

Explosive Destruction Technology (EDT) Environmental Assessment (EA) Public Meeting



Purpose and Need

24 April 2012

Presented to:

Pueblo County Community

Presented by:

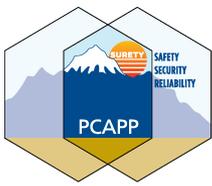
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A PARTNERSHIP FOR SAFE
CHEMICAL WEAPONS DESTRUCTION

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U.S. Army Element, Assembled
Chemical Weapons Alternatives



Pueblo Chemical Agent
Destruction Pilot Plant

Agenda

- **Environmental Assessment Proposed Action**
- **Environmental Assessment Purpose and Need**
 - Problematic Rounds
- **EDT Potential Feeds**
 - Overpacks
 - Rejects
 - Energetic Components
- **EDT Potential Feed Quantities**
- **Summary**



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Proposed Action

As Stated in the Environmental Assessment:

The **proposed action** is to **deploy** and operate specialized **EDT** equipment for the safe and timely **destruction** of **overpacked** mustard-filled chemical munitions currently being stored at the PCD and anticipated **reject munitions**, and to dispose of **explosive components** and associated wastes, in an environmentally acceptable and cost-effective manner. The proposed EDT facility would be constructed and operated within the boundaries of the PCD.

PCD – Pueblo Chemical Depot



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Purpose and Need

As Stated in the Environmental Assessment:

The **purpose** of the proposed action is to provide for the **destruction** of the **problematic chemical munitions** and provide operational flexibility for the destruction of the explosive components currently being stored at the PCD by augmenting the planned chemical agent destruction capabilities of the PCAPP. The equipment being designed and installed for the PCAPP will not be able to accomplish the draining of mustard agent from munitions that prove difficult to disassemble due to existing leakage and/or their condition. Unless the mustard agents can be successfully accessed and drained from the munitions, the PCAPP cannot complete the destruction of these mustard agents. In addition, the explosive components removed from the munitions could also be destroyed in the proposed EDT facility, thereby eliminating the need for further treatment or processing of these components prior to their eventual off-site disposal. The proposed action would thus provide a solution for the processing and destruction of the problematic munitions at the PCD, as well as the explosive components.



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Purpose and Need

As Stated in the Environmental Assessment:

The proposed action is **needed** to show progress toward meeting U.S. **obligations** under the international **Chemical Weapons Convention (CWC)** (OPCW 2005) and U.S. Congressional directives (see Public Law 99-145, et seq., and Section 8119 of Public Law 110-116) for destroying the entire U.S. stockpile of lethal, unitary chemical warfare agents. In addition, the completion of the proposed action, in conjunction with the completion of operations at the PCAPP, would eliminate the need for continued surveillance and maintenance of the mustard agents and munitions currently being stored at the PCD.

OPCW – Organisation for the Prohibition of Chemical Weapons



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EDT Potential Feed Materials

- **Overpacked Munitions**
 - Previously sampled or leaking munitions in propellant charge cans and/or single round containers (SRCs)
- **Reject munitions**
 - Items that can not be processed through the plant by normal means
- **Energetic material**
 - Those that are determined to be agent contaminated
 - Those that would require further processing
 - Based on economics or practicality (desired feeds)



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Overpacked Munitions

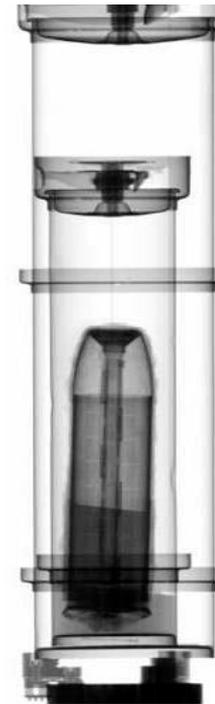
■ Overpacked Munitions

- Currently there are 547 overpacks containing munitions that were previously sampled or have been identified as leakers. Some minimal additional quantity is anticipated before PCAPP operations
- They are configured either in propellant charge cans or single round containers, or both
- If not processed in an EDT, these would have to be manually reconfigured to minimize plant contamination

Mortar in double overpack



Single Round Container



Propellant Charge Cans



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Reject Munitions

- **Reject munitions**
 - Items that can not be processed through the plant by normal means
 - Quantities estimated based on previous experience and results of Linear Projectile Mortar Disassembly machine (LPMD) testing at Anniston Chemical Agent Disposal Facility (ANCDF)



Fuze falls off a 4.2" mortar during processing at ANCDF



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Reject Munitions – 4.2" Mortar

- **Reject types – 4.2" mortar**
 - Stuck fuzes at the Nose Closure Removal Station
 - The chuck was unable to tightly grasp the fuze and would slip when trying to unscrew it
 - The equipment reached its set torque limit and would stall before removing the fuze



Gimbal Cam Socket moving into place to remove a fuze
(105mm projectile shown)



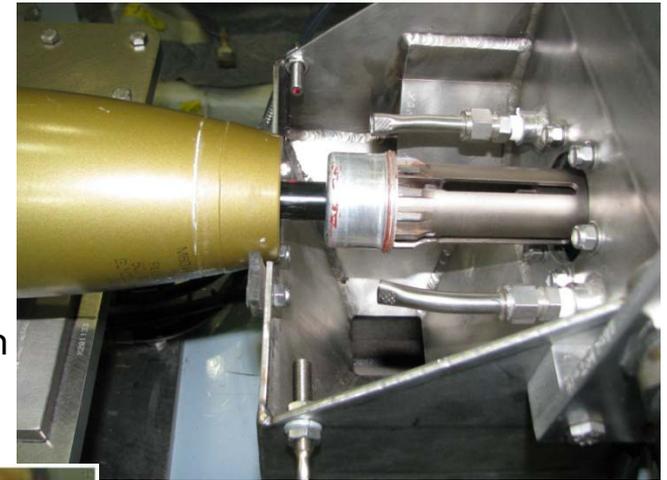
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Reject Munitions –Projectiles

■ Reject types

- Stuck hex plugs at the Nose Closure Removal Station
- Bursters stuck to fuze well cups at the Miscellaneous Parts Removal Station
- Stuck bursters at the Burster Removal Station
 - Debris in munitions hindered removal
 - Most prevalent issue

Burster stuck
to fuze well
cup during
LPMD
demonstration



Munitions contained rust and
debris that hindered processing



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Energetic Material

■ Energetic material

- Based on discussions with Treatment Storage and Disposal Facilities (TSDF), two components removed from the munition can not be treated without being further processed
 - 4.2" fuze and burster are attached and require separation before shipment. While this capability is being built into the plant, it does add a step in the process that increases process risk
 - The 155mm burster is too large for TSDF treatment without size reduction. This capability is not built into the plant and would require the TSDF or third party to size reduce adding risk
 - There are approximately 100,000 4.2" fuze/burster components and 300,000 155mm bursters that may, as a result, be processed in an EDT



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Energetic Material (cont)

- **Energetic material**

- Energetics and energetic components (i.e. fuzes) that are contaminated and not able to be sent off-site for disposal, will be destroyed in the EDT (very limited quantity anticipated)
- Although current estimates that the cost to process energetics within an EDT is on par with treating off-site, economics and convenience may warrant on-site processing. This would include fuzes, bursters, and propellant (represented as “Desired Feeds” in the EA).



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Potential Feed Quantities

Table 1-2. List of Materials to be Processed by the Proposed EDT Facility.

Item	155-mm Projectiles	105-mm Projectiles	4.2-in. Mortar Rounds
<i>Required Feeds</i>			
Overpacks	400	400	200
Rejects (estimated)	4,600	5,990	1,420
Downloaded energetic material:			
Bursters	299,554	N/A	N/A
Fuzes/boosters	N/A	28,376	N/A
Fuze/burster combination	N/A	N/A	97,106
<i>Desired Feeds</i>			
Additional downloaded energetic material:			
Bursters	N/A	383,418	N/A
Propelling charges	N/A	78,031 pounds	60,011 pounds

Notes: N/A indicates the specified item is not applicable to the type of munition shown,



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Summary

■ Summary

- EDT is required to process those items that present additional risks if processed in the plant (overpacks and rejects) or sent off-site for disposal (energetic components)
- Current total number of munitions that may require processing in an EDT, including overpacks, and rejects is estimated as an upper bound of 13,000 for the purposes of determining the environmental impact.
- Energetic material is also anticipated to be processed in an EDT to be determined by risk and economics