ENVIRONMENTAL MONITOR

The Heartland

Fort Riley, KS in snow, c. 1919

U.S. Army Central Regional Environmental Office, Kansas City, MO - Serving Regions VI & VII Winter 2000

Lone Star Army Ammunition Plant Begins Remediation of Superfund Site

Elaine Kennedy

Day and Zimmermann Inc., Operating Contractor, Lone Star AAP

ROD signing ceremony. L - R: Ruby Williams - EPA, Hopeton Brown - AEC, Dr Susan Walker - Ageiss, Rod Sewell - LSAAP, Gary Schilling - LSAAP, LTC Todd Smith - LSAAP Commander

The Department of the Army recently hosted a ceremony to celebrate signing of the Record of Decision (ROD) for the Old Demolition Area at the Lone Star Army Ammunition Plant (LSAAP). LSAAP is a 15,500 acre government-owned and contractor-operated facility that is used to load, assemble, and pack ammunition items for the Army as well as other Department of Defense agencies. The ceremony, held at LSAAP, was open to the public. Representatives from the Army, the U.S. Environmental Protection Agency (EPA), and the Texas Natural Resource Conservation Commission (TNRCC) participated.

Signing of this ROD by the Army, EPA, and TNRCC means remediation activities can commence at the site, referred to as the Old Demolition Area. This area covers 17.4 acres and was established in 1943. Until it was closed in 1944, it was used by the Army to detonate off-specification munitions. In 1986, the Army cleared the area of vegetation in order to expose, collect, and destroy explosive surface debris remaining from demolition activities. The area has been under investigation for explosives and heavy metals contamination since 1987 when it was designated by the EPA as a Superfund site because of concerns that chemicals from ordnance debris may

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Chief Commentary

Michael L. Cain - *CREO Chief/DoD Region VII REC*
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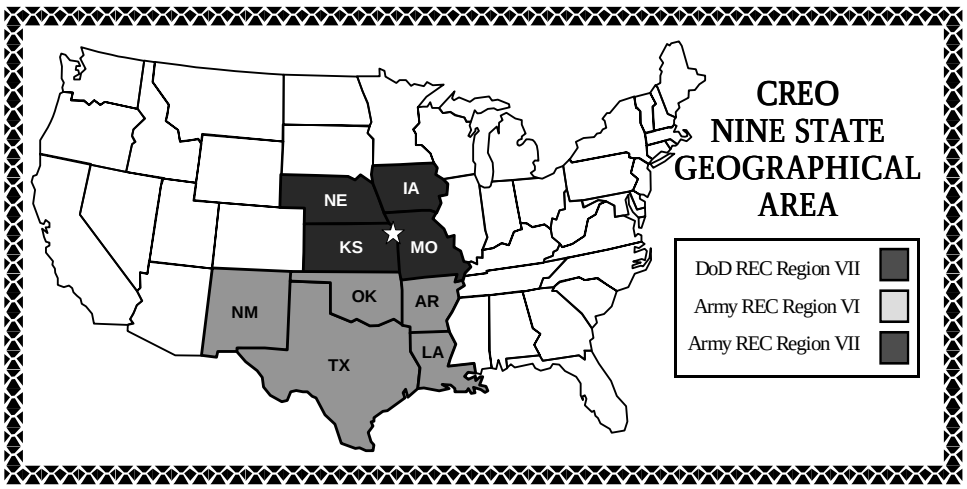
The battalion commander slammed his hands on my desk, got up in my face, and asked me why his water was turned off. He had 25 tracked and wheeled vehicles that needed washing, now! His face was red. He had my full attention. I explained that the wash rack's pollution control system had failed and in order to avoid pollution and a notice of violation (NOV) from the state, I ordered the water to the wash rack shut off. He said, "You got one hour!"

Even though he was fresh from a war game (complete with sidearm and muddy boots), I survived to protect another stream and with some emergency help from the installation public works director we had the battalion operational and the commander happy in short order.

Looking back on this incident that occurred very early in my Army career, I asked myself, "What more could have been done to avoid shutting down the commander's wash rack?" The oil water separator (OWS) had failed because it had filled with mud, which could have potentially allowed oil and grease to flow directly into the creek. The standard operating procedure (SOP) required that soldiers stop cleaning operations on the wash rack and then they had to shovel out all the mud and haul it to the landfill. Their washing could then resume.

Suffice to say the troops did not like the SOP. We clearly had an accident waiting to happen but I found that the troops were not truly to blame. Things could have been done that would have avoided this operational shutdown. The installation OWS cleaning contract was not flexible enough to deal with muddy days and did not have emergency provisions to deal with the commander's immediate problem. The "big fix" is the construction of a central wash facility (birdbath) that eliminated all OWSs and has zero discharge to the stream. The birdbath had been unfunded for years because it did not compete well with other high dollar Army projects. I guess I could go all the way to Capitol Hill for blame (limited funds), but I had better stop while I'm ahead.

The point is that we in the environmental and installations business need to constantly be on the look out for ways to get ahead of compliance issues before the Army gets a NOV or the mission is disrupted. Besides, you really don't want a commander wearing muddy boots paying you an "up close and personal visit."



CREO Calendar
DoD REC Region VII
Army RECs Regions VI & VII

2/2	Kansas Environmental Engineering Conference, Lawrence, KS
2/8	EPA Region VII P2 Focus Group Meeting, Kansas City, KS
2/15-16	Texas P3 Meeting, Fort Bliss, TX
2/23	DoD/New Mexico Partnership Meeting, Albuquerque, NM
2/23-24	Southwest Strategy Federal/Tribal Workgroup Mtg, Albuquerque, NM
2/27-29	Partnership for a Livable Texas Conference, Dallas, TX
3/14-15	EPCRA TRI Munitions Reporting Training, Austin, TX
3/21-23	Recycling and Composting Conference, Lindsborg, KS
3/27	Army Day at DoD/NDIA Environmental Conference, Long Beach, CA
3/28-30	DoD/NDIA Environmental Conference, Long Beach, CA
3/29-30	EPA Corrective Action Workshop, Dallas, TX
4/12-13	Region VI P2 Conference, New Orleans, LA
4/13	New Mexico Pollution Prevention Partnership Mtg, Albuq., NM
5/1-3	Texas Environmental Trade Fair, Austin, TX
5/3	Texas Initiative - Environmental Partnering Group Mtg, Austin, TX
5/4	Texas P3 Meeting, Austin, TX
5/10	Green Purchasing Fair, Kansas City, MO
5/10-11	EPA Region VII Federal Facilities Conference, Kansas City, KS
5/11-12	Region VII P2 Roundtable, Kansas City, KS

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Corpus Christi Army Depot's Successful Hazardous Material Management System

By Mr. Daryl Brandt
CCAD HMMS Program Manager

Corpus Christi Army Depot (CCAD) is a tenant of the Naval Air Station Corpus Christi, encompassing 145 acres of land. CCAD is the world's largest facility for the repair and overhaul of Department of Defense rotary-wing aircraft. CCAD is the Army's only depot for the repair and overhaul of helicopters and other DoD aircraft, as well as related engines and components.

Maintenance activities at CCAD.

Established in 1961 as the United States Army Aeronautical Depot Maintenance Center (ARADMAC), the Depot began as a depot-level maintenance facility for fixed- and rotary-wing aircraft. In 1967, CCAD's mission to overhaul and repair fixed-wing aircraft was phased out. By 1968, the facility was providing repair and overhaul services to approximately 400 helicopters annually. The name was changed to CCAD in 1974. In 1998 CCAD became a part of the US Army Aviation and Missile Command.

Today, CCAD provides helicopter repair and overhaul capability to all the U.S. military services, as well as numerous foreign military organizations. Thirty percent of CCAD's workload is obtained from other services and includes the SH-60 Seahawk, AH-1W Super Cobra Attack Helicopter, MH-60 Pavehawk and UH-1N Huey Helicopter.

The management of new and used chemicals for such a maintenance facility, comprised of 50 buildings throughout the depot, is handled rather efficiently by means of a Hazardous Material Management System (HMMS), otherwise known as a "hazmat pharmacy."

The HMMS is an automated tracking system providing cradle-to-grave tracking, management, and reporting capabilities for hazardous materials and waste. The HMMS was deployed at CCAD in 1993. It is a Department of Defense standard, joint-service system that has helped save millions of dollars in hazardous material acquisition through improved business practices supported by the program. The HMMS supports the functional requirements of Pollution Prevention (P2) and Emergency Planning and the Community Right-to-Know Act (EPCRA).

Photos by Gus Gonzales CCAD Public Affairs office.

All types of hazardous materials come through issue points at CCAD, primarily corrosives, flammables, combustibles, paints, solvents, and oxidizers. Fully trained personnel who have attended Hazardous Material and Hazardous Waste training staff 10 primary issue points. Over 100 hazardous waste satellites have been integrated into the issue point operations. There are also 5 special issue points — three are located in paint shops, one in the airframe cleaning shop, and one in the plating shop.

Changed business processes have effectively reduced the amount of hazardous materials wasted when excessive quantities are ordered. Formerly, an employee may have been given one quart of epoxy, but he only used two ounces from the can. If a lid was not put on tightly, or the can was shoved to the back of the shelf, it eventually lost its effectiveness and had to be disposed of as hazardous waste. When it was learned that manufacturers were able and willing to package products in smaller containers, instead of traditional one-quart or one-gallon amounts, order changes were required for all operations.

With digital scales and bar scanners,

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Perspective on Partnering
An Insider's View

By Bill Bradley

Attorney Advisor, U.S. Army Industrial Operations Command

Partnering is a process that is advocated throughout all government agencies, to include federal, state, county and local. The reason is that partnering never fails to make the government process cheaper if applied properly. Those who support the government through taxes have a right to expect this and expect government employees to support this effort.

Partnering is supposed to develop a forum in which an honest dialogue is conducted between and among the partners. It is based on professional relationships and not personal relationships. This is an important distinction because partnering can be effective at preventing misunderstandings which might lead to expensive, time consuming litigation. But, honest disagreements must be expected. If these disagreements occur, and they will, the professional partners will respect one another's position without any impact on other issues pertinent to the partnership. The partnership must be based on mutual honesty, respect and trust. Personal friendships between partnering members are likely to develop, but should never be expected to influence professional decision-making.

A good example of a successful partnership is one between the Department of Defense and the state of New Mexico, known simply as the New Mexico Partnership. The partnering in New Mexico is relatively unique because it brings a number of similarly situated entities together simultaneously. One can easily see the consequent economy of administration and logistics. This partnering forum deals with matters that affect all or nearly all its members. It is not expected to take up any banner and advocate for any particular member if the matter at issue is peculiar to only one member. That advocacy is properly left to the individual member. Common issues are numerous enough.

Bill Bradley addressing the New Mexico Partnership

The partnering in New Mexico is undertaken with the recognition that the New Mexico Environmental Department (NMED) and the other partnering entities have a common goal. That goal is the protection and remediation of the environment in New Mexico. Every member is as dedicated to that task as NMED itself. We are dedicated also to devising the best, most cost effective means of doing just that. Pollution Prevention is number one.

The partnering entities are represented by strong willed individuals with excellent leadership and technical skills. The combined expertise when assembled in one room is awesome. The potential of the individuals is expanded exponentially when these characteristics can be focused on the common good. It is a tenuous unity that can only exist with the guidance of suggestive leadership and not a commanding leadership. It is fragile. The greatest threat to such a partnership is not the natural and healthy tension that exists between the regulated and regulating communities, but is from dissention within the individual entities.

Partnering and more efficient government will thrive when a greater number of folks within government understand both the potential and limitations of partnering. Partnering is not the sole answer to providing more effective government. But, it can be a part of the answer.

I hope this helps everyone understand what is happening in New Mexico. No, it is not the answer to everything confronting us there, but it will help us all better understand the questions. Feel free to contact me regarding my thoughts on partnering or any other issue at (309) 782-8418 or *bradleyw@ioc.army.mil.*

Army Fosters Tribal Relations Through Southwest Strategy Federal/Tribal Workgroup

By Mr. Jim Mayer
CREO Project Manager, Versar Inc.

The Southwest Strategy (SWS) is a community development and natural resources conservation and management partnership by federal, state, tribal and local governments. Through this effort the partners work in collaboration with each other and the public to restore and maintain the cultural, economic and environmental quality of life in the states of Arizona and New Mexico.

The SWS's Federal/Tribal Workgroup, formed in August 1999, works to develop mutual trust, effective communication, and to cooperatively identify solutions to common natural and cultural resource problems and issues and recommends forums to address common issues.

A clear understanding of government - to - government relations is required by federal agencies participating in the SWS to develop productive relationships that result in effective collaboration on tribal lands. Effective collaboration is key to the success of natural and cultural resource management and community development and other areas of mutual interest.

The Federal/Tribal Workgroup is comprised of members from Department of Defense, U.S. Army, U.S. Air Force, Natural Resources Conservation Service, Bureau of Indian Affairs, Bureau of Land Management, Natural Resources Conservation Service, U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service and Indian Tribes.

The objectives of the workgroup are to: 1) identify and become more knowledgeable with tribal and federal protocols and procedures; 2) improve federal knowledge and sensitivity when working on tribal natural resource and cultural issues; 3) increase commitment and follow-up by federal agencies to effectively address tribal natural and cultural resources issues; and 4) improve the federal agencies' tribal consultation and collaboration process to fulfill the federal trust responsibilities to Indian Nations.

Current projects being undertaken by the workgroup include: 1) developing an implementation plan for recommendations identified at tribal/federal gatherings; 2) coordinating and recommending training for interagency teams in cultural awareness and sensitivity to improve tribal and federal relations; and 3) developing a federal/tribal directory of who's who in the southwest to assist in establishing and maintaining government to government relationships.

Members of the Southwest Strategy tour a wetlands restoration site on the Colorado River Indian Tribes reservation in Parker, AZ.

The first product of the workgroup came from the Training Committee. The Training Committee developed, organized and presented cultural awareness and sensitivity training to the Southwest Strategy Regional Executive Committee and other key federal executives. This type of training is critical to improving tribal and federal relations and to the overall success of the Tribal/Federal Relations Workgroup and the Southwest Strategy.

The SWS Regional Executive Committee Harmony Workshop took place November 30 to December 2, 1999 at the Colorado River Indian Tribes (CRITs) reservation in Parker, AZ. Workshop topics included history, law, executive orders and policies, tribal government structure, cultural values and a field site visit.

Two additional training workshops will be provided by the SWS and be offered to audiences in New Mexico and Arizona — the first in spring 2000. The target audience includes all federal agency management, staff and field level personnel who may be working now or possibly in the future to implement Federal trust responsibilities to Indian nations in New Mexico and Ari-

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DoD Environmental Focus

Matters of Interest to All DoD Components

Environmental Trends in the New Millennium Influence Military Installations and Activities

By Mr. Steve Scanlon

CREO Region VII Army REC, Versar Inc.

What will the new millennium hold for installation environmental coordinators? Many new challenges and opportunities are coming — whether you are ready or not!

Environmental planning has traditionally focused on correcting mistakes of the past. Over the past 30 years, the Department of Defense (DoD) has been quite successful in addressing known problems. However, many experts believe we need to turn our attention to developing an "early warning system" for emerging environmental problems. Fortunately, there are a number of visionaries and futurists contemplating the trends that are shaping the future even now. This article addresses just a few of the issues and trends they have identified that could be factored into your long range planning.

Methyl Tertiary Butyl Ether (MTBE). MTBE is an oxygenating compound used in gasoline for the last 30+ years, to improve engine performance and reduce air pollution. But, it is a prime example of the "law of unintended consequences," because it can potentially contribute to groundwater pollution. Whether your geographic area required the use of reformulated gasoline or not – the fuel you received and stored may have contained MTBE.

Studies have linked the substance to cancer in lab animals, but not in humans. Where there has been a significant spill or release of a fuel containing MTBE, the fuel will usually attenuate within 1800 feet and naturally degrade. But, MTBE does not naturally degrade and can leach much farther than the fuel.

EPA has not set a maximum concentration level (MCL) for MTBE. However, the agency is in the process of requiring oil companies to restrict and eventually eliminate the use of MTBE, on a five-year glide path. Many states are moving ahead with requirements and standards for sampling and cleanup of MTBE. Iowa now requires analysis for MTBE in soil and groundwater samples as part of investigations and corrective actions at Underground Storage Tank (UST) sites with petroleum contamination. Missouri has established a groundwater cleanup standard based on the use of the water supply, i.e., 40 ppb for potable water and 400 ppb for nonpotable. Missouri's soil action level is 60 ppm, if the soil is to be used as clean fill. The groundwater cleanup level in Kansas is 20 ppb.

Currently, there are no known treatment technologies that are effective for MTBE contamination. There is a debate among the services concerning whether DoD should put money into MTBE remediation research, since this is a greater problem for the private sector (and in particular, Shell Oil which came up with the compound). Some believe that the petroleum industry should devise the solution. The Navy is working on the use of bioaugmentation (injecting a select strain of microbes) to degrade the MTBE in-situ at Port Hueneme, CA. There are no results yet. And, it may be another year before good data is available.

DoD has very rarely analyzed for MTBE, so it is difficult to assess the magnitude of the problem. A worst case scenario might be that the restoration program and RCRA cleanup program will have to reopen the books on sites that were considered clean or under active remediation, to analyze for MTBE.

Bio-Technology. Government and business devoted huge sums of money to overcoming the "millennium bug" - an unfortunate consequence of decisions made many years earlier by "experts" in information technology. As complex and pervasive as this problem was, we were still able to anticipate and correct the problem by applying knowledge of cybernetics. But as science and technology move into the next era – the

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Federal Facilities Risk Impact Analysis (FRIA) Pilot

By Mr. Bart Ives
CREO Region VI Army REC

In an effort to target areas of greatest environmental concern, EPA Region VI is attempting to involve Defense Department (DoD) facilities in the region in the development of a screening analysis tool aimed at evaluating the environmental vulnerabilities, as well as impacts from federal facility activities. EPA Region VI is in the process of developing the Federal Facilities Risk Impact Analysis (FRIA) model for federal defense facilities (see *www.epa. gov/earth1r6/6en/xp/fria.pdf*). The model considers multi-media environmental vulnerabilities and potential effects on watershed units by determining a cumulative risk for defense facilities. Primarily, EPA Region VI hopes to use the FRIA as a communication bridge with federal facilities. This will allow EPA and the facility to more quickly get to the point of addressing environmental areas of greatest concern. It will also be used, in part, as a tool to aid in making enforcement targeting decisions.

> EPA Region VI hopes to use the FRIA as a communication bridge with federal facilities. This will allow EPA and the facility to more quickly get to the point of addressing environmental areas of greatest concern.

The FRIA is an assessment tool that will use risk evaluation components similar to those found in the Human Health Risk Index (HHRI) used for regional enforcement targeting, the Region VI Environmental Justice Risk Index (EJRI), the Cumulative Risk Impact Analysis (CRIA), the Index of Watershed Indicators, and the Region VI Vulnerability Assessment.

The methodology follows other Region VI targeting projects by relying on geographic information systems (GIS), electronic data files, and criteria developed with a 1-5 scoring system. Electronic data are intended to be applied to identified criteria to score each facility (1-5) as to their impact/vulnerability for that specific criterion. At this point the EPA has data for about eight of the 24 criteria identified so far in the development of the tool. The screening method uses existing data, such as information from a facility's Toxic Release Inventory submittal, and from regulatory permits. The method is holistic in that it considers effects to land, air, surface water and groundwater, and is cumulative, in that it takes into consideration other pollution sources. The method makes use of GIS data that the region has been collecting for the past several years. GIS overlays environmental information, such as watersheds and non-attainment areas, onto a geographic area.

The methodology is comprised of two parts: 1) vulnerabilities within a geographic area; and 2) impacts from federal facilities. The vulnerabilities identified generally stay the same within a geographic area and include factors such as the quality of water and air, wildlife habitat, groundwater depth, soil permeability and population demographics. Criteria for potential impacts cover: chemical releases to air, land and water; procedures for waste disposal; regulatory history such as environmental violations; chemical storage and the proximity of a facility to endangered species areas.

In the end, EPA will have a list of 30 to 40 criteria to evaluate a federal facility. Vulnerability areas identified and potential impacts will be given a score between one and five to assess whether the activity meets the criteria for concern. Those with scores of five will be deemed to be of the most environmental concern and be targeted for discussion between regulators and the facility.

EPA would like to get the military's input, however, on establishing the criteria for determining impact factors, and in particular getting information on federal facility operations. EPA believes DoD input is important up front to avoid legal actions, rather than making decisions without the regulated community's input. Also the agency will have a better chance of establishing accurate criteria because federal facility staff can contribute technical expertise and experience.

To this point, EPA Region VI has briefed the pilot FRIA to the DUSD (ES), the service Regional Environmental Coordinators (RECs) for Region VI, a federal facilities workshop in the spring of 1999, and two DoD/state agency partnering groups. Discussion has also taken place on the possibility of briefing the FRIA to other DoD/state partnering groups in the region. The DoD, through the DoD Regional Environmental Coordinator's office, will continue to work with the EPA staff to refine the FRIA Concept.

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Other People's Money
Take Advantage of These Resources

From Staff Notes

At a time when resources to implement and maintain environmental projects and programs seem to be getting scarce, staff must keep a lookout for and take advantage of free resources available to help carry out their mission. This new feature of the newsletter aims at trying to identify *other people's money* that is available to help support your mission. The free resources do not just include cold cash, but may also include things like technical expertise, training or even things like recyclables for re-use.

If you have or know where to get free help or resources for Army and other DoD installations and activities, and would like to share it, please let us know and we will post it here (see contact information on back cover).

Much thanks goes to Colonel Thomas Dockens, Commander, Corpus Christi Army Depot for the idea to run and maintain this feature.

Pollution Prevention Investment Fund (P2IF). There is approximately $10 million per year waiting to be tapped here through 2005. The P2IF provides a mechanism to allocate limited P2 resources Army-wide. The objective of the P2IF is to fund cost effective installation level P2 projects which support Department of Defense (DoD) P2 Measures of Merit; reduce hazardous material purchase, use, and disposal; and reduce or eliminate environmental compliance requirements. Specifically, the focus is on implementing source reduction technologies and projects that address compliance issues through pollution prevention. The P2IF is a centrally managed fund under which Army projects compete for limited P2 resources based upon economic payback and other criteria. Project submissions should be made via the Environmental Program Requirements (EPR) database. The Army EPR database will be queried twice annually for candidate P2IF projects. The P2IF is available to Army activities, including the Army National Guard and Army Reserve. Required performance reports will be used to analyze estimated savings and payback potential. For detailed information on the P2IF, including application procedures, go to the Army Environmental Center website at *http://aec.army.mil/ (pollution prevention).* Don't delay, there are deadlines.

Tuition Free Training. The Naval School, Civil Engineer Corps Officers School (CECOS) offers many free courses under the auspices of the Interservice Environmental Education Review Board which are open to all military and civilian personnel of the DoD. The courses offer instruction in specific natural resource laws, regulations, policies, Executive Orders, DoD Instructions, and other guidance, noting service-specific requirements. Courses address stewardship, preservation, and process; fish, game, and wildlife management laws; protection of wetlands, waterways, and other protected ecological areas; forest and land use management laws; and interservice cooperation.

Courses such as Natural Resources Compliance, Introduction to Cultural Resources Management Laws and Regulations, Historic Preservation Law and Section 106 Compliance, and Native American Traditions and Cultures (Implementing DoD Native American Policy) are all "tuition free".

For further information visit the CECOS website at *http://www.cecos.navy.mil/* or call the CECOS Registrar at (805) 982-2895 or DSN 551-2895.

U.S. Army Solvent Substitution Program. The Army's Acquisition Pollution Prevention and Support Office has developed the "Standard Protocol for Selecting General Cleaning Agents and Process." This protocol is designed to assist managers in selecting the best cleaning agent and process for a specific operation. Copies of the protocol, which is being developed as an American Society for Testing and Materials (ASTM) guide, are available free to Army personnel on the WWW at *http://es.epa.gov/ssds/army*.

Hazardous Material Information System. The Hazardous Materials Information System (HMIS) is a Depart-

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Army Test and Evaluation Command (ATEC) Created

By ATEC Public Affairs Office

On November 18, 1998, the Vice Chief of Staff of the Army directed and approved consolidation of Army developmental and operational testing into a single test and evaluation command.

That decision led to the redesignation of the Operational Test and Evaluation Command (OPTEC) to the U.S. Army Test and Evaluation Command (ATEC).

Hosted by ATEC Commander Maj. Gen. A.J. Madora, redesignation ceremonies were conducted October 1, 1999, at Fort Myer, VA, with Assistant Vice Chief of Staff of the Army Lt. Gen. David K. Heebner serving as reviewing officer.

The Test and Evaluation Command (TECOM) transferred from the Army Materiel Command (AMC) and became an ATEC subordinate command. As part of the reorganization, TECOM was redesignated as the U.S. Army Developmental Test Command (DTC), with DTC headquarters remaining at Aberdeen Proving Ground, MD.

The Test and Experimentation Command (TEXCOM), already a subordinate command of ATEC, was redesignated the U.S. Army Operational Test Command (OTC) and stood up in place with headquarters at Fort Hood, Texas.

The Operational Evaluation Command (OEC) and Evaluation Analysis Center (EAC), with respective headquarters in Alexandria, VA, and Aberdeen Proving Ground, were consolidated, reorganized, and redesignated as the Army Evaluation Center (AEC).

Under the consolidation directive, ATEC received responsibility for installation management of White Sands Missile Range (WSMR), NM; Dugway Proving Ground (DPG), UT; and Yuma Proving Ground (YPG), AZ.

ATEC also took command of Aberdeen Test Center (ATC) at Aberdeen Proving Ground, MD; Redstone Technical Test Center (RTTC), at Redstone Arsenal, AL; Aviation Technical Test Center (ATTC) at Fort Rucker, AL; Electronic Proving Ground (EPG), Fort Huachuca, AZ; Cold Regions Test Center (CRTC), Fort Greely, AK; and the Tropic Regions Test Center (TRTC), headquartered at YPG.

ATEC headquarters will remain in Alexandria, VA.

Additional information can be found at the ATEC website at *http://www.atec.army.mil/*.

New CREO Staff Member

Meet **Diane Faile**, a recent addition to the CREO, Versar Staff. Ms. Faile joined our staff on January 12th replacing Marsha Brustad. Diane will serve as the CREO's Regulatory Specialist and will manage the publication of the CREO Regional (Legislative/Regulatory) Review. Diane holds a J. D., Environmental & Natural Resources Law Certificate, and is a member of the Missouri State Bar. She can be contacted at (816) 983-3444 or at *diane.m.faile@usace.army.mil.*

LSAAP *(continued from page 1)*

potentially be contaminating the environment.

The extent of contamination and potential risk to human health and the environment were studied in evaluating the site. These studies determined that source containment was the best way to protect human health, welfare, and the environment. The ROD, which outlines procedures for source containment, requires the site be covered with clay soil and construction of erosion-control berms. In addition, groundwater and surface water will be monitored to ensure nearby streams are not being contaminated. The effectiveness of this remedy will be evaluated every five years.

The next phase, which will take two to three months to complete, will be the remedial design phase – during which engineering will be performed for all remediation requirements. After that, construction (estimated at $1,000,000) should take about eight months to complete. For additional information please contact Elaine Kennedy at (903) 334-1944).

"The signing of this Record of Decision is the culmination of a lot of hard work over the past 12 years to address the problems at this contaminated site. It was imperative that we reach a solution that would address everyone's concerns about the environment, and we have successfully accomplished that objective."

LTC Todd R. Smith
Commander
Lone Star Army Ammunition Plant

CCAD *(Continued from page 3)*

issue clerks track the amounts of chemicals used, their remaining shelf life and where they are located on the depot. Hazardous material containers must be resealed and returned to the issue point by the end of a worker's shift. We've taken the responsibility of storing the chemicals in their toolboxes away from the employees and shifted the burden back where it belongs. As long as a container stays in good shape and the labeling is accurate and legible, the hazardous material can be reissued repeatedly until the container is empty.

The CCAD's hazardous materials management program has validated its success using fiscal year (FY) 1993 as the baseline and determining hazardous materials purchase costs and workload costs for that year. Beginning with FY 1994, the program's gross recovery was $1 million. By investing $360,000 into the program, much of which was spent on computer equipment, it showed a net recovery of $690,000. In FY 1995, the gross recovery was $2.58 million and the investment was $285,000, earning a net recovery for the depot of $2.23 million.

The success of the CCAD hazardous materials program has not gone unnoticed. Numerous government agencies and private industry have approached CCAD for advice on program function and implementation, including Allied Signal Aerospace, Volvo Aero Support AB, U. S. Army Concepts Analysis Agency and Texas Instruments.

If you have any question about our successful HMMS program please contact me (Daryl W. Brandt, CCAD HMMS Program Manager) at (361) 961-2940 (DSN) 861-2940 or by email me at *dbrandt@ccad.army.mil.*

Tribal ***(continued from page 5)***

zona. Army Installation, MACOM and other DoD personnel with these responsibilities are encouraged to attend. Check the SWS website in the spring for workshop announcement and details.

For additional information on the Federal/Tribal Workgroup, please contact the author (Jim Mayer) at (816) 983-3451 or *james.a.mayer @usacearmy.mil*. You can also visit the Southwest Strategy website at *www.swstrategy.org.*

The Army Environmental Center's Southern Regional Environmental Office has moved. Their new address and phone number is:

101 Marietta Street, NW, Suite 3120
Atlanta, GA 30303-2716
Phone: (404) 524-5061
Fax: (404) 524-5162

Trends *(Continued from page 6)*

"Biological Society" – the impact of "bugs" we create may be less predictable and even more of a challenge to tame.

Biological remedies for remediation of contamination at some DoD sites have already overcome many of the shortcomings of chemical and mechanical technology used previously. Great strides have been made in the discovery and bioengineering of beneficial microorganisms that can consume contamination, apparently without causing collateral harm. Recent tests of bacteria that can mineralize isomers of dinitrotoluene (DNT) in soil contaminated with explosives look promising, as do tests for anaerobic dechlorination of perchloroethylene (PCE) and trichloroethylene (TCE) in groundwater. However, there are many other applications of bio-technology that may present us with challenges as yet unimagined.

For example, biotechnology has the potential to revolutionize agriculture. Bio-engineered food, fodder and fabrics are on store shelves already. But, we lack information about the possible adverse effects (if any) that long- term ingestion or dermal absorption will have on humans. When these "super plants" that have been bio-engineered to resist insects, reduce water requirements and increase yield start growing in places where they were not intended, they could become the next wave of "invasive species" to alter natural ecosystems and displace indigenous species. On the other hand, bio-engineering could actually increase the diversity of beneficial and desirable plant species.

The Indoor Environment. For three decades, we have been concerned with pollution in our soil, air and water. Now, we are turning our attention to the environment in our home and immediate work area. Studies show that Americans spend about 90 percent of their time indoors (i.e., 62 percent at home, 25 percent at work, 7 percent in enclosed transit and 6 percent outdoors). In one survey, 40 to 60 volatile organic compounds were measured in the indoor air of randomly selected buildings (not buildings associated with "sick building syndrome"). Evidence suggests that when total VOC concentration exceeds 2-3 mg/m^3, symptoms occur. Irritancy symptoms are most often associated with cleaning products and water-based paints. The interaction of outdoor pollutants with the indoor exposure requires further study. In some cases, our home and office may protect us from exposure to outdoor pollutants. In other cases, the synergistic effects of exposure to both outdoor and indoor pollutants may enhance the combined effects. Health problems of workers, such as allergic sensitivity and multiple chemical sensitivity, may affect the materials we can use in construction and maintenance of offices. It may even affect the soaps, perfumes, and cosmetics that can be allowed in the workplace. Telecommuting may gain greater favor, as a way to avoid costly adaptation of

(Continued on page 11)

OPM *(continued from page 8)*
ment of Defense (DoD) automated system developed and maintained by the Defense Logistics Agency. HMIS is the central repository for Material Safety Data Sheets (MSDS) for the United States government military services and civil agencies. It also contains value-added information input by the service/agency focal points. This value-added data includes HAZCOM warning labels and transportation information. HMIS provides this data for hazardous materials purchased by the federal government through the Department of Defense (DoD) and civil agencies. The system assists federal government personnel who handle, store, transport, use, or dispose of hazardous materials.

Defense Logistics Information Service (DLIS) is the HMIS Program Manager and acts as the focal point for program support. To access HMIS resources go to the DLIS website at *www.dlis.dla.mil/hmis/index.htm.*The DLIS Customer Service Office number is DSN 932-4725 or commercial 1-888-352-9333.

Trends *(Continued from page 10)*
the workplace and/or potential legal liability.

Trace Antibiotics. As a result of the use of antibiotics to treat disease in humans and animals, trace amounts of antibiotics are showing up in our water supply. Our current water treatment protocols and systems do not test for or eliminate antibiotics from drinking water. Low-level exposure to antimicrobials may lessen the effectiveness of medicines for fighting disease.

Demographic trends indicate that the U.S. population is aging. Scientists are working on drugs that can be "tailored" to the specific DNA of a patient. While these medications may be more effective for the patient for whom they were originally prescribed, we don't know what effect they will have on the rest of the population. As these medications enter our water supply, our utility systems may have to combat this problem.

Endocrine Disrupters. Congress has directed U.S. EPA to develop a program to screen and test chemicals for their potential to disrupt the endocrine system. Hundreds of household and industrial chemicals are currently being evaluated. The term "endocrine disruptor" describes a synthetic or natural chemical that may mimic or antagonize hormone-mediated processes. Exposure to endocrine disrupting chemicals in the environment has been associated with decreased fertility in birds, fish, shellfish and mammals; decreased hatching success in fish, birds and turtles; feminization of male fish, birds, reptiles and mammals; immune deficiency in birds and marine mammals; and abnormal thyroid function in fish and birds. Since hormone receptor systems are similar in animals and people, effects seen in wildlife raise concern for human health. A recent report concludes that "….environmental estrogens clearly constitute a potential hazard to humans and wildlife." Regulation of these chemicals may present new challenges not only for the military installations, but for the average household as well. Additional information on endocrine disrupters is available on the Internet at http://www.epa.gov/endocrine.

Encroachment. Encroachment is fast becoming a significant issue for installation operations and training. Noise and dust pollution are among the chief complaints from communities

growing-up around the perimeter of many bases. The immediate result is increased cost to the installation as it attempts to mitigate some of the environmental effects of normal training. But there are other consequences as well. Electromagnetic encroachment by civilian sources affects the military's ability to train on ranges and training areas already. In the future, this trend could limit or curtail the type of training that can be performed at our shrinking inventory of ranges and training areas.

Green Base of the Future (GBOF) Program. The goal of this initiative is to create a nationally recognized model for the green base of the future that enhances mission readiness and achieves significant cost savings by integrating environmental best practices and operational requirements. The GBOF is a military installation where installation planning, facility design, and pollution prevention best practices are comprehensively applied. GBOF is currently an Air Force funded initiative that is being developed within the Texas Pollution Prevention Partnership (TXP3). The goal is to provide proof of concept within state of Texas. The concept would then be forwarded to OSD and other military services for possible adoption. Three Texas installations, including Fort Sam Houston, have volunteered to serve as prototype installations to test the GBOF concept.

Conclusion. There are many topics that could be included in this article. So, these are just a few that might impact military installations across the country. Future editions of this newsletter will undoubtedly address other horizon issues.

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