

# Monthly Status Briefing

*December 2012*



Pueblo Chemical Agent-Destruction Pilot Plant



Program Executive Office  
Assembled Chemical Weapons Alternatives



# PCAPP

Pueblo Chemical Agent-Destruction Pilot Plant

[www.peoacwa.army.mil](http://www.peoacwa.army.mil)



A PARTNERSHIP FOR SAFE CHEMICAL WEAPONS DESTRUCTION

# Project Background

- The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) will safely destroy 2,611 tons of mustard agent in mortar rounds and artillery projectiles stored at the U.S. Army Pueblo Chemical Depot (PCD).
- Neutralization followed by biotreatment is the technology selected by the Department of Defense to destroy the Pueblo chemical weapons stockpile.
- The Program Executive Officer, Assembled Chemical Weapons Alternatives (ACWA), headquartered at Aberdeen Proving Ground, Maryland, is responsible for managing all aspects of the safe and environmentally sound destruction of the chemical weapons stockpiles in Colorado and Kentucky.
- The Bechtel Pueblo Team (BPT) is a partnership of Bechtel National, Inc., URS, Parsons, and Battelle Memorial Institute. The BPT functions as the systems contractor selected to design, build, systemize, pilot test, operate, and close the PCAPP.

# Bechtel Pueblo Team

## Systems Contractor

- Project management
- Business services
- Safety and quality



- Design/engineering
- Procurement/subcontracting
- Construction

## Teaming Subcontractors



**URS**

- Systemization
- Pilot testing
- Operations
- Closure



**PARSONS**

- Process design
- Process equipment fabrication
- Support to systemization and operations



**Battelle**

- Environmental permitting and compliance
- Laboratory management
- Pilot testing



- Bechtel Pueblo Team non-manual: **572**
  - Pueblo County local hires: 149
  - Colorado hires (outside Pueblo County): 39
  - Other locations: 3
- Construction Workers: **105**
  - Bechtel direct-hire craft workers: 33
  - Subcontractor personnel: 72

# Employment Opportunities

## Hotline

(719)549-4003

## Website

<http://pueblo.bechtel.com>

As of November 30, 2012,  
PCAPP Project staff accomplished:

- 218 Safe Work Days
- 1,262,191 Safe Work Hours



## Step 1



### Removal of Energetics

Robotic equipment removes energetics (explosives) from the weapon. The energetics will be disposed of at a permitted facility offsite.

## Step 2



### Removal of Mustard Agent

The inside of the weapon is remotely accessed and mustard agent is washed out with high-pressure water.

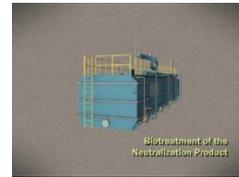
## Step 3



### Neutralization of Mustard Agent

The mustard agent is neutralized with caustic solution and hot water. The byproduct is called hydrolysate.

## Step 4



### Biotreatment

Microbes treat the hydrolysate, breaking it down into brine. The brine is separated with water being recycled back to the plant and salt cakes shipped for disposal at a permitted facility.

## Step 5

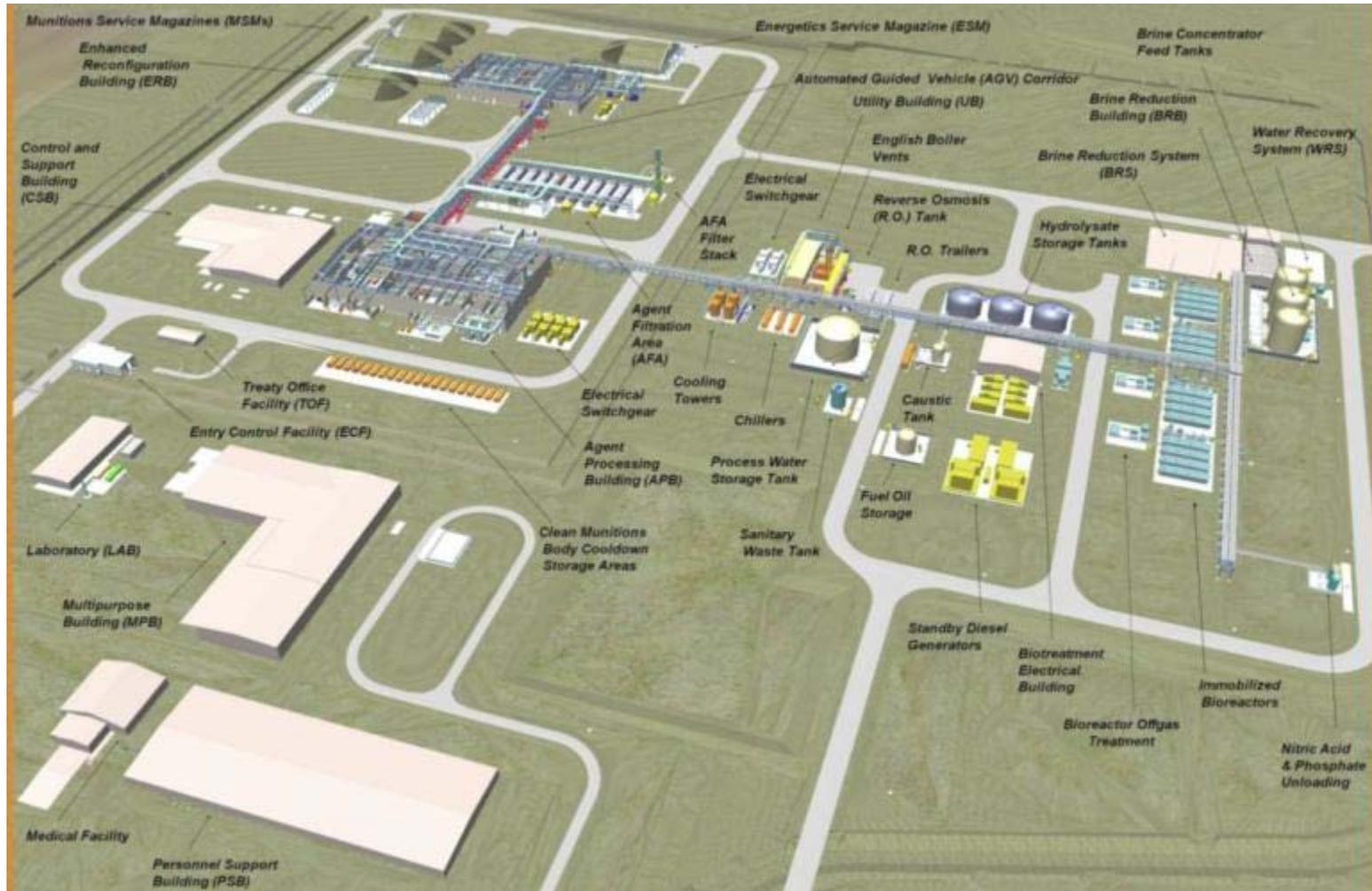


### Thermal Treatment and Disposal of Metal Parts

Metal Parts are heated to 1,000 degrees Fahrenheit for 15 minutes and can then be recycled.

**Neutralization followed by biotreatment will be used to destroy the Colorado chemical weapons stockpile.**

# Pueblo Chemical Agent-Destruction Pilot Plant—Site Plan



# PCAPP Site Overview



Northwestern Corner - Observation Point

- |   |                                   |   |                                     |
|---|-----------------------------------|---|-------------------------------------|
| 1 | Enhanced Reconfiguration Building | 5 | Agent Filtration Area               |
| 2 | Automated Guided Vehicle Corridor | 6 | Munitions Service Magazine          |
| 3 | Agent Processing Building         | 7 | Control and Support Building        |
| 4 | Biotreatment Area                 | 8 | Munitions Service Magazine corridor |

## As the project transitions from construction to systemization, the following systems have been turned over to the start-up group to begin the systemization process:

- Plant & Instrument Air
- Hot Process Water—Agent Processing Building (APB) Hot Process Water Tank and Heating Coil.
- Agent Collection and Neutralization System—Hydrolysate Collection and Storage—Yard
- HVAC Hot Water—Pumps and related tanks, Heat Exchangers and Outside Rack Piping
- Breathing Air—A & B Compressor/Purifier Packages, Receiver and Chiller, Bottle Filling Station
- Enhanced Reconfiguration Building (ERB) Supply Air Handling Units/Control Room and Support Areas Ventilation System
- Steam Supply—Fuel Oil Piping, Natural Gas Piping, Amine Feed Skid, Boilers A & B" and Outside Rack Steam
- ERB 480V Substation
- Steam and Condensate—APB/Biotreatment Area (BTA)/Brine Reduction System (BRS) Distribution
- Bulk Chemical Storage and Distribution—DAP, UREA and 25% caustic
- Projectile Handling and Projectile Disassembly—Projectile Mortar Disassembly systems and Related Equipment—Lines 1, 2, and 3



To learn more about Systemization, watch the video at  
[http://www.peoacwa.army.mil/info/video/systemization\\_yt.html](http://www.peoacwa.army.mil/info/video/systemization_yt.html)

# Systemization (cont.)

- Brine Reduction Belt Feed System
- Chilled Water—Chillers, Distribution to various HVAC units, recirculation units, autoclave and Off-Gas Treatment scrubber
- Decon Solution Storage and Distribution—APB
- Immobilized Cell Bioreactor (ICB) Feed, Biotreatment, ICB Blower and Off Gas Treatment—Modules 1/2/3/4
- Plant Air—BTA, APB and ERB Distribution
- Process Cooling Water—BRS Distribution
- Potable Water—ERB, APB and BRS
- ERB Electrical Room Ventilation System
- Munitions/Parts Monitoring-ERB
- Process Cooling Water—PCW pumps, tanks, chemical feed skids, cooling towers, BRS Distribution
- Main Sanitary Waste—Lift Stations, Waste Tank and Pumps
- Non-Essential Power Panel-Entry Control Facility (ECF)
- Critical Power Panels—ERB
- Essential Power Panel—ECF
- Water Recovery—Brine Concentrator Feed Tanks “A”, “B”, and “C” and BC Feed Tanks Off-Gas Treatment
- Munitions Washout System-Instrument Air Distribution, Process Water Distribution, Hydraulic Power Line 1 & 2
- Munitions Treatment Units #1 and #1; Munition Body Storage Building-Gravity Conveyors\*
- APB HVAC: Supply Air Handling Units, Battery Room Ventilation System; Cascade Ventilation System, Operator Work Station Ventilation System\*
- Agent Monitoring: Agent Filtration Area; Laboratory\*



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\*Newly added

# Agent Processing Building



Checking and verifying components to make sure they are installed and wired correctly is a part of pre-commissioning activities currently underway at PCAPP. Here, a worker checks a Munitions Treatment Unit (MTU). The MTU will heat agent residue from emptied munitions to 1,000 degrees Fahrenheit.

# Enhanced Reconfiguration Building



**Maintenance Technician Charlie Burlingame does a mechanical component check on a Parts Monitoring Enclosure (PME), inside the Parts Monitoring Area. The PMEs will monitor miscellaneous parts for agent.**

# Biotreatment Area



The Brine Reduction System, located in the Biotreatment Area, will extract water from biotreated effluent for recycling and reuse at the site.

# Small Business Outreach



**PCAPP Small Business Advocate Tanya Musso talks with a potential vendor at the Annual Southern Colorado Business Resource Conference, held on Nov. 29. Approximately 40 people stopped by the booth to talk about the PCAPP project.**

# Contact Information



## **Pueblo Chemical Stockpile Outreach Office**

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