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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 2020 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Sensitivity Originator

No originator information is available at this time.

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name

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

DoD Component

DoD

Responsible Office

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References

Pueblo (PCAPP)

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 22, 2012

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 22, 2012

Blue Grass (BGCAPP)

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 22, 2012

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 22, 2012

Mission and Description

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 DAE assigned 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 the 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 2018 SAR details changes to cost, schedule, and performance since last reported in the December 2017 SAR for the Chem Demil-ACWA program. Chem Demil-ACWA is responsible for the safe destruction of 3,136 tons of mustard and nerve agent stockpiled at the Blue Grass Army Depot in Kentucky and the Pueblo Chemical Depot in Colorado. The Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) is currently testing and validating systems and procedures, as part of the systemization phase. The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) is in pilot testing, a phase in which munitions are gradually introduced into the plant leading up to full-rate agent destruction operations. As of March 11, 2019, the PCAPP safely destroyed 623.1 U.S. tons of agent.

On September 10, 2018, Mr. Michael Abaie was named Program Executive Officer, Assembled Chemical Weapons Alternatives (PEO ACWA). The PEO ACWA continues to evaluate various options, including the potential use of additional Explosive Destruction Technologies (EDT), to accelerate munitions destruction. Chem Demil-ACWA found that the Static Detonation Chambers (SDCs), an EDT that will be used at the BGCAPP, would accelerate munitions destruction while enhancing worker and community safety. Chem Demil-ACWA is procuring three SDCs for the PCAPP and is evaluating additional SDCs for the BGCAPP.

The PEO ACWA established a contracting task force to review the ACWA contracts and recommend steps to optimize Systems Contractor (SC) performance. As part of his contracting initiatives and in response to the task force recommendation, the PEO ACWA intends to take advantage of the authorities of Public Law 109-364. This law authorized the use of incentive clauses to accelerate the safe elimination of the stockpile and reduce the total cost of the program. The PEO ACWA will develop, in conjunction with Army Contracting Command - Rock Island (ACC-RI), a contracting strategy incorporating an overall incentive clause for the BGCAPP and the PCAPP. The PEO ACWA is also implementing management oversight processes and controls to increase SC performance and accountability.

BGCAPP

The BGCAPP will use two technologies to safely destroy the stockpile at the Blue Grass Army Depot. The Main Plant will use neutralization followed by Supercritical Water Oxidation, and the SDC will use explosive destruction.

The BGCAPP SDC is in the final stages of systemization ensuring the equipment works as designed and the facility is prepared to operate safely under various contingency scenarios. In 2018, the BGCAPP completed four systems turnovers (Communication, Compressed Air, Air Monitoring, and Electrical Distribution), and completed the remaining three systems in 1st Q FY 19 (Fire Detection and Protection, HVAC, and SDC Off-Gas Treatment). Additionally, the BGCAPP successfully tested the SDC with conventional ammunition and surrogate munitions (mustard-agent simulant) to demonstrate the ability of the SDC to safely destroy munitions. The SDC is scheduled to begin agent operations in June 2019.

The BGCAPP Main Plant continues through the systemization process to demonstrate that the various systems meet the design criteria. In 2018, the BGCAPP completed 27 system turnovers to include the Rocket Handling System, Munitions Washout System, and Munitions Demilitarization Building heating, ventilation, and air conditioning (HVAC). In December 2018, the BGCAPP completed the air balancing for the Munitions Demilitarization Building's HVAC system. Sealing the building and balancing the ventilation system are a major component of establishing agent boundaries, an essential step prior to chemical weapons destruction operations. In CY 2019, the BGCAPP will use non-agent simulant and surrogate chemicals in the Main Plant to demonstrate systems capabilities. This approach allows the BGCAPP to robustly test the systems safely. The Main Plant is scheduled to begin agent operations in late CY 2019.

PCAPP

On June 13, 2018, the PCAPP resumed agent operations after a 9-month outage. During the outage, the PCAPP upgraded multiple components to improve plant reliability. These improvements, combined with enhanced Government oversight,

resulted in a significant improvement in the daily destruction rate at the PCAPP. After a successful ramp up of agent munition processing, the PCAPP averaged 264 projectiles processed per day, more than three times the average daily rate prior to September 10, 2018.

Between June 13, 2018 and March 11, 2019, the PCAPP destroyed 62,898 155mm projectiles through the main plant, which is more munitions than the PCAPP had destroyed in total prior to June 13, 2018.

In CY 2019, the PCAPP Main Plant will conduct Integrated Facility Demonstrations (IFDs) to validate operating parameters to the Colorado Department of Public Health and Environment (CDPHE). These parameters will be incorporated into the final Resource Conservation and Recovery Act (RCRA) Part B permit; enumerating the criteria for destruction operations in the Main Plant.

As discussed above, the PEO ACWA plans to install three SDCs to augment the PCAPP's munitions destruction capability and to enhance worker and community safety. The SDCs will be used to destroy 4.2-inch mustard mortars and other problematic 155mm and 105mm projectiles. The SDCs will operate concurrently with the Main Plant. The PEO ACWA will work with the CDPHE to ensure the SDCs are installed and operated in full compliance with State and Federal environmental regulations.

The PCAPP Explosive Destruction System (EDS) completed its second campaign conducted between June 25, 2018 and December 5, 2018; destroying 391 munitions. The EDS has been closed and shipped off site. The PCAPP will use the SDC for problematic munitions in the future.

A portion of the 105mm projectiles and all of the 4.2-inch mortars in the Pueblo Chemical Depot stockpile are stored in wooden boxes. These boxed munitions are going through a process called "baseline reconfiguration." Baseline reconfiguration involves opening the boxes and separating the munitions and energetics. The munitions are then palletized and sent back to stockpile storage for later processing in the plant. The non-agent contaminated energetics are sent off-site for disposal at the Chem Demil-ACWA facility in Anniston, Alabama. The PCAPP has unboxed 27,357 of the 97,018 4.2-inch mortars as of March 11, 2019. The PCAPP completed unboxing the 105mm projectiles on February 15, 2018.

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

Threshold Breaches

Pueblo (PCAPP)

APB Breaches

Schedule		<input checked="" type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input checked="" 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 checked="" type="checkbox"/>
	APUC	<input type="checkbox"/>

Explanation of Breach

The schedule, RDT&E, and PAUC breaches were reported in the December 2016 SAR.

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	Significant
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Blue Grass (BGCAPP)

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input checked="" 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 checked="" type="checkbox"/>
	APUC	<input type="checkbox"/>

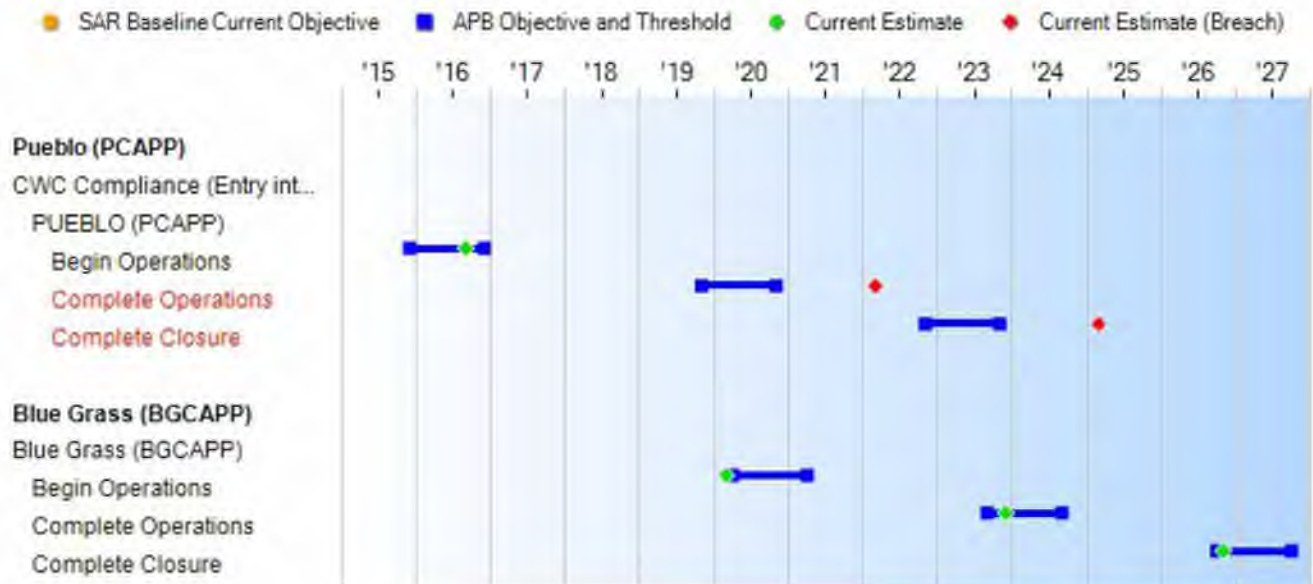
Explanation of Breach

The RDT&E and PAUC breaches were reported in the December 2016 SAR.

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	Significant
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Pueblo (PCAPP)

Schedule Events				
Events	SAR Baseline Development Estimate	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	Sep 2016
Complete Operations	Nov 2019	Nov 2019	Nov 2020	Mar 2022[†]
Complete Closure	Nov 2022	Nov 2022	Nov 2023	Mar 2025[†]

[†] APB Breach**Change Explanations**

None

Notes

The schedule breach was discussed in the December 2016 SAR.

The APB value references in the table above are from the March 22, 2012 DAE approved APB. The current estimates reflect the 2017 POE.

Acronyms and Abbreviations

PCAPP - Pueblo Chemical Agent-Destruction Pilot Plant

Blue Grass (BGCAPP)

Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Blue Grass (BGCAPP)				
Begin Operations	Apr 2020	Apr 2020	Apr 2021	Mar 2020
Complete Operations	Sep 2023	Sep 2023	Sep 2024	Dec 2023
Complete Closure	Oct 2026	Oct 2026	Oct 2027	Nov 2026

Change Explanations

None

Notes

The schedule breach was discussed in the December 2016 SAR.

The APB value references in the table above are from the March 22, 2012 DAE approved APB. The current estimates reflect the 2017 POE.

Acronyms and Abbreviations

BGCAPP - Blue Grass Chemical Agent-Destruction Pilot Plant

Performance

Pueblo (PCAPP)

Performance Characteristics				
SAR Baseline Development Estimate	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 Reference

ORD dated September 2, 1994

Change Explanations

None

Notes

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 the 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 or EDTs where the following occurs:

- Confirmed chemical agent release above the General Population Limit 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.

The APB value references in the table above are from the March 22, 2012 DAE approved APB.

Acronyms and Abbreviations

EDT - Explosive Destruction Technology

Blue Grass (BGCAPP)

Performance Characteristics				
SAR Baseline Development Estimate	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 Reference

Operational Requirements Document (ORD) dated September 2, 1994

Change Explanations

None

Notes

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 the 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 or EDTs where the following occurs:

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- 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.

The APB value references in the table above are from the March 22, 2012 DAE approved APB.

Acronyms and Abbreviations

EDT - Explosive Destruction Technology

Track to Budget

Pueblo (PCAPP)

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
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Defense-Wide 0391 01 0708007D

Project	Name
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Pueblo Chemical Depot Ammunition Demilitarization Facility (Sunk)

Blue Grass (BGCAPP)

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
---------	------

Chemical Agents and Munitions Destruction (Shared)

MILCON

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

Defense-Wide 0391 01 0708007D

Project	Name
---------	------

Blue Grass Army Depot Ammunition Demilitarization (Sunk)

Cost and Funding

Cost Summary - Total Program

Total Acquisition Cost - Total Program							
Appropriation	BY 2011 \$M			BY 2011 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	8615.5	8615.5	--	10770.0	9246.6	9246.6	11983.2
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	--	1354.4	1370.5	1370.5	1351.2
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	9980.8	9980.8	N/A	12124.4	10617.1	10617.1	13334.4

Cost and Funding

Cost Summary - Pueblo (PCAPP)

Total Acquisition Cost - Pueblo (PCAPP)							
Appropriation	BY 2011 \$M			BY 2011 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	4096.7	4096.7	4506.4	5181.6 ¹	4353.2	4353.2	5730.0
Procurement	0.0	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	606.5	606.5	667.2	558.9	593.1	593.1	541.4
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4703.2	4703.2	N/A	5740.5	4946.3	4946.3	6271.4

¹ APB Breach

Cost Notes

The APB breach was reported in the December 2016 SAR.

The current estimated total program cost in this submission has not changed from the \$13.334B identified in the 2017 SAR. Cost growth at PCAPP was due to increased preliminary schedule duration, additional technologies and escalation adjustments.

The APB value references in the table above are from the March 22, 2012, DAE approved APB.

No cost estimate has been done in the past year.

Total Quantity - Pueblo (PCAPP)			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	2613	2613	2613
Procurement	0	0	0
Total	2613	2613	2613

Quantity Notes

The unit of measure for total quantity is U.S. tons of agent.

Cost Summary - Blue Grass (BGCAPP)

Total Acquisition Cost - Blue Grass (BGCAPP)							
Appropriation	BY 2011 \$M			BY 2011 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	4518.8	4518.8	4970.7	5588.4 ¹	4893.4	4893.4	6253.2
Procurement	0.0	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	758.8	758.8	834.7	795.5	777.4	777.4	809.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	5277.6	5277.6	N/A	6383.9	5670.8	5670.8	7063.0

¹ APB Breach**Cost Notes**

The APB breach was reported in the December 2016 SAR.

The current estimated total program cost in this submission has not changed from the \$13.334B identified in the December 2017 SAR. Reduced costs at BGCAPP were due to reduced duration of Main Plant systemization.

The APB value references in the table above are from the March 22, 2012, DAE approved APB.

No cost estimate has been done in the past year.

Total Quantity - Blue Grass (BGCAPP)			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	523	523	523
Procurement	0	0	0
Total	523	523	523

Quantity Notes

The unit of measure for total quantity is U.S. tons of agent.

Cost and Funding**Funding Summary - Total Program**

Appropriation Summary									
FY 2020 President's Budget / December 2018 SAR (TY\$ M)									
Appropriation	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
RDT&E	6528.8	880.3	869.4	781.1	694.9	703.5	725.5	799.7	11983.2
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MILCON	1351.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1351.2
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2020 Total	7880.0	880.3	869.4	781.1	694.9	703.5	725.5	799.7	13334.4
PB 2019 Total	7879.8	880.3	922.5	841.1	688.6	721.6	751.9	648.6	13334.4
Delta	0.2	0.0	-53.1	-60.0	6.3	-18.1	-26.4	151.1	0.0

Cost and Funding

Funding Summary - Pueblo (PCAPP)

Appropriation Summary									
FY 2020 President's Budget / December 2018 SAR (TY\$ M)									
Appropriation	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
RDT&E	3280.7	406.4	417.7	378.7	327.5	308.2	394.0	216.8	5730.0
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MILCON	541.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	541.4
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2020 Total	3822.1	406.4	417.7	378.7	327.5	308.2	394.0	216.8	6271.4
PB 2019 Total	3821.9	406.4	429.5	389.3	314.6	232.3	186.5	103.8	5884.3
Delta	0.2	0.0	-11.8	-10.6	12.9	75.9	207.5	113.0	387.1

Funding Notes

The total program funding in this submission matches the total funding profile of \$13.334B identified in the December 2017 SAR. Cost growth at PCAPP was due to increased preliminary schedule duration, additional technologies and escalation adjustments.

The APB value references in the table above are from the March 22, 2012, DAE approved APB.

Quantity Summary										
FY 2020 President's Budget / December 2018 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Development	2613	0	0	0	0	0	0	0	0	2613
Production	0	0	0	0	0	0	0	0	0	0
PB 2020 Total	2613	0	0	0	0	0	0	0	0	2613
PB 2019 Total	2613	0	0	0	0	0	0	0	0	2613
Delta	0	0	0	0	0	0	0	0	0	0

Funding Summary - Blue Grass (BGCAPP)

Appropriation Summary									
FY 2020 President's Budget / December 2018 SAR (TY\$ M)									
Appropriation	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
RDT&E	3248.1	473.9	451.7	402.4	367.4	395.3	331.5	582.9	6253.2
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MILCON	809.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	809.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2020 Total	4057.9	473.9	451.7	402.4	367.4	395.3	331.5	582.9	7063.0
PB 2019 Total	4057.9	473.9	493.0	451.8	374.0	489.3	565.4	544.8	7450.1
Delta	0.0	0.0	-41.3	-49.4	-6.6	-94.0	-233.9	38.1	-387.1

Funding Notes

The total program funding in this submission matches the total funding profile of \$13.334B identified in the December 2017 SAR. Reduced costs at BGCAPP were due to reduced duration of Main Plant systemization.

The APB value references in the table above are from the March 22, 2012, DAE approved APB.

Quantity Summary										
FY 2020 President's Budget / December 2018 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Development	523	0	0	0	0	0	0	0	0	523
Production	0	0	0	0	0	0	0	0	0	0
PB 2020 Total	523	0	0	0	0	0	0	0	0	523
PB 2019 Total	523	0	0	0	0	0	0	0	0	523
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation - Pueblo (PCAPP)

Annual Funding - Pueblo (PCAPP)							
0390 RDT&E Chemical Agents and Munitions Destruction, Defense							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	19.6
1998	--	--	--	--	--	--	2.0
1999	--	--	--	--	--	--	16.3
2000	--	--	--	--	--	--	54.2
2001	--	--	--	--	--	--	39.3
2002	--	--	--	--	--	--	12.2
2003	--	--	--	--	--	--	73.3
2004	--	--	--	--	--	--	75.1
2005	--	--	--	--	--	--	91.7
2006	--	--	--	--	--	--	2.6
2007	--	--	--	--	--	--	105.5
2008	--	--	--	--	--	--	199.3
2009	--	--	--	--	--	--	130.1
2010	--	--	--	--	--	--	196.8
2011	--	--	--	--	--	--	179.4
2012	--	--	--	--	--	--	197.6
2013	--	--	--	--	--	--	292.7
2014	--	--	--	--	--	--	251.8
2015	--	--	--	--	--	--	318.7
2016	--	--	--	--	--	--	307.7
2017	--	--	--	--	--	--	293.1
2018	--	--	--	--	--	--	421.7
2019	--	--	--	--	--	--	406.4
2020	--	--	--	--	--	--	417.7
2021	--	--	--	--	--	--	378.7
2022	--	--	--	--	--	--	327.5
2023	--	--	--	--	--	--	308.2
2024	--	--	--	--	--	--	394.0
2025	--	--	--	--	--	--	172.8
2026	--	--	--	--	--	--	36.0
2027	--	--	--	--	--	--	8.0
Subtotal	2613	--	--	--	--	--	5730.0

Annual Funding - Pueblo (PCAPP)							
0390 RDT&E Chemical Agents and Munitions Destruction, Defense							
Fiscal Year	Quantity	BY 2011 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	24.5
1998	--	--	--	--	--	--	2.4
1999	--	--	--	--	--	--	19.7
2000	--	--	--	--	--	--	65.2
2001	--	--	--	--	--	--	46.8
2002	--	--	--	--	--	--	14.3
2003	--	--	--	--	--	--	85.8
2004	--	--	--	--	--	--	86.0
2005	--	--	--	--	--	--	102.1
2006	--	--	--	--	--	--	2.8
2007	--	--	--	--	--	--	111.4
2008	--	--	--	--	--	--	206.2
2009	--	--	--	--	--	--	133.0
2010	--	--	--	--	--	--	198.2
2011	--	--	--	--	--	--	174.0
2012	--	--	--	--	--	--	192.2
2013	--	--	--	--	--	--	280.7
2014	--	--	--	--	--	--	236.5
2015	--	--	--	--	--	--	295.2
2016	--	--	--	--	--	--	280.5
2017	--	--	--	--	--	--	261.9
2018	--	--	--	--	--	--	369.2
2019	--	--	--	--	--	--	348.9
2020	--	--	--	--	--	--	351.5
2021	--	--	--	--	--	--	312.5
2022	--	--	--	--	--	--	264.9
2023	--	--	--	--	--	--	244.4
2024	--	--	--	--	--	--	306.3
2025	--	--	--	--	--	--	131.7
2026	--	--	--	--	--	--	26.9
2027	--	--	--	--	--	--	5.9
Subtotal	2613	--	--	--	--	--	5181.6

Annual Funding - Pueblo (PCAPP) 0391 MILCON Chemical Demilitarization Construction, Defense	
Fiscal Year	TY \$M
	Total Program
2001	10.7
2002	18.0
2003	38.0
2004	88.0
2005	44.8
2006	--
2007	41.8
2008	35.2
2009	65.1
2010	92.5
2011	65.4
2012	15.4
2013	26.5
Subtotal	541.4

Annual Funding - Pueblo (PCAPP) 0391 MILCON Chemical Demilitarization Construction, Defense	
Fiscal Year	BY 2011 \$M
	Total Program
2001	12.7
2002	20.9
2003	43.0
2004	96.9
2005	47.9
2006	--
2007	43.1
2008	35.8
2009	65.0
2010	90.8
2011	63.2
2012	14.7
2013	24.9
Subtotal	558.9

Annual Funding By Appropriation - Blue Grass (BGCAPP)

Annual Funding - Blue Grass (BGCAPP)							
0390 RDT&E Chemical Agents and Munitions Destruction, Defense							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	19.6
1998	--	--	--	--	--	--	2.0
1999	--	--	--	--	--	--	16.3
2000	--	--	--	--	--	--	54.1
2001	--	--	--	--	--	--	39.2
2002	--	--	--	--	--	--	10.0
2003	--	--	--	--	--	--	24.2
2004	--	--	--	--	--	--	92.2
2005	--	--	--	--	--	--	82.8
2006	--	--	--	--	--	--	49.9
2007	--	--	--	--	--	--	110.3
2008	--	--	--	--	--	--	106.4
2009	--	--	--	--	--	--	153.2
2010	--	--	--	--	--	--	256.0
2011	--	--	--	--	--	--	206.3
2012	--	--	--	--	--	--	204.3
2013	--	--	--	--	--	--	334.9
2014	--	--	--	--	--	--	340.9
2015	--	--	--	--	--	--	258.9
2016	--	--	--	--	--	--	261.6
2017	--	--	--	--	--	--	214.8
2018	--	--	--	--	--	--	410.2
2019	--	--	--	--	--	--	473.9
2020	--	--	--	--	--	--	451.7
2021	--	--	--	--	--	--	402.4
2022	--	--	--	--	--	--	367.4
2023	--	--	--	--	--	--	395.3
2024	--	--	--	--	--	--	331.5
2025	--	--	--	--	--	--	349.2
2026	--	--	--	--	--	--	214.3
2027	--	--	--	--	--	--	19.4
Subtotal	523	--	--	--	--	--	6253.2

Annual Funding - Blue Grass (BGCAPP)							
0390 RDT&E Chemical Agents and Munitions Destruction, Defense							
Fiscal Year	Quantity	BY 2011 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	24.5
1998	--	--	--	--	--	--	2.4
1999	--	--	--	--	--	--	19.7
2000	--	--	--	--	--	--	65.1
2001	--	--	--	--	--	--	46.6
2002	--	--	--	--	--	--	11.7
2003	--	--	--	--	--	--	28.3
2004	--	--	--	--	--	--	105.5
2005	--	--	--	--	--	--	92.2
2006	--	--	--	--	--	--	54.0
2007	--	--	--	--	--	--	116.5
2008	--	--	--	--	--	--	110.1
2009	--	--	--	--	--	--	156.6
2010	--	--	--	--	--	--	257.8
2011	--	--	--	--	--	--	200.1
2012	--	--	--	--	--	--	198.7
2013	--	--	--	--	--	--	321.2
2014	--	--	--	--	--	--	320.1
2015	--	--	--	--	--	--	239.8
2016	--	--	--	--	--	--	238.5
2017	--	--	--	--	--	--	192.0
2018	--	--	--	--	--	--	359.2
2019	--	--	--	--	--	--	406.8
2020	--	--	--	--	--	--	380.1
2021	--	--	--	--	--	--	332.0
2022	--	--	--	--	--	--	297.2
2023	--	--	--	--	--	--	313.5
2024	--	--	--	--	--	--	257.7
2025	--	--	--	--	--	--	266.2
2026	--	--	--	--	--	--	160.1
2027	--	--	--	--	--	--	14.2
Subtotal	523	--	--	--	--	--	5588.4

Annual Funding - Blue Grass (BGCAPP) 0391 MILCON Chemical Demilitarization Construction, Defense		
Fiscal Year	TY \$M	
	Total Program	
2000		2.0
2001		1.1
2002		11.3
2003		18.6
2004		16.2
2005		37.1
2006		--
2007		89.2
2008		69.0
2009		79.2
2010		95.4
2011		59.3
2012		59.9
2013		110.3
2014		122.5
2015		38.7
	Subtotal	809.8

Annual Funding - Blue Grass (BGCAPP) 0391 MILCON Chemical Demilitarization Construction, Defense	
Fiscal Year	BY 2011 \$M
	Total Program
2000	2.4
2001	1.3
2002	13.1
2003	21.1
2004	17.8
2005	39.7
2006	--
2007	92.0
2008	70.3
2009	79.1
2010	93.6
2011	57.3
2012	57.1
2013	103.7
2014	112.1
2015	34.9
Subtotal	795.5

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

Pueblo (PCAPP)

None

Blue Grass (BGCAPP)

None

Nuclear Costs

Pueblo (PCAPP)

None

Blue Grass (BGCAPP)

None

Unit Cost

Pueblo (PCAPP)

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2011 \$M	BY 2011 \$M	% Change
	Current UCR Baseline (Mar 2012 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	4703.2	5740.5	
Quantity	2613	2613	
Unit Cost	1.800	2.197¹	+22.06¹
Average Procurement Unit Cost			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2011 \$M	BY 2011 \$M	% Change
	Revised Original UCR Baseline (Mar 2012 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	4703.2	5740.5	
Quantity	2613	2613	
Unit Cost	1.800	2.197	+22.06
Average Procurement Unit Cost			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

¹ Nunn McCurdy Unit Cost Breach and APB Unit Cost Breach

The APB breach was reported in the December 2016 SAR.

The Chem Demil-ACWA APB baseline is at the program level. The current PAUC for the overall program is \$3.866M (BY 2011\$), which exceeds the objective by 21.5%.

Public Law 115-91, requires Chem-Demil ACWA to report funding and schedules at the subprogram (PCAPP and BGCAPP) level.



APB Unit Cost History					
Item	Date	BY 2011 \$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	1.800	N/A	1.893	N/A
Prior APB	Mar 2012	3.183	N/A	3.386	N/A
Current APB	Mar 2012	1.800	N/A	1.893	N/A
Prior Annual SAR	Dec 2017	2.091	N/A	2.252	N/A
Current Estimate	Dec 2018	2.197	N/A	2.400	N/A

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
1.893	-0.019	0.000	0.498	0.000	0.028	0.000	0.000	0.507	2.400

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	--	--	--	--	--	--	--	--	0.000

An APUC Unit Cost History is not available, since no Initial APUC Estimate had been calculated due to a lack of defined quantities.

Chem Demil-ACWA currently has no Procurement requirement.

SAR Baseline History					
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate	
Milestone I	N/A	N/A	N/A	N/A	N/A
Milestone II	N/A	N/A	N/A	N/A	N/A
Milestone III	N/A	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	N/A	2430.4	6271.4	
Total Quantity	N/A	N/A	0	2613	
PAUC	N/A	N/A	N/A	2.400	

Blue Grass (BGCAPP)

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2011 \$M	BY 2011 \$M	% Change
	Current UCR Baseline (Mar 2012 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	5277.6	6383.9	
Quantity	523	523	
Unit Cost	10.091	12.206¹	+20.96¹
Average Procurement Unit Cost			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2011 \$M	BY 2011 \$M	% Change
	Original UCR Baseline (Mar 2012 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	5277.6	6383.9	
Quantity	523	523	
Unit Cost	10.091	12.206	+20.96
Average Procurement Unit Cost			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

¹ *Nunn McCurdy Unit Cost Breach and APB Unit Cost Breach*

The APB breach was reported in the December 2016 SAR.

The Chem Demil-ACWA APB baseline is at the program level. The current PAUC for the overall program is \$3.866M (BY 2011\$), which exceeds the objective by 21.5%.

Public Law 115-91, requires Chem-Demil ACWA to report funding and schedules at the subprogram (PCAPP and BGCAPP) level.



APB Unit Cost History					
Item	Date	BY 2011 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Mar 2012	10.091	N/A	10.843	N/A
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	Mar 2012	10.091	N/A	10.843	N/A
Prior Annual SAR	Dec 2017	12.857	N/A	14.245	N/A
Current Estimate	Dec 2018	12.206	N/A	13.505	N/A

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.843	0.072	0.000	1.649	0.000	0.941	0.000	0.000	2.662	13.505

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	--	--	--	--	--	--	--	--	0.000

An APUC Unit Cost History is not available, since no Initial APUC Estimate had been calculated due to a lack of defined quantities.

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	N/A	N/A	N/A
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	5670.8	N/A	7063.0
Total Quantity	N/A	523	N/A	523
PAUC	N/A	10.843	N/A	13.505

Cost Variance**Pueblo (PCAPP)**

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	4353.2	--	593.1	4946.3
Previous Changes				
Economic	-31.7	--	-44.1	-75.8
Quantity	--	--	--	--
Schedule	+838.4	--	--	+838.4
Engineering	--	--	--	--
Estimating	+183.0	--	-7.6	+175.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+989.7	--	-51.7	+938.0
Current Changes				
Economic	+26.2	--	--	+26.2
Quantity	--	--	--	--
Schedule	+464.1	--	--	+464.1
Engineering	--	--	--	--
Estimating	-103.2	--	--	-103.2
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+387.1	--	--	+387.1
Total Changes	+1376.8	--	-51.7	+1325.1
CE - Cost Variance	5730.0	--	541.4	6271.4
CE - Cost & Funding	5730.0	--	541.4	6271.4

Summary BY 2011 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	4096.7	--	606.5	4703.2
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+648.2	--	--	+648.2
Engineering	--	--	--	--
Estimating	+159.5	--	-47.6	+111.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+807.7	--	-47.6	+760.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+365.9	--	--	+365.9
Engineering	--	--	--	--
Estimating	-88.7	--	--	-88.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+277.2	--	--	+277.2
Total Changes	+1084.9	--	-47.6	+1037.3
CE - Cost Variance	5181.6	--	558.9	5740.5
CE - Cost & Funding	5181.6	--	558.9	5740.5

Previous Estimate: December 2017

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+26.2
Adjustment for current and prior escalation. (Estimating)	-8.7	-9.9
Adjusted estimate to account for actual performance to date and the plan to use additional technologies. (Schedule)	+365.9	+464.1
Revised estimate due to an internal realignment of fund from Pueblo (PCAPP) subprogram to Blue Grass (BGCAPP) subprogram. (Estimating)	-80.0	-93.3
RDT&E Subtotal	+277.2	+387.1

Change Explanations Notes

Cost growth at PCAPP was due to increased preliminary schedule duration, additional technologies and escalation adjustments. The total program estimate \$13.334B (TY\$ M) identified in the December 2017 SAR did not change.

Cost Variance**Blue Grass (BGCAPP)**

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	4893.4	--	777.4	5670.8
Previous Changes				
Economic	-42.2	--	+41.4	-0.8
Quantity	--	--	--	--
Schedule	+1371.2	--	--	+1371.2
Engineering	--	--	--	--
Estimating	+417.9	--	-9.0	+408.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1746.9	--	+32.4	+1779.3
Current Changes				
Economic	+38.5	--	--	+38.5
Quantity	--	--	--	--
Schedule	-509.1	--	--	-509.1
Engineering	--	--	--	--
Estimating	+83.5	--	--	+83.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-387.1	--	--	-387.1
Total Changes	+1359.8	--	+32.4	+1392.2
CE - Cost Variance	6253.2	--	809.8	7063.0
CE - Cost & Funding	6253.2	--	809.8	7063.0

Summary BY 2011 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	4518.8	--	758.8	5277.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+1072.4	--	--	+1072.4
Engineering	--	--	--	--
Estimating	+337.5	--	+36.7	+374.2
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1409.9	--	+36.7	+1446.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	-411.5	--	--	-411.5
Engineering	--	--	--	--
Estimating	+71.2	--	--	+71.2
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-340.3	--	--	-340.3
Total Changes	+1069.6	--	+36.7	+1106.3
CE - Cost Variance	5588.4	--	795.5	6383.9
CE - Cost & Funding	5588.4	--	795.5	6383.9

Previous Estimate: December 2017

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+38.5
Adjustment for current and prior escalation. (Estimating)	-8.7	-9.8
Adjusted estimate to align with current Main Plant systemization schedule. (Schedule)	-411.5	-509.1
Revised estimate due to an internal realignment of funds from Pueblo (PCAPP) subprogram to Blue Grass (BGCAPP) program. (Estimating)	+79.9	+93.3
RDT&E Subtotal	-340.3	-387.1

Change Explanations Notes

Reduced costs at BGCAPP were due to reduced duration of Main Plant systemization. The total program estimate \$13.334B (TY\$ M) identified in the December 2017 SAR did not change.

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: Pueblo
Contractor: Bechtel National Inc.
Contractor Location: Pueblo, CO 81003
Contract Number: DAAA09-02-D-0025/1
Contract Type: Cost Plus Fixed Fee (CPFF), Cost Plus Award Fee (CPAF)
Award Date: September 27, 2002
Definitization Date: September 30, 2002

Contract Price							
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	3390.2	N/A	2613	5746.9	3769.4

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.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (11/30/2018)	-594.7	-11.9
Previous Cumulative Variances	-397.7	-100.6
Net Change	-197.0	+88.7
Percent Variance		
Percent Complete		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to extended unplanned plant outage.

The favorable net change in the schedule variance is due to the end of systemization zeroing out the schedule variance.

Notes

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. Operations phase was added via Modification 95 in April 2015, and Closure phase will eventually be added. The Current Contract Target Price of \$3,370.7 incorporates all contract modifications to date.

The TO 1, which was definitized on September 30, 2002, required the Systems Contractor (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.

The TO 2, which was definitized on May 5, 2003, required the SC to design the facility. Design completion is now included in TO 6. This task 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.

The 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 \$36.5M. All deliverables are complete.

The 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.

The TO 5 was negotiated and definitized in multiple stages. The first stage was definitized on September 7, 2005, and the final stage being definitized on October 15, 2008. This task required 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 \$758.7M. The SC declared construction complete in December 2012 with exclusions. Exclusions were completed in FY 2016.

The 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 \$87.5M. 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 \$873.2M. The revised BAC for this task is \$813.8M. All deliverables are complete.

Operations was awarded via Modification 95 on April 9, 2015. The total contract value of Operations is \$1,335.7M. The revised BAC for this task is \$1,276.5M. Estimated price at completion is \$2,487.8M.

Estimate at Completion (EAC) Changes: The Contract Level EAC decreased \$683.1M since last SAR submission, from \$5,478.2M to \$4,795.1M due to recent plant improvements combined with enhanced Government oversight.

Contract Identification

Appropriation: RDT&E
Contract Name: Blue Grass
Contractor: Bechtel Parsons JV
Contractor Location: Richmond, KY 40475
Contract Number: DAAA09-03-D-0023/1
Contract Type: Cost Plus Award Fee (CPAF), Cost Plus Fixed Fee (CPFF)
Award Date: June 13, 2003
Definitization Date: June 13, 2003

Contract Price							
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	3995.8	N/A	523	4141.0	4162.8

Target Price Change Explanation

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

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (11/18/2018)	-132.7	-8.2
Previous Cumulative Variances	-149.8	+3.5
Net Change	+17.1	-11.7
Percent Variance		
Percent Complete		

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to Minor scope reductions tied to PEO initiatives.

The unfavorable net change in the schedule variance is due to Delay in systemization ramp-up.

Notes

The Government awarded Contract W52P1J-09-C-0013 to Bechtel Parsons Blue Grass Team (BPBGT) on March 19, 2009 CLIN. 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 contract) into Contract W52P1J-09-C-0013 (a multi-year, life cycle, cost reimbursable, systems contract). Contract W52P1J-09-C-0013 permits the Government and BPBGT to complete project life cycle planning and execution. This contract is a CPAF/CPIF CLIN contract. The total Negotiated Contract Cost for this contract is \$2,367.9M (excluding fees of \$421.8M).

CLIN 002 (Construction Phase IV) was definitized via Contract Modification on March 31, 2011, and consists of completing all BGCAPP construction required for plant systemization and operations. Another Contract Modification was issued on July 11, 2013 to incorporate the FY 2013 Continued Resolution Authority impacts to this CLIN. It was followed by another Contract Modification issued on February 14, 2014, to incorporate transfer of scope to Systemization CLIN 003. This CLIN currently has a total contract value of \$1,489.2M (includes fee) and has a Budget at Completion (BAC) of \$1,329.9M. The current Estimate at Completion (EAC) for this CLIN is \$1,474.5M.

CLIN 003 (Systemization) was partially definitized on June 4, 2011, and consists 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. A Contract Modification was issued on February 14, 2014, to incorporate transfer of scope from Construction CLIN 002 to Systemization. Another Contract Modification was issued on December 1, 2014, to incorporate a cost avoidance by eliminating the EVM system flow down requirement for Teaming Subcontractors. This CLIN currently has a total contract value of \$633.3M (includes fee) and has a BAC of \$1,017.8M. The current EAC for this CLIN is \$905.4M.

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 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% complete, and has a BAC of \$116.2M representing 4.5% of the total BAC for both contracts. The EAC (i.e., final actual cost) for this CLIN is \$113.5M, completed in September 2013.

CLIN 007 Explosive Destruction Technology (EDT) Part "A" was definitized on May 31, 2011, and consists of conducting a comprehensive feasibility study analysis and comparison of alternate approaches for processing problematic mustard munitions. The EDT Part "A" Extension was 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. The negotiated EDT Part "C" Extension was awarded via Contract Modification on June 30, 2014. This CLIN currently has a total contract value of \$208.8M (includes fee) and has a BAC of \$163.3M. The current EAC for this CLIN is \$220.2M.

CLIN 008 (Treaty Compliance) was definitized via Contract Modification on February 25, 2015, and consists of all facilities, equipment, documentation services, personnel, and technical and administrative support necessary to destroy the onsite chemical weapons stockpile in accordance with the Chemical Weapons Convention Treaty. This CLIN currently has a total contract value of \$4.2M (includes fee) and has a BAC of \$3.5M. The current EAC for this CLIN is \$3.4M.

CLIN 009 (Information Technology) was definitized via Contract Modification on June 17, 2015, and consists of a Cybersecurity Risk Management Framework to ensure the security of the Main Plant Facility Control System and the Customer First Agreement to keep it maintained. This CLIN currently has a total contract value of \$34.0M (includes fee) and has a BAC of \$30.3M. The current EAC for this CLIN is \$30.4M.

EAC Changes:

The total EAC increased \$1,302.9M from the previous SAR from \$3,261.0M to \$4,562.9M.

The EAC increase for CLIN 002 Construction is primarily due to Support to Post Construction Complete as a result of the

2017 SC Replan.

The EAC increase for CLIN 003 Systemization is primarily due to increases to the Start Up from Field Emergent Work.

The EAC increase for CLIN 007 EDT is primarily due to extension of the EDT schedule.

Deliveries and Expenditures

Pueblo (PCAPP)

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	1724	623	2613	23.84%
Production	0	0	0	--
Total Program Quantity Delivered	1724	623	2613	23.84%

Expended and Appropriated (TY \$M)

Total Acquisition Cost	6271.4	Years Appropriated	23
Expended to Date	3711.7	Percent Years Appropriated	74.19%
Percent Expended	59.18%	Appropriated to Date	4228.5
Total Funding Years	31	Percent Appropriated	67.43%

The above data is current as of December 31, 2018.

Notes

The above financial data is updated quarterly.

As of March 11, 2019, the PCAPP has processed 105,795 HD agent-filled 155mm projectiles through the main plant. Cumulatively, the site (the main plant + PCAPP Explosive Destruction System) has processed 623.1 U.S. tons of mustard agent. The Planned to Date is based on the 2017 POE destruction plan.

Blue Grass (BGCAPP)

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	523	0.00%
Production	0	0	0	--
Total Program Quantity Delivered	0	0	523	0.00%

Expended and Appropriated (TY \$M)

Total Acquisition Cost	7063.0	Years Appropriated	23
Expended to Date	3630.8	Percent Years Appropriated	74.19%
Percent Expended	51.41%	Appropriated to Date	4531.8
Total Funding Years	31	Percent Appropriated	64.16%

The above data is current as of December 31, 2018.

Notes

The above financial data is updated quarterly.

The BGCAPP is expected to begin operations in the Static Detonation Chamber in June 2019. Main Plant operation slated to begin in December 2019.

Operating and Support Cost

Pueblo (PCAPP)

Cost Estimate Details

Date of Estimate:

Source of Estimate:

Quantity to Sustain:

Unit of Measure:

Service Life per Unit:

Fiscal Years in Service:

Sustainment Strategy

Sustainment Strategy statement from the January 2012 Acquisition Strategy for PEO ACWA approved on February 3, 2012: Unlike other DoD acquisition programs, the PEO 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

No Antecedent.

Cost Element	Annual O&S Costs BY2011 \$M	
	Pueblo (PCAPP)	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	--	--

Item	Total O&S Cost \$M			
	Pueblo (PCAPP)			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold	Current Estimate		
Base Year	N/A	N/A	N/A	N/A
Then Year	N/A	N/A	N/A	0.0

O&S Cost Variance

Category	BY 2011 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2017 SAR	0.0	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	0.0	
Current Estimate	0.0	

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2011 \$M): 0.0

Blue Grass (BGCAPP)

Cost Estimate Details

Date of Estimate:

Source of Estimate:

Quantity to Sustain:

Unit of Measure:

Service Life per Unit:

Fiscal Years in Service:

Sustainment Strategy

Sustainment Strategy statement from the January 2012 Acquisition Strategy for PEO ACWA approved on February 3, 2012: Unlike other DoD acquisition programs, the PEO 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

No Antecedent.

Cost Element	Annual O&S Costs BY2011 \$M	
	Blue Grass (BGCAPP)	No Antecedent (Antecedent)
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	--	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total	--	--

Item	Total O&S Cost \$M			
	Blue Grass (BGCAPP)		No Antecedent (Antecedent)	
	Current Development APB Objective/Threshold	Current Estimate		
Base Year	N/A	N/A	N/A	N/A
Then Year	N/A	N/A	N/A	0.0

Category	O&S Cost Variance	
	BY 2011 \$M	Change Explanations

Prior SAR Total O&S Estimates - Dec 2017 SAR	0.0
Programmatic/Planning Factors	0.0
Cost Estimating Methodology	0.0
Cost Data Update	0.0
Labor Rate	0.0
Energy Rate	0.0
Technical Input	0.0
Other	0.0
Total Changes	0.0
Current Estimate	0.0

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2011 \$M):