RCMD OVERVIEW

The U.S. Army Chemical Materials Activity (CMA) Recovered Chemical Materiel Directorate (RCMD) provides centralized management and direction to the Department of Defense for the assessment and disposal of recovered chemical warfare materiel (RCWM) in a safe and environmentally compliant manner.

RCMD leads the nation in the development and utilization of advanced technology to destroy RCWM. In 1997, the United States entered into force of the Chemical Weapons Convention (CWC), an international treaty requiring the destruction of chemical weapons.

In support of the CWC, RCMD maintains technology and personnel expertise to continue to destroy RCWM around the country.

RCMD personnel and equipment provide:

Tools, tactics and technologies to strengthen the Soldier's knowledge base in the assessment and treatment of chemical warfare materiel (CWM)

Proven, transportable assessment technologies to quickly respond to planned and unplanned CWM recoveries on site, most often in response to CWM unearthed during range-clearing operations and from relic burial sites

On-site destruction of RCWM using proven technologies that safely and effectively neutralize chemical warfare materiel while protecting operators, the community and the environment

Pictured, the Mobile Munition Assessment System, the Portable Isotopic Neutron Spectroscopy System and the Explosive Destruction System – essential tools and technologies in the response to RCWM.

U.S. ARMY CHEMICAL MATERIALS ACTIVITY | 8435 HOADLEY ROAD, BLDG. E4585 | APG, MD 21010
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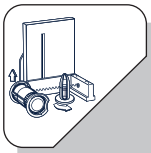
RCWM ASSESSMENT AND TREATMENT

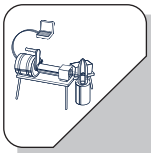
When an item of chemical and explosive concern is recovered, RCMD deploys its proven assessment technologies to the site to determine whether a munition is explosively configured or contains chemical agent. When items are identified as containing chemical agent, RCMD treatment technologies safely and effectively destroy munitions of all shapes and sizes, providing complete containment of the neutralization process while protecting operators, the community and the environment. Not all assessments result in a finding of recovered chemical warfare materiel. If the item does not contain chemical warfare materiel, it is disposed of locally.

ASSESSMENT TECHNOLOGIES



Digital Radiography and Computed Tomography System (DRCT)

DRCT uses X-ray technology to vertically scan recovered munitions on a rotating platform, reproducing a high-quality digital image of their interiors to determine whether a liquid fill is present, as well as the explosive potential of the item.



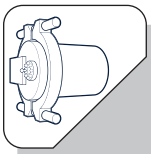
Portable Isotopic Neutron Spectroscopy System (PINS)

PINS accurately detects the presence of chemical elements by using neutron particles to produce a unique energy spectrum emitted by chemicals inside the munition.

Raman Spectrometer

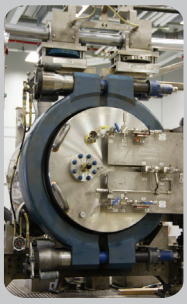
Raman Spectrometer identifies the contents of glass bottles that were part of Chemical Agent Identification Sets (CAIS), used for training decades ago. This technology uses a fiber optic probe and laser.

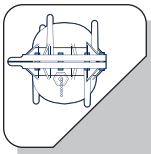
TREATMENT TECHNOLOGIES



Explosive Destruction System (EDS)

EDS is a total containment system that uses cutting charges to explosively access chemical munitions, eliminating their explosive capacity before the chemical agent is neutralized. The system's main component—a sealed, stainless-steel vessel—contains all the blast, vapor and fragments from the process. Treatment is confirmed by sampling residual liquid and air from the vessel prior to reopening the EDS. RCMD maintains five transportable EDS units to support both planned and quick-response operations.





Single CAIS Access and Neutralization System (SCANS)

SCANS treats small quantities of chemical agent found in CAIS items. CAIS items were used to train Soldiers in the identification and disposal of chemical warfare agent.

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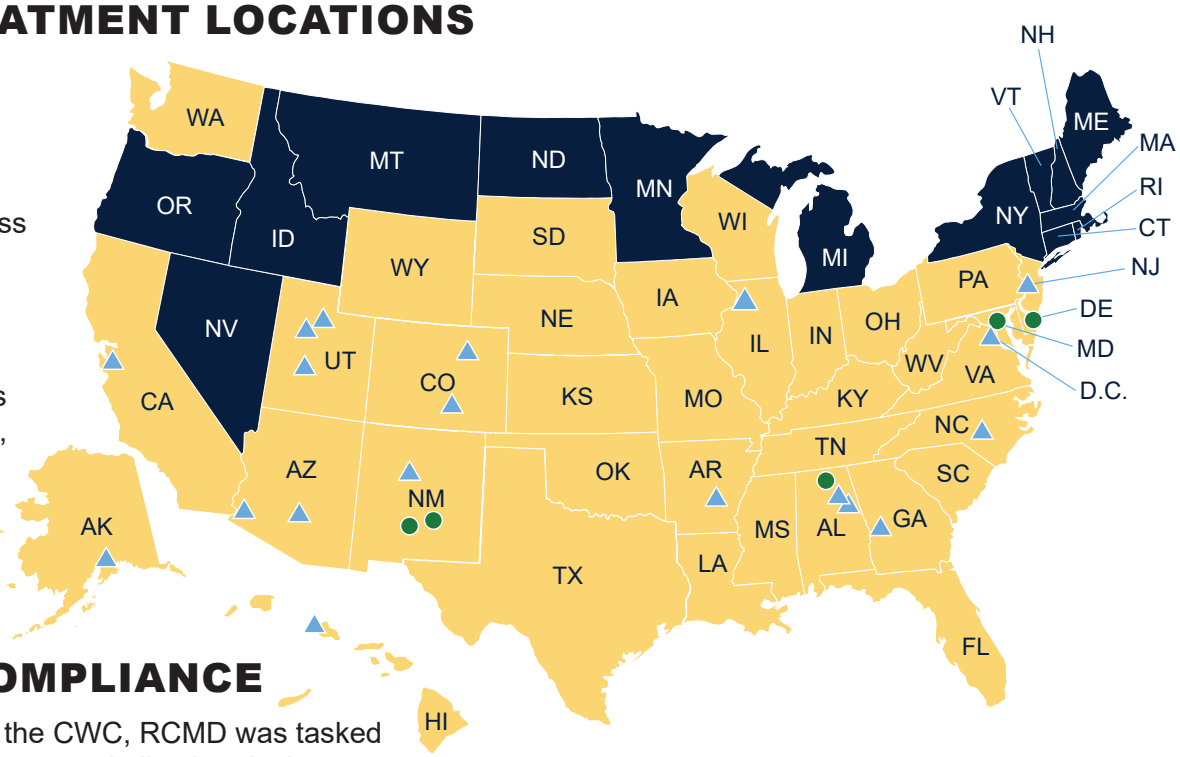
FACT SHEET

RCMD TREATMENT LOCATIONS

RCMD leads the Nation in the development and use of advanced technology to assess and treat RCWM. In 1997, the United States entered into force of the Chemical Weapons Convention (CWC), an international treaty requiring the destruction of chemical weapons.



TREATY COMPLIANCE

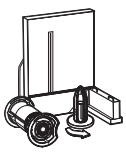
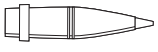
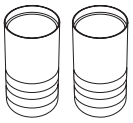
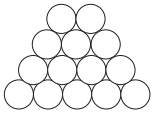
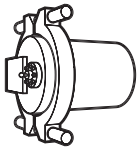
In compliance with the CWC, RCMD was tasked with destroying all non-stockpile chemical weapons and former chemical warfare production facilities. RCMD safely completed all major CWC destruction missions ahead of schedule. RCMD continues to assess and destroy RCWM as it is recovered, reporting all declared items to the Organisation for the Prohibition of Chemical Weapons, the international organization that verifies CWC compliance.

KEY

1994 – 2023

- Assessment missions performed to identify contents of items with unknown liquid fills
- No assessment or treatment missions performed
- Destruction operations of chemical warfare materiel
- Ongoing operations

RCMD BY THE NUMBERS

PERFORMED MORE THAN **3,500**	DESTROYED MORE THAN **13,000**	DESTROYED MORE THAN **258,000**	DESTROYED MORE THAN **57,000**	DECONTAMINATED AND DESTROYED OR RECYCLED **7,824**	DESTROYED **10**	DESTROYED MORE THAN **3,800**
ASSESSMENTS IN THE **UNITED STATES**	CAIS ITEMS **USING EDS AND SCANS**	155MM BINARY PROJECTILE BODIES AT **HAWTHORNE ARMY DEPOT, NV**	CANISTERS / DRUMS OF BINARY CHEMICALS IN **PINE BLUFF, AR**	TON CONTAINERS IN **MD, AR AND UT**	CHEMICAL WEAPONS PRODUCTION FACILITIES IN FIVE STATES **AL, AR, CO, MD, IN**	ITEMS USING EDS AS OF APRIL 2023
						

RECOVERED CHEMICAL MATERIEL DIRECTORATE

FACT SHEET

RCWM PROGRAM

USACE

1

History

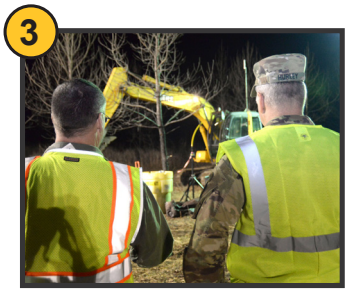
During the early part of the 20th century, chemical agents and munitions were tested and later disposed of on active military installations. Until the 1970s, burial was an internationally accepted means of disposal.

2

Discovery

The U.S. Army Corps of Engineers (USACE) locates chemical warfare materiel based on historical records and investigations by government authorities, land inventories, surveys or incidental discoveries.

3



Investigation

The objective of the investigation phase is to determine the nature and extent of contamination and evaluate the potential risk to human health and environment.

4

Remediation

During the remediation phase, the selected remedial action is implemented, e.g., source removal, land-use controls, long-term management.

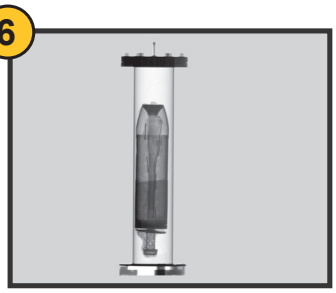
RCMD

5

Packaging and Storage

Operators package a suspect item in a Multiple Round Container (MRC) for safe transport to the nearest military installation. Items are stored in an interim holding facility or igloo, if available, pending assessment and destruction.

6



Assessment

Recovered items with unknown fills are assessed by RCMD using Digital Radiography and Computed Tomography (DRCT), Portable Isotopic Neutron Spectroscopy (PINS) or Raman Spectrometry aboard the Mobile Munitions Assessment System (MMAS).

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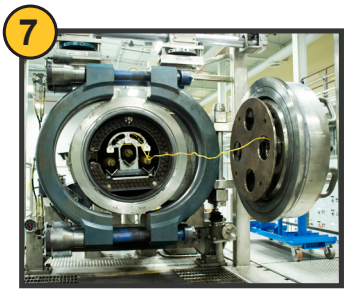

Destruction

Systems such as the EDS destroy recovered chemical munitions; Single CAIS Access and Neutralization System (SCANS) destroys Chemical Agent Identification Set (CAIS) bottles.

8

Waste Disposal and Site Closure

Waste from destruction operations is shipped to a permitted treatment, storage and disposal facility. The site is then closed in accordance with all local, state and federal regulations, permit requirements and international treaty standards.

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