



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-243



**Program Executive Office
Assembled Chemical Weapons Alternatives**

Chemical Demilitarization-Assembled Chemical Weapons Alternatives (Chem Demil-ACWA)

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

Chemical Demilitarization-Assembled Chemical Weapons Alternatives (Chem Demil-ACWA)

DoD Component

DoD

Responsible Office

Responsible Office

Mr. Conrad Whyne

SFAE-ACW-Z

5183 Blackhawk Road

APG-EA, MD 21010-5424

conrad.f.whyne.civ@mail.mil**Phone** 410-436-3498**Fax** 410-436-1992**DSN Phone** 584-3498**DSN Fax** 584-1992**Date Assigned** December 19, 2010

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 21, 2012

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 21, 2012

Mission and Description

Chemical Demilitarization-Assembled Chemical Weapons Alternatives (Chem Demil-ACWA) is performing a portion of the chemical warfare materiel elimination mission. In 1996, Congress and the President, responding to public concerns about the safe destruction of chemical weapons, established and later expanded the ACWA program (Public Laws 104-208, 105-261, 106-79 and 107-248). The DoD was charged with identifying and demonstrating two or more alternative technologies to incineration for the destruction of assembled chemical weapons. The Defense Acquisition Executive assigned Program Manager (PM) ACWA the responsibility for developing neutralization technologies to eliminate the chemical weapons stockpiles located at Pueblo, CO, and Blue Grass, KY (July 16, 2002, and February 3, 2003, respectively). At time of initiation, the ACWA program was known as the Assembled Chemical Weapons Assessment program. When the assessment phase was complete, the ACWA program shifted its focus from assessing chemical weapons destruction technologies to implementing full-scale pilot testing. As a result, the program was renamed Assembled Chemical Weapons Alternatives in June 2003, to better reflect the new program goals. To raise the program's visibility and obtain the necessary resources, PM ACWA was redesignated as the Program Executive Office ACWA on October 1, 2012.

Executive Summary

This December 2013 SAR details changes to cost, schedule, and performance since last reported in the December 2012 SAR for Chem Demil-ACWA. Program funding and production quantities listed in this SAR are consistent with the FY 2015 PB.

Systemization at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) increased by 8 percent; i.e., the September 2013 re-planned systemization is now approximately 46 percent complete compared to the 38 percent complete reported in the December 2012 SAR.

Construction at the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) increased by 13 percent; i.e., construction of the destruction plant is approximately 79 percent complete compared to the 66 percent complete reported in the December 2012 SAR. Systemization is underway and currently 14 percent complete.

The Program Executive Officer (PEO) for the Assembled Chemical Weapons Alternatives (ACWA) program has requested a MILCON appropriation in FY 2015 of \$38.7M for the BGCAPP project. Of this amount, \$4.7M is a recovery of the reduction of the FY 2013 MILCON sequestered funds and \$34M will be an authorization ceiling increase (from \$746M to \$780M). The request for the \$34M ceiling increase is needed for the additional costs associated with safety, security, and environmental compliance requirements, and to complete construction. Overall, this increase is not a growth in total dollars but more accurately reflects the proper allocation of monies between MILCON and RDT&E funds necessary to complete construction.

Since the 2011 Nunn-McCurdy review of the ACWA program, increased emphasis has been placed on the early identification of risks and the close tracking of their potential impact on cost and schedule. The PEO ACWA continues to evaluate ways to mitigate risks, shorten schedules, and safely accelerate the program.

PCAPP:

PCAPP is a fixed-base, single-use system designed to perform all necessary steps for destruction of the stockpile of chemical weapons in storage at Pueblo Chemical Depot, Colorado.

Systemization of equipment, subsystems, systems, facilities and the initial functional integration of these elements remain the current schedule driver. PEO ACWA and the U.S. Army Corps of Engineers/Engineering Support Center determined that construction was substantially complete as of December 31, 2012, with allowable punch list and exclusion items. In FY 2013, the project went through an extensive systemization replanning effort to properly align and sequence key milestones and associated critical supporting activities and events. This effort was necessary as the punch list and exclusion items from final construction activities experienced significant schedule delay in system turnovers, due to late receipt of the FY 2013 MILCON funding. Additional MILCON funds were received and placed on contract in April 2013 to complete the punch list and exclusion items by the third quarter of FY 2014. The Systems Contractor (SC) submitted an initial systemization replan to PEO ACWA in February 2013 to address the impacts. This submittal underwent an extensive and comprehensive iterative review by a PEO-commissioned team comprised of PEO ACWA, U.S. Army Chemical Materials Activity (CMA) and SC personnel. After incorporating recommendations from the review team, the SC submitted a revised Integrated Master Schedule that forecasts systemization completion nine months past the current, negotiated end-date of December 2014 to September 2015. A contract modification extending the period of performance for systemization to September 20, 2015, was signed on September 16, 2013. Final contract negotiations to address cost impact are targeted for third quarter of FY 2014.

As of December 22, 2013, systemization is approximately 46 percent complete with facilities turnover nearing

completion as remaining construction punch list items are being worked. Approximately 92 percent of the mechanical, process and electrical systems, which include subsystems in the Agent Processing Building, the Brine Reduction System, the Enhanced Reconfiguration Building, and the Entry Control Facility, have been successfully turned over to the systemization team. The Biotreatment Area was completed on April 30, 2012.

Construction of the PCAPP operator training and certification facility was completed November 2012; classroom training started in late December 2012. Installation of the training equipment in the "hands-on" area of the facility began in June 2013 and is scheduled for completion and systemization in second quarter of FY 2014. Development of discrete knowledge-based courses is complete, but practical exercises using the training equipment cannot be initiated until the equipment is installed and systemized. Demilitarization Protective Ensemble suit training was initiated in December 2013.

PCAPP continues to work closely with the Colorado Department of Public Health and Environment (CDPHE) Hazardous Materials and Waste Management Division on a monthly basis. The focus of the meetings is twofold: 1) the primary goal is to keep approval of key regulatory documentation, such as Environmental Permit Modifications, Management and Operational Plans, Emergency and Contingency Plans, and Facility Construction Certifications on schedule, and 2) to enhance CDPHE knowledge basis and familiarity of the PCAPP facility, systems, processes, and operational personnel.

The ACWA program completed a supplemental Environmental Assessment (EA) to the original PCAPP site-specific Environmental Impact Statement to assess the environmental impact of the construction and operation of an Explosive Destruction Technology (EDT) for the destruction of problematic munitions at PCAPP. A Finding of No Significant Impact (FONSI) was issued on August 13, 2012, which included a roll-up of comments and responses. The SC then published a Request for Proposal for an EDT. The SC and PEO ACWA received and evaluated proposals; PEO ACWA announced on April 18, 2013, the decision to use the U.S. Army's Explosive Destruction System (EDS). The Record of Environmental Consideration specific to the PCAPP EDS configuration was signed on December 17, 2013. The Army will be responsible for procuring, installing, systemizing and operating the PCAPP EDS. The SC will be responsible for transporting rejects and overpacked munitions from the PCAPP to storage. PCAPP EDS start of operations to destroy existing overpacked munitions could begin as early as first quarter of FY 2015.

In preparation for a timely and seamless transition from systemization to the operational phase of the program, a series of meetings between the SC and PEO ACWA was held in FY 2013. The SC submitted their initial proposal for PCAPP operations on December 17, 2012. Draft and final PEO ACWA Technical Evaluation Reports of the SC's initial operations proposal were delivered on April 10, 2013, and May 23, 2013, respectively. Follow-up meetings were held between the PEO ACWA and the SC to reach agreement on an affordable operational schedule and staffing levels. The meetings resulted in agreement on a significantly shorter operations duration and lower staffing level than originally proposed by the SC. The SC submitted a revised operations proposal that reflected those agreements on July 31, 2013. This proposal was resubmitted on January 30, 2014, as a result of input from the Defense Contract Management Agency. The development of the Pre-negotiation Objective Memorandum is now targeted for second quarter of FY 2014 with negotiation anticipated to start in third quarter of FY 2014.

BGCAPP:

BGCAPP is a fixed-base, single-use system designed to perform all necessary steps for destruction of the stockpile of chemical weapons in storage at Blue Grass Army Depot (BGAD), KY.

As of December 22, 2013, construction at BGCAPP is approximately 79 percent complete and systemization is approximately 14 percent complete. Construction continues on the Munition Demilitarization Building (MDB), the Supercritical Water Oxidation (SCWO) Processing Building (SPB), the Hydrolysate Storage Area (HSA), and the Utility Building (UB). The MDB is where the chemical weapons will be disassembled, the explosives removed, and

the agent and energetics neutralized. Within the MDB, large bore piping installation is nearing completion, and small bore piping installation continues. At the SPB, pipe rack steel erection is nearing completion and piping is being loaded into racks. Hydrostatic testing of all five tanks within the HSA has been successfully completed and tank painting is being finalized. The Personnel Support Building, Maintenance Building, Laboratory Building, and Control Support Building have been turned over to the Systemization Group. The UB was turned over to the Systemization Group on February 28, 2014. Construction on support structures, such as the Container Handling Building and Entry Control Facility, is scheduled to commence in the third quarter of FY 2014.

First-of-a-Kind (FOAK) equipment testing has been successfully completed on the Munitions Washout System (MWS), Rocket Shear Machine (RSM), Rocket Cutting Machine (RCM) and the SCWO system. On January 7, 2013, PEO ACWA authorized shipment of the MWS to the site following a technical review of the factory acceptance testing and the associated Technology Readiness Assessment. The SC has completed installation of the RCM equipment (May 29, 2013), RSM equipment (May 30, 2013) and MWS equipment (June 27, 2013). SCWO equipment installation is approximately 50 percent complete. Some additional testing of VX campaign equipment on the MWS and SCWO system is deferred to be completed during systemization at the site.

BGCAPP has made significant progress in efforts to assess an approach for the safe destruction of problematic mustard munitions housed at BGAD. A supplemental EA to the site-specific Final Environmental Impact Statement originally dated December 2002 was completed on June 25, 2013. On October 24, 2013, the FONSI was signed with comments and responses, and subsequently the PEO ACWA authorized a limited-notice-to-proceed for the SC to move forward with the process to select an EDT to destroy these problematic munitions. On November 12, 2013, the SC announced selection of UXB International, Inc., for the Static Detonation Chamber (SDC). BGCAPP continues to evaluate the SC proposal to design, construct, install, systemize, operate and close the SDC and support facilities, as well as, install required utilities/infrastructure. Full contract award to the SC is anticipated the third quarter of FY 2014.

An application for a modification to the BGAD Resource and Conservation Recovery Act (RCRA) hazardous waste permit has been prepared for the operation of the SDC. The application has undergone BGCAPP review and is in the comment resolution phase. BGAD submitted the final application to the Kentucky Department of Environmental Protection (KDEP) on March 14, 2014. A public information meeting on this permit modification request will be held during the third quarter of FY 2014.

There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

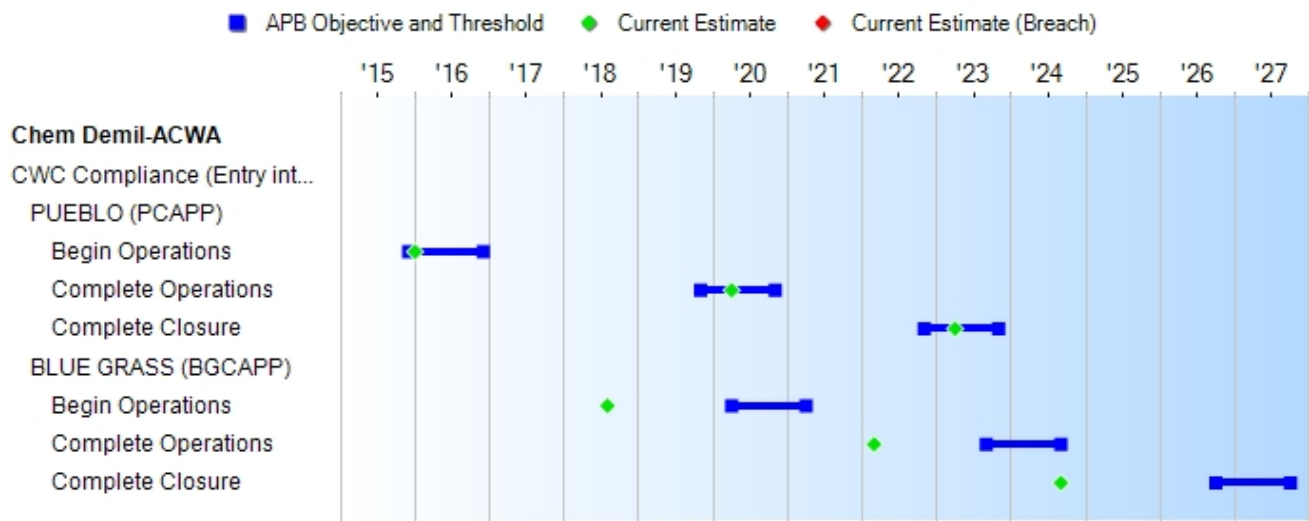
Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	
CWC Compliance (Entry into Force April 29, 1997)					
PUEBLO (PCAPP)					
Begin Operations	DEC 2015	DEC 2015	DEC 2016	JAN 2016	(Ch-1)
Complete Operations	NOV 2019	NOV 2019	NOV 2020	APR 2020	(Ch-2)
Complete Closure	NOV 2022	NOV 2022	NOV 2023	APR 2023	(Ch-3)
BLUE GRASS (BGCAPP)					
Begin Operations	APR 2020	APR 2020	APR 2021	AUG 2018	(Ch-4)
Complete Operations	SEP 2023	SEP 2023	SEP 2024	MAR 2022	(Ch-5)
Complete Closure	OCT 2026	OCT 2026	OCT 2027	SEP 2024	(Ch-6)

Change Explanations

(Ch-1) The current estimate for PCAPP Begin Operations slipped by one month from December 2015 to January 2016 due to revisions to the risk register in the 2013 POE.

(Ch-2) The current estimate for PCAPP Complete Operations slipped by 5 months from November 2019 to April 2020 due to revisions to the risk register in the 2013 POE.

(Ch-3) The current estimate for PCAPP Complete Closure slipped by 5 months from November 2022 to April 2023 because Complete Operations slipped by 5 months.

(Ch-4) The current estimate for BGCAPP Begin Operations improved by 15 months from April 2020 to August 2018 due to accelerated construction schedules.

(Ch-5) The current estimate for BGCAPP Complete Operations improved by 18 months from September 2023 to March 2022 due to construction and systemization completion ahead of schedule.

(Ch-6) The current estimate for BGCAPP Complete Closure improved 23 months from October 2026 to September 2024 due to operations ending earlier.

Memo

The current estimate is based on the 2013 POE dated September 16, 2013.

Acronyms and Abbreviations

BGCAPP - Blue Grass Chemical Agent-Destruction Pilot Plant

CWC - Chemical Weapons Convention

PCAPP - Pueblo Chemical Agent-Destruction Pilot Plant

POE - Program Office Estimate

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Environmental Laws and Regulations	Meets DoD, State, and/or Federal Requirements	Meets DoD, State, and/or Federal Requirements	Meets DoD, State, and/or Federal Requirements	On Track	Meets DoD, State, and/or Federal Requirements
Safety and Occupational Health Laws and Regulations	Meets DoD, State, and/or Federal Requirements	Meets DoD, State, and/or Federal Requirements	Meets DoD, State, and/or Federal Requirements	On Track	Meets DoD, State, and/or Federal Requirements
Chemical Agent Release	0	0	0	On Track	0
Chemical Agent Exposure	0	0	0	On Track	0

Requirements Source

Operational Requirements Document (ORD) dated September 2, 1994

Change Explanations

None

Memo

Environmental Laws and Regulations: Facility is operating in compliance with all conditions specified in environmental permits and applicable laws and regulations. The threshold is breached if violation of law or regulation warrants a stop-work order issued by the DoD, the State, the Department of Health and Human Services, or the Environmental Protection Agency and causes a schedule delay of more than 12 months.

Safety and Occupational Health Laws and Regulations: Facility is operating in compliance with the conditions specified in safety and occupational health laws and regulations. The threshold is breached if a violation warrants a stop-work order issued by DoD, the State, or the Occupational Safety and Health Administration and causes a schedule delay of more than 12 months.

Chemical Agent Release: An event involving chemical agent-destruction pilot plants where the following occurs:

- Confirmed chemical agent release above the General Population Limit (GPL) at the installation boundary measured in accordance with the approved monitoring and/or modeling plan with the pilot plant as the identified source.
- Confirmed chemical agent release from the pilot plant's exhaust air filter stack above the allowable threshold limit. Allowable threshold limits are calculated as vapor screening level ceiling values.

Chemical Agent Exposure: Department of the Army Implementation Guidance Policy for Revised Airborne

Exposure Limits (June 18, 2004) Appendices A and B, defines a chemical agent exposure as an event when an individual exhibits clinical signs or symptoms of being exposed to chemical agent.

Track to Budget**RDT&E**

Appn	BA	PE
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Defense-
Wide 0390 02 0708007A

Project	Name
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Chemical Agents and Munitions
Destruction (Shared) (Sunk)

Defense-
Wide 0390 02 0708083D

Project	Name
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Chemical Agents and Munitions
Destruction (Shared)

MILCON

Appn	BA	PE
------	----	----

Defense-
Wide 0391 01 0708007D

Project	Name
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Pueblo Chemical Depot
Ammunition Demilitarization
Facility (Sunk)
Blue Grass Army Depot
Ammunition Demilitarization

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2011 \$M			BY2011 \$M	TY \$M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	8615.5	8615.5	9477.1	8850.2	9246.6	9246.6	9634.8
Procurement	0.0	0.0	--	0.0	0.0	0.0	0.0
Flyaway	--	--	--	0.0	--	--	0.0
Recurring	--	--	--	0.0	--	--	0.0
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	1365.3	1365.3	1501.8	1358.8	1370.5	1370.5	1359.2
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	9980.8	9980.8	N/A	10209.0	10617.1	10617.1	10994.0

Confidence Level for Current APB Cost 50% -

The Independent Cost Estimate (ICE) to support Chemical Demilitarization-Assembled Chemical Weapons Alternatives Program, Milestone B decision, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation (CAPE), is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Program (MDAP) programs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	3136	3136	3136
Procurement	0	0	0
Total	3136	3136	3136

The RDT&E quantity reflects tons of chemical agent to be destroyed by the ACWA program. This number is 3,136 U.S. tons (881,842 munitions) and is composed of 2,613 U.S. tons (780,078 munitions) in the Pueblo stockpile and 523 U.S. tons (101,764 munitions) in the Blue Grass stockpile.

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	3448.5	584.2	575.8	613.7	617.9	655.8	641.9	2497.0	9634.8
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MILCON	1198.0	122.5	38.7	0.0	0.0	0.0	0.0	0.0	1359.2
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2015 Total	4646.5	706.7	614.5	613.7	617.9	655.8	641.9	2497.0	10994.0
PB 2014 Total	4653.8	706.7	714.5	620.5	614.4	697.6	742.4	1903.5	10653.4
Delta	-7.3	0.0	-100.0	-6.8	3.5	-41.8	-100.5	593.5	340.6

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	3136	0	0	0	0	0	0	0	0	3136
Production	0	0	0	0	0	0	0	0	0	0
PB 2015 Total	3136	0	0	0	0	0	0	0	0	3136
PB 2014 Total	3136	0	0	0	0	0	0	0	0	3136
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

0390 | RDT&E | Chemical Agents and Munitions Destruction, Defense

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
1997	--	--	--	--	--	--	39.2
1998	--	--	--	--	--	--	4.0
1999	--	--	--	--	--	--	32.6
2000	--	--	--	--	--	--	108.3
2001	--	--	--	--	--	--	78.5
2002	--	--	--	--	--	--	22.2
2003	--	--	--	--	--	--	97.5
2004	--	--	--	--	--	--	167.3
2005	--	--	--	--	--	--	174.5
2006	--	--	--	--	--	--	52.5
2007	--	--	--	--	--	--	215.8
2008	--	--	--	--	--	--	305.7
2009	--	--	--	--	--	--	283.3
2010	--	--	--	--	--	--	452.8
2011	--	--	--	--	--	--	385.9
2012	--	--	--	--	--	--	401.8
2013	--	--	--	--	--	--	626.6
2014	--	--	--	--	--	--	584.2
2015	--	--	--	--	--	--	575.8
2016	--	--	--	--	--	--	613.7
2017	--	--	--	--	--	--	617.9
2018	--	--	--	--	--	--	655.8
2019	--	--	--	--	--	--	641.9
2020	--	--	--	--	--	--	765.7
2021	--	--	--	--	--	--	649.8
2022	--	--	--	--	--	--	545.6

2023	--	--	--	--	--	--	344.5
2024	--	--	--	--	--	--	158.4
2025	--	--	--	--	--	--	30.9
2026	--	--	--	--	--	--	2.1
Subtotal	3136	--	--	--	--	--	9634.8

Annual Funding BY\$**0390 | RDT&E | Chemical Agents and Munitions Destruction, Defense**

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2011 \$M	Non End Item Recurring Flyaway BY 2011 \$M	Non Recurring Flyaway BY 2011 \$M	Total Flyaway BY 2011 \$M	Total Support BY 2011 \$M	Total Program BY 2011 \$M
1997	--	--	--	--	--	--	49.0
1998	--	--	--	--	--	--	4.9
1999	--	--	--	--	--	--	39.4
2000	--	--	--	--	--	--	130.3
2001	--	--	--	--	--	--	93.4
2002	--	--	--	--	--	--	26.1
2003	--	--	--	--	--	--	114.2
2004	--	--	--	--	--	--	191.5
2005	--	--	--	--	--	--	194.3
2006	--	--	--	--	--	--	56.8
2007	--	--	--	--	--	--	227.8
2008	--	--	--	--	--	--	316.2
2009	--	--	--	--	--	--	289.7
2010	--	--	--	--	--	--	456.0
2011	--	--	--	--	--	--	374.1
2012	--	--	--	--	--	--	390.8
2013	--	--	--	--	--	--	600.2
2014	--	--	--	--	--	--	545.3
2015	--	--	--	--	--	--	527.7
2016	--	--	--	--	--	--	551.6
2017	--	--	--	--	--	--	544.5
2018	--	--	--	--	--	--	566.6
2019	--	--	--	--	--	--	543.7
2020	--	--	--	--	--	--	635.8
2021	--	--	--	--	--	--	529.0
2022	--	--	--	--	--	--	435.5
2023	--	--	--	--	--	--	269.6
2024	--	--	--	--	--	--	121.5
2025	--	--	--	--	--	--	23.2

2026	--	--	--	--	--	--	1.5
Subtotal	3136	--	--	--	--	--	8850.2

Annual Funding TY\$
0391 | MILCON | Chemical Demilitarization
Construction, Defense

Fiscal Year	Total Program TY \$M
2000	2.0
2001	11.8
2002	29.3
2003	56.6
2004	104.2
2005	81.9
2006	--
2007	131.0
2008	104.2
2009	144.3
2010	187.9
2011	124.7
2012	75.3
2013	144.8
2014	122.5
2015	38.7
Subtotal	1359.2

Annual Funding BY\$
0391 | MILCON | Chemical Demilitarization
Construction, Defense

Fiscal Year	Total Program BY 2011 \$M
2000	2.4
2001	14.0
2002	34.0
2003	64.1
2004	114.8
2005	87.6
2006	--
2007	135.2
2008	106.1
2009	144.1
2010	184.4
2011	120.4
2012	71.6
2013	135.2
2014	110.6
2015	34.3
Subtotal	1358.8

Low Rate Initial Production

There is no LRIP for this Program.

Foreign Military Sales

None

Nuclear Costs

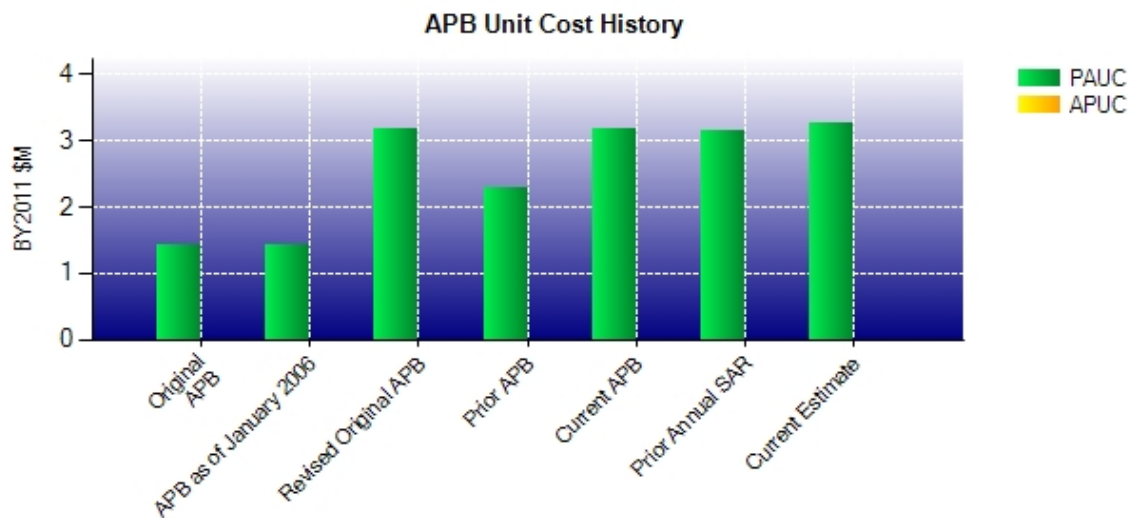
None

Unit Cost**Unit Cost Report**

	BY2011 \$M	BY2011 \$M	
Unit Cost	Current UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9980.8	10209.0	
Quantity	3136	3136	
Unit Cost	3.183	3.255	+2.26
Average Procurement Unit Cost (APUC)			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

	BY2011 \$M	BY2011 \$M	
Unit Cost	Revised Original UCR Baseline (MAR 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9980.8	10209.0	
Quantity	3136	3136	
Unit Cost	3.183	3.255	+2.26
Average Procurement Unit Cost (APUC)			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

Unit Cost History



	Date	BY2011 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	APR 2003	1.434	N/A	1.355	N/A
APB as of January 2006	APR 2003	1.434	N/A	1.355	N/A
Revised Original APB	MAR 2012	3.183	N/A	3.386	N/A
Prior APB	APR 2007	2.293	N/A	2.540	N/A
Current APB	MAR 2012	3.183	N/A	3.386	N/A
Prior Annual SAR	DEC 2012	3.160	N/A	3.397	N/A
Current Estimate	DEC 2013	3.255	N/A	3.506	N/A

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3.386	0.021	0.000	0.098	0.000	0.001	0.000	0.000	0.120	3.506

Current SAR Baseline to Current Estimate (TY \$M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	--	--	--	--	--	--	--	--	0.000

APUC Unit Cost History is not available: No Initial APUC Estimate calculated due to lack of defined quantities.

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	N/A	N/A	N/A
Milestone III	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	N/A	2430.4	10994.0
Total Quantity	N/A	N/A	0	3136
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	N/A	3.506

Cost Variance

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	9246.6	--	1370.5	10617.1
Previous Changes				
Economic	+122.4	--	+3.0	+125.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-42.3	--	-46.8	-89.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+80.1	--	-43.8	+36.3
Current Changes				
Economic	-57.1	--	-2.3	-59.4
Quantity	--	--	--	--
Schedule	+308.1	--	--	+308.1
Engineering	--	--	--	--
Estimating	+57.1	--	+34.8	+91.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+308.1	--	+32.5	+340.6
Adjustments	--	--	--	--
Total Changes	+388.2	--	-11.3	+376.9
CE - Cost Variance	9634.8	--	1359.2	10994.0
CE - Cost & Funding	9634.8	--	1359.2	10994.0

Summary Base Year 2011 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	8615.5	--	1365.3	9980.8
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-33.1	--	-37.4	-70.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-33.1	--	-37.4	-70.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+217.1	--	--	+217.1
Engineering	--	--	--	--
Estimating	+50.7	--	+30.9	+81.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+267.8	--	+30.9	+298.7
Adjustments	--	--	--	--
Total Changes	+234.7	--	-6.5	+228.2
CE - Cost Variance	8850.2	--	1358.8	10209.0
CE - Cost & Funding	8850.2	--	1358.8	10209.0

Previous Estimate: December 2012

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-57.1
Net increase due primarily to longer duration of systemization and operations phases at Pueblo Chemical Agent-Destruction Chemical Pilot Plant. (Schedule)	+217.1	+308.1
Adjustment for current and prior escalation. (Estimating)	+13.9	+14.6
Revised estimate reflects the application of new outyear escalation indices. (Estimating)	+36.8	+42.5
RDT&E Subtotal	+267.8	+308.1

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.3
Adjustment for current and prior escalation. (Estimating)	+2.3	+2.3
Additional construction costs at BGCAPP associated with safety, security, and environmental compliance requirements. (Estimating)	+28.6	+32.5
MILCON Subtotal	+30.9	+32.5

Contracts

Appropriation: RDT&E

Contract Name	Pueblo
Contractor	Bechtel National Inc.
Contractor Location	Pueblo, CO 81003
Contract Number, Type	DAAA09-02-D-0025/1, CPIF/CPFF/FFP
Award Date	September 27, 2002
Definitization Date	September 30, 2002

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
178.2	N/A	2613	1876.8	N/A	2613	2131.6	2253.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional tasks being awarded. The initial contract price only included the initial design effort.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/16/2014)	-106.1	-9.2
Previous Cumulative Variances	-68.5	-15.8
Net Change	-37.6	+6.6

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional time and resources needed to complete major punch list and exclusion items, such as coatings and the electronic security system and additional engineering resources required to support construction and systemization activities.

The favorable net change in the schedule variance is due to greater installation efficiencies aided by extended work week and an extensive effort to incorporate all scope activities in the schedule resulting in a more comprehensive and realistic schedule.

Contract Comments

This contract was initially a cost plus incentive fee, multi-phase Task Order (TO) contract. The restructured contract transitioned from an incentive fee structure to an award fee structure on September 26, 2013 via Modification 68. The Initial Contract Target Price (\$178.2M) only included the initial design effort. By December 2010, the restructured contract included the original contract (TOs 1 through 6) and a new contract covering Pre-Systemization and Systemization. Additionally, Operations and Closure phases will eventually be added. The Pueblo Chemical Agent-Destruction Chemical Pilot Plant (PCAPP) Systems Contractor (SC) proposal for the operations phase has been submitted and is currently under review by the government. The Current Contract Target Price of \$1,876.7M incorporates all contract modifications through December 2013.

TO 1, which was definitized on September 30, 2002, required the SC to develop the Design Build Plan and was awarded for a total contract value of \$3.9M. The revised Budget at Completion (BAC) is \$3.6M. All deliverables are complete.

TO 2, which was definitized on May 5, 2003, required the SC to design the facility. (Design completion is now included in TO 6.) TO 2 had a total contract value of \$173.5M when initiated in April 2003. A subsequent Stop Work Order budget adjustment issued in February 2012 resulted in an adjusted total contract value of \$142.1M. The revised BAC for this TO is \$127.8M. All deliverables are complete.

TO 3, which was definitized on December 14, 2004, required the SC to conduct special studies as required and support design and fabrication of first-of-a-kind (FOAK) equipment. This task has a total contract value of \$41.8M. The revised BAC for this TO is \$38.4M. All deliverables are complete.

TO 4, which was definitized on November 1, 2003, required the SC to provide Project Services support, including public outreach, to the contract. This task, which is complete, has a total contract value of \$52.5M and was primarily level of effort work. The revised BAC for this TO is \$49.4M.

TO 5 requires the SC to construct the PCAPP facilities. This task has a current total contract value of \$821.2M. The revised BAC for this TO is \$762.3M. The SC declared construction complete in December 2012 with exclusions. Exclusions will be completed by FY 2014.

TO 6, which was definitized on September 7, 2005, required the SC to complete the optimized redesign. This task has a total contract value of \$97.6M. The revised BAC for this TO is \$88.3M. All deliverables are complete.

Systemization was awarded in two parts: Part 1, Pre- Systemization and Part 2, Systemization. Part 1, which includes work during the Construction phase associated with preparation of the Systemization phase documentation, was awarded in June 2009. Part 2, which includes all the major tasks, was awarded in December 2010. The total contract value of Systemization is \$717M. The revised BAC for this task is \$758.89M. Construction turn-over delays have impacted Systemization work. The SC completed re-planning of the Systemization schedule in September 2013.

EAC Changes:

The Contract Level Estimate at Completion (EAC) increased \$201.58M from the previous SAR, from \$1778.15 to \$1,979.73M.

The Contract level EAC increase of \$201.58M is comprised of Task 1 and Task 2 (+\$0.001M); Task 3 FOAK/Energetics (-\$0.08M); Task 4 (+\$3.99M); Task 5 Construction (+\$29.3M); Task 6 Redesign (+\$0.08M); and Systemization Task (+\$165.37M).

Construction-

A further analysis of the Construction increase reveals a base EAC increase of +\$29.33M that includes the sum of control account EACs plus the Undistributed Budget. In addition, TO 5 Most Likely EAC also now includes all unresolved/potential trends and requests for equitable adjustment. At the Control Account level, the largest contributors to the increased EAC are: Construction Resident Engineering/Non Manual (+\$6.396M); Construction Distributable Costs (+\$3.912M); Agent Processing Building (+\$4.769M); Enhanced Reconfiguration Building (+\$2.434M); Yard A (+\$3.336M); Yard B (+\$2.668M); Yard C (\$1.405M); Bio Treatment Area (+\$2.071M); and over half a dozen accounts encompassing the balance of Process Facilities construction amounting to +\$2.34M.

Systemization-

Systemization increase shows a base EAC increase of +\$163.37M (sum of distributed budget EACs in Control Accounts plus the Undistributed Budget). The EAC growth includes a \$140M schedule extension for Systemization that will be negotiated by July 2014.

At the Control Account level, the largest contributors increased by \$28.988M. The largest of these contributors are: Commissioning & Startup Utilities (+\$4.169M); Commissioning & Startup Maintenance Support (+\$11.457M); Commissioning & Startup Operations Support (+\$5.563M); and Project Services (+\$7.799M).

Appropriation: RDT&E

Contract Name	Blue Grass
Contractor	Bechtel Parsons JV
Contractor Location	Richmond, KY 40475
Contract Number, Type	DAAA09-03-D-0023/1, CPIF/CPFF/FFP
Award Date	June 13, 2003
Definitization Date	June 13, 2003

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
138.0	N/A	523	2669.6	N/A	523	2733.2	2728.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional tasks and Contract Line Item Number (CLINs) being awarded. The initial contract price only included the initial design effort.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/16/2014)	-48.2	-11.3
Previous Cumulative Variances	-26.0	-19.1
Net Change	-22.2	+7.8

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional electrical engineering support needed to reduce the backlog of isometric drawing logs, incorporation of Facility Control System design changes, overtime in all engineering disciplines required to support quicker turnarounds on construction change documents and additional engineering management resources required for construction support.

The favorable net change in the schedule variance is due to single-point adjustment reflecting the Construction Phase IV (CLIN 002) replan in the August and September accounting periods that moved Budgeted Cost of Work Scheduled (BCWS) that had been planned through the preceding periods into the future, resulting in a favorable \$26.2M schedule variance adjustment in that period.

Contract Comments

The Government awarded Contract DAAA09-03-D-0023 to Bechtel Parsons Blue Grass Team (BPGT) on June 13, 2003 (Task Order (TO) structure). This contract is a cost plus incentive fee multi-phase Task Order (TO) contract. There were a total of seven TOs awarded on the contract, ending up with a total negotiated contract cost (NCC) of \$564.4M (excluding fees of \$64.7M).

TO 1, which was definitized on June 13, 2003, required the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) Systems Contractor (SC) to complete the BGCAPP design. This task has a total contract value of \$297.5M (includes fee). This task, TO 1, is 100 percent complete and represents 10.8 percent of the total budget at complete (BAC) for both contracts (DAAA09-03-D-0023 and W52P1J-09-C-0013). The current Estimate At Complete (EAC) for the TO is \$306.2M and was completed in February 2011.

TO 2, was definitized on September 30, 2003, and then cancelled. It required the BGCAPP SC to implement a risk mitigation program in support of the BGCAPP. This TO had a total contract value of \$20K (includes fee). The BAC has since been revised to \$0.

TO 3, which was definitized on September 26, 2003, required the BGCAPP SC to provide Public Communications services support to the BGCAPP contract. This TO has a total contract value of \$3.3M (includes fee). The work is 100 percent complete and represents 0.1 percent of the total BAC for both contracts.

TO 4, which was definitized on February 22, 2006, required the BGCAPP SC to initiate construction of the BGCAPP facilities, and was further expanded to include Phase I, Phase II, and Phase III. The Phase II construction proposal was awarded in November 2007. A Limited Notice to Proceed (LNTP) was then issued for Phase IIIA and IIIB. The Phase IIIA construction proposal was submitted in November 2007, and was awarded in December 2008. The Phase IIIB proposal was submitted in January 2008, and was awarded in July 2009. There was a "Phase IV" proposal submitted in April 2009 which was eventually negotiated and awarded in March 2011 under the new contract as "Contract Line Item Number (CLIN) 002" (see below). This TO has a total contract value of \$228.1M (includes fee). The work is 100 percent complete and represents 8.5 percent of the total BAC for both contracts. The current EAC for the TO is \$179.4M and was completed in September 2010.

TO 5, which was definitized on August 2, 2005, required the BGCAPP SC to perform the special studies and design considerations. This task has a total contract value of \$1.65M (includes fee). The work is 100 percent complete and represents 0.1 percent of the total BAC for both contracts.

TO 6, which was definitized on September 19, 2006, is a LNTP for the BGCAPP SC to perform expedited rocket motors removal technology validation tests. This task has a total contract value of \$3.3M (includes fee). The work is 100 percent complete and represents 0.1 percent of the total BAC for both contracts.

TO 7, which was definitized on June 20, 2007, required the BGCAPP SC to support design and fabrication of the first-of-a-kind (FOAK) equipment. TO 7 was further broken into Part I and Part II (Part II was later negotiated as "CLIN 006" under the new contract). The TO has a total contract value of \$95.2M (includes fee). Part I was awarded in April 2009. As mentioned above, there was a "Part II" proposal that was submitted in April 2009 and was eventually negotiated and awarded under the new contract as "CLIN 002" in May 2011 (see below). This task was 100 percent complete as of November 2012, and represents 3.5 percent of the total BAC for both contracts. The current EAC for the TO is \$90.2M and was substantially completed in December 2010, with hold out work completed in 2012.

The Government awarded Contract W52P1J-09-C-0013 to BPGT on March 19, 2009 (CLIN structure). The Procuring Contracting Officer established and executed Contract W52P1J-09-C-0013 strictly as an administrative change which restructured and converted Contract DAAA09-03-D-0023 (the original competitively solicited and awarded indefinite delivery, indefinite quantity (IDIQ) contract) into Contract W52P1J-09-C-0013 (a multi-year, lifecycle, cost reimbursable, systems contract). Contract W52P1J-09-C-0013 permits the Government and BPGT

to complete project lifecycle planning and execution. This contract is a cost plus incentive fee CLIN contract. The total NCC for this contract is \$1,847.9M (excluding fees of \$192.6M).

CLIN 002 (Construction Phase IV) was definitized on March 31, 2011, and consists of completing all BGCAPP construction required for plant systemization and operations. This CLIN currently has a total contract value of \$1,276.1M (includes fee). Another Contract Modification was issued on July 11, 2013 to incorporate the FY 2013 Continued Resolution Authority impacts to this CLIN. The total work under this CLIN was 72.8 percent complete in November 2013, and represents 46.3 percent of the total BAC for both contracts.

CLIN 003 (Systemization) was partially definitized on June 4, 2011, consisting of planning, scheduling, staffing, supporting and managing the first FY of plant systemization (subsequently referred to as FY 2012 Pre-Systemization). The Balance of Systemization proposal was submitted in November 2011, and was awarded in September 2012. This CLIN currently has a total contract value of \$619.9M (includes fee). The total work under this CLIN was 13.3 percent complete in November 2013, and represents 23.9 percent of the total BAC for both contracts.

CLIN 006 (FOAK Part II) was definitized on May 31, 2011, and consists of manufacturing, testing and delivering six (6) Munitions Washout System cavity access machines, two (2) rocket cutting and shearing lines, two (2) neutralization system sampling stations, and three (3) Supercritical Water Oxidation (SCWO) systems with aluminum filtration systems. This CLIN currently has a total contract value of \$134.1M (includes fee). The total work under this CLIN is 100 percent complete, and represents 5.0 percent of the total BAC for both contracts. The current EAC for this CLIN is \$179.4M and was completed in September 2013.

CLIN 007 Explosive Detonation Technologies (EDT) Part "A" was definitized on May 31, 2011, and consisted of conducting a comprehensive feasibility study analysis and comparison of alternate approaches for processing problematic mustard munitions. The EDT Part "A" Extension awarded in September 2012, and EDT Part "B" was awarded in June 2013. In November 2013, an undefinitized portion of EDT Part "C" was established as authorized unpriced work based on the incremental proposed value through July 2014. This CLIN currently has a total contract value of \$10.3M (includes fee). The total work under this CLIN was 27.5 percent complete in November 2013, and represents 1.7 percent of the total BAC for both contracts. The current EAC for this CLIN is \$29.2M.

EAC Changes:

The total EAC increased \$93.9M from the previous SAR from \$2,296.4M to \$2,390.3M. The contract percent complete increased from 59.8 to 65.9 percent complete. The net EAC increase of \$93.9M is due to increasing CLIN 002 Construction by \$54.5M, CLIN 007 EDT by \$29.4M, CLIN 003 Systemization by \$8.7M, and CLIN 006 FOAK by \$1.7M, with some offset due to closed TO rate adjustments of -\$0.5M.

The EAC increase for CLIN 002 Construction is primarily due to Munitions Demilitarization Building (MDB) actuals and forecasted adjustments; Construction Distributables actuals and forecasted adjustments; actual and forecasted Resident Engineering inefficiencies; Project Services Business Management: forecasted non-manual labor increases in Project Controls, Info Services & Technology, and Acquisitions (the non-Construction support side of that department); Construction Bulk Materials: correction of previously underestimated estimate to complete (ETC) commodity quantities; Business Management Support to Construction: forecasted non-manual labor increases in Project Controls, Administration and Document Control support, and Acquisitions Services; and Project Management and Business Management Support to Construction: increased Non-Manual staffing to support the replan of the balance of Construction driven by FY 2013 Continuing Resolution Act impacts.

The EAC increase for CLIN 007 EDT is due to incorporation of the undefinitized portion of EDT Part "C" established as authorized unpriced work based on the incremental proposed value through July 2014; and, additional Project Management and Business Management Support to Construction forecasts reflect added resources to support the

night shift (i.e., Craft Supervision, Security, Timekeeping, and Health and Safety).

The EAC increase for CLIN 003 Systemization is due to Additional Business/Operations Management Support, Utility Systemization Safety and Health, Systemization Support of Construction, and Craft support of Systemization resulting from falling behind in turnovers from Construction; and, forecasted increases driven by replanning of Start-Up direct labor and Relocation costs, Procurement, Construction direct support, Project Services Start-Up support, Lab support, and related other direct costs.

The EAC increase for CLIN 006 FOAK Part II is due to a correction to accrued KY state taxes on delivered FOAK equipment.

Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	3136	0.00%
Production	0	0	0	--
Total Program Quantity Delivered	0	0	3136	0.00%

Expended and Appropriated (TY \$M)

Total Acquisition Cost	10994.0	Years Appropriated	18
Expended to Date	4161.7	Percent Years Appropriated	60.00%
Percent Expended	37.85%	Appropriated to Date	5353.2
Total Funding Years	30	Percent Appropriated	48.69%

The above data is current as of 2/28/2014.

Operating and Support Cost

Chem Demil-ACWA

Assumptions and Ground Rules

Cost Estimate Reference:

N/A

Sustainment Strategy:

Sustainment Strategy statement from the January 2012 Acquisition Strategy for ACWA approved on February 3, 2012:

Unlike other DoD acquisition programs, the ACWA Program does not result in fielded items for the warfighter. Upon successful performance of the contractual requirements, all United States chemical agent munitions stockpiles will be eliminated and the destruction facilities will be decontaminated, decommissioned, and demolished. Thus, there are no requirements for future sustainability. As part of the current contracts, the contractors are required to maintain and sustain the facilities until closure of the facilities.

Antecedent Information:

N/A

Unitized O&S Costs BY2011 \$M			
Cost Element	Chem Demil-ACWA	No Antecedent (Antecedent)	
Unit-Level Manpower	0.000		0.000
Unit Operations	0.000		0.000
Maintenance	0.000		0.000
Sustaining Support	0.000		0.000
Continuing System Improvements	0.000		0.000
Indirect Support	0.000		0.000
Other	0.000		0.000
Total	--		--

Unitized Cost Comments:

N/A

	Total O&S Cost \$M			
	Current Development APB Objective/Threshold		Current Estimate	
	Chem Demil-ACWA	Chem Demil-ACWA	No Antecedent (Antecedent)	
Base Year	N/A	N/A	N/A	N/A
Then Year	N/A	N/A	N/A	N/A

Total O&S Costs Comments:

O&S costs are an integral part of the ACWA program and, as such, are reported previously in the funding and cost sections of this report.

Disposal Costs:

N/A