State of Oregon
Department of Environmental Quality

Umatilla Chemical Demilitarization Program
Status Update
Environmental Quality Commission
February 18, 2010

Program news

On Jan. 22, 2010, DEQ issued a conditional approval of the mustard agent comprehensive performance test plan and a tentative decision and draft permit for the correlating Resource Conservation and Recovery Act mustard agent trial burn plan. DEQ also approved an up-to-180-day extension to the temporary authorization request to allow shakedown activities before its final decision on the RCRA mustard agent trial burn plan permit modification request.

Agent processing at the Umatilla Chemical Agent Disposal Facility

There is no change in agent processing status because the information provided by the site ended Jan. 21, the day before DEQ issued the temporary authorization extension and restarting of mustard agent operations.

As of Jan. 21 2010, the facility has destroyed 218,128 munitions, which represents 99 percent of all Umatilla munitions and bulk containers and 41 percent of the original Umatilla stockpile by agent weight.

Mustard agent operations

The mustard agent campaign began June 4, 2009. There are 2,635 HD one-ton containers in the facility stockpile. This represents one percent of all facility munitions and bulk containers and 63 percent, by agent weight, of the original stockpile. As of Nov. 18 2009, 159 one-ton containers have been treated containing 141 tons of mustard agent.

Sarin operations:

The facility completed sarin munitions and bulk items processing in July 2007. Sarin munitions and bulk items comprised 21.4 percent of the total Umatilla stockpile by agent weight. The facility destroyed 155,539 munitions and bulk containers filled with 2,028,020 pounds of sarin nerve agent. This represented 70.5 percent of all Umatilla munitions and bulk containers and 21.4 percent of the original Umatilla stockpile by agent weight.

The only remaining sarin-related waste is PFS carbon, used in the incinerator's pollution abatement system. The facility has treated all other sarin secondary wastes.

VX Operations:

The facility completed processing VX munitions Nov. 5 2008. VX munitions and bulk items comprised 9.8 percent of the total Umatilla stockpile by agent weight. The facility destroyed

14,519 VX rockets and warheads, one one-ton container, 156 spray tanks, 32,313 155mm projectiles, 3,752 8-inch projectiles, and 11,685 mines filled with over 720,000 pounds of agent.

Except for carbon, the facility has treated all VX-related wastes previously stored in J-Block igloos. The facility is treating all secondary wastes produced during the changeover process as they are generated.

UMCDF permitting activity - December 1, 2009, through January 29, 2010**:**

SUBMITTALS
(include 09-028, which was denied, and 09-031, 09-024, and 10-006 which were approved this period)

PMR/TAR#	Title	Submitted
UMCDF-09-028-WAP(1N)	Off-site disposal of brine by EPA method 3052	12/03/09
UMCDF-09-031-CONT(1N)	Update to contingency plan emergency coordinator	12/17/09
UMCDF-09-023-MISC(1N)	Redline annual update for furnace and misc. systems	12/21/09
UMCDF-09-024-WAP(1N)	Off-site disposal of brine by EPA method 3052	12/31/09
UMCDF-10-006-CONT(1N)	Update to contingency plan emergency coordinator	01/15/10
UMCDF-10-003-MISC(TA)	HD operating parameters during shakedown *(Second TAR request)*	01/15/10
UMCDF-10-001-MPF(1R)	Metal parts furnace additional shakedown hours	01/20/10

WITHDRAWN

PMR#	Title	Received	Decn
UMCDF-05-034-WAST(3)	Deletion of the DUN and addition of the CMS	10/25/05	12/21/09

DENIALS/REJECTIONS
(09-028 and 10-006 were also submitted this period)

PMR#	Title	Received	Decn
UMCDF-09-028-WAP(1N)	Off-site disposal of brine by EPA method 3052	12/03/09	12/10/09
UMCDF-10-003-MISC(TA)	HD operating parameters during shakedown *(existing TA reissued instead of new TA as requested)*	01/15/10	01/22/10

APPROVALS/ACCEPTANCES

PMR#	Title	Received	Decn
UMCDF-09-031-CONT(1N)	Update to contingency plan emergency coordinator	12/17/09	12/17/09
UMCDF-09-024-WAP(1N)	Off-site disposal of brine by EPA method 3052	12/31/09	12/31/09
UMCDF-10-006-CONT(1N)	Update to contingency plan emergency coordinator	01/15/10	01/15/10

IN PROCESS: The following permit modification notices and requests are under DEQ review
(includes 09-023 and 10-001, which were also submitted during this period)

PMR#	Title	Received	Public Comment Period Close	Target Decision/ Review Date
Requests				
UMCDF-07-006-DFS(3TA)	Minimum temperature limit change on the DFS	01/16/07	04/25/08[3]	TBD
UMCDF-09-003-MISC(3)	Resubmittal of HD ATBP	02/26/09	03/08/10[3]	10/15/09
UMCDF-09-006-CLOS(2)	Amend closure plan	09/25/09	11/24/09[1]	02/25/10
UMCDF-09-025-MPF(2TA)	MPF DAL water cooling and TAR	10/12/09	12/14/09[1]	02/09/10
UMCDF-09-012-WAP(2)	Spent carbon waste determination	10/28/09	12/28/09[1]	02/25/10
UMCDF-10-001-MPF(1R)	MPF additional shakedown hours	01/20/10	N/A	02/02/10

IN PROCESS: The following permit modification notices and requests are under DEQ review *(includes 09-023 and 10-001, which were also submitted during this period)*				
PMR#	**Title**	**Received**	**Public Comment Period Close**	**Target Decision/ Review Date**
Notices				
UMCDF-08-037-MISC(1N)	Annual procedures update	05/29/08	N/A	TBD
UMCDF-08-028-MISC(1N)	Redline annual update for general/ PAS Systems	11/26/08	N/A	TBD
UMCDF-09-001-MISC(1N)	Redline annual update-furnace system	01/21/09	N/A	TBD
UMCDF-09-010-MISC(1N)	Redline annual update for the BRA, tank, and MISC Systems	03/17/09	N/A	TBD
UMCDF-09-018-PAS(1N)	High-moisture automatic waste feed cut-off	04/21/09	N/A	TBD
UMCDF-09-016-MISC(1N)	Redline annual update for CHB, HVAC, and MISC systems	05/22/09	N/A	TBD
UMCDF-09-017-MISC(1N)	Redline annual update for DMIL, MDB, and MISC systems	08/06/09	N/A	TBD
UMCDF-09-021-MISC(1N)	Redline annual update for general, PAS, and MISC systems	10/13/09	N/A	TBD
UMCDF-09-023-MISC(1N)	Redline annual update for furnace and misc. systems	12/21/09	N/A	TBD

[1] Initial (permittee) public comment period.
[2] Additional public comment period required/opened due to incompleteness of original permit modification request submittal
[3] DEQ (draft permit) public comment period.

Facility permitting activity: None for the period December 1, 2009 through January 29, 2010.

Significant events at other demilitarization facilities

As of Nov. 15 2009, 68.4 percent of the national chemical agent stockpile tonnage has been destroyed.

Anniston Chemical Agent Disposal Facility, Alabama

The Anniston facility began processing HT and MD mortars July 2, 2009. As of Jan. 20, 2010, the facility has destroyed 83,558 4.2-inch HT mortars and 24 4.2-inch HD mortars. The Anniston facility has destroyed 66.9 percent of its original tonnage, and its mustard campaign may end in early 2012.

Pine Bluff Chemical Agent Disposal Facility, Arkansas

The Pine Bluff facility started processing one-ton mustard container processing Dec. 7, 2008. As of Jan. 20 2010, the Pine Bluff facility has processed 1,612 one-ton HT containers and 12 one-ton HD containers.

On Nov. 7, 2009, the Pine Bluff facility passed a milestone of 50 percent destruction of the total stockpile of chemical agent by weight, and passed 50 percent destruction for its mustard agent stockpile Dec. 23, 2009.

Arkansas DEQ lifted the 75 percent feed restriction Jan 8, 2010, and authorized the Pine Bluff facility to increase its liquid incinerator and metal parts furnace feed rates to 100 percent of the permitted feed rates. Demolition of the former BZ disposal building began Oct. 31 2009, and was completed Jan. 11, 2010.

Tooele Chemical Agent Disposal Facility, Utah
As of Jan. 20 2010, the Toole facility has treated 4,682 one-ton HD mustard agent containers and 2,136 HT mustard agent mortars had been treated. The Toole facility has destroyed 87.4 percent of its original stockpile tonnage.

On Jan. 12, 2010, the Toole facility resumed processing 4.2-inch mustard mortars. This campaign was suspended in April 2009 when analysis indicated higher-than-expected mercury levels. The new $33 million carbon filer system in the pollution abatement system of incinerators, using sulfur-impregnated carbon, is being used to capture mercury in the exhaust stream. The facility plans to also eliminate small stockpiles of Tabun and Lewisite blister agent.

Newport Chemical Agent Disposal Facility, Indiana
Newport has completed agent disposal operations. It is the third site to complete operations, following the Johnston Atoll Chemical Agent Disposal System in 2000 and Aberdeen Chemical Agent Disposal Facility in 2006.

The final 1X waste was shipped offsite Oct. 22, 2009 to the Veolia facility in Port Arthur, Texas. The contractor has completed the facility demolition and final site cleanup in ongoing. Closure activities now focus on property and administrative closeout.

Pueblo Chemical Agent Destruction Pilot Plant, Colorado
The Pueblo facility will use neutralization followed by biotreatment to destroy the 2,611-ton mustard agent stockpile of artillery and mortar projectiles. The overall design is complete and some construction is under way, but site-specific equipment is still being designed and fabricated. Some special equipment has been tested, and the facility's target date for startup has been changed from 2014 to January 2015, with a December 2017 completion date.

Based on the U.S. Army's commitment to treat all agent-contaminated secondary wastes onsite versus offsite shipment, as was done at Newport, all hydrolysates will be processed onsite.

Blue Grass Chemical Agent Destruction Pilot Plant, Kentucky
The Blue Grass facility will use neutralization followed by supercritical water oxidation to destroy the 524-ton stockpile of nerve and mustard agents. The facility has neutralized three one-ton containers of sarin, known as Operation Swift Solution and representing 0.2 percent of the facility's stockpile. The facility will begin chemical agent operations in 2017 and will be completed by 2023.

The design work is 96 percent complete and should be final in May 2010. The first structural steel for the control and support building was placed Sept. 17, 2009.

One of the specialty equipment items being fabricated specifically for Blue Grass facility, the metal parts treater, is being fabricated at the Parsons facility in Pasco, Washington. Testing of this and other facility-specific equipment will be conducted over a six-month period.

Based on the U.S. Army's commitment to treat all agent-contaminated secondary wastes onsite versus offsite shipment, as was done at Newport, all hydrolysates will be processed onsite.

When the facility has completed all treatment, the operational facilities will be shut down and the temporary structures and equipment will be shipped back to the Aberdeen Proving Grounds in Maryland.

Chemical Weapons Destruction Program
Glossary of Acronyms and Terms of Art

ABCDF – Aberdeen Chemical Agent Disposal Facility, located at the Aberdeen Proving Grounds in Maryland

ACAMS – Automatic Continuous Air Monitoring System – the chemical agent monitoring instruments used by the Army to provide low-level, near real time analysis of chemical agent levels in the air

ACWA –Assembled Chemical Weapons Alternatives, agency of the Army overseeing operations at Pueblo, CO (PCAPP) and Bluegrass, Kentucky (BGCAPP)

ANCDF – Anniston Chemical Agent Disposal Facility, located at Anniston Army Depot in Alabama

APG–Aberdeen Proving Grounds, Edgewood, Maryland

ATB – agent trial burn – test burns on incinerators to demonstrate compliance with emission limits and other permit conditions

AWFCO instrument– Automatic Waste Feed Cutoff – an instrument that monitors key operating parameters of a high temperature incinerator and automatically shuts off waste feed to the incinerator if prescribed operating limits are exceeded

BDS – Bulk Drain Station – the used in the Munitions Demilitarization Building to weigh, hole punch and drain liquid HD from ton containers

BGCA – Blue Grass Chemical Activity, located at the Blue Grass Army Depot in Kentucky

BGCAPP – Blue Grass Chemical Agent Destruction Pilot Plant, new designation for BGCA.

BRA – Brine Reduction Area – the hazardous waste treatment unit that uses steam evaporators and drum dryers to convert the salt solution (brine) generated from pollution abatement systems on the incinerators into a dry salt that is shipped off-site to a hazardous waste landfill for disposal

CAC – Chemical Demilitarization Citizens Advisory Commission – the nine member group appointed by the Governor to receive information and briefings and provide input and express concerns to the U.S. Army regarding the Army's ongoing program for disposal of chemical agents and munitions – each state with a chemical weapons storage facility has its own CAC – in Oregon the DEQ's Chemical Demilitarization Program

Administrator and the Oregon CSEPP Manager serve on the CAC as non-voting members

CAMDS – Chemical Agent Munitions Disposal System – the former research and development facility for chemical weapons processing, located at the Deseret Chemical Depot in Utah

CDC – Centers for Disease Control and Prevention – a federal agency that provides oversight and technical assistance to the U.S. Army related to chemical agent monitoring, laboratory operations, and safety issues at chemical agent disposal facilities (Website: http://www.cdc.gov/nceh/demil/)

CMA – U.S. Army's Chemical Materials Agency, the agency responsible for chemical weapons destruction (website: http://www.cma.army.mil/)

CMP – comprehensive monitoring program – a program designed to conduct sampling of various environmental media (air, water, soil and biota) required by the EQC in 1997 to confirm the projections of the Pre-Trial Burn Health and Ecological Risk Assessment.

CMS – carbon micronization system – a new treatment system that is proposed to be used in conjunction with the deactivation furnace system to process spent carbon generated at UMCDF during facility operations – the CMS would pulverize the spent carbon and then inject the powder into the deactivation furnace system for thermal treatment to destroy residual chemical agent adsorbed onto the carbon

CSEPP – Chemical Stockpile Emergency Preparedness Program – the national program that provides resources for local officials (including emergency first responders) to provide protection to people living and working in proximity to chemical weapons storage facilities and to respond to emergencies in the event of an off-post release of chemical warfare agents (Website: http://csepp.net/)

CWC Treaty – Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. Ratified by the U.S. Senate on April 24, 1997.

CWWG – Chemical Weapons Working Group, an international organization opposed to incineration as a technology for chemical weapons destruction and a proponent of alternative technologies, such as chemical neutralization (Website: http://www.cwwg.org/)

DAAMS – Depot Area Air Monitoring System – the system that is utilized for perimeter air monitoring at chemical weapons depots and to confirm or refute ACAMS readings at chemical agent disposal facilities – samples are collected in tubes of sorbent materials and taken to a laboratory for analysis by gas chromatography

DAL – discharge airlock – a chamber at the end of MPF used to monitor treated waste residues prior to release.

DCD – Deseret Chemical Depot – the chemical weapons depot located in Utah

DFS – deactivation furnace system – a high temperature incinerator (rotary kiln with afterburner) used to destroy rockets and conventional explosives (e.g., fuses and bursters) from chemical weapons

DPE – demilitarization protective ensemble – the fully-encapsulated personal protective suits with supplied air that are worn by workers in areas with high levels of agent contamination

DUN – dunnage incinerator – high temperature incinerator included in the original UMCDF design and intended to treat secondary process wastes generated from munitions destruction activities – this incinerator was never constructed at UMCDF

ECR – Explosive Containment Room – UMCDF has two ECRs used to process explosively configured munitions. ECRs are designed with reinforced walls, fire suppression systems, pressure sensors, and automatic fire dampers to detect and contain explosions and/or fire that might occur during munitions processing

EONC – Enhanced Onsite Container – Specialized vessel used for the transport of munitions and bulk items from UNCD to UMCDF and for the interim storage of those items in the UMCDF Container Handling Building until they are unpacked for processing

G.A.S.P. – a Hermiston-based anti-incineration environmental group that has filed multiple lawsuits in opposition to the use of incineration technology for the destruction of chemical weapons at the Umatilla Chemical Depot – G.A.S.P. is a member of the Chemical Weapons Working Group

GB – the nerve agent sarin

HD – the blister agent mustard

HTS – Heel Transfer Station – the part of the HD bulk drain station that contains the water and air sprays that used to solubilize solid heels in ton containers for purposes of sampling and meeting waste feed limitations

HVAC – heating, ventilation, and air conditioning

HW – hazardous waste

I-Block – the area of storage igloos where ton containers of mustard agent are stored at UMCD

IOD – integrated operations demonstration – part of the Operational Readiness Review process when UMCDF demonstrates the full functionality of equipment and operators prior to the start of a new agent or munition campaign.

JACADS – Johnston Atoll Chemical Agent Disposal System, the prototype chemical agent disposal facility located on the Johnston Atoll in the Pacific Ocean (now closed and dismantled)

J-Block – the area of storage igloos where secondary wastes generated from chemical weapons destruction are stored at UMCD

K-Block – the area of storage igloos where chemical weapons are stored at UMCD

LIC1 & LIC2 – liquid incinerators #1 & #2 – high temperature incinerators (liquid injection with afterburner) used to destroy liquid chemical agents

MDB – munitions demilitarization building – the building that houses all of the incinerators and chemical agent processing systems. The MDB has a cascaded air filtration system that keeps the building under a constant negative pressure to prevent the escape of agent vapor. All air from inside the MDB travels through a series of carbon filters to ensure it is clean before it is released to the atmosphere.

MPF – metal parts furnace – high temperature incinerator (roller hearth with afterburner) used to destroy secondary wastes and for final decontamination of metal parts and drained munitions bodies

NECDF – Newport Chemical Agent Disposal Facility, located at the Newport Chemical Depot in Indiana

NRC – National Research Council

ORR – operational readiness review – a formal documented review process by internal and external agencies to assess the overall readiness of UMCDF to begin a new agent or munitions processing campaign.

PBCDF – Pine Bluff Chemical Agent Disposal Facility, located at the Pine Bluff Arsenal in Arkansas

PCAPP – Pueblo Chemical Agent Destruction Pilot Plant, new designation for PUCDF.

PFS – the carbon filter system installed on the pollution abatement systems of the incinerators used for chemical agent destruction

PICs – products of incomplete combustion – by-product emissions generated from processing waste materials in an incinerator

PMR – permit modification request

PMN – permit modification notice

PUCDF – Pueblo Chemical Agent Disposal Facility, located at the Pueblo Chemical Depot in Colorado

SAP – sampling and analysis plan

SETH – simulated equipment test hardware – "dummy" munitions used by UMCDF to test processing systems and train operators before the processing of a new munitions type. SETH munitions are often filled with ethylene glycol to simulate the liquid chemical agent so that all components of the system, including the agent draining process, can be tested.

TAR – Temporary Authorization Request

TOCDF – the Tooele Chemical Agent Disposal Facility, located at the Deseret Chemical Depot in Utah

UMCD – Umatilla Chemical Depot

UMCDF – Umatilla Chemical Agent Disposal Facility

WAP – waste analysis plan –a plan required for every RCRA permit which describes the methodology that will be used to characterize wastes generated and/or managed at the facility.

WDC – Washington Demilitarization Company, LLC – the Systems Contractor for the U.S. Army at UMCDF.

VX – a nerve agent