

Overview – Chemical Demilitarization and CBRN Analysis Branch

The Branch is comprised of three teams aligned to its major functional areas; however, team members support projects across all of the teams depending on capabilities required. A brief branch overview slide and description of each team is provided below

The CBRN Analysis Team

The CBRN Analysis Team conducts a broad range of technical studies and analyses supporting efforts to defend against CBRN threats for both military and homeland security applications.

- **Modeling and Simulation:** The team uses computational fluid dynamics, combat simulation, and hazard dispersion models, and develops analytical methods to study the effects of CBRN hazards.
- **Data Analysis and Development:** The team serves as the AMSAA focal point for developing methods to generate standardized CBRN hazards and effects data for use in Army combat simulations.
- **Test and Evaluation Support:** The team supports Army evaluators and Program Managers of CBRN defense systems by providing analyses of system performance data, developing test strategies and designs, conducting verification and validation of CBRN system models and test infrastructure, and evaluating field performances of CBRN systems.

The Chem Demil Team

The Chem Demil Team conducts independent test and evaluations and analyses of fixed facilities and transportable systems developed for the safe treatment and disposal of the nation's aging stockpiles of chemical agents and weapons, and recovered chemical warfare materiel. The work of the Chem Demil Team enhances national security and supports the nation's obligations from the Chemical Weapons Convention, an international treaty mandating the destruction of our nation's chemical agents.

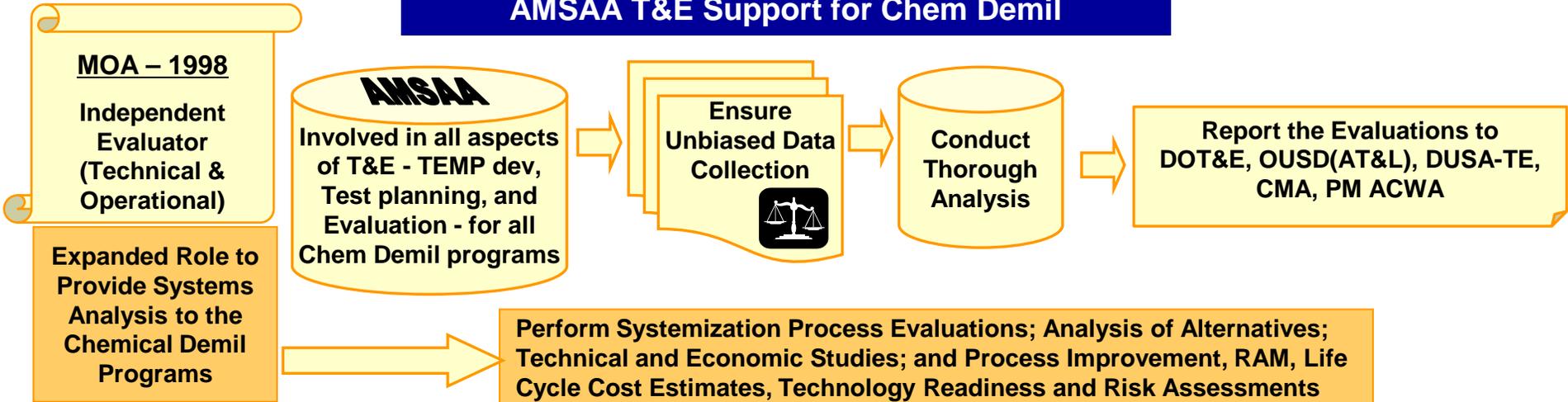
The Homeland Defense and Security Analysis Team

The Homeland Defense and Security Analysis Team collaborates with and supports the Department of Homeland Security and other federal, state, and local interagency partners to provide analyses and evaluations to support the nation's collective homeland defense capabilities.

- Develops test and evaluation programs for military and civilian homeland defense systems and performs independent evaluations for defense system T&E.
- Provides CBRN-focused exercise development and evaluation expertise.
- Conducts in-depth assessments to characterize risks to various infrastructures from accidental or deliberate CBRN releases.

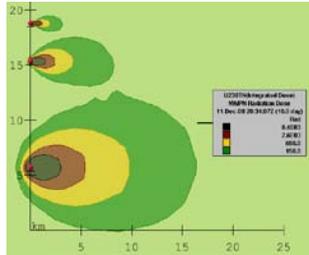
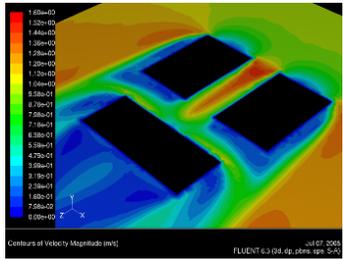
- Perform requirements analysis and identification to support acquisition and fielding of military and civilian homeland defense systems and related components.
- Conducts comprehensive program and technical assessments to determine current program/system performance and identify recommendations for future program considerations.

AMSAA T&E Support for Chem Demil



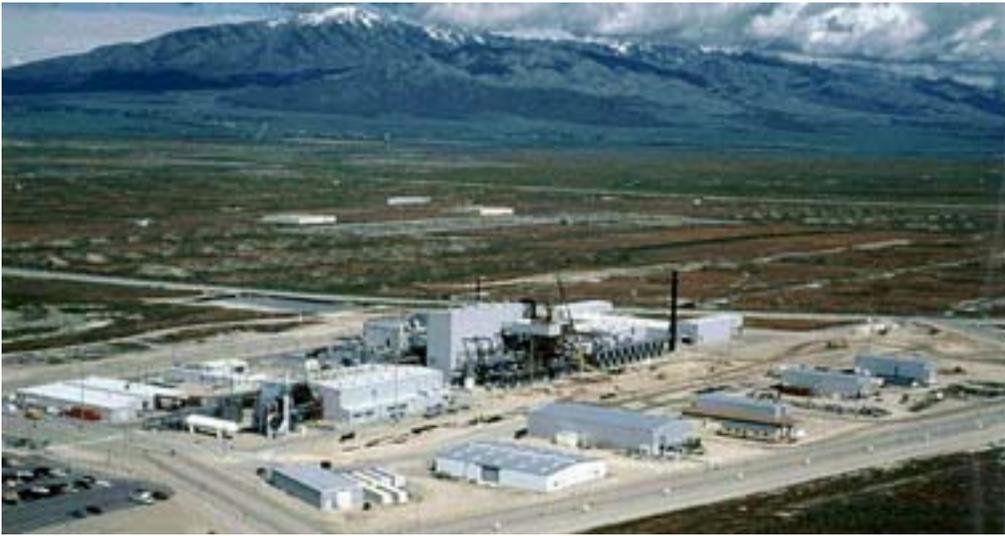
CBRN Studies (customer in parentheses)

- V&V of Test Infrastructure (*JPM Contamination Avoidance/PDTESS*)
- Model dispersion using **Computational Fluid Dynamics** (*ECBC*)
- Model Joint Chemical Agent Detector (JCAD) **operational effects** using **Infantry Warrior Simulation (IWARS)** combat model (*AEC*)
- Develop a process model of JSTDS to evaluate throughput requirements (*AEC*)
- Research/analyze nuclear effects modeling capabilities and recommend methodology for inclusion in **AWARS** (*TRAC*)
- Analyze performance of bio-aerosol warning sensor for Joint Biological Point Detection System (JBPDS) (*JPM Bio Defense*)
- Conduct **independent methodology validation assessment** of JPM Guardian's Installation Protection Program (IPP) (*DUSA-TE*)
- Chair, **Chem Bio Defense Program T&E Capabilities and Methodologies IPT** to develop T&E Standards(*DUSA-TE*)
- Conduct independent programmatic & technical assessment of a large area chemical detection system for civilian use and conduct systems analysis for chemical detection pilot projects(*DHS*)



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Chem Demil & CBRN Analysis Branch Pictures/Captions



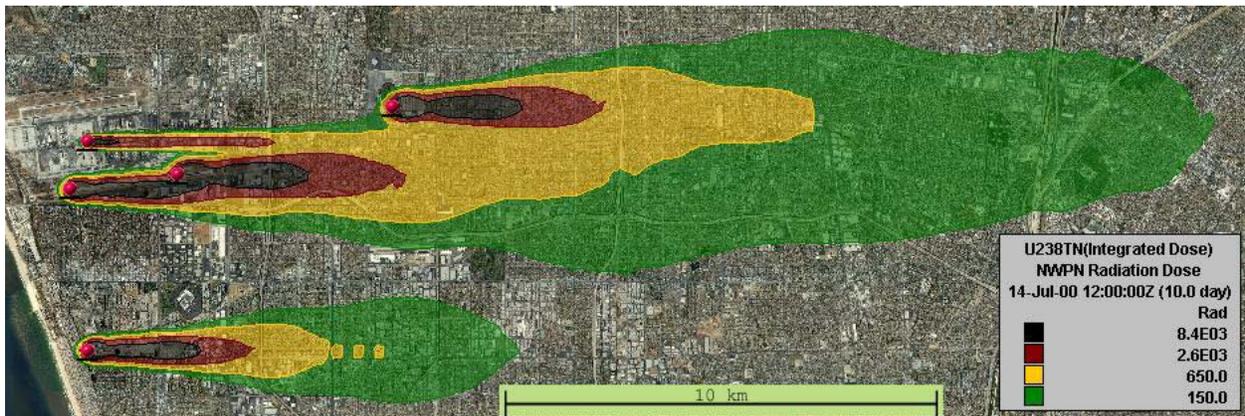
The Tooele Chemical Disposal Facility in Utah



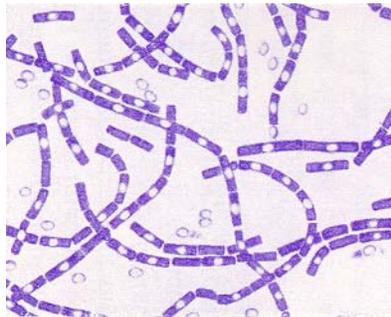
Soldiers training to perform work in full mission-oriented protective posture (MOPP) gear: protective gear for chemical, biological, radiological, and nuclear (CBRN) environments.



The Joint Chemical Agent Detector (JCAD), a handheld device which detects, quantifies, identifies, and warns users of chemical agent threats.



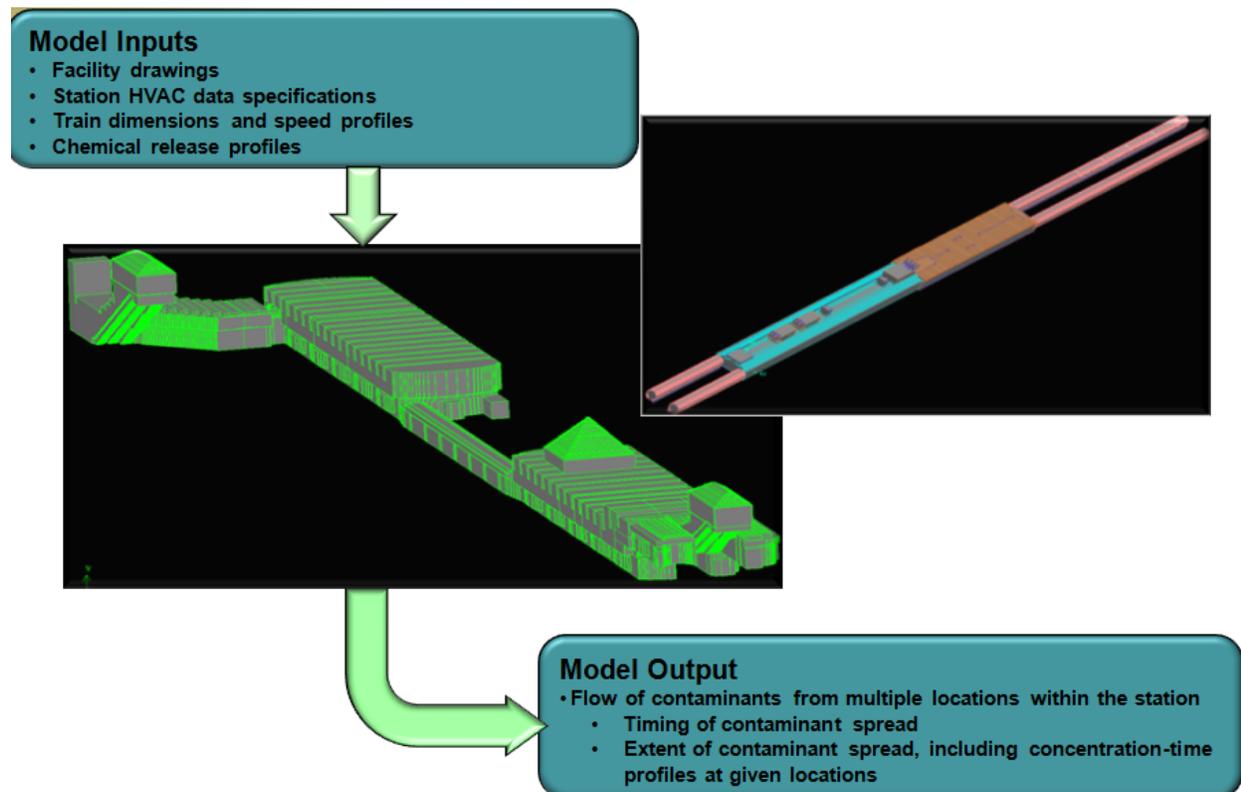
A screenshot from the Hazard Prediction and Assessment Capability (HPAC) model showing absorbed-radiation-dose curves resulting from a 5-weapon nuclear attack. The long clouds are a result of radiological material dispersed downwind after the blasts.



A microscope image of the bacteria *Bacillus anthracis*, which causes the potentially-lethal disease Anthrax. Anthrax is often spread by spores, which have been used in the past as a biological weapon, and can survive in the environment for extended periods of time before causing infection.



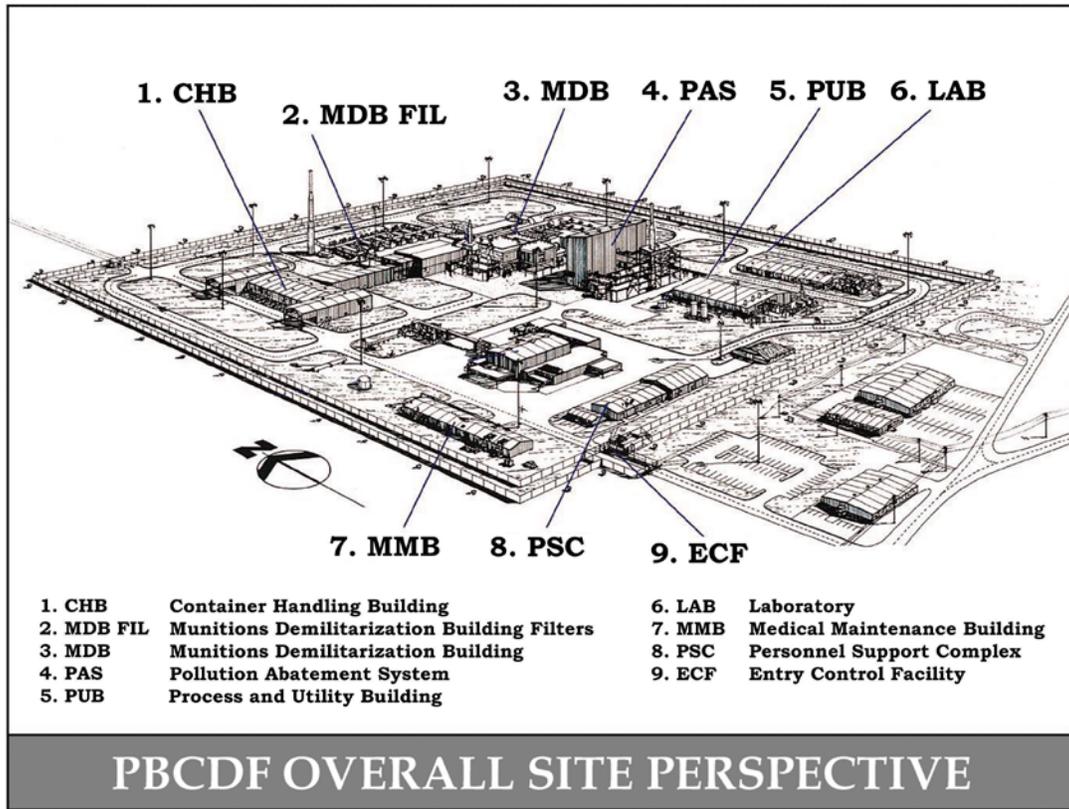
AMSAA's evaluation of Recovered Chemical Warfare Materiel destruction at Schofield Barracks, Hawaii



A subway station CFD air dispersion modeling process. The screenshots are of a subway station model: an example of calculating the flow of potential CBRN hazards in critical infrastructure.



AMSAA's evaluation of overpacked test item destruction at Aberdeen Proving Ground, Edgewood Area.



Pine Bluff Chemical Disposal Facility in Arkansas

