

Section 3

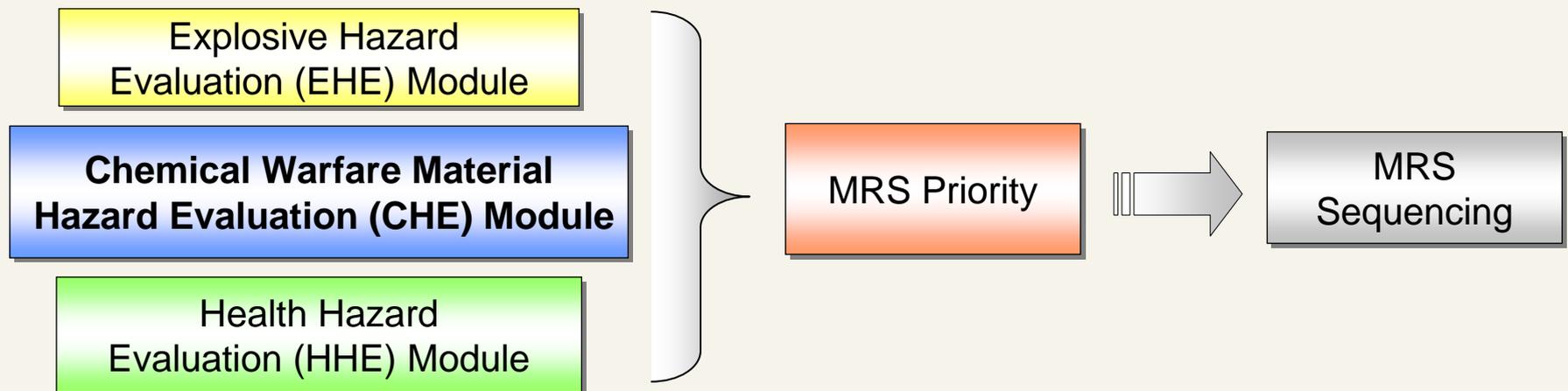
Chemical Warfare Materiel Hazard Evaluation
(CHE)



CHE Module

- Provides a consistent DoD-wide approach for assigning a *relative* priority to munitions response sites (MRSs) where potential CWM hazards are known or suspected to be present
- Used to conduct an evaluation of the potential chemical agent hazards associated with the physiological effects of CWM

Protocol Structure



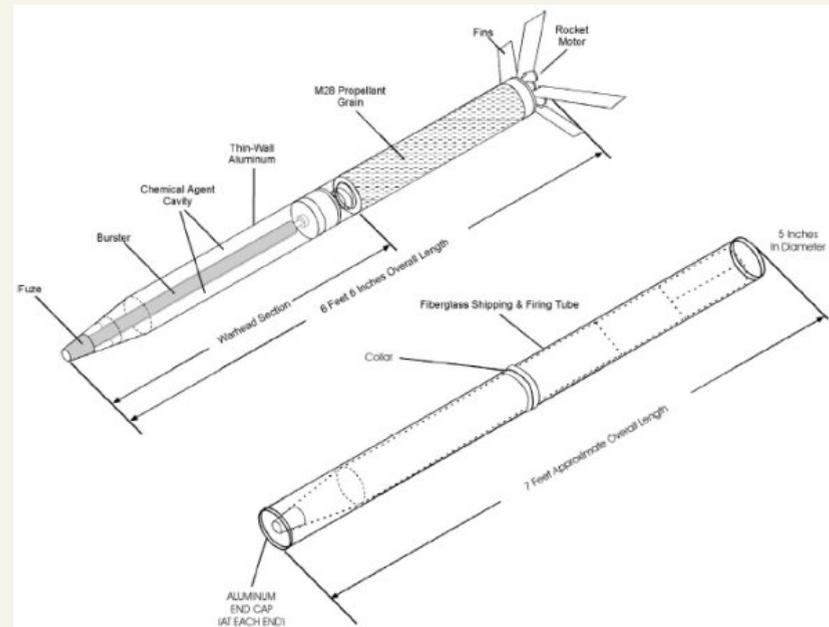
CWM Subcategories Defined

- Chemical Agent (CA) –
 - ◆ A chemical compound (to include experimental compounds) that, through its chemical properties produces lethal or other damaging effects on human beings, is intended for use in military operations to kill, seriously injure, or incapacitate persons through its physiological effects – [32 CFR §179.3]
- CWM is generally configured as a munition containing a chemical compound that is intended to kill, seriously injure, or incapacitate a person through its physiological effects
- For the purposes of the Protocol, CWM encompasses four subcategories –
 - ◆ CWM, explosively configured – Munitions that contain a CA fill and any explosive component (e.g., M-55 rockets, M23 VX mine, M360105-mm GB artillery cartridges)
 - ◆ CWM, nonexplosively configured – Munitions that contain a CA fill but do not include any explosive (chemical munition that does not contain an explosive component)
 - ◆ CWM, bulk container – All non-munitions-configured containers of CA, such as ton containers
 - ◆ CA identification sets (CAIS) – Military training aids containing small quantities of various chemical agents and other chemicals



CHE Module Factors and Data Elements

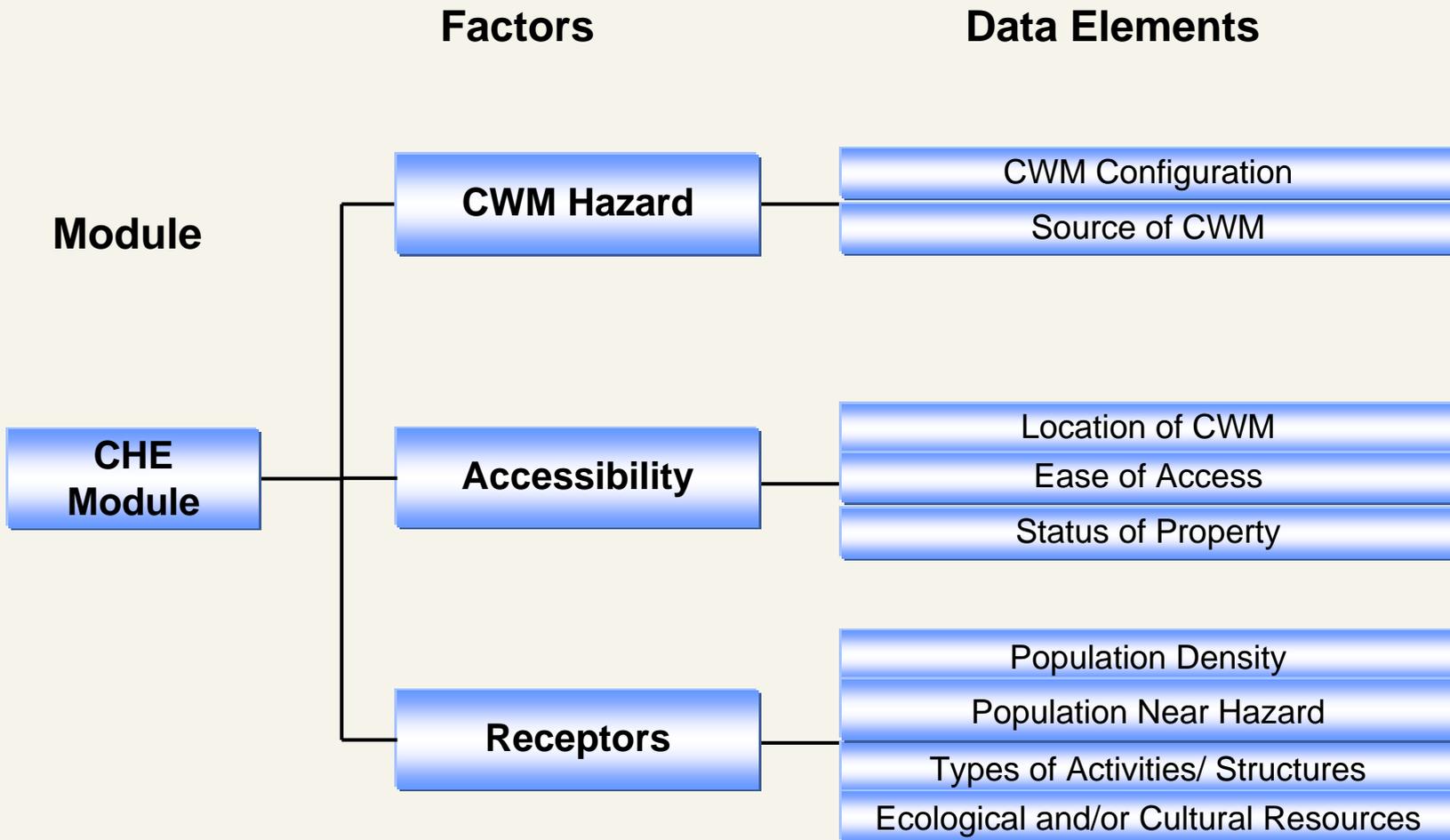
- CWM Hazard Factor
 - ◆ CWM Configuration
 - ◆ Sources of CWM
- Accessibility Factor
 - ◆ Location of CWM
 - ◆ Ease of Access
 - ◆ Status of Property
- Receptor Factor
 - ◆ Population Density
 - ◆ Population Near Hazard
 - ◆ Types of Activities/Structures
 - ◆ Ecological and/or Cultural Resources



115 mm Chemical Rocket M55



Structure of the CHE Module



CHE Module Factors

- The CHE Module structure is very similar to the EHE Module structure
- The CHE Module Rating is determined using three factors –
 - ◆ CWM Hazard Factor – evaluates the unique characteristics of CWM
 - ◆ Accessibility Factor – characterizes the potential for the receptor to encounter CWM on the MRS
 - ◆ Receptor Factor – characterizes the impact the hazard may have on human and ecological populations at the MRS
- The CHE's three-axis structure limits the influence of any one factor on the overall CHE Module Rating
- Each factor is further comprised of two to four data elements that capture available MRS-specific data



CHE Module Scoring

- The data elements of the three factors contribute to the CHE Module Rating

CWM Hazard Factor	40 pts
Accessibility Factor	40 pts
Receptor Factor	20 pts
Maximum Total	100 pts

- Based on the CHE Factor Values, the Module is assigned one of seven ratings (letters A – G)
- There are also three alternative outcomes for when a letter rating is not appropriate –
 - ◆ Evaluation Pending
 - ◆ Prioritization No Longer Required
 - ◆ No Known or Suspected CWM Hazard



Table 11

CHE Module: CWM Configuration Data Element Table

DIRECTIONS: Below are seven classifications of CWM configuration and their descriptions. Circle the score(s) that correspond to all CWM configurations 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, explosive configuration either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: <ul style="list-style-type: none"> Explosively configured 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	<ul style="list-style-type: none"> The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured 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	<ul style="list-style-type: none"> The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged. 	20
CWM, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: <ul style="list-style-type: none"> Nonexplosively configured CWM/DMM. Bulk CWM/DMM (e.g., ton container). 	15
CAIS K941 and CAIS K942	<ul style="list-style-type: none"> The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11. 	12
CAIS (chemical agent identification sets)	<ul style="list-style-type: none"> Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS. 	10
Evidence of no CWM	<ul style="list-style-type: none"> 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).	

Circle all CWM configurations present at the MRS

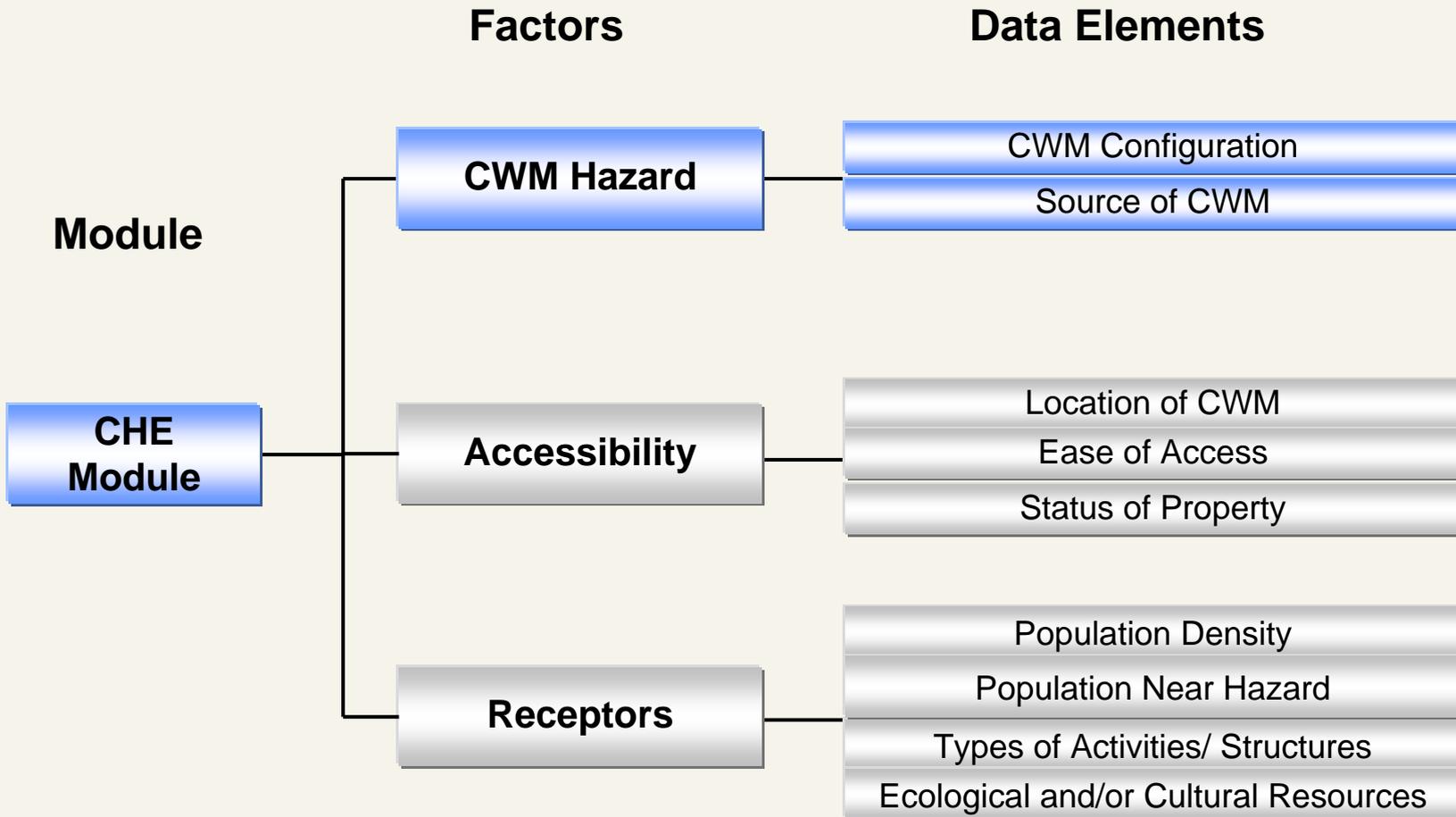
Record only the largest single classification score in the CWM Configuration box

DO NOT ADD MULTIPLE SCORES TOGETHER!

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

Document any MRS-specific data used in selecting the CWM Configuration classifications here

Structure of CWM Hazard Factor

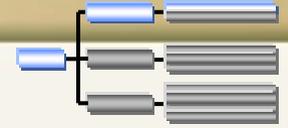


Similarity to EHE Module

- A scoring system similar to the EHE Module is used in the CHE Module
- In both modules the Accessibility and Receptor Factors and their corresponding data elements are essentially identical
- The only differences between the EHE and CHE Module are
 - ◆ Hazard factor
 - CWM Configuration
 - Source of CWM
 - ◆ Accessibility factor
 - Location of CWM - no small arms range option



CWM Hazard Factor – CWM Configuration



- CWM configuration is the data element with the highest potential score within the CHE Module (30 points possible)
- Classifies CWM according to its potential CA hazard and is based on –
 - ◆ CWM type (e.g., explosively configured, bulk container)
 - ◆ Condition (e.g., fired, unused)



Table 11

CHE Module: CWM Configuration Data Element Table

DIRECTIONS: Below are seven classifications of CWM configuration and their descriptions. Circle the score(s) that correspond to **all** CWM configurations 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, explosive configuration either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: <ul style="list-style-type: none"> ◆ Explosively configured 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	<ul style="list-style-type: none"> ◆ The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured 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	<ul style="list-style-type: none"> ◆ The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged. 	20
CWM, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: <ul style="list-style-type: none"> ◆ Nonexplosively configured CWM/DMM. ◆ Bulk CWM/DMM (e.g., ton container). 	15
CAIS K941 and CAIS K942	<ul style="list-style-type: none"> ◆ The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11. 	12
CAIS (chemical agent identification sets)	<ul style="list-style-type: none"> ◆ Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS. 	10
Evidence of no CWM	<ul style="list-style-type: none"> ◆ 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 the single highest score from above in the box to the right (maximum score = 30).	

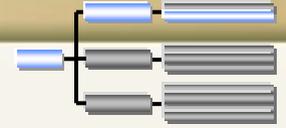
DIRECTIONS: Document any MRS-specific data used in selecting the **CWM Configuration** classifications in the space provided.

CWM, explosive configuration (UXO or damaged DMM) – Highest risk (30 points)

CAIS K941 and CAIS K942- Selected if investigation finds physical or historical evidence of CAIS K941 – toxic gas set M1 or CAIS K942 – toxic gas set M-2/E11 (12 points)

Evidence of No CWM – Can be selected only if investigation finds physical or historical evidence indicating CWM is not present (0 points)

CWM Hazard Factor – Source of CWM



- Classifies common circumstances that lead to CWM being present on an MRS
- Addresses the type of CWM activities conducted, the extent CWM may be present, and its potential condition. For example –
 - ◆ Live-fire involving CWM
 - ◆ Damaged or undamaged CWM/DMM or CAIS/DMM, surface or subsurface
 - ◆ Former production or testing areas
 - ◆ Former training facilities
 - ◆ Former storage or transfer points of CWM



Table 12

CHE Module: Sources of CWM Data Table

DIRECTIONS: Below are 11 sources of CWM hazards and their descriptions. Review these classifications and circle the score(s) that correspond with **all** the sources of CWM hazard found at the MRS.

Note: The terms *CWM/UXO*, *CWM/DMM*, *surface*, *subsurface*, *physical evidence*, and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
Live-fire involving CWM	<ul style="list-style-type: none"> The MRS is a former military range that supported live-fire of explosively configured CWM and the CWM/UXO are known or suspected of being present on the surface or in the subsurface. The MRS is a former military range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface commingled with conventional munitions that are UXO. 	10
Damaged CWM/DMM surface or subsurface	<ul style="list-style-type: none"> There are damaged CWM/DMM on the surface or in the subsurface at the MRS. 	10
Undamaged CWM/DMM surface	<ul style="list-style-type: none"> There are undamaged CWM/DMM on the surface at the MRS. 	10
CAIS/DMM surface	<ul style="list-style-type: none"> There are CAIS/DMM on the surface. 	10
Undamaged CWM/DMM, subsurface	<ul style="list-style-type: none"> There are undamaged CWM/DMM in the subsurface at the MRS. 	5
CAIS/DMM subsurface	<ul style="list-style-type: none"> There are CAIS/DMM in the subsurface at the MRS. 	5
Former CA or CWM Production Facilities	<ul style="list-style-type: none"> The MRS is a facility that formerly engaged in production of CA or CWM, and CWM/DMM is suspected of being present on the surface or in the subsurface. 	3
Former Research, Development, Testing, and Evaluation (RDT&E) facility using CWM	<ul style="list-style-type: none"> The MRS is at a facility that formerly was involved in non-live-fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface. 	3
Former Training Facility using CWM or CAIS	<ul style="list-style-type: none"> The MRS is a location that formerly was involved in training activities involving CWM and/or CAIS (e.g., training in recognition of CWA, decontamination training) and CWM/DMM or CAIS/DMM are suspected of being present on the surface or in the subsurface. 	2
Former Storage or Transfer points of CWM	<ul style="list-style-type: none"> The MRS is a former storage facility or transfer point (e.g., intermodal transfer) for CWM. 	1
Evidence of no CWM	<ul style="list-style-type: none"> 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
SOURCES OF CWM	DIRECTIONS: Record the single highest score from above in the box to the right (maximum score = 10).	

Live-fire involving CWM, Damaged CWM/DMM surface or subsurface, Undamaged CWM/DMM surface, and CAIS/DMM surface – All pose the greatest potential hazard and receive the highest classification score (10 points)

Evidence of no CWM – Can only be selected if investigation finds physical or historical evidence indicating no CWM present (0 points)

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

Data Element Classifications

CWM Configuration (Max. 30)

- CWM, explosive configuration, either UXO or damaged DMM 30
- CWM mixed with UXO 25
- CWM, explosive configuration that are DMM (undamaged) 20
- CWM, not explosively configured or CWM, bulk container 15
- CAIS K941 and CAIS K942 12
- CAIS (chemical agent identification sets) 10
- Evidence of no CWM 0

Source of CWM (Max. 10)

- Live-fire involving CWM 10
- Damaged CWM/DMM, surface or subsurface 10
- Undamaged CWM/DMM surface 10
- CAIS/DMM surface 10
- Undamaged CWM/DMM subsurface 5
- CAIS/DMM subsurface 5
- Former CA or CWM Production Facilities 3
- Former RDT&E facility using CWM 3
- Former Training Facility using CWM or CAIS 2
- Former Storage or Transfer points of CWM 1
- Evidence of no CWM 0



Table 20
Determining the CHE Module Rating

DIRECTIONS:

- From Tables 11-19, record the data element scores in the **Score** boxes to the right.
- 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 **CHE Module Total** box below.
- 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.

	Source	Score	Value
CWM Hazard Factor Data Elements			
CWM Configuration	Table 11	30	33
Sources of CWM	Table 12	3	
Accessibility Factor Data Elements			
Location of CWM	Table 13	20	35
Ease of Access	Table 14	10	
Status of Property	Table 15	05	
Receptors Factor Data Elements			
Population Density	Table 16	05	15
Population Near Hazard	Table 17	05	
Types of Activities/ Structures	Table 18	05	
Ecological and /or Cultural Resources	Table 19	00	
CHE MODULE TOTAL			83
CHE Module Total	CHE Module Rating		
92 to 100	A		
82 to 91	B		
71 to 81	C		
60 to 70	D		
48 to 59	E		
38 to 47	F		
less than 38	G		
Alternative Module Ratings	Evaluation Pending		
	No Longer Required		
	No Known or Suspected CWM Hazard		
CHE MODULE RATING	B		

Enter the CWM Hazard Factor Value by summing the data element scores

Enter the Accessibility Factor Value by summing the data element scores

Enter the Receptor Factor Value by summing the data element scores

Add the three factor values

Select the Module Rating that corresponds with the CHE Module Total calculated above

Record Module Rating in the CHE Module Rating box

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 number in the **MRS or Alternative Priority** box 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	2	B	2	A	2
B	3			B	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 or ALTERNATIVE PRIORITY					

Circle the CHE Module Rating and select corresponding Priority

There are also three alternative outcomes to a rating and priority

Camp Swampy Fictitious Example

- Former Camp Swampy is located about four miles from the Gulf of Mexico. The Swampy River flows through the Camp and discharges into the Gulf. The river is frequently used for recreational purposes
- The MRS is located on the eastern portion of the former Camp Swampy. The MRS is a state wildlife refuge containing three endangered species. The MRS is partially fenced and unmonitored
- The western half of Camp Swampy was sold to Swampy Inc. in 1993 and is surrounded by an electric fence
- The northern half of the Camp Swampy MRS contains 12 unused buildings, but a town with 600 houses and a population density of 125 people per square mile is only 1 mile away



CHE Camp Swampy Fictitious Example

- During World War II, the Camp included storage facilities of various types of CA-filled munitions
- Mustard agent was a common filler for these munitions
- Historical records indicate –
 - ◆ CA-filled munitions were buried at a burial site, east of the current OB/OD area
 - ◆ Prior to burial, an attempt using explosives was made to split open the munitions to expose any CA fill
- The condition of any buried munitions is unknown, but they are assumed to be damaged

**What is the CHE Module Rating for
Camp Swampy?**



CHE

Fill in the worksheet for the CHE module



Table 11

CHE Module: CWM Configuration Data Element Table

DIRECTIONS: Below are seven classifications of CWM configuration and their descriptions. Circle the score(s) that correspond to all CWM configurations 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, explosive configuration either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: <ul style="list-style-type: none"> + Explosively configured 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 explosively configured CWM/DMM that have not been damaged, or nonexplosively configured 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, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: <ul style="list-style-type: none"> + Nonexplosively configured CWM/DMM. + Bulk CWM/DMM (e.g., ton container). 	15
CAIS K941 and CAIS K942	+ The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11.	12
CAIS (chemical agent identification sets)	+ Only 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).	30

DIRECTIONS: Document any MRS-specific data used in selecting the CWM Configuration classifications in the space provided.

CWM, explosively configured

Table 12

CHE Module: Sources of CWM Data Element Table

DIRECTIONS: Below are 11 sources of CWM hazards and their descriptions. Review these classifications and circle the score(s) that correspond with all the sources of CWM hazard found at the MRS.

Note: The terms CWM/UXO, CWM/DMM, surface, subsurface, physical evidence, and historical evidence are defined in Appendix C of the Primer.

Classification	Description	Score
Live-fire involving CWM	<ul style="list-style-type: none"> + The MRS is a former military range that supported live-fire of explosively configured CWM and the CWM/UXO are known or suspected of being present on the surface or in the subsurface. + The MRS is a former military range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface commingled with conventional munitions that are UXO. 	10
Damaged CWM/DMM surface or subsurface	<ul style="list-style-type: none"> + There are damaged CWM/DMM on the surface or in the subsurface at the MRS. 	10
Undamaged CWM/DMM surface	<ul style="list-style-type: none"> + There are undamaged CWM/DMM on the surface at the MRS. 	10
CAIS/DMM surface	<ul style="list-style-type: none"> + There are CAIS/DMM on the surface. 	10
Undamaged CWM/DMM, subsurface	<ul style="list-style-type: none"> + There are undamaged CWM/DMM in the subsurface at the MRS. 	5
CAIS/DMM subsurface	<ul style="list-style-type: none"> + There are CAIS/DMM in the subsurface at the MRS. 	5
Former CA or CWM Production Facilities	<ul style="list-style-type: none"> + The MRS is a facility that formerly engaged in production of CA or CWM, and CWM/DMM is suspected of being present on the surface or in the subsurface. 	3
Former Research, Development, Testing, and Evaluation (RDT&E) facility using CWM	<ul style="list-style-type: none"> + The MRS is at a facility that formerly was involved in non-live-fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface. 	3
Former Training Facility using CWM or CAIS	<ul style="list-style-type: none"> + The MRS is a location that formerly was involved in training activities involving CWM and/or CAIS (e.g., training in recognition of CWA, decontamination training) and CWM/DMM or CAIS/DMM are suspected of being present on the surface or in the subsurface. 	2
Former Storage or Transfer points of CWM	<ul style="list-style-type: none"> + The MRS is a former storage facility or transfer point (e.g., intermodal transfer) for CWM. 	1
Evidence of no CWM	<ul style="list-style-type: none"> + 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
SOURCES OF CWM	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 Sources of CWM classifications in the space provided.

Damaged CWM/DMM surface or subsurface

Table 13**CHE Module: Location of CWM Data Element Table**

DIRECTIONS: Below are seven classifications of CWM locations and their descriptions. Review these locations and circle the score(s) that correspond with all locations where CWM are located or suspected of being found at the MRS.

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

Classification	Description	Score
Confirmed surface	<ul style="list-style-type: none"> Physical evidence indicates that there are CWM on the surface of the MRS. Historical evidence (e.g., a confirmed incident report or accident report) indicates there are CWM on the surface of the MRS. 	25
Confirmed subsurface, active	<ul style="list-style-type: none"> Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging), at the MRS, are likely to expose CWM. Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging), at the MRS, are likely to expose CWM. 	20
Confirmed subsurface, stable	<ul style="list-style-type: none"> Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities, at the MRS, are not likely to cause CWM to be exposed. Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed. 	15
Suspected (physical evidence)	<ul style="list-style-type: none"> There is physical evidence, other than the documented presence of CWM, indicating that CWM may be present at the MRS. 	10
Suspected (historical evidence)	<ul style="list-style-type: none"> There is historical evidence indicating that CWM may be present at the MRS. 	5
Subsurface, physical constraint	<ul style="list-style-type: none"> There is physical or historical evidence indicating that CWM 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 CWM. 	2
Evidence of no CWM	<ul style="list-style-type: none"> Following investigation of the MRS, there is physical evidence that there is no CWM present or there is historical evidence indicating that no CWM are present. 	0
LOCATION OF CWM	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 25).	5

DIRECTIONS: Document any MRS-specific data used in selecting the Location of CWM classifications in the space provided.

No historical records confirm previous CWM found.
The historical evidence is that the burial is suspect for containing CWM.

Table 14

CHE 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 any CWM. 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 the single highest score from above in the box to the right (maximum score = 10).	8

DIRECTIONS: Document any MRS-specific data used in selecting the *Ease of Access* classification in the space provided.

The MRS is partially unfenced and unmonitored.

Table 15

CHE Module: Status of Property Data Element Table

DIRECTIONS: Below are three classifications of the status of a property within the Department of Defense (the Department) 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 the Department. 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.	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 the Department, and the Department plans to transfer that land or water body to 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 rule is applied.	3
DoD control	* The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department controls access to the property 24 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 classification in the space provided.

The MRS is located on a wildlife refuge owned by the State.

Table 16

CHE Module: Population Density Data Element Table

DIRECTIONS: Below are three classifications of population density and their descriptions. Determine the population density per square mile in the vicinity of the MRS and circle the score that corresponds with the associated population density.

Note: If an MRS is located in more than one county, use the largest population density value among the counties. If the MRS is within or borders a city or town, use the population density for the city or town, rather than that of the county.

Classification	Description	Score
> 500 persons per square mile	* There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5
100–500 persons per square mile	* There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3
< 100 persons per square mile	* There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1
POPULATION DENSITY	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 Population Density classification in the space provided.

The town has a population density of 125 persons per square mile.

Table 17

CHE 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 population near the hazard. Determine the number of inhabited structures within two miles of the MRS boundary and circle the score that corresponds with the associated population near the hazard.

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 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* classification in the space provided.

The town, located less than one mile from the MRS, has 600 houses.

Table 18**CHE Module: Types of Activities/Structures Data Element Table**

DIRECTIONS: Below are five classifications of activities and/or inhabited structures near the hazard 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 score(s) that correspond with all the activities/structures classifications at the MRS.

Note: The term *Inhabited structures* 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, 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 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 *Types of Activities/Structures* classifications in the space provided.

The residential area is located less than two miles away. The MRS is located on a state wildlife refuge with Swampy Inc across the river.

Table 19

CHE 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 resource classification at 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 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* classification in the space provided.

Three endangered species exist on the MRS

Table 20
Determining the CHE Module Rating

DIRECTIONS:

- From Tables 11-19, record the data element scores in the **Score** boxes to the right.
- 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 **CHE Module Total** box below.
- 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.

	Source	Score	Value
CWM Hazard Factor Data Elements			
CWM Configuration	Table 11	30	40
Sources of CWM	Table 12	10	
Accessibility Factor Data Elements			
Location of CWM	Table 13	05	18
Ease of Access	Table 14	08	
Status of Property	Table 15	05	
Receptors Factor Data Elements			
Population Density	Table 16	03	16
Population Near Hazard	Table 17	05	
Types of Activities/ Structures	Table 18	05	
Ecological and /or Cultural Resources	Table 19	03	
CHE MODULE TOTAL			74
CHE Module Total	CHE Module Rating		
92 to 100	A		
82 to 91	B		
71 to 81	C		
60 to 70	D		
48 to 59	E		
38 to 47	F		
less than 38	G		
Alternative Module Ratings	Evaluation Pending		
	No Longer Required		
	No Known or Suspected CWM Hazard		
CHE MODULE RATING	C		

CWM, explosively configured

Damaged CWM/DMM surface or subsurface

Historical evidence

Fence is incomplete

Non-DoD Controlled

Population Density= 100-500 p/sq mi

Nearby suburbs >26 inhabited structures

Residential area <2 miles away

Ecological Resources - Endangered species

Add the data element scores recorded above

Select the Module Rating that corresponds with the module value calculated above

Record the Module Rating in the CHE Module Rating box