

# Demil Dispatch

## Recent Progress on the Blue Grass Army Depot Demilitarization Effort.

Kentucky Department for Environmental Protection (KDEP)  
Division of Waste Management (DWM)  
Hazardous Waste Branch (HWB)  
Blue Grass Army Depot Section (BGAD)



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## What Do You Do With 70,000 Rocket Motors?

One of the many issues that the Army is dealing with as part of the planned destruction of the chemical weapons at Blue Grass Army Depot (BGAD) is the demilitarization (destruction) of almost 70,000 rocket motors from the M55 rockets, which currently contain the nerve agents GB and VX.

During the Blue Grass Chemical Agent-Destruction Pilot Plan (BGCAPP) main plant operations, the warheads, which contain the nerve agent, will be separated from the rocket motors. After careful screening to ensure that there are no traces of nerve agent, the rocket motors will need to be demilitarized. As recommended by the National Research Council (now the National Academies), the Army is looking into a range of options, which may include one or more of the following sites: Anniston Army Depot in Alabama, using a static detonation chamber, BGAD's existing controlled detonation chamber (which is totally separate from the proposed detonation chamber for destroying mustard-filled projectiles), and a General Dynamics facility in Joplin, Missouri.

In order to determine the feasibility and rate at which rocket motors

might be processed at these facilities, treatability studies are being conducted. It is likely that more than one site may be needed in order to keep pace with the numbers of rocket motors coming out of the BGCAPP plant once operations begin. Kentucky Department of Environmental Protection (KDEP) has reviewed and commented on a treatability study plan for the existing BGAD controlled detonation chamber (also known as the Donovan chamber). Upon approval of the treatability study plan, BGAD would conduct a limited number of static firings of the rocket motors in the chamber to determine its feasibility for full-scale use. Any proposal for full-scale use would require a separate review and approval process.



A team from the Centers for Disease Control and Prevention (CDC), Atlanta, Ga., listens as Blue Grass Chemical Agent-Destruction Pilot Plant Chief Scientist Dr. John Barton details how the Rocket Cutting Machine separates rocket warheads from their motors and transfers the warheads for subsequent agent draining.

## BGCA Celebrates 20 Year Anniversary

The National Anthem and an Invocation opened the ceremony in which the Bluegrass Chemical Activity (BGCA) celebrated 20 years of safe chemical munitions stockpile storage on June 25. Though the stockpile has been stored for longer than 20 years, it has been maintained under the moniker of BGCA for 20 years.

Distinguished speakers included:

- Commissioner of the Kentucky Department of Veterans Affairs, Heather French Henry
- Chemical Materials Activity Commander, Colonel Nathaniel W. Farmer
- Bluegrass Chemical Activity Commander, Lieutenant Colonel Andrew "Jack" Morgan
- Blue Grass Army Depot Chief of Staff, Colonel (Retired) George B. Shuplinkov

- Representatives from Senate Majority Leader Mitch McConnell and Representative Andy Barr were also on hand to read congratulatory letters in honor of BGCA's accomplishments, which include critical missions such as Operation Swift Solution, an X-ray assessment of mustard projectiles, and rocket motor separation in addition to the daily operations of monitoring the stockpile and maintaining safe storage conditions.

An overview of the history of BGCA, as well as an employee perspective, was provided and an anniversary memento was added to the time capsule for posterity. The ceremony concluded following a benediction, the playing of the Army Song, and the Chemical Corps Song. Many tables were set up around the National Guard Reserves gymnasium to provide attendees visual displays of life working for the BGCA and the opportunity to talk to BGCA employees.



Speakers & Attendees of the 20 Year Anniversary Celebration

## KDEP Dedicates Time to Training

With several new members on the Blue Grass Army Depot (BGAD) team, Kentucky Department for Environmental Protection (KDEP) employees climbed a steep learning curve last year. Both the KDEP Permitting and Field Office groups devoted much of the year to training.

To ensure safety on the job, all new employees completed CPR/First Aid training and a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) course, which prepares employees who will work at certain hazardous waste sites. Veteran employees took an annual 8-hour HAZWOPER refresher. The KDEP BGAD team also attended General Employee Training for the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP). Although General Employee Training is designed for full-time BGCAPP staff, new KDEP employees take the course to understand on-site rules and potential hazards.

KDEP Field Office staff honed their skills with specialized training. Employees completed two Inspector Training courses: one by the Environmental Protection Agency (EPA) and another by the Commonwealth of Kentucky. Inspectors also attended EPA's Sampling for Hazardous Materials training. These courses instructed the Field Office in examining BGAD's operations, including analyzing any substances that are released into the environment, to ensure that the facility is complying with its permit.

Both permit writers and field office inspectors learned about various aspects of emergency response. Although permitting and field office staff will not act as emergency responders, training in the procedures better enables KDEP to assess BGAD's emergency response plans. The inspectors familiarized themselves with the Incident Command System, a standard method of managing emergency response, by taking two courses offered by the Federal Emergency Management Agency (FEMA). Three KDEP employees completed a week-long introductory course on WebPuff, the modeling software that predicts hazards in the event of a chemical release at Blue Grass Chemical Activity (BGCA) or BGCAPP. Familiarity with WebPuff helps permit writers evaluate the modeling used in BGCAPP's risk assessments.



In August, three permit writers visited Atlanta, while other team members ventured in December to Montgomery, Alabama, for the EPA Resource Conservation and Recovery Act (RCRA) Permit Writer's Course. The course instructed KDEP permit writers in the basics of hazardous waste regulations and the process of crafting an effective permit. In Indianapolis, KDEP employees dug deeper into federal hazardous waste regulations during RCRA Unraveled, a nationally-acclaimed week-long course offered by McCoy and Associates.

Despite attending several courses in the past year, the KDEP BGAD team by no means considers its training complete. The team will take advantage of new opportunities to expand and update their knowledge. KDEP employees believe that appropriate training is an essential part of protecting human health and the environment as they navigate this unique project.

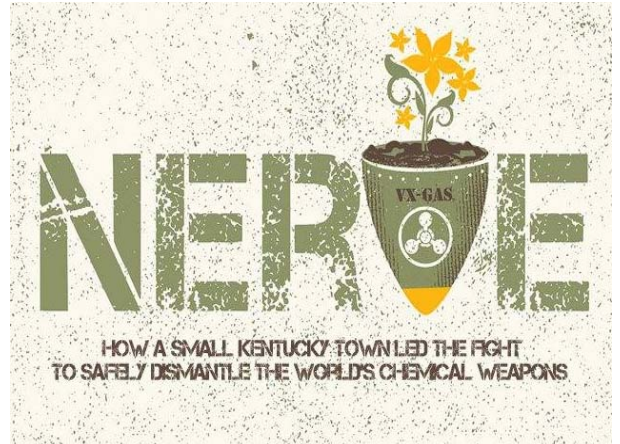
## A Synopsis of “NERVE.....”

“Nerve How a Small Kentucky Town Led the Fight to Safely Dismantle the World’s Chemical Weapons” is a documentary that chronicles Madison County citizens’ fight against the incineration of chemical munitions in Richmond, Kentucky. The documentary is a project of the non-profit Kentucky Environmental Foundation.

What initially began as public outcry in town hall style meetings, eventually became a significant enough issue to be presented in Washington and garnered national attention as other world powers struggled with similar issues in the demilitarization of their chemical stockpiles. The real push for compromise occurred when alternative demilitarization technologies were presented. Of these technologies Super Critical Water Oxidation (SCWO) was ultimately chosen for use at the Bluegrass Chemical Agent-Destruction Pilot Plant (BGCAPP) to demilitarize Kentucky’s stockpile of chemical munitions.

The film uses a mix of present day interviews and historical meetings and proceedings footage featuring key local figures, particularly the citizen activist Craig Williams, to document the more than 30 year struggle that has resulted in the recently built multibillion dollar demilitarization facility.

You can find information on the fundraising and movie making on Facebook (<https://www.facebook.com/NERVEthefilm/>) and watch the movie trailer here: <http://www.kyenvironmentalfoundation.org/nerve-the-film.html>



## New Employees at the KY Department of Environmental Protection

### Meet Cran Combs—BGAD Permitting Section Environmental Scientist

A new environmental scientist has joined the KDEP team. On August 1, 2015, John “Cran” Combs began working with the Blue Grass Army Depot Section.

Cran has a Bachelor of Science Degree from the University of the State of New York. He attended two colleges in Kentucky: Kentucky Wesleyan College (Mathematics) and the University of Kentucky (Geology). After serving in the Army and Army Reserve, Cran spent about 10 years as an oil and gas geologist mostly in the Illinois Basin. In August of 2007, he moved to Frankfort to work for the Division of Mine Permits, Department for Natural Resources for eight years.

Cran is proud to have been chosen to be a member of the BGAD Section Permitting team and is looking forward to the successful completion of the chemical demilitarization program.





## Kentucky Regulators Visit Anniston Army Depot

On Dec. 3, 2015, the Assembled Chemical Weapons Alternatives (ACWA) Anniston Field Office and the Alabama Department of Environmental Management (ADEM) welcomed a delegation from Kentucky to the Anniston Army Depot (ANAD) in Alabama. Personnel from the Blue Grass Army Depot (BGAD), Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP), and Kentucky's Department for Environmental Protection (KDEP) represented Kentucky. Given the shared chemical weapons demilitarization mission and the similar Explosive Destruction Technology (EDT) equipment employed at both sites, there was an obvious opportunity to exchange information and lessons learned between these groups.

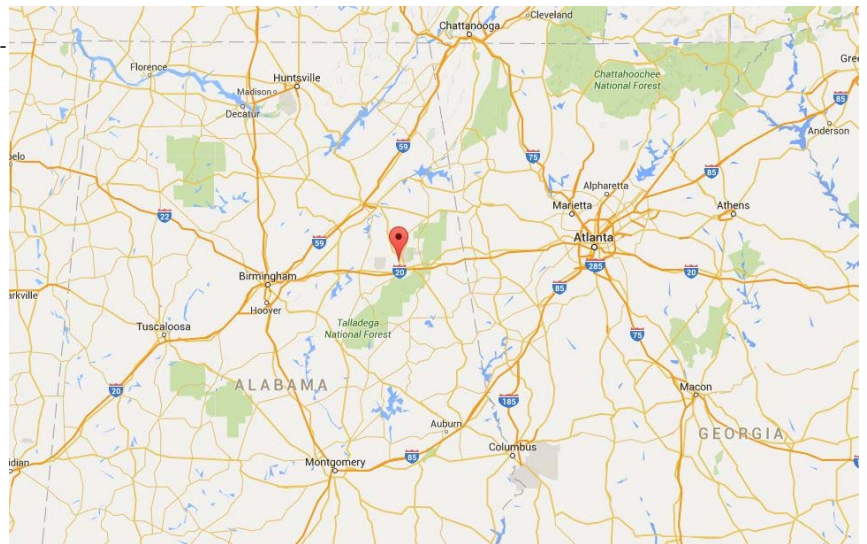
Between March 2011 and September 2012, ANAD destroyed a total of 2,737 mustard agent munitions in their EDT unit. BGCAPP is scheduled to process approximately 15,500 mustard projectiles and two DOT Bottles through its EDT, beginning in March 2017. While both EDT units use a Dynasafe Static Detonation Chamber (SDC) 1200, rated for the same net explosive weight, some enhancements have been made to the BGCAPP unit, including: enhanced ventilation of the loading chambers, additional detonation chamber heating, a 98% larger thermal oxidizer, a 75 percent larger off-gas treatment system, process gas condensers and reheaters, and larger carbon filters. BGCAPP will also have a permanent steel enclosure building, while a sprung-structure (a fabric-covered building) was used in Alabama.

Tim Garrett, Anniston Site Project Manager for ACWA, presented an overview of the EDT equipment, the mustard campaign, and the ongoing conventional munition and propellant campaign. The presentation showed key emission testing parameters needed for environmental compliance and how those tests translate into permit conditions controlling waste feed rates to the detonation chamber. Emission Tests are also used to evaluate and establish equipment operating conditions, known as Feed Prohibitive Interlocks (FPIs). These waste feed rates and FPIs serve to fully specify the explosive destruction process and off-gas treatment, so that all operations are conducted in a manner proven to destroy agent and protect the environment.

The presentation was followed by a tour of the EDT facilities where the group was able to see the unit at work, processing waste propellant. The tour included a look at the storage magazine, unpack and tray indexing area, loading chambers, detonation chamber, thermal oxidizer, off-gas treatment units, and the control room. The tour groups were guided by operations personnel who provided first-hand knowledge of the units.

An open question and answer session with Tim Garrett, Robert Taylor (SDC Manager), and Tracy Greenwood (SDC Environmental Engineer) followed the tour. KDEP also had an opportunity to meet with ADEM regulators to discuss permitting a demil facility and strategies for oversight during operations. ADEM Government Hazardous Waste Branch Chief, Steve Cobb, and staff, shared their experiences regulating a large chem-demil facility. The discussion covered permit conditions, management of staff during 24-hour operations, relationship with the demil facility, and compliance issues. These discussions helped to further reinforce the protective nature of the EDT technology and will be useful for KDEP now and throughout operations.

Given that the mustard campaign in Alabama completed without an agent release to the environment from the process stack or from process waste streams, the opportunity to meet with Alabama officials and discuss permitting and compliance strategies places Kentucky in a position to use a proven approach to regulating BGCAPP's mustard campaign once a complete application is received.



*Kentucky Department for  
Environmental Protection (KDEP)*

Blue Grass Army Depot Section  
200 Fair Oaks Lane  
Frankfort KY 40601

Phone: 502-564-6716 ext. 4700  
Web: [waste.ky.gov](http://waste.ky.gov)  
E-mail: [heather.alexander@ky.gov](mailto:heather.alexander@ky.gov)

The mission of the Kentucky Division of Waste Management is to protect human health and the environment by minimizing adverse impacts on all citizens of the Commonwealth through the development of fair, equitable, and effective waste management programs.



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BGCAPP Aerial View, December 2015



Photographs courtesy of ACWA, BGCAPP, CMA, and KDEP