PEO ACWA

A Partnership for Safe Chemical Weapons Destruction

ACWA

Program Executive Office
Assembled Chemical Weapons Alternatives

BGCAPP

Blue Grass Chemical Agent-Destruction Pilot Plant

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

PCAPP

Pueblo Chemical Agent-Destruction Pilot Plant

ACWA *A partnership for safe chemical weapons destruction*

ACWA Mission

The safe and environmentally sound destruction of the chemical weapons stockpiles stored at the Pueblo Chemical Depot, Colo., and the Blue Grass Army Depot, Ky.

SAFETY • INVOLVEMENT • TRANSPARENCY
EMPOWERMENT • PRUDENT STEWARDSHIP
OVERCOMING CHALLENGES • DIVERSITY

These are the values of the Assembled Chemical Weapons Alternatives, or ACWA, program, which is charged with building and operating facilities designed to safely destroy the chemical weapons stockpiles that have been stored at the Pueblo Chemical Depot, Colo., and Blue Grass Army Depot, Ky., since the 1940s and 50s. They represent the promise made by the program to the citizens who live and work near these Army installations, and to the global community. It is a promise that is lived each and every day by the many dedicated Americans who are partners in the ACWA mission.

Since the ACWA program's inception, people have been its driving force, embodying its values and the program motto, "A Partnership for Safe Chemical Weapons Destruction." From technical oversight organizations and lawmakers, to local community members and the workforce, a diverse group of people have devoted their time and effort toward achieving the ultimate goal of meeting the international mandate of safe chemical weapons destruction.

These partnerships are rooted in a global commitment for safe chemical weapons destruction. In the 1980s, with the rise of international dialogue concerning the effects of chemical warfare, Congress directed the Army to destroy all U.S. chemical weapons. This was reinforced by a Presidential directive, and the U.S. ratification in 1997 of the Chemical Weapons Convention, an international treaty that compels all member nations to destroy their chemical weapons and production facilities.

To comply with the Chemical Weapons Convention, the United States must destroy all the chemical weapons it owns or possesses; destroy those that may have been abandoned in other countries; and destroy those facilities used to produce chemical weapons. The treaty, which has been signed by 188 nations, is enforced by the Organisation for the Prohibition of Chemical Weapons in The Hague, Netherlands.

Leaders of the U.S. chemical weapons destruction programs have long-standing involvement and relationships with their counterparts across the globe with similar chemical weapons destruction missions. They share lessons learned with the international community to support the safe destruction of chemical weapons worldwide, while making the national mission and the cultivation of all its stakeholder partnerships a top priority.

WHAT ARE ASSEMBLED CHEMICAL WEAPONS?

Assembled chemical weapons are configured with fuzes, explosives, propellant, chemical agents, shipping and firing tubes and packaging materials. Examples include rockets and projectiles.

WHAT CHEMICAL AGENTS ARE PART OF THE PUEBLO STOCKPILE?

The Pueblo stockpile contains the blister agents HD and HT in mortar and artillery projectiles. These agents are colorless liquid compounds in their pure state. They can cause severe burns and damage to the skin, eyes and lungs.

WHAT CHEMICAL AGENTS ARE PART OF THE BLUE GRASS STOCKPILE?

The Blue Grass stockpile contains blister and nerve agents. Mustard (H) agent is contained in projectiles. The nerve agents VX and Sarin (GB) are contained in projectiles and rockets. Nerve agents are clear and colorless liquids, named for their lethal effects on the nervous system.

ACWA *A partnership that empowers communities*

Since the mid-twentieth century, the communities near Pueblo Chemical Depot, Colo., and Blue Grass Army Depot, Ky., have safeguarded a portion of the nation's chemical weapons stockpiles. This responsibility evolved from the national decision to create a chemical weapons stockpile as a deterrent to foreign enemies following the introduction of chemical warfare in World War I.

Involving the Community

Local community groups and private citizens living near the two stockpiles have played active roles in the ACWA program through various means.

- In 1997, ACWA initiated a national public involvement process, known as the ACWA Dialogue, to work with communities and subject matter experts in identifying and testing potential destruction technologies for each stockpile as alternatives to incineration. Since that time, this fully participative process has served as the standard for ACWA's ongoing outreach and public involvement initiatives.
- The Pueblo and Blue Grass stockpile communities are each home to a public outreach office specifically established to support the program's commitment to transparency. The offices act as information hubs that proactively provide the public with the latest news and information about ACWA's chemical weapons destruction program.
- Local leaders and community members actively participate in Chemical Demilitarization Citizens' Advisory Commissions, known as CACs, which serve as forums for exchanging information about chemical weapons destruction between the community and the government. The CACs afford opportunities for the public to become involved in their local demilitarization project and represent community and state interests to the Army and the Department of Defense.

Investing in the Community

ACWA not only relies on each community for decision-making input, but also for the diverse talents and skills of its citizens. Many of the men and women who work at the Pueblo or Blue Grass pilot plants hail from towns surrounding the Army installations. The same spirit and commitment that motivated past generations to sustain more than 60 years of safe chemical weapons storage now empowers these workers in the construction and operation of the Pueblo and Blue Grass Chemical Agent-Destruction Pilot Plants.

CITIZENS' ADVISORY COMMISSIONS

In accordance with Public Law 102-484, the mission of the Kentucky and Colorado Citizens' Advisory Commissions, or CACs, is to "provide a mechanism for the thorough and objective exchange of information among the citizens of Colorado and Kentucky, the Army and other organizations involved in the chemical weapons demilitarization program."

The governor of each state appoints nine members to each CAC, including seven private citizens who represent the local community and two representatives of state agencies that work closely with the chemical weapons destruction program. The CAC conducts public meetings to facilitate consistent public participation in the chemical weapons destruction program. Although each commission receives limited federal funding from the Department of Defense, it operates independently of Defense Department influence.

For more information on the CACs, meeting times or contact information, visit www.peoacwa.army.mil.

ACWA *A partnership that puts safety first*

ACWA leadership has put skilled contractor teams with extensive experience in chemical demilitarization in place to safely execute its mission. These teams work hand-in-hand with the ACWA government staff, as well as regulatory agencies and local citizens to make the safe and environmentally sound destruction of the Pueblo and Blue Grass stockpiles a reality.

The Pueblo Team

In 2002, Bechtel Pueblo was chosen as the systems contractor to design, construct, systematize, test, operate and close the Pueblo Chemical Agent-Destruction Pilot Plant, or PCAPP. The Bechtel Pueblo team is comprised of members from Bechtel National, Inc. and partners from URS Corporation, Parsons, Battelle Memorial Institute and General Atomics.

Bechtel Pueblo will destroy the Pueblo stockpile using neutralization followed by biotreatment. The process involves disassembling the weapons to separate the chemical agent from explosive components. The chemical agent is then vigorously mixed with hot water and a caustic which neutralizes and destroys the agent. The resulting byproduct, called hydrolysate, is then biotreated in large tanks where microbes digest the residual organics.

The Blue Grass Team

In 2003, Bechtel Parsons Blue Grass was chosen to design, construct, systemize, test, operate and close the Blue Grass Chemical Agent-Destruction Pilot Plant, or BGCAPP. Bechtel Parsons Blue Grass is a joint venture of Bechtel National, Inc., and Parsons Infrastructure and Technology Group, Inc. Their teaming partners include URS Corporation, Battelle Memorial Institute, General Physics and General Atomics.

Bechtel Parsons Blue Grass will destroy the Blue Grass stockpile using neutralization followed by Supercritical Water Oxidation, known as SCWO. The neutralization process involves disassembling the weapons to separate the chemical agent from explosives. The agent and explosives are then destroyed by mixing them separately in either a caustic solution or water, resulting in byproducts known as hydrolysates. The SCWO process will then subject these hydrolysates to very high temperatures and pressures, breaking them down in to carbon dioxide, water and salts.

Commitment to Safety

At both Pueblo and Blue Grass, the government and systems contractor teams have established a safety culture that is not only compliant with Army safety regulations and with Occupational Safety and Health Administration (OSHA) standards, but is integrated throughout all aspects of the program. As a result, both the PCAPP and BGCAPP teams have maintained collective recordable injury rates well-below industry average and workers consistently give testimony to exceptional safety practices.

In 2009, PCAPP became the first chemical demilitarization site to receive Star Status designation in OSHA's Voluntary Protection Program during the construction phase. Star Status is one of the nation's highest safety awards recognizing worksites that show exemplary safety records and practices. The BGCAPP team can cite exemplary safety standards as well, having surpassed 5 million man hours without a lost-time injury in March 2010.

ACWA FACILITIES & TECHNOLOGIES

SURETY
SAFETY
SECURITY
RELIABILITY
PCAPP

Pueblo Chemical Agent-Destruction Pilot Plant

Destruction Mission:
2,611 tons of mustard agent in projectiles

Destruction Technology:
Neutralization followed by biotreatment

BGCAPP

Blue Grass Chemical Agent-Destruction Pilot Plant

Destruction Mission:
523 tons of nerve agents GB and VX and mustard (or blister) agent in rockets and projectiles

Destruction Technology:
Neutralization followed by Supercritical Water Oxidation

ACWA *A partnership that values oversight*

The ACWA program welcomes input from stakeholders and oversight organizations alike. Several organizations and groups function as third-party oversight for the program, providing advice and expertise, collaborating to support the safe and efficient destruction of the weapons, and ensuring the protection of human health and the environment.

Congress

The U.S. Congress created the ACWA program and has supported and guided the parameters of its mission from its earliest days. Since 1996 when Public Law 104-208 established the ACWA program to test and demonstrate at least two alternatives to incineration for the destruction of chemical weapons, Congress has passed subsequent legislation which mandated independence from the Army, direct reporting to the Department of Defense and assignment to ACWA of the responsibility for the destruction of the Pueblo and Blue Grass stockpiles.

However, congressional interest in the program has not been limited to legislation and funding. Congressional leaders are engaged in the program, receiving regular communication from ACWA leadership regarding program progress, priorities and accomplishments, the status of activities at the stockpile sites, challenges and next steps. They are regularly welcomed at the chemical weapons destruction sites to see progress on the ground firsthand.

National Research Council

The National Research Council, known as the NRC, has been involved with ACWA since the program's beginning and was an integral part of the public involvement process and the technology selections for both the Pueblo and Blue Grass chemical weapons stockpile sites.

Today, ACWA and the NRC continue a close working relationship. The NRC's depth of technical knowledge offers insight to the program in several ways. ACWA leadership looks to the NRC for its scientific expertise in overcoming challenges and for advice in making key programmatic decisions. The NRC conducts technical studies and generates and releases formal reports on a variety of topics, such as design and secondary waste. This independent opinion is valued by ACWA leadership and continues to be instrumental in formulating recommendations to ensure mission achievement.

Environmental Regulators

ACWA leadership works with state environmental regulatory agencies to ensure that the plants are built and operated in compliance with all environmental laws and in a manner that protects workers, the community and the environment.

Both the Pueblo and Blue Grass facilities obtained Resource Conservation and Recovery Act (RCRA) Research, Development and Demonstration (RD&D) permits for construction and and will obtain RCRA Part B permits for destruction operations. ACWA's environmental staff on the ground at both sites ensure public health and environmental safety is integrated into all activities and decisions in accordance with their permits, as well as federal and state regulations. Staff remain in constant communication with the Colorado Department of Public Health and the Environment and the Kentucky Department for Environmental Protection, respectively, to ensure continued compliance and to address any new or ongoing permit related issues. This proactive approach allows environmental officials and program leadership to efficiently mitigate issues and facilitate changes to the permits without impacting the schedule.

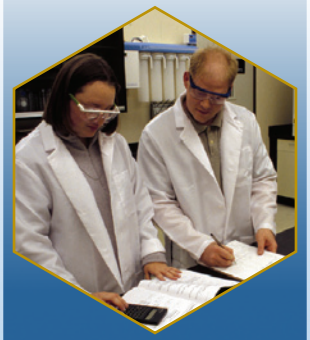
RESOURCE CONSERVATION AND RECOVERY ACT PERMITS

The Resource Conservation and Recovery Act (RCRA) is implemented by the U.S. Environmental Protection Agency and state environmental regulatory agencies. It regulates the management of hazardous waste from the moment it is generated until final disposal. A RCRA permit is a legally binding document that establishes the waste management activities that the Pueblo and Blue Grass chemical weapons destruction facilities will conduct and the conditions under which each facility can conduct them.

The Blue Grass Chemical Agent-Destruction Pilot Plant and Pueblo Chemical Agent-Destruction Pilot Plant's RCRA permits outline facility design and operation, lay out safety standards and describe activities that the facility must perform, such as monitoring and reporting. They also require the development of emergency plans and training for employees to handle hazards.

ACWA *A partnership that shares lessons learned*

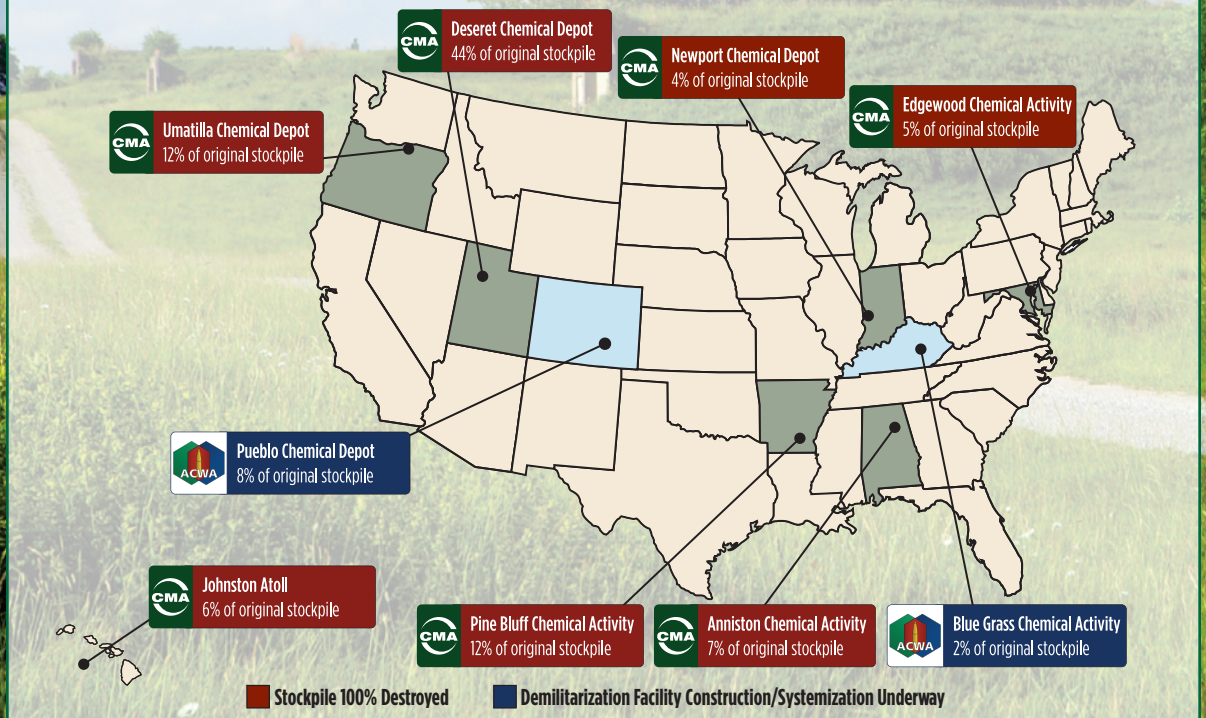
ACWA and the U.S. Army Chemical Materials Activity (CMA) are separate organizations, but their missions are intertwined. They share the goal of destroying the nation's chemical weapons stockpile, which provides many opportunities to jointly strengthen national chemical demilitarization efforts.



CMA is responsible for two distinct chemical weapons destruction projects. The Project Manager-Chemical Stockpile Elimination manages the safe treatment and disposal of chemical weapons using incineration and neutralization technologies. The Non-Stockpile Chemical Materiel Project (NSCMP) managed the demolition of the nation's former chemical warfare production facilities, completed in December 2006, and the destruction of the binary chemical weapon inventory, completed in November 2007. NSCMP also uses a variety of fixed facilities and mobile assessment and treatment technologies are used to treat recovered chemical warfare materiel across the country and in the U.S. territories.

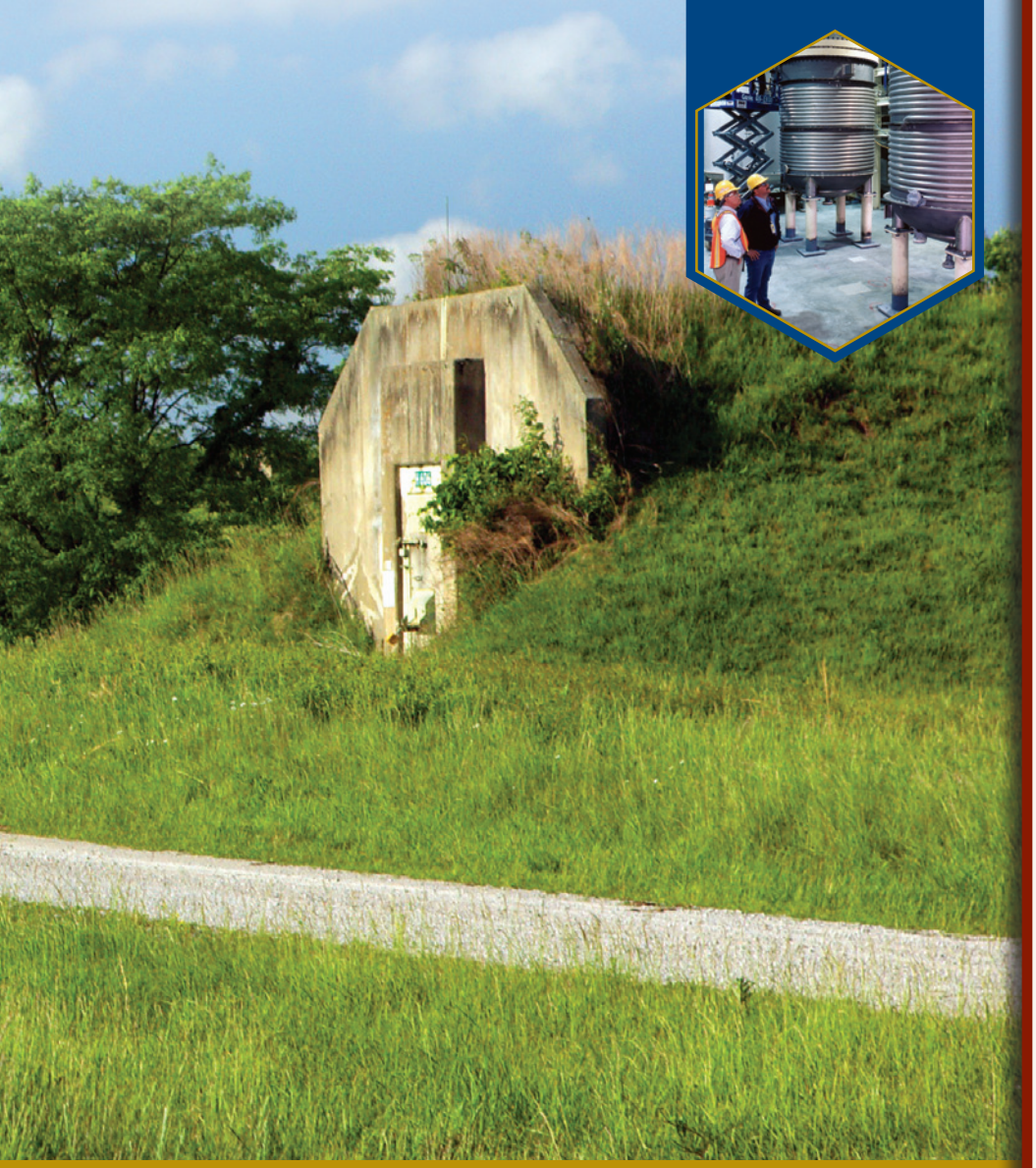
Further, CMA is responsible for the safe storage of the nation's chemical weapons stockpile before its ultimate destruction, including the chemical weapons stockpiles in storage in Colorado and Kentucky. ACWA coordinates closely with its CMA colleagues who are safeguarding the chemical weapons stockpiles in Pueblo and Blue Grass on a range of issues, to include safety, security and environmental compliance. This interaction is critical to ensuring that the men and women building and operating the Pueblo and Blue Grass Chemical Agent-Destruction Pilot Plants are aware of any significant changes to the overall condition of the chemical weapons stockpiles, so that challenges can be addressed in advance and the construction and operation of the plants can remain on schedule.

U.S. CHEMICAL AGENT & MUNITIONS STOCKPILES



**Destruction status as of January 23, 2012*

The organizations also share lessons learned. Although most of the CMA stockpile has been destroyed using incineration technology, stockpiles previously located at Edgewood Chemical Activity, Md., and Newport Chemical Depot, Ind., were safely and efficiently destroyed using neutralization, the same technology to be used in Pueblo and Blue Grass. Both organizations consult frequently on technical issues and have found many opportunities to share equipment, best practices and trained staff to the mutual benefit of both organizations.



OPERATION *SWIFT SOLUTION*

ACWA and CMA initiated a destruction operation known as Operation *Swift Solution* in late 2007 to safely eliminate three deteriorating steel containers that contained a mixture of chemical agent GB (Sarin) and its breakdown products that occurred over time, as well as wastes associated with the management of these steel containers that were in storage at the Blue Grass Army Depot (BGAD). One of the containers leaked in the past and the other containers were showing signs of corrosion. *Swift Solution's* mission was to safely eliminate the risks associated with the long-term storage of the containers.

ACWA coordinated the efforts with the following partners to implement and complete *Swift Solution*: BGAD, Blue Grass Chemical Activity, CMA, U.S. Army Edgewood Chemical Biological Center (ECBC), the Kentucky Department for Environmental Protection and local stakeholders. To complete the destruction operations, a trained team from ECBC utilized a system known as the Chemical Agent Transfer System, or CHATS, to destroy the contents of the steel containers. The system drained and neutralized the contents of the containers, which were then decontaminated and recycled. The effort was completed in spring 2009 and the United States received credit for chemical agent destruction under the Chemical Weapons Convention treaty.

CONNECT with ACWA

Program Executive Office
Assembled Chemical Weapons Alternatives

CONTACT US:

PEO ACWA Public Affairs
(410) 436-3398

Pueblo Chemical Stockpile Outreach Office
(719) 546-0400

Blue Grass Chemical Stockpile Outreach Office
(859) 626-8944

For information on the Army's other chemical weapons stockpile sites, please contact the U.S. Army Chemical Materials Activity Public Affairs office at (800) 488-0648 or (410) 436-3629.

Website:
www.peoacwa.army.mil

Facebook:
www.facebook.com/peoacwa

Twitter:
www.twitter.com/acwanews

Photostream on Flickr:
www.flickr.com/photos/acwa

YouTube Channel:
www.youtube.com/usaeacwa

Real Simple Syndication (RSS) Feed:
www.peoacwa.army.mil/connect/acwa_rss.html

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