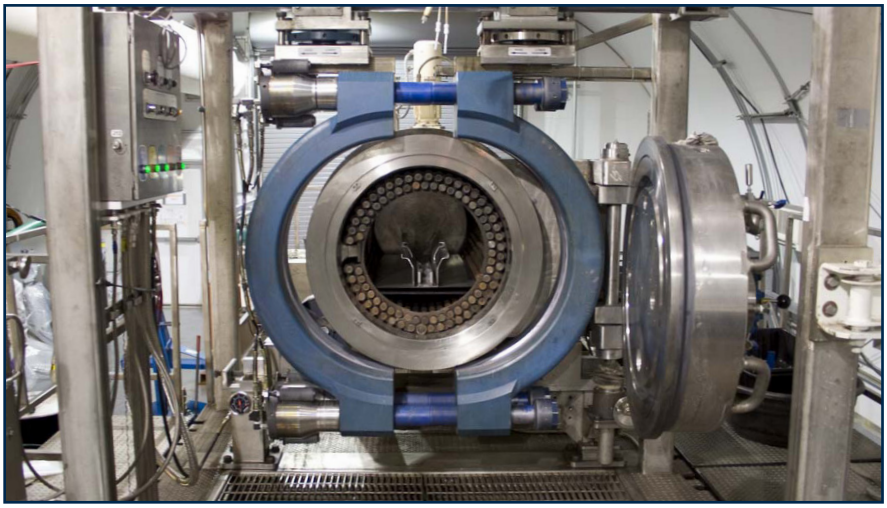
FACT SHEET

RECOVERED CHEMICAL MATERIEL DIRECTORATE

EXPLOSIVE DESTRUCTION SYSTEM (EDS) OVERVIEW



The Explosive Destruction System destroys recovered chemical warfare materiel while protecting workers and the environment.

The Explosive Destruction System (EDS) provides on-site treatment of chemical warfare materiel in a safe, environmentally sound manner. As an innovative alternative to the open detonation of explosively configured munitions, the EDS supports both planned and quick-response munition recovery operations.

The EDS uses cutting charges to explosively access chemical munitions, eliminating their explosive capacity before neutralizing the chemical agent. The system's main component, a sealed, stainless vessel, contains all the blast, vapor and fragments from the process. Operators confirm treatment by sampling residual liquid and air from the vessel prior to reopening the EDS.

The success of the first EDS, known as EDS Phase 1, led to the development of a second EDS, known as EDS Phase 2, constructed to contain larger materiel in both size and explosive content. The EDS 2 handles the same items as the EDS 1, plus 155mm and 8-inch projectiles. Both systems, mounted on trailers, transport easily where needed.

The EDS site layout, set up in accordance with all applicable laws and permit requirements, ensures the overall safety of the workers and the environment. The EDS vessel contains all the blast, vapor and fragments from the process and the continuous air monitoring conducted at every EDS site ensures protection. The U.S. Army Chemical Materials Activity Recovered Chemical Materiel Directorate takes all precautions during operations seriously, and safety remains the top priority.

QUICK FACTS

- RCMD maintains five transportable EDS units; two Phase 1 and three Phase 2.
- Phase 1 weighs 32,000 pounds with an explosive rating of 1.5 pounds (TNT Equivalent).
- Phase 2 weighs 68,000 pounds with an explosive rating of 4.8 pounds (TNT Equivalent).
- More than 2,000 items treated in full compliance with all safety and environmental regulatory requirements.
- Phase 1 processes up to three (or six) items at once including: 4.2-inch mortars, 75 mm artillery shells, livens projectiles and bomblets.
- Phase 2 processes up to three (or six) items at once including: 4.2-inch mortars, 75 mm artillery shells, 105 mm projectiles, 155 mm projectiles and 8-inch projectiles.
- Both EDS vessels treat mustard, phosgene, G-series agents, VX, lewisite, cyanogen chloride, hydrogen cyanide, chloropicrin and chloroacetophenone and chloropicrin in chloroform (CNS).
- Successfully completed missions include: Aberdeen Proving Ground (APG), Maryland; Spring Valley, Washington, D.C.; Dover Air Force Base, Delaware; Former Camp Sibert, Alabama; Pine Bluff Arsenal, Arkansas; Rocky Mountain Arsenal, Colorado; and Redstone Arsenal, Alabama. Testing for the EDS was conducted at Porton Down, United Kingdom, and APG.

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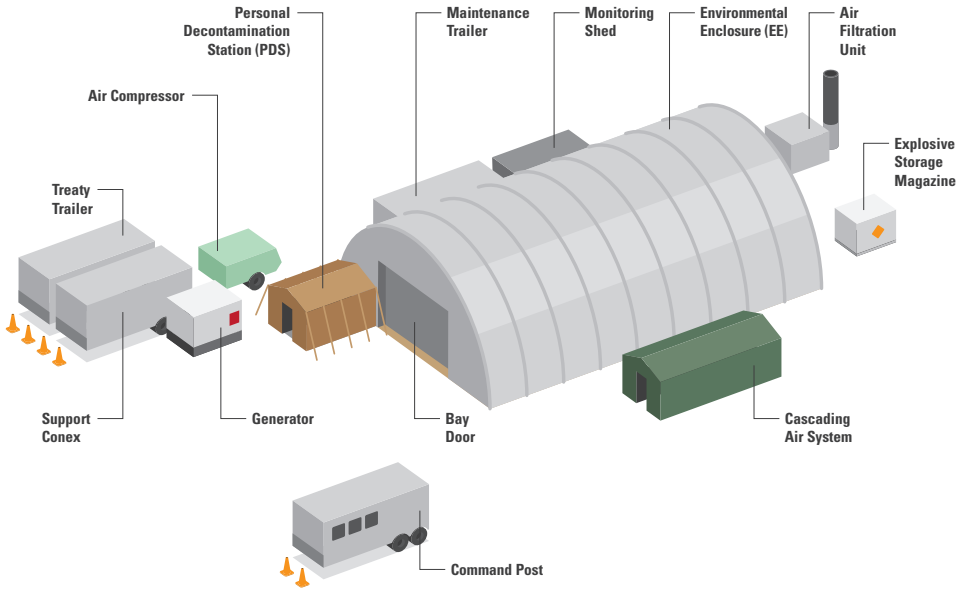
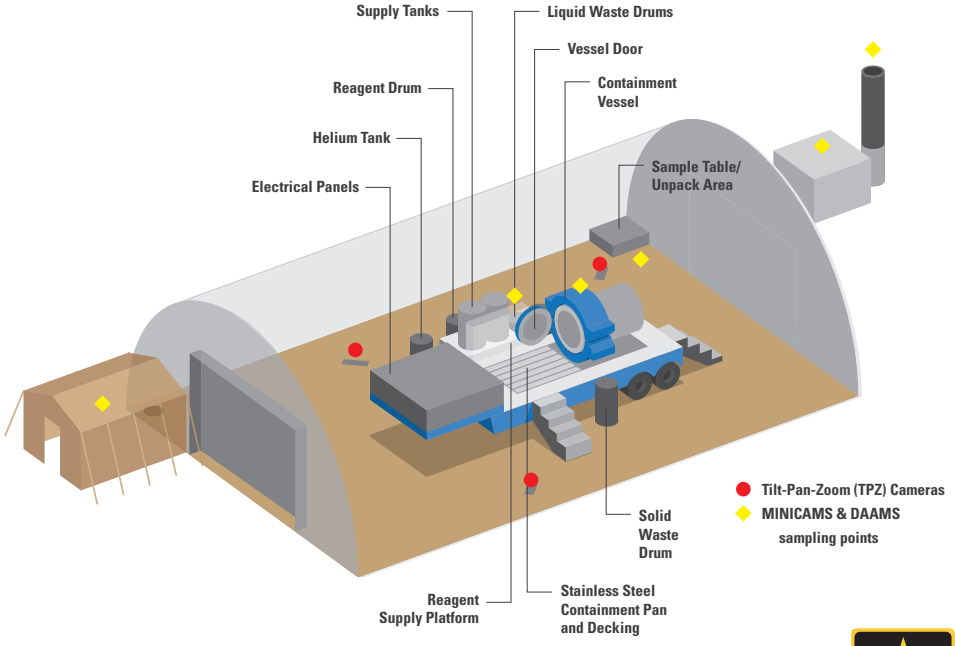
TYPICAL EDS SITE LAYOUT (EXTERIOR)



TYPICAL EDS SITE LAYOUT (INTERIOR)



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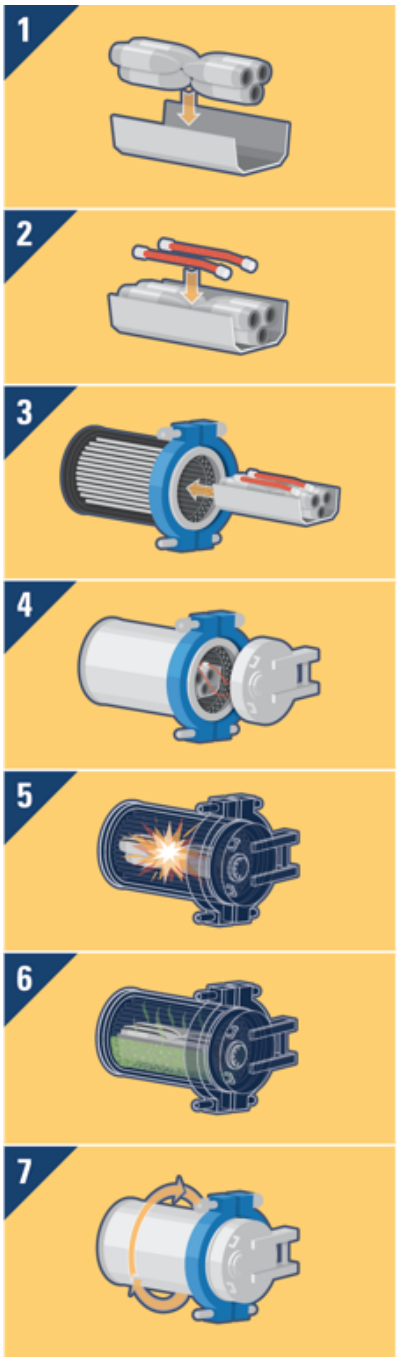
HOW DOES THE EDS WORK?



Step 1
Operators bring the overpacked munitions into the environmental enclosure, unpack the munitions and place them in the munition holder, which can hold up to six munitions.

Step 2
Operators attach linear shaped charges along the munition bodies.

Step 3
Operators slide the items into the EDS vessel where the Fragment Suppression System (FSS) or Advanced Fragment Suppression System (AFSS) surrounds them, protecting the chamber of the EDS during operations. The AFSS efficiently allows operators to replace the individual damaged rods instead of the entire system.

Step 4
Electrical components are attached, then the door is closed and sealed, and the seal is validated.

Step 5
Operators remotely detonate the linear shaped charges to access the munition bodies and their chemical fill, while eliminating their explosive capacity.

Step 6
Neutralization chemicals are added and the vessel is heated, if needed, using steam heating technology that injects live steam directly into the EDS, heating the vessel on the inside only.

Step 7
Operators rotate the unit to mix the contents and neutralize the chemical fill. They confirm treatment by sampling residual liquid and air from the vessel prior to reopening the EDS. Finally, they remove the contents and package them for transport to an approved facility for treatment as hazardous waste.

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