E	3				
71 to 81	С					
60 to 70	D					
48 to 59	E					
38 to 47	F					
0 to 37	G					
	Evaulation Pending					
Alternative Module Ratings	☐ No Longer Required					
7 intermediate realings	No Known or Suspected CWM Hazard					
CHE Module Rating No Known or Suspected CWM Hazard						

CHE Module Description (4000 characters max):

Contaminant Hazard Factor (CHF)

Directions: Record the maxium 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 maxium 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** Comparison Value (µq/L) **Ratios** $(\mu g/L)$ **CHF Value CHF Scale Sum The Ratios** 0 CHF > 100 H (High) [Maximum Concentration of Contaminant] $CHF = \sum$ 100 > CHF > 2 M (Medium) [Comparison Value for Contaminant] 2 > CHF L (Low) DIRECTIONS: Record the CHF Value from above in the box CONTAMINANT HAZARD FACTOR to the right (maximum value = H). Migratory Pathway Factor Classification **Description** Value Analytical data or observable evidence indicates that contamination in \Box_{H} Evident the groundwater is present at, moving toward, or has moved to a point of exposure Contamination in the groundwater has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, Шм Potential or information is not sufficient to make a determination of Evident or Confined. Information indicates a low potential for contaminant migration from the source via the groundwater to a potential point of exposure Пι Confined (possible due to the presence of geological structures or physical controls) **MIGRATORY DIRECTIONS:** Record the single highest value from above **PATHWAY** in the box to the right (maximum value = H). **FACTOR** Receptor Factor Classification **Description** Value Identified receptors have access to groundwater to which ШΗ Identified contamination has moved or can move. Potential for receptors have access to groundwater to which ΙΙм Potential contamination has moved or can move. Little or no potential for receptors to have access to groundwater to Limited which contamination has moved or can move. **RECEPTOR** Check the value that corresponds most closely to the **FACTOR** groundwater receptors at the MRS. No Known or Suspected Groundwater MC Hazard DIRECTIONS: Document any MRS - specific data used in selecting the ground water contaminants in the Media Not Evaluated. Groundwater was not a pathway of concern for this MRS (see 2019 RI Section 3.3.1). (Only 1 groundwater sample taken - in MRS 06 where there is a public water supply well)

space provided.

Surface Water - Human Endpoint

Contaminant Hazard Factor (CHF)

Directions: Record the maxium 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.

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	0			
CHF > 100	H (High)	-	ation of Contaminant]			
100 > CHF > 2	M (Medium)	CHF = \(\sum_{				
2 > CHF	L (Low)	[Comparison Value for Contaminan				
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record the CHF to the right (maximum value =					
	Migratory Pa	thway Factor				
Classification	Descr	iption	Value			
Evident	Analytical data or observable evide the surface water is present at, morpoint of exposure	nce indicates that contamination in ving toward, or has moved to a	□н			
Potential	the source (i.e., tens of feet), could	Contamination in the 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				
Confined	Information indicates a low potential the source via the surface water to (possible due to the presence of geontrols).	□L				
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the sing in the box to the right (maxim					
	Recepto	or Factor				
Classification	Descr	iption	Value			
Identified	Identified receptors have access to contamination has moved or can m	□н				
Potential	Potential for receptors have access contamination has moved or can m	□м				
Limited	Little or no potential for receptors to which contamination has moved or					
RECEPTOR FACTOR						
No Known						
DIRECTIONS: Document any MRS - specific data used in selecting the surface water contaminants in the space provided. Media Not Evaluated. Surface water was not a pathway of concern and was not sampled (see 2019 RI Section 3.3.1).						

Section 3.3.1).

D01MA0033 CP WELLFLEET - 05 - MMRP - ROCKET RANGE AND SMALL **ARMS RANGE** Table 23 **Sediment - Human Endpoint**

Contaminant Hazard Factor (CHF)

Directions: Record the maxium 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	0		
CHF > 100	H (High)		ation of Contaminant]		
100 > CHF > 2	M (Medium)	CHF = \(\sum_{			
2 > CHF	L (Low)	[Comparison Valu	e for Contaminant]		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record the CHF to the right (maximum value =				
	Migratory Pa	thway Factor			
Classification	Descr	iption	Value		
Evident	Analytical data or observable evide the sediment is present at, moving exposure		□н		
Potential	Contamination in the sediment has source (i.e., tens of feet), could more information is not sufficient to machined.	ve but is not moving appreciably.	□м		
Confined	Information indicates a low potentia the source via the sediment to a podue to the presence of geological s				
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the sing in the box to the right (maxim				
	Recepto	or Factor			
Classification	Descr	iption	Value		
Identified	Identified receptors have access to has moved or can move.	sediment to which contamination	□н		
Potential	Potential for receptors have access contamination has moved or can m	□м			
Limited	Little or no potential for receptors to which contamination has moved or				
RECEPTOR FACTOR	Check the value that correspond sediment receptors at the MR				
No Kno	own or Suspected Sediment (I	Human Endpoint) MC Hazard			
space provided.	ment any MRS - specific data uso	Ğ			

Surface Water - Ecological Endpoint

Contaminant Hazard Factor (CHF)

Directions: Record the maxium 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.

ecological er	idpoints present in the surface w	<u>ater, select the box at the bottom</u>	of the table.
Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	CHF Value	Sum The Ratios	0
CHF > 100	H (High)	-	ation of Contaminant]
100 > CHF > 2	M (Medium)	CHF = \(\sum_{	
2 > CHF	L (Low)	[Comparison Valu	e for Contaminant]
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record the CHF to the right (maximum value =		
	Migratory Pa	thway Factor	
Classification	Descr	iption	Value
Evident	Analytical data or observable evide the surface water is present at, morpoint of exposure	nce indicates that contamination in ving toward, or has moved to a	□н
Potential	Contamination in the surface water the source (i.e., tens of feet), could appreciably, or information is not su Evident or Confined.	move but is not moving	□м
Confined	Information indicates a low potential the source via the surface water to (possible due to the presence of ge controls).	□L	
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the sing in the box to the right (maxim		
	Recepto	or Factor	
Classification	Descr	iption	Value
Identified	Identified receptors have access to contamination has moved or can m		□н
Potential	Potential for receptors have access contamination has moved or can m	□м	
Limited	Little or no potential for receptors to which contamination has moved or		
RECEPTOR FACTOR	Check the value that corresponding the corresponding to the comments at the co		
No Known or S	uspected Surface Water (Eco	logical Endpoing) MC Hazard	
DIRECTIONS: Docui space provided.	ment any MRS - specific data use	ed in selecting the surface water ay of concern and was not samp	

D01MA0033 CP WELLFLEET - 05 - MMRP - ROCKET RANGE AND SMALL ARMS RANGE Table 25 Sediment - Ecological Endpoint

Contaminant Hazard Factor (CHF)

Directions: Record the maxium 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

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	0			
CHF > 100	H (High)	[Maximum Concentr	ation of Contaminant]			
100 > CHF > 2	M (Medium)	CHF = \(\sum_{				
2 > CHF	L (Low)	[Comparison Valu	e for Contaminant]			
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record the CHF to the right (maximum value =					
	Migratory Pa	thway Factor				
Classification	Descr	iption	Value			
Evident	Analytical data or observable evide the sediment is present at, moving exposure		□н			
Potential	Contamination in the sediment has source (i.e., tens of feet), could more or information is not sufficient to macconfined.	ve but is not moving appreciably,	□м			
Confined	Information indicates a low potentia the source via the sediment to a podue to the presence of geological s	□L				
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the sing in the box to the right (maxim					
	Receptor Factor					
Classification	Descr	iption	Value			
Identified	Identified receptors have access to has moved or can move.	sediment to which contamination	□н			
Potential	Potential for receptors have access contamination has moved or can m	to sediment to which ove.	□м			
Limited	Little or no potential for receptors to which contamination has moved or	□L				
RECEPTOR FACTOR	Check the value that correspond sediment receptors at the MR					
No Known or Suspected Sediment (Ecological Endpoint) MC Hazard						
space provided.	ment any MRS - specific data uso	G				

Contaminant Hazard Factor (CHF)

Directions: Record the maxium 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.

Comparison Value (mg/kg)

Ratios

Maximum Concentration

(mg/kg)

Contaminant

	(3/113/		
Nitroguanidine	0.21 6100		0.00003443
Zinc	13.90	13.90 23000	
Copper	5.90	0.00190323	
CHF Scale	CHF Value	Sum The Ratios	0.00254201
CHF > 100	H (High)	-	ration of Contaminant]
100 > CHF > 2	M (Medium)	CHF = \(\sum_{	
2 > CHF	L (Low)	[Comparison Valu	ue for Contaminant]
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record the CHI to the right (maximum value =	Value from above in the box : H).	L
	Migratory Pa	thway Factor	
Classification	Descr	iption	Value
Evident	Analytical data or observable evide the surface soil is present at, movir of exposure	ence indicates that contamination in ng toward, or has moved to a point	□н
Potential	Contamination in the surface soil has source (i.e., tens of feet), could mo or information is not sufficient to ma Confined.	✓м	
Confined	Information indicates a low potentia the source via the surface soil to a (possible due to the presence of ge controls).	ΩL	
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record the sing in the box to the right (maxim	М	
	Recepto	or Factor	
Classification	Descr	Value	
Identified	Identified receptors have access to contamination has moved or can m	П	
Potential	Potential for receptors have access contamination has moved or can m	M	
Limited	Little or no potential for receptors to which contamination has moved or	۵L	
RECEPTOR FACTOR	Check the value that corresponding surface soil receptors at the M	M	
	No Known or Suspe	cted Surface Soil MC Hazard	
			

DIRECTIONS: Document any MRS - specific data used in selecting the soil contaminants in the space provided.

Soil sampling included IS sampling of surface soil collected from three sampling units SUs and IS subsurface soil from one SU. All metal results except zinc and copper were less than the calculated background values. RI Table 3-4 presents background values. RI table D-12 presents max concentrations for samples in MRS. No background was calculated for explosives. Nitroguanidine detected in one soil sample at 0.21 mg/kg. RI Table D-12. All results were less than the PSLs and the Eco-SSLs. (RI Section 5.4.6). The RI concluded no unacceptable risk due to MC. RI Section 6.1.2.

D01MA0033 CP WELLFLEET - 05 - MMRP - ROCKET RANGE AND SMALL ARMS RANGE 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)	Contamina ntHazard Factor Value	Migratory Pathway Factor Value	Receptor Factor Value	Three- Letter Combinatio n (Hs-Ms- Ls)	Media Rating (A-G)
Groundwater (Table 21)					
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)	L	M	М	LMM	Е
DIRECTIONS (co	ont.): 4. Select t	the single	HHE M	ODULE RATING	i N
highest Media Ra lowest) and enter	iting (A is highe the letter in the	est; G is e HHE Module		HHE Ratings (fo	r reference only)
Rating box.			Com	bination	Rating
Notes: An alterna	tive module rat	ing may be	HHH		A
assigned when a	module letter r	ating is	,	HMH,MHH	В
inappropriate. An used when more	alternative mo information is r	dule rating is needed to	HHL,HLH,LHH,HMM,MHM,MMH		С
score one or more data elements, contamination at an MRS was previously		HML,HLM,MHL,MLH,LHM,LMH,M MM		D	
addressed, or there is no reason to suspect		HLL,LHL,LLH,MML,MLM,LMM		E	
contamination was ever present at an MRS.		MLL,LML,LLM		F	
		LLL		G	
		Alternative Module Ratings		Evaluation Pending No Longer Required	
					No Known or Suspected MC Hazard

HHE Module Description (4000 characters max):

MC sampling results indicated metals above background in soil, but the RI screen against project screening levels showed no MC releases, no risks to human health and the environment, and accordingly, the HHE module has been assigned the alternative rating of No Known or Suspected MC Hazard. RI Section 6.1.2

In the chart below, circle the letter rating for each module recorded in Table 10 (EHE), Table 20 (CHE), and Table 28 (HHE). Check 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.

MRS Priority or Alternative MRS Rating at the bottom of the table.

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
		Α	1		
Α	2	В	2	Α	2
В	3	С	3	В	3
С	4	D	4	С	4
D	5	Е	5	D	5
Е	6	F	6	Е	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 Known or Haza	