



# **The Path Forward – U.S. Capabilities to Assist in the Safe Disposal of Chemical Weapons**

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# Overview

- Recent Program Accomplishments
- Stockpile Program
- Recovered Chemical Weapons Assessment and Disposal Capabilities
- Path Forward – Capabilities to Assist Other Countries in Demilitarization and Safe Disposal of Chemical Weapons



# Recent Program Accomplishments

- More than 42% of the U.S. chemical agent stockpile has been safely destroyed since CWC entry-into-force
- U.S. remains ahead of schedule to meet December 2007 CWC 45% destruction milestone
- 100% destruction milestone for former chemical warfare production facilities was met in April 2007
- Newport Facility completed neutralization of 50% of the Newport stockpile of nerve agent VX – destruction of hydrolysate began in April 2007
- Aberdeen Facility has now completed both operations and facility closure – closure planning ongoing for other facilities
- Completed destruction of all binary chemical weapon precursors – disposal of neutralent ongoing



# Safety is Top Priority

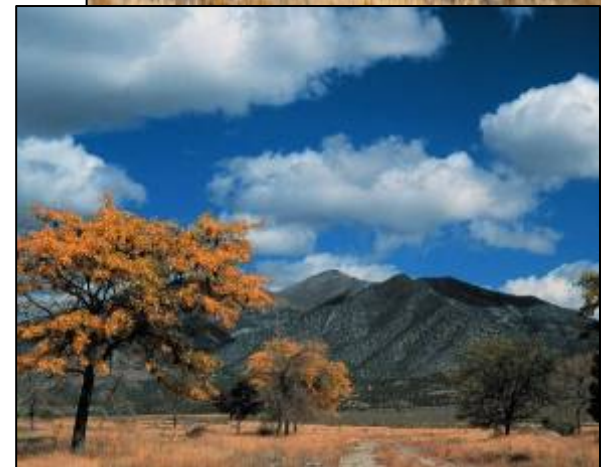


- The program's overall recordable injury rate (RIR) is 1.2, compared to a chemical manufacturing median RIR of 2.4
- Anniston Facility surpassed 10 million hours without a lost-workday incident, the first time a U.S. demilitarization facility has reached this level
- Anniston and Umatilla Facilities received Government awards for exemplary workplace health and safety



# Environmental Stewardship

- The U.S. is committed to:
  - Maximum protection of the public, workers, and the environment
  - Environmental protection and compliance with environmental regulations
- Treatment of Newport Hydrolysate complies with permitting requirements for a commercial treatment, storage, and disposal facility
  - Similar to wastewater generated in industry today
  - Independent government reviews found no unique transportation concerns
  - Voluntarily exceeded regulations for shipments to commercial facility
  - Waste is being destroyed under existing facility permit





# Stockpile Program



- Demonstrated capability to design, construction, operation, and close large-scale demilitarization facilities
  - Built to process large numbers of munitions and multiple agents
  - Agent Migration and Explosive Safety design considerations
- Tailored engineering solutions to address processing challenges
  - Aging chemical agent and munitions
  - Mustard Agent Heels
  - Mercury contamination
  - Secondary waste disposal





# Non-Stockpile Chemical Materiel Project

- Demonstrated government and industry core capabilities:
  - Survey potential burial sites
  - Support assessment and recovery of suspected chemical weapons
  - Plan for recovery, transportation, interim storage, and final disposal
  - Transportable disposal systems for safe disposal of recovered chemical materiel in accordance with environmental regulations
  - Safe destruction of former production facilities
- Solutions are tailored to specific requirements for safe, expedient, and cost effective destruction of recovered chemical munitions





# Schofield Barracks

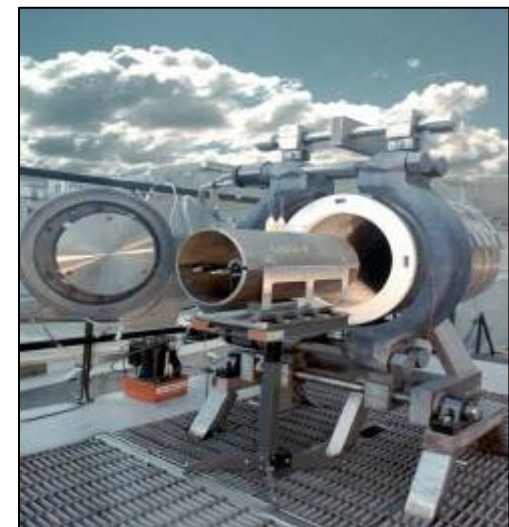
- Example of U.S. cradle to grave capability for the recovery and disposal of buried chemical munitions
  - Site surveys of potential burials
  - Non-intrusive assessments of suspect munitions
  - Deployment of mobile treatment systems for on-site safe disposal of chemical items





# Explosive Destruction System (EDS)

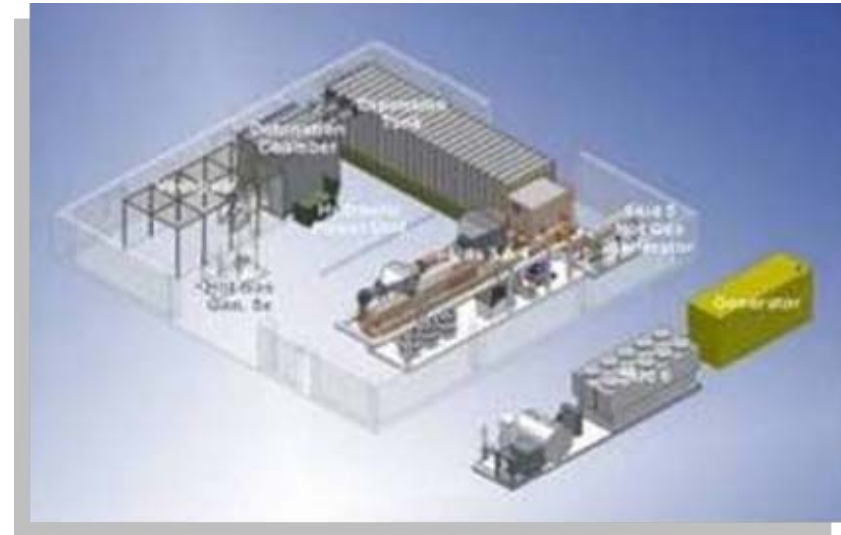
- EDS is a total containment mobile system which eliminates airborne hazards, contains all blast fragments, and allows treatment of chemical fills by neutralization
- Developed to meet the U.S. CWC requirement to destroy recovered chemical materiel and support future disposal of recovered chemical materiel
- Tailored solution provides for cost-effective disposal while ensuring compliance with environmental regulations





# Controlled Detonation Chamber

- Successfully completed Demonstration/Validation Testing in March 2006
- Demonstrated maximum daily throughput of 16 (8 doubles) & 3 day throughput of 42 (21 doubles)
- Proven capability to destroy a range of conventional and chemical weapons





# U.S. Capabilities to Assist in the Safe Disposal of Chemical Weapons

- Full life-cycle management of non-stockpile chemical materiel
  - Surveys, recovery, assessment, interim storage, safe destruction, and waste disposal
- Assessment of suspected chemical weapons using technology and subject matter expertise
  - Portable Isotopic Neutron Spectroscopy (PINS)
  - Mobile Munitions Assessment System (MMAS)





# The Path Forward

- **Current challenges include:**
  - Monitoring regulatory environment to anticipate changing requirements
  - Identifying and pursuing secondary waste destruction alternatives
  - Working with stakeholders to identify chemical agent disposal facility closure requirements
  - Continual efforts to meet CWC requirements
  - Ongoing technical challenges
- **Continued efficient disposal of the U.S. chemical weapons stockpile while ensuring the safety of the workers, environment, and the public**