

Pueblo Chemical Agent-Destruction Pilot Plant

# Monthly Status Briefing

*July 2012*



**PCAPP**

Pueblo Chemical Agent-Destruction Pilot Plant

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



- Systemization
- Pilot testing
- Operations
- Closure



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



- Environmental permitting and compliance
- Laboratory management
- Pilot testing

# Staffing



- Bechtel Pueblo Team non-manual: **653**
  - Pueblo: 644 (165 local hires)
  - Other locations: 9
  
- Construction Workers: **337**
  - Bechtel direct-hire craft workers: 319
  - Subcontractor personnel: 18

# Employment Opportunities

## Hotline

(719)549-4003

## Website

<http://pueblo.bechtel.com>



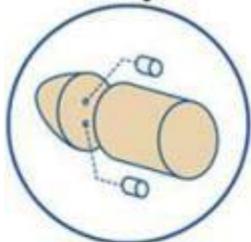
As of June 30, 2012,  
PCAPP Project staff accomplished:

- 65 Safe Work Days
- 386,113 Safe Work Hours



# Destruction Technology

## Step 1



### REMOVAL OF ENERGETICS

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

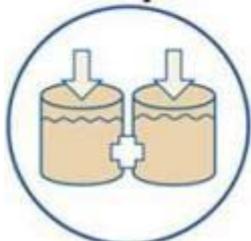
## Step 2



### REMOVAL OF MUSTARD AGENT

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

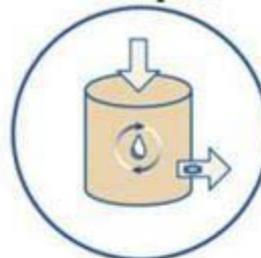
## Step 3



### NEUTRALIZATION OF MUSTARD AGENT

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

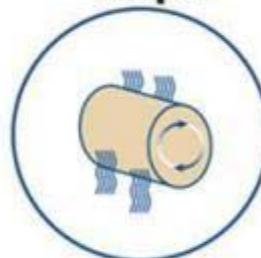
## Step 4



### BIOTREATMENT

The hydrolysate is treated with microbes that break down the solution into water and biosludge. Water is recycled in the plant, and biosludge is shipped for disposal at a permitted facility.

## Step 5

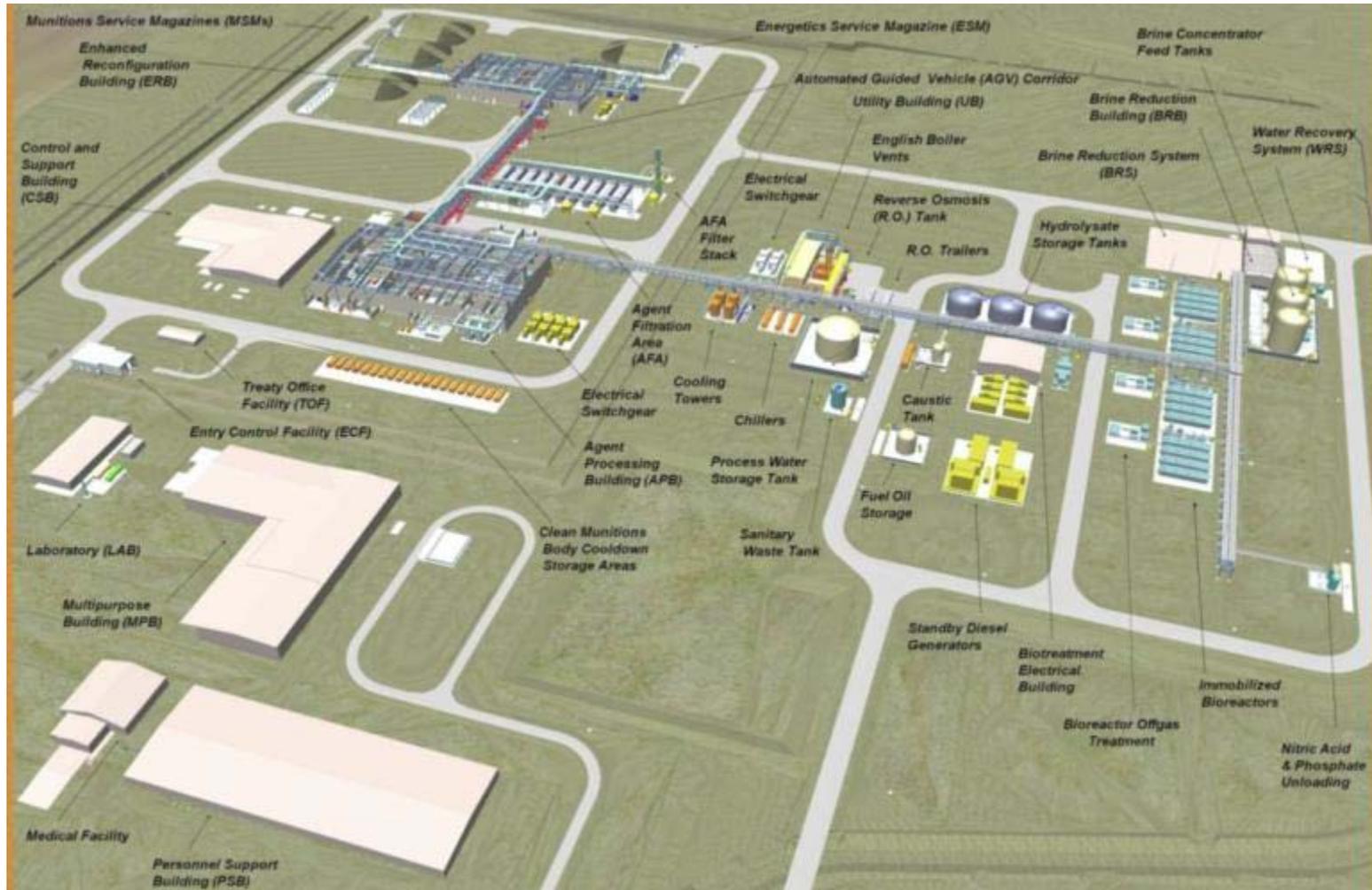


### DISPOSAL OF METAL PARTS

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

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

# Construction Status – In Progress

- **Enhanced Reconfiguration Building**—Continuing electrical punch list items and energetics work, preparing for coatings placement in the Munitions Service Magazine area.
- **Agent Processing Building**—Continuing electrical installations, piping and instrumentation installations.
- **Laboratory**—HVAC and electrical installations.
- **Balance of Facilities**—Continue final grade, sidewalks in the yard area
- **Biotreatment Area**—Continuing coatings preparations for the Immobilized Cell Bioreactor pads; completed hydro testing of the Brine Concentrator Feed tanks and 30-day hydrolysate storage tanks.
- **Brine Reduction System**—Completed electrical installations, including installations for Biotreatment Electrical Building
- **Entry Control Facility**—Electrical installations continuing.



**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:**

- Instrument Air—IA Compressor "A," Dryer "A," Main Air Receiver and Yard Distribution Piping
- Hot Process Water—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—Bottle Filling Station
- ERB Supply Air Handling Units/Control Room and Support Areas Ventilation System
- Steam Supply—Fuel Oil Piping, Natural Gas Piping, Amine Feed Skid, Boiler "A" and Outside Rack Steam
- Steam Supply—Boiler "B"
- Steam and Condensate—APB/BTA Distribution
- Bulk Chemical Storage and Distribution—DAP
- Bulk Chemical Storage and Distribution—25% Caustic
- Projectile Handling and Projectile Disassembly—PMDs and Related Equipment—Lines 1, 2, and 3.
- Water Recovery—Tanks "A", "B", and "C"
- Bioreactor Off-Gas Treatment—Module 1 thru 4



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

# Systemization (cont.)

- Potable Water—BRS Distribution\*
- ERB 480V Substation\*
- ERB Battery Rooms' Ventilation System\*
- Brine Reduction Belt Feed System\*
- Water Recovery— Brine concentrator (BC) Feed Tanks Off-Gas Treatment\*
- Process Cooling Water—Cooling Tower Chemical Feed Skids\*
- Chilled Water—Distribution to various APB HVAC units, recirculation units, autoclave and OTS scrubber\*
- HVAC Hot Water—Distribution to various APB unit heaters and HVAC units\*
- Decon Solution Storage and Distribution—APB\*
- Immobilized cell bioreactor (ICB ) Feed, Biotreatment, ICB Blower and Air Distribution — Modules 1/2/3/4\*
- Plant Air - BTA Distribution\*
- Plant Air—APB Distribution\*
- Steam and Condensate—BRS Distribution\*
- Process Cooling Water—BRS Distribution\*
- Potable Water—APB Potable Water Break Tank, Booster Pumps and Distribution\*
- ERB Electrical Room Ventilation System\*



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[http://www.pmacwa.army.mil/info/video/systemization\\_yt.html](http://www.pmacwa.army.mil/info/video/systemization_yt.html)

\*Newly added

# Agent Processing Building (APB)



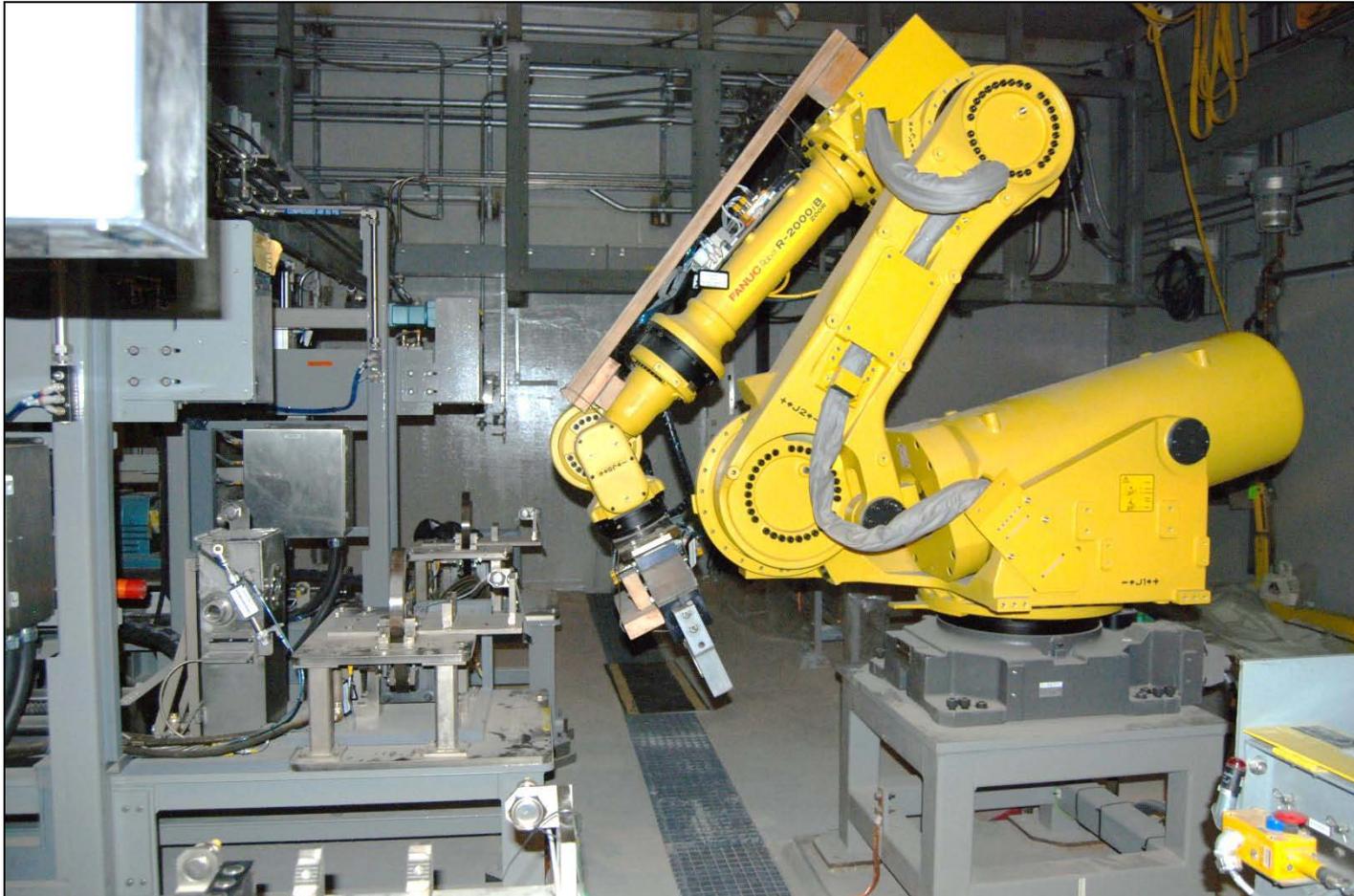
**In the APB, the Off Gas Treatment System removes acid gases generated from the process units in the APB. The white covering on the scrubber, shown here, is insulation which protects workers from elevated temperatures.**

# Enhanced Reconfiguration Building



**Before systemization personnel can test the lift assists, control room operators must verify technical drawings and apply identification tags.**

# Enhanced Reconfiguration Building



**All three Linear Projectile/Mortar Disassembly systems are in place in the ERB, where they await testing by the systemization team.**

# Pueblo Board of Water Works Tour



**On July 12, PCAPP Plant Manager Jerry Tiller (right) gave a tour to employees and board member of the Pueblo Board of Water Works. Pictured here are (from left) Nick Gradisar, vice-president and Alan Hamel, executive director.**

# Contact Information



## **Pueblo Chemical Stockpile Outreach Office**

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Bechtel Communications  
Manager

## **U.S. Army Pueblo Chemical Depot**

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### **Chuck Sprague**

Public Affairs Officer

### **Ken Roque**

Deputy Public Affairs Officer



U.S. Army Element, Assembled  
Chemical Weapons Alternatives

