



**Annual Status Report
on the
Destruction of the United States Stockpile of Lethal
Chemical Agents and Munitions
for Fiscal Year 2017**

September 30, 2017

The estimated cost of report or study for the Department of Defense (DoD) is approximately \$1170.00 in Fiscal Years 2017-2018. This includes \$0.00 in expenses and \$1170.00 in DoD labor.

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I. Introduction

The Department of Defense (DoD) is submitting this annual report for fiscal year (FY) 2017 to Congress, pursuant to section 1521(i) of title 50 United States Code (U.S.C.). The report documents the status of the U.S. Chemical Demilitarization Program (CDP) as of September 30, 2017.

II. Mission

The CDP mission is to enhance national security by eliminating chemical warfare materiel, while protecting the workforce, the public, and the environment and meeting obligations specified in the Chemical Weapons Convention (CWC)¹. The CDP is a program established pursuant to section 1521 of title 50 U.S.C., which directs DoD to destroy the U.S. stockpile of lethal chemical agents and munitions.

III. Organization

The CDP is divided into two Acquisition Category ID Major Defense Acquisition Programs: (1) Chemical Demilitarization Program (Chem Demil) - U.S. Army Chemical Materials Activity (CMA); and (2) Chem Demil – Assembled Chemical Weapons Alternatives (ACWA). In accordance with section 1521(g) of title 50 U.S.C., the Department of the Army manages Chem Demil-CMA and the Program Executive Office, ACWA manages the Chem Demil-ACWA with a direct reporting relationship to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics.

The CMA mission included destruction of the chemical weapons stockpiles stored at Deseret Chemical Depot, Utah; Umatilla Chemical Depot (UMCD), Oregon; Anniston Chemical Activity (ANCA), Alabama; Pine Bluff Chemical Activity (PBCA), Arkansas; Newport Chemical Depot (NECD), Indiana; Aberdeen Proving Ground, Maryland; and Johnston Atoll in the Pacific Basin. Destruction of these stockpiles is complete and these sites are closed. The CMA is also responsible for implementation of the Chemical Stockpile Emergency Preparedness Program (CSEPP) and for the execution of the Recovered Chemical Warfare Materiel (RCWM) Program (formerly known as the Non-Stockpile Chemical Materiel Project) in the United States.

The ACWA program is responsible for destruction of the remaining U.S. stockpiles stored at Pueblo Chemical Depot (PCD), Colorado, and Blue Grass Army Depot (BGAD), Kentucky. The ACWA program expects to complete destruction operations by the December 31, 2023, U.S. statutory destruction deadline.

¹ The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, commonly known as the CWC, defines the stockpile elimination deadline for 100 percent destruction of Category 1 chemical weapons as April 29, 2012, the latest date allowable under the CWC. Section 1411 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92) amended the U.S. statutory destruction deadline from “the deadline established by the Chemical Weapons Convention, but not later than December 31, 2017” to “the deadline established by the Chemical Weapons Convention, but not later than December 31, 2023.”

IV. Current Operations

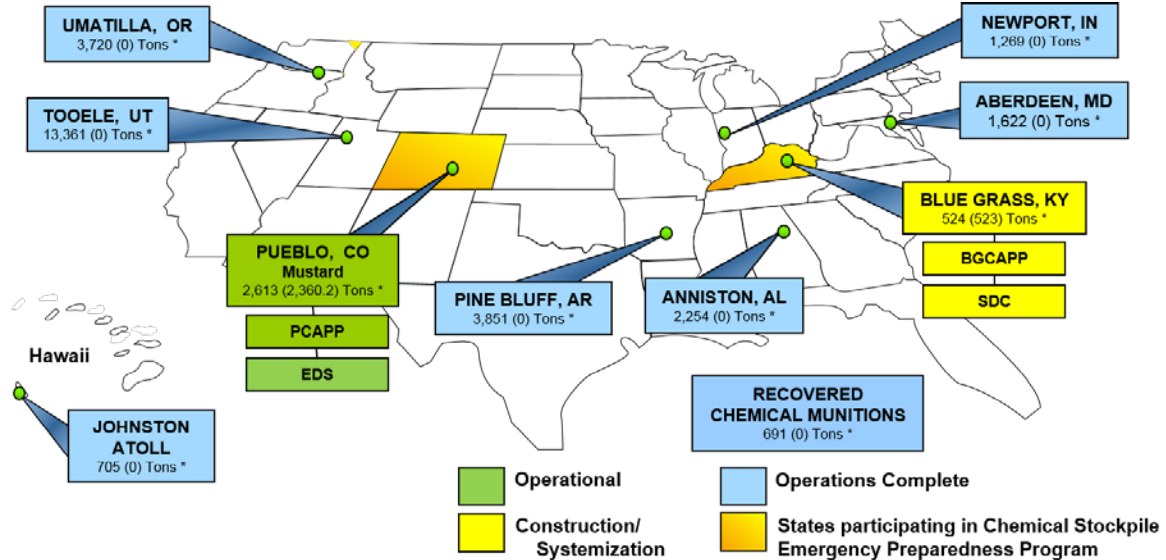
The CMA continues implementation of the CSEPP in Colorado and Kentucky as well as the assessment and destruction of RCWM. The ACWA program continued operations at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) and continues systemization of the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP).

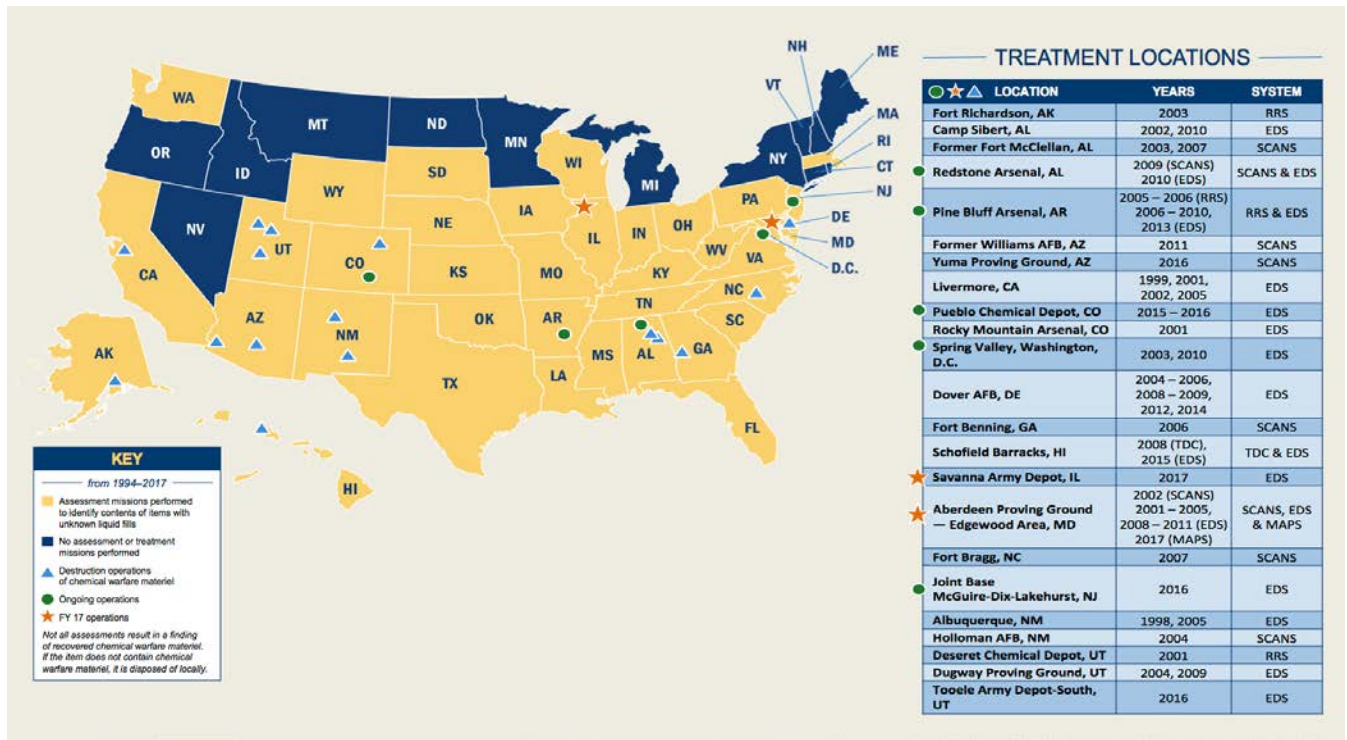
A. Site-by-Site Description of Chemical Weapons Stockpile Destruction

CDP Site Status Summary

| Site | Destruction Operations | Storage Facility | Destruction Facility | Agent Destroyed (U.S. Tons) |
|----------------|------------------------|------------------|----------------------|-----------------------------|
| Deseret/Tooele | Complete, Jan 2012 | Closed, Jul 2013 | Closed, Nov 2014 | 13,617 |
| Umatilla | Complete, Oct 2011 | Closed, Aug 2012 | Closed, Jan 2015 | 3,720 |
| Anniston | Complete, Sep 2011 | Closed, May 2013 | Closed, May 2014 | 2,254 |
| Pine Bluff | Complete, Nov 2010 | Closed, Aug 2012 | Closed, Jan 2013 | 3,851 |
| Newport | Complete, Sep 2008 | Closed, Jun 2010 | Closed, Jan 2010 | 1,269 |
| Aberdeen | Complete, Feb 2006 | Closed, Jun 2007 | Closed, Jun 2007 | 1,622 |
| Johnston Atoll | Complete, Nov 2000 | Closed, Dec 2003 | Closed, Dec 2003 | 2,031 |
| Pueblo EDS | Began, Mar 2015 | Active | *Temporary Closure | 1.91 |
| Pueblo | Began, Sep 2016 | Active | Operational | 250.1 |
| Blue Grass SDC | TBD | Active | In construction | -- |
| Blue Grass | TBD | Active | In systemization | -- |

*PCAPP EDS is in temporary closure until needed to destroy reject munitions from the main plant.





CMA

All of the Chemical Stockpile Elimination sites have completed destruction of their stockpiles totaling 89.75 percent of the U.S. chemical weapons stockpile, facility closure, and closure of their respective operating permits. The CMA continues to share lessons learned to facilitate greater effectiveness and efficiency within the ACWA program.

During FY 2017, the CMA Recovered Chemical Materiel Directorate (RCMD) supported two destruction operations that occurred at Aberdeen Proving Ground, Maryland and Savanna Army Depot, Illinois, respectively.

Aberdeen Proving Ground, Maryland. Three 75mm projectiles from Dover Air Force Base, Delaware were transported to the Edgewood Area of Aberdeen Proving Ground, Maryland, on July 22, 2015. All three munitions were assessed, and one was determined the fill was mustard residue; but no mustard was recovered, and the other two contained Chloropicrin. All three munitions were destroyed under environmental containment in the Munitions Assessment Processing System facility. One item was destroyed on December 5, 2016, while the other two were destroyed on March 16, 2017.

Savanna Army Depot, Illinois. On May 14, 2017, the RCMD successfully completed the destruction of one recovered chemical munition (a 155mm mustard projectile) utilizing its Explosive Destruction System (EDS) at the Savanna Army Depot.

ACWA

On June 5, 2017, Mr. James A. MacStravic, Performing the Duties of the Under Secretary of Defense (Acquisition, Technology, and Logistics) determined and subsequently notified Congress of a significant Nunn-McCurdy cost breach. This unit cost growth is primarily attributable to increased systemization schedule and operational experience for PCAPP, revised systemization schedule for BGCAPP, and revised Explosive Destruction Technology requirements at both sites.

The ACWA program continues to implement and refine cost control initiatives, which include performance-based incentives for the Systems Contractor (SC). Section 1521(n) of title 50 U.S.C. allows the use of performance-based incentive clauses in contracts to accelerate safe elimination of the U.S. chemical weapons stockpiles and to reduce the total life-cycle cost of the CDP.

PCAPP continues to operate under a Pilot Test Demonstration Plan (PTDP) and Test Concept Plan to develop processing data for permitting and for full rate operational test and evaluation requirements. BGCAPP continues to execute a robust systemization process that tests plant readiness in four primary areas:

- Paper: Development of all procedures and maintenance instructions, as well as test plans for all elements of the plant and documentation in support of the Facilities Construction Certification.
- Plant: Commissioning, start-up, and testing of the physical plant – ensuring all systems and subsystems within the facilities work properly and function together. A good example of this is the sophisticated fire protection system installed in the plant and the robotic equipment used to disassemble and move munitions through the destruction process. Both sites are employing risk reduction processes for their hydrolysate treatment systems, i.e., biotreatment at PCAPP and supercritical water oxidation at BGCAPP.
- People: Hiring and training of the operations and maintenance staff needed to complete the chemical weapons destruction mission. This includes training each individual for technical proficiency for their assigned duties and ensuring the highest standards are upheld for those included in the Chemical Personnel Reliability Program.
- Permitting: Working with State and Federal regulators to develop, negotiate, and resolve plant operating parameters and Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act, and Clean Air Act permit conditions to prepare for plant operations and maintain regulatory compliance.

PCD and PCAPP, Colorado

PCAPP continues to execute its PTDP to capture relevant operational data and information to support final RCRA permitting actions and operating limits. Since the initiation of plant operations on September 7, 2016, the plant has destroyed over 42,897 of 299,554 155mm mustard filled projectiles. This accounts for over 251 U.S. tons of mustard agent destroyed. In addition, baseline reconfiguration of boxed 105mm rounds continues in parallel to the destruction of 155mm rounds. Significant progress has been made toward completion of the PTDP; however, the PCAPP has encountered schedule delays due to equipment and process difficulties including unanticipated and unforeseen issues with the condition of the stockpile munitions.

Weapons destruction in the PCAPP requires all portions of the operation, from energetics removal to the final treatment of the neutralized agent (hydrolysate), to work in concert. A significant portion of the operation is dependent upon proper liquid management from the munitions washout system to the biotreatment process and final water recovery system. The liquid balance within the plant became a significant problem with the failure of two separate tank storage systems, the 30-day storage tanks for hydrolysate, and the secondary containment system for the feed tanks to the water recovery system. Together, the recovery from these incidents contributed to a 54-day loss of processing and testing.

The condition of the PCD stockpile has also created additional impacts to plant operations. Higher than expected solids in the 155mm munitions being processed required additional plant modifications. Although the plant was designed to deal with leaking munitions that might be encountered, the first event with leakers demonstrated that recovery of contaminated systems is labor intensive and consumes significant resources and time. In addition, due to the decades-long storage of the stockpile, rodent infestations have caused issues that must be dealt with by PCD and PCAPP personnel. Staining on munitions must also be investigated to avoid mistaking an undetected agent leak for rodent urine. Other examples of stockpile conditions impacting destruction throughput rates include lower than expected amounts of mustard agent fill, and pressurized munitions due to agent degradation.

Baseline reconfiguration of boxed 105mm munitions is proceeding in parallel to the destruction of 155mm munitions. Baseline reconfiguration involves unboxing and palletizing the 105mm projectiles in preparation for the future destruction campaign of those munitions. The reconfiguration process is labor intensive and would not be able to keep pace with plant operations if performed before disassembly of the munition. Baseline reconfiguration operations have also encountered leakers, which has impacted overall progress. When the 105mm boxed munitions are completed, the plant will conduct a similar operation for the 4.2-inch mortar.

Non-contaminated energetics removed from the 155mm munitions and the boxed 105mm munitions are palletized and shipped to a Static Detonation Chamber (SDC) located at the Anniston Army Depot for final destruction. This includes the propellant, cartridges, and bursters (designed to detonate the munitions) which are removed during baseline reconfiguration of the boxed 105mm munitions. Contaminated bursters, propellants, and components are over packed and stored at PCD to await destruction in the PCAPP EDS.

There were no PCAPP EDS operations conducted during this reporting period, but routine maintenance of the facility and equipment was conducted. The PCAPP EDS is operated by personnel from the CMA and the Edgewood Chemical Biological Center; both headquartered at Aberdeen Proving Ground, Maryland.

Safety for the PCAPP workforce and the surrounding community along with environmental compliance, remains a top priority during destruction operations. The SC for PCAPP has recorded more than 7.8 million consecutive work hours without a lost-time injury and with a Recordable Injury Rate (RIR) of 0.38, which is well below the industry average for industrial projects. The PCAPP maintains the Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) Star Status.

BGAD and BGCAPP, Kentucky

BGCAPP continued the systemization or testing phase throughout FY 2017. Minor construction activities that do not affect systemization activities are still underway such as design and installation of the Electronic Security System, installation of pipe insulation, and miscellaneous landscaping, fencing, and road work.

As of September 30, 2017, BGCAPP main plant systemization is 52.4 percent complete. The systemization complete percentage has decreased since the last report due to contractually-recognizing a re-planned systemization schedule, which reset the contract time to complete the remaining systemization effort. BGCAPP focused on systemization of several major systems in the main plant this year. In November 2016, technicians began the light-off process for part of the pollution abatement system – the Thermal Oxidizers. Energetics Batch Hydrolyzers drums rotated for the first time and systemization work on the Rocket Shear Machines both began in March 2017. In May 2017, the Agent Collection System was turned over to operations. Pressure testing of pipes and smoke testing to ensure concealment began in the Munitions Demilitarization Building. In addition, development continues of the test and demonstration plans that were needed during the demonstration period of systemization.

The SDC will be used for the destruction of the mustard-filled munitions stored at BGAD. In December 2016, the SDC was placed in a lay-up status following a review of the BGCAPP projected funding in 2017. At the time of lay-up, construction was 85 percent complete. The facility was left with minimal equipment energized, heating and cooling systems operational, and doors locked for security. Employees walked through the facility on set intervals to ensure the equipment remained safe and secure. In July 2017, the SC for the BGCAPP began preparations to bring the facility out of lay-up status and resume systemization activities.

In December 2016, the BGCAPP Medical Facility began providing emergency response capabilities to the site 24 hours a day, seven days a week. Emergency preparedness training ramped up in FY 2017 with staged drills such as caustic leak, personnel health, and high-angle rescue simulation responses. Laboratory personnel prepared for operations by calibrating equipment in order to conduct air monitoring with Depot Area Air Monitoring Systems and Miniature Continuous Air Monitoring Systems.

The BGCAPP SC has logged more than 8.8 million consecutive work hours without a lost-time injury and a RIR of 0.37, which is well below the industry average for industrial projects. The BGCAPP also maintains OSHA VPP Star Status.

B. Safety Status of Chemical Weapons Stockpile Storage

The CMA, through its subordinate relationship with the U.S. Army Materiel Command, is responsible for safe storage of the remaining chemical weapons stockpiles stored at PCD and BGAD. The CMA continues a monitoring and inspection program that includes analytical sampling and analysis along with an enhanced ammunition surveillance program to assess the safety and integrity of the stockpile munitions, agent, and explosives involved. The CMA continues to test the stockpile to ensure that there is no degradation of any components involved. The stockpile can be safely stored until treated and/or destroyed. The CMA uses high-performance over pack containers to store leaking chemical agent-filled munitions safely. Leaks that occur in storage are extremely unlikely to endanger on- or off-post communities in the vicinity of the storage sites. During FY 2017, eight leaking munitions were identified at either PCD or BGAD. The eight munitions were isolated and contained. At no time was the community or environment at risk of exposure to chemical agents.

For historical leaker information, see Appendix B. Totals were adjusted from the FY 2015 report based on a search of historical leaker records at PCD and BGAD, and a review of the leaker history of M55 rockets.

V. Funding Execution

The Consolidated Appropriations Act, 2017 (Public Law 115-31), set funding for the Chemical Agents and Munitions Destruction, Defense (CAMD,D) appropriation at \$650,726 million for the CDP. There were no funds appropriated for Chemical Demilitarization Construction, Defense. The ACWA program portion of the CAMD,D appropriation was \$507,892 million.

The following table reflects disbursements as of September 30, 2017.

FY 2017 Disbursements
 (includes disbursement amounts for all active FYs)
 (\$ IN THOUSANDS)

| Purpose | Funds Disbursed |
|---|-----------------|
| Construction of and equipment for CWDFs (includes systemization) | 244,136 |
| Operation of CWDFs | 291,903 |
| Dismantling and closure of CWDFs | 2,577 |
| RCWM chemical materiel research and development | 9,278 |
| Program Management (includes Chemical Demilitarization Training Facility) | 25,889 |
| RCWM chemical materiel disposal | 49,716 |
| Other | 685 |
| CSEPP | 25,560 |
| Travel and associated travel costs for CAC members (detailed in the following paragraphs) | 0 |
| TOTAL | 649,745 |

Note: Total ±1 thousand dollars due to rounding

Sources: (1) Defense Finance and Accounting System 218 report with data as of September 30, 2017

(2) General Fund Enterprise Business System Reconciliation reports as of September 30, 2017

The table at Appendix C shows a detailed listing of funds disbursed by project and location as of September 30, 2017.

Chemical Demilitarization Citizens' Advisory Commissions (CAC), in accordance with section 1521(m) of title 50 U.S.C., continued to be important partners of the ACWA program. There were no funds expended for travel and associated travel costs incurred by CAC members during FY 2017. Colorado and Kentucky CAC travel funds are approved by the Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, when travel is required.

VI. Chemical Stockpile Emergency Preparedness Program (CSEPP)

The CSEPP is a joint program between the Army (CMA) and the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) with the Army responsible for the on-post mission and DHS/FEMA responsible for the off-post mission. The DHS/FEMA accomplishes its off-post mission through cooperative agreements with States to augment emergency preparedness in the communities surrounding the chemical storage sites. The CSEPP activities have been implemented at all continental U.S. chemical weapons storage sites. As of September 30, 2017, the CSEPP is only active at the PCD and BGAD storage sites. The CMA on-post mission continued to maintain emergency preparedness and readiness at chemical weapons storage installations, and DHS/FEMA executed the off-post mission with State and local governments to meet the CDP mandate of maximum protection. The CMA continues to participate in Community Integrated Process Teams (IPTs). These IPTs consist of representatives from the affected counties and State, along with representatives from DHS/FEMA Region and Headquarters, the local installation, and CMA. The IPTs maintain

emergency plans, synchronize efforts with community partners, and address specific community issues. The DHS/FEMA provides a separate report to Congress outlining accomplishments and issues in participating civilian communities, pursuant to section 1521(e) of title 50 U.S.C.

In July 2017, DHS/FEMA reported that the Blue Grass and Pueblo communities remain in compliance with the 12 CSEPP benchmarks for emergency preparedness. The CSEPP benchmarks establish the capabilities that enable the communities to respond effectively to a chemical accident/incident at the stockpile storage sites. The CMA will continue to support sustainment and maintain state-of-the-art capabilities for both the depots and the communities until the chemical weapons stockpiles are eliminated.

At the Pueblo and Blue Grass sites, initial testing of local implementation of the national Integrated Public Alert and Warning System laid the foundation for greater speed and effectiveness in alerting the public to emergencies. In Kentucky, Fayette County's Emergency Operations Centers (EOC) became operational in late 2016 completing the construction and updating all of the CSEPP county and State EOCs.

The CMA conducted joint annual CSEPP exercises with the Pueblo community on May 3, 2017, and with the Blue Grass community on September 20, 2017. In 2017, the CSEPP automation systems, Webpuff and the Chemical Stockpile Wide Area Network, were recertified and granted an interim Authority to Operate (ATO) in September 2017. A full ATO would be granted once any findings are resolved in the Plan of Action and Milestone.

To coordinate activities locally, the CMA and DHS/FEMA participated in community IPT meetings held regularly at both sites in 2017. At the national level, Program Management Team meetings were held in February 2017 in Arlington, Virginia, and in August 2017 in Richmond, Kentucky. Attendees included personnel from CMA; PEO ACWA; FEMA headquarters and Regions IV and VIII, Kentucky Emergency Management and Colorado Division of Homeland Security and Emergency Management; BGAD; PCD; and CSEPP counties surrounding the installations.

APPENDIX A
ABBREVIATIONS AND SYMBOLS

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ABBREVIATIONS AND SYMBOLS

| | |
|------------|---|
| ACWA | Assembled Chemical Weapons Alternatives |
| ANCA | Anniston Chemical Activity |
| ANCDF | Anniston Chemical Agent Disposal Facility |
| APG | Aberdeen Proving Ground |
| | |
| BGAD | Blue Grass Army Depot |
| BGCAPP | Blue Grass Chemical Agent-Destruction Pilot Plant |
| | |
| CAC | Citizens' Advisory Commission |
| CAMD,D | Chemical Agents and Munitions Destruction, Defense |
| CAMDS | Chemical Agent Munitions Disposal System |
| CDP | Chemical Demilitarization Program |
| Chem Demil | Chemical Demilitarization |
| CMA | U.S. Army Chemical Materials Activity |
| CSEPP | Chemical Stockpile Emergency Preparedness Program |
| CWC | Chemical Weapons Convention |
| CWDF | Chemical Weapons Destruction Facility |
| | |
| DHS | Department of Homeland Security |
| DoD | Department of Defense |
| | |
| EDS | Explosive Destruction System |
| | |
| FEMA | Federal Emergency Management Agency |
| FY | Fiscal Year [October 1 through September 30] |
| | |
| IPT | Integrated Process Team |
| | |
| JACADS | Johnston Atoll Chemical Agent Disposal System |
| | |
| NECD | Newport Chemical Depot |
| NECDF | Newport Chemical Agent Disposal Facility |
| | |
| O&M | Operational and Maintenance |
| OSHA | Occupational Safety and Health Administration |
| | |
| PBCA | Pine Bluff Chemical Activity |
| PBCDF | Pine Bluff Chemical Disposal Facility |
| PCAPP | Pueblo Chemical Agent-Destruction Pilot Plant |
| PCD | Pueblo Chemical Depot |
| PM CSE | Project Manager for Chemical Stockpile Elimination Recovered Chemical Warfare Materiel (RCWM) Program |
| PROC | Procurement |

| | |
|----------|--|
| PTDP | Pilot Test Demonstration Plan |
| RCRA | Resource Conservation and Recovery Act |
| RCWM | Recovered Chemical Warfare Materiel |
| RDT&E | Research, Development, Test, and Evaluation |
| RIR | Recordable Injury Rate |
| SC | Systems Contractor |
| SDC | Static Detonation Chamber |
| SUPLECAM | Surveillance Program, Lethal Chemical Agents and Munitions |
| TOCDF | Tooele Chemical Agent Disposal Facility |
| UMCD | Umatilla Chemical Depot |
| UMCDF | Umatilla Chemical Agent Disposal Facility |
| U.S.C. | United States Code |
| VPP | Voluntary Protection Program |

APPENDIX B
OCCURRENCES OF LEAKING CHEMICAL MUNITIONS

APPENDIX B: OCCURRENCES OF LEAKING CHEMICAL MUNITIONS

| Fiscal Year | Leaker Occurrences by Type | | | | Leaker Occurrences by State or Territory ^a | | | | | | | | | |
|--------------------------|----------------------------|---|--------------------------|--------------------|---|-----------|------------------------|----------|------------|------------------------|----------|------------------|--------------|-----------|
| | M55 Rockets ^b | SUPLECAM Samples ^c and Overpack Containers | All Other Munitions | TOTAL | AL | AR | CO | IN | JI | KY | MD | OR | UT | Other |
| 2017 | 2 | 0 | 6 | 8 | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2015 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 2014 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2012 | 3 | 0 | 10 ⁱ | 13 ⁱ | 0 | 0 | 1 ⁱ | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2010 | 1 | 3 | 15 ⁱ | 19 ⁱ | 0 | 0 | 7 ⁱ | 0 | 0 | 7 | 0 | 5 | 0 | 0 |
| 2009 | 4 | 1 | 344 ⁱ | 349 ^{d/i} | 184 ^e | 0 | 1 ⁱ | 0 | 0 | 9 | 0 | 154 ^e | 1 | 0 |
| 2008 | 0 | 3 | 62 | 65 ^d | 40 | 1 | 0 | 0 | 0 | 2 | 0 | 14 | 8 | 0 |
| 2007 | 0 | 7 | 59 | 66 ^{d/f} | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 25 | 34 | 0 |
| 2006 | 4 ⁱ | 6 | 65 ⁱ | 75 ^{d/i} | 4 | 2 | 8 ⁱ | 0 | 0 | 1 | 0 | 45 | 14 | 0 |
| 2005 | 15 ⁱ | 28 | 132 ⁱ | 166 ^{d/i} | 14 | 1 | 17 ⁱ | 0 | 0 | 9 ⁱ | 0 | 20 | 114 | 0 |
| 2004 | 34 | 46 | 69 ⁱ | 158 ^{d/i} | 33 | 0 | 1 ⁱ | 0 | 0 | 0 | 1 | 11 | 103 | 0 |
| 2003 | 17 ⁱ | 7 | 24 ⁱ | 48 ⁱ | 15 | 0 | 0 ⁱ | 0 | 0 | 2 | 0 | 8 | 21 | 0 |
| 2002 | 43 ⁱ | 18 | 32 | 93 ^{d/i} | 40 | 6 | 0 | 0 | 0 | 0 | 0 | 8 | 41 | 0 |
| 2001 | 70 ⁱ | 35 | 186 ⁱ | 291 ^d | 58 | 0 | 0 ⁱ | 0 | 2 | 6 | 0 | 8 | 205 | 0 |
| 2000 | 71 ⁱ | 142 | 36 ⁱ | 249 ^{d/i} | 51 | 2 | 1 ⁱ | 0 | 0 | 6 | 0 | 6 | 180 | 0 |
| 1999 | 73 ⁱ | 69 | 226 ⁱ | 368 ^{d/i} | 65 | 1 | 4 ⁱ | 0 | 0 | 8 | 0 | 4 | 286 | 0 |
| 1998 | 26 ⁱ | 27 | 45 | 98 ^d | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 74 | 0 |
| 1997 | 62 ⁱ | 11 | 46 | 119 ^{d/i} | 62 | 2 | 12 | 0 | 1 | 2 | 0 | 6 | 33 | 0 |
| 1996 | 153 | 3 | 98 | 254 ^d | 119 | 0 | 2 | 0 | 70 | 7 | 0 | 3 | 53 | 0 |
| 1995 | 108 ⁱ | 11 | 17 | 136 ⁱ | 66 | 0 | 0 | 0 | 0 | 1 | 0 | 13 | 55 | 0 |
| 1994 | 146 ⁱ | 29 | 27 | 202 ⁱ | 82 | 4 | 2 | 0 | 0 | 6 | 0 | 5 | 103 | 0 |
| 1993 | 77 ⁱ | 3 | 37 | 117 ⁱ | 37 | 1 | 1 | 0 | 2 | 11 | 0 | 7 | 61 | 0 |
| 1992 | 81 | 139 | 51 ⁱ | 271 ⁱ | 52 | 1 | 0 ⁱ | 1 | 6 | 21 | 0 | 7 | 183 | 0 |
| 1991 | 67 ⁱ | 3 | 43 ⁱ | 113 | 28 | 3 | 1 ⁱ | 0 | 5 | 6 | 0 | 8 | 63 | 0 |
| 1990 | 76 | 5 | 27 | 108 | 17 | 11 | 1 | 0 | 7 | 2 | 0 | 12 | 58 | 0 |
| 1980 ^g - 1989 | 819 ^{h/i} | 60 | 931 ⁱ | 1,810 ⁱ | 317 | 15 | 29 ⁱ | 0 | 70 | 111 ⁱ | 0 | 280 | 993 | 27 |
| TOTALⁱ | 1,953 | 656 | 2,597ⁱ | 5,206 | 1,306 | 52 | 102ⁱ | 1 | 163 | 235ⁱ | 1 | 654 | 2,683 | 27 |

Notes:

- ^a AL Alabama (ANCA) (operations completed in 2011)
AR Arkansas (PBCA) (operations completed in 2010)
CO Colorado (PCD)
IN Indiana (NECD) (operations completed in 2008)
JI Johnston Island (includes the storage site and Johnston Atoll Chemical Agent Disposal System; operations completed in 2000)
KY Kentucky (Blue Grass Chemical Activity)
MD Maryland (Edgewood Area of Aberdeen Proving Ground) (operations completed in 2006)
OR Oregon (UMCD) (operations completed in 2011)
UT Utah (Dugway Proving Ground and Deseret Chemical Depot) (operations completed in 2012)
Other Germany (munitions from German retrograde program that were transferred to Johnston Island in December 1990)
- ^b Includes GB and VX rockets and rocket warheads.
- ^c Surveillance Program, Lethal Chemical Agents and Munitions (SUPLECAM) (leaks from drilled and plugged holes in munitions selected for ammunition stockpile reliability testing).
- ^d Some leaking munitions were detected during disassembly at the Chemical Demilitarization Facilities prior to destruction, rather than at the storage area (69 in FY 1996, 10 in FY 1997, 37 in FY 1998, 211 in FY 1999, 30 in FY 2000, 152 in FY 2001, 27 in FY 2002, 61 in FY 2004, 116 in FY 2005, 36 in FY 2006, 33 in FY 2007, 57 in FY 2008, and 333 in FY 2009). All leaks detected during these operations were under engineering controls.
- ^e The apparent spike in leakers at AL and OR in 2009 was due to the processing of M23 mines at those locations.
- ^f Leaker numbers were updated after the final submission of the FY 2007 Annual Report.
- ^g Specific totals for years prior to FY 1980 were not included, as early records were incomplete, and any total incorporating those time frames could not be considered accurate.
- ^h A large number of M55 GB rockets were inspected in 1984 and 1985, and a more sophisticated and more sensitive monitoring protocol was adopted. Quarterly storage monitoring inspections of M55 GB rockets were conducted thereafter.
- ⁱ Totals adjusted from FY 2015 report based on a search of historical leaker records at PCD and BGAD, and a review of the leaker history of M55 rockets.

APPENDIX C
PROGRAM DISBURSEMENTS SUMMARY

APPENDIX C
CHEMICAL DEMILITARIZATION PROGRAM
FY 2017 DISBURSEMENTS SUMMARY – AS OF SEPTEMBER 30, 2017
(INCLUDES DISBURSEMENT AMOUNTS FOR ALL ACTIVE FISCAL YEARS)
(\$ IN THOUSANDS)

| Project/Facility | Chemical Agents and Munitions Destruction, Defense | | | | Chemical Demilitarization Construction, Defense |
|---|--|----------|---------------|--------------------|---|
| | RDT&E | PROC | O&M | Total | Total |
| Program Management (CMA) | - | - | 90 | 90 | - |
| Program Management (PM CSE) | - | - | 4,959 | 4,959 | - |
| Chemical Demilitarization Training Facility | - | - | - | - | - |
| CAMDS (Closure) | - | - | 4 | 4 | - |
| JACADS (Closure) | - | - | 3 | 3 | - |
| TOCDF (Operations) | - | - | - | - | - |
| TOCDF (Closure) | - | - | 5,672 | 5,672 | - |
| ANCDF (Operations) | - | - | - | - | - |
| ANCDF (Closure) | - | - | 924 | 924 | - |
| UMCDF (Operations) | - | - | - | - | - |
| UMCDF (Closure) | - | - | (4,537) | (4,537) | - |
| PBCDF (Operations) | - | - | - | - | - |
| PBCDF (Closure) | - | - | 481 | 481 | - |
| ABCDF (Closure) | - | - | - | - | - |
| NECDF (Closure) | - | - | 31 | 31 | - |
| NECDF (Operations) | - | - | - | - | - |
| RCWM Chemical Materiel | 9,278 | 6 | 49,716 | 58,994 | - |
| Other | - | - | 685 | 685 | - |
| Program Management (ACWA) | 20,840 | - | - | 20,840 | - |
| PCAPP (Construction & Equipment) | - | - | - | 291,903 | 118 |
| PCAPP (Operations) | 291,903 | - | - | - | - |
| BGCAPP (Construction & Equipment) | 238,105 | - | - | 238,105 | 5,913 |
| CSEPP | - | - | - | 25,560 | - |
| TOTAL | 560,126 | 6 | 83,582 | 643,714 | 6,031 |
| *Totals ±due to rounding | | | | GRAND TOTAL | 649,745 |

Source: Defense Finance And Accounting System 218 report

ABCDF = Aberdeen Chemical Agent Disposal Facility
ACWA = Assembled Chemical Weapons Alternatives
ANCDF = Anniston Chemical Agent Disposal Facility
BGCAPP = Blue Grass Chemical Agent-Destruction Pilot Plant
CAMDS = Chemical Agent Munitions Disposal System

NECDF = Newport Chemical Agent Disposal Facility
O&M = Operations and Maintenance
PBCDF = Pine Bluff Chemical Agent Disposal Facility
PCAPP = Pueblo Chemical Agent-Destruction Pilot Plant
PM CSE = Project Manager for Chemical Stockpile Elimination

CMA = U.S. Army Chemical Materials Activity

PROC = Procurement

CSEPP = Chemical Stockpile Emergency Preparedness Program

RCWM = Recovered Chemical Warfare Materiel
RDT&E = Research, Development, Test and Evaluation
TOCDF = Tooele Chemical Agent Disposal Facility

FY = Fiscal Year

JACADS = Johnston Atoll Chemical Agent Disposal System

UMCDF = Umatilla Chemical Agent Disposal Facility