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# Krohn offers another 'tool' for OE removals

By KIM GILLESPIE
*Huntsville Center*

A new approach, the Krohn Mechanical Mine Clearance System, was used last summer to remove various types of ordnance from a range at the Combat Maneuver Training Center in Hohenfels, Germany.

"The Corps is always looking for safer and better ways to remove ordnance," said Bob Nore, the Corps of Engineers' Huntsville Center lead for the project. "By using this 'different,' or new approach, we now have data that can be applied for use of this type of technology at other sites. This type of technology may have potential for use at ranges in the United States."

The Krohn system, developed by European entrepreneur Herr Walter Krohn, is designed to drive through and "till" ordnance contaminated soil. This detonates any ordnance present while simultaneously withstanding the blast and protecting the operator from sound, metallic fragments, and over pressure caused by blasts.

The Krohn can withstand up to 10 kilograms, or 22 pounds of explosives. It consists of an armor plated, track-driven vehicle equipped with a front-mounted tiller system. The tiller includes a roller approximately three meters wide (or about 10 feet) fitted with teeth approximately 22 centimeters (eight inches) in length and four centimeters (one and one-half inches) thick.

The teeth are offset on the roller to ensure complete excavation of subsurface materials during each revolution. The offset, combined with the rotation of the roller, loosens the soil and shreds most everything from vegetation and stone, to land mines and other unexploded ordnance to a depth of approximately 32 centimeters, or one foot. The range on which the Krohn machine was tested was used as a direct fire anti-tank range.

**The Krohn Mechanical Mine Clearance System**

The Krohn machine was used for clearance of about 17 acres during a four-week time frame. More than 64 different types of ordnance items were encountered at this range. Items ranged from 40mm grenades, to M8 mines, to Light Anti-tank Weapon (LAW) rockets, to 90mm projectiles, which were the largest items demolished at the site by the Krohn. A minimum separation distance (or work exclusion zone) of 300 meters from the sides and back of the machine, and 586 meters from the exposed front was established (the distance was calculated by Huntsville Center) as a safety measure for the anticipated detonations caused by the tilling.

"Because of the high density of ordnance, the initial plan was to use 'mag and flag,' which means using a magnetometer to locate potential ordnance items, excavating and identifying the item, then disposing of any unexploded ordnance and ordnance scrap," said Nore. "But by using the tiller, we anticipated that it would make geophysical mapping safer and more efficient by eliminating surface items, removing vegetation and uneven surfaces; and saving clearance time by eliminating some excavations."

The contractor, EODT, requested a proposal for the Krohn. "It was our job to ensure that the Krohn met our safety requirements and effectively minimized the risks. After Huntsville Center Safety approved its use and we revised the safety plan, we moved forward," Nore said.

To evaluate the Krohn's performance for ordnance removal, a test grid using 25 meters by 25 meters and cleared to a depth of 4 feet was established comparing "not tilled" areas to "tilled" areas. "Advantages to using this machine included better visibility of unexploded ordnance, faster and safer excavation and more accurate geophysical mapping," said Nore. "Disadvantages included the need to establish a minimum separation distance for planned detonations, down time due to the roller being jammed with target scrap and worn teeth due to rocks and limestone, a one-foot effectiveness limit, and landscape limits (not feasible in mud, limestone or rocky areas)."

Nore emphasizes that a machine like the Krohn is best suited to ranges or isolated areas where the minimum separation distance does not impact residents or traffic. "We now have another tool in our project 'toolbox' that meets our stringent safety standards," he said.

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## INSIDE

**US Army Corps of Engineers®**

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# Corps embraces 2001 Earth Day theme

**By MAJ. GEN. HANS VAN WINKLE**
***Civil Works and***
**BRIG. GEN. STEVEN R. HAWKINS**
***Military Programs***

On April 22, the Army will join the rest of the country in celebrating Earth Day. Although there isn't a national theme for Earth Day, the Army does have one — "Transforming The Army … Sustaining the Environment." As Gen. Eric K. Shinseki, Army Chief of Staff, notes in his 2001 Earth Day Message, "[this theme] highlights our goals for the future and our continued success and dedication to environmental stewardship on our installations."

The point the Chief of Staff is making is that the success of Army Transformation depends on balancing the Army's training and operation missions with protecting and sustaining the environment. The U.S. Army Corps of Engineers is uniquely qualified to support this effort and will play a vital role in achieving the goals the Chief of Staff has outlined.

We have programs that help Army and Air Force installations fulfill their environmental missions. We also are responsible for protecting and sustaining the environment through our cleanup, regulatory, cultural resource preservation and ecosystem restoration initiatives.

Lt. Gen. Robert Flowers, Chief of Engineers, has set environmental stewardship as one of his five goals to accomplish. He has challenged each of us to "create environmentally sustainable systems that protect people, property and economic growth across the United States."

Our projects balance economic and engineering concerns with the need to protect and enhance the environment. We are applying this mandate across all our missions from our support to the military, including Army Transformation, to our Civil Works mission, going beyond our legal and regulatory requirements.

As we mark Earth Day, we are defining our role in Army Transformation, an initiative to make the Army more agile, efficient and rapidly deployable. To reach these important goals, the Army must have access to realistic training – training that can only occur if the ranges and training areas are both environmentally and technologically capable of supporting it. If we lose our enviromentally healthy ranges, we lose our training capacity, which will impact our readiness.

To meet the military's growing and changing training needs, we have developed land use inventory and management systems that help the Army balance training and operations with environmental needs. Our goal is to maintain effective training while ensuring a viable ecosystem flourishes for future use.

Our labs are playing a large role in the environmental aspect of Army Transformation by developing the necessary technology for sustainable military training lands, focusing on threatened/endangered species, cultural resources, dust and invasive species control, noise management, training carrying capacity and erosion control and restoration.

Because Army installations are homes to many endangered species, both plants and animals, our engineers and scientists are developing technologies and strategies that will enable the Army to train now and in the future without damaging those habitats often found nowhere else in the country. That's why it is vital that we continue to look at endangered ecosystems and wetlands mitigation while preserving military readiness through Army Transformation.

In addition to our direct support of our military, we support the nation through a broader range of civil missions. As stewards of nearly 12 million acres of land and water within the United States, the environmental decisions we make are far-reaching. The environmental investments we make benefit the Nation, the Army, ecosystems, our social well-being, and the economy for present and future generations. Through our regulatory program, we balance the need for continued economic growth against the need to protect valuable, but fragile wetlands. In our flood control and navigation missions, we look for solutions with the least negative environmental impact or those that offer environmental enhancements.

We recognize that all of our missions impact the environment. To understand, plan for and mitigate this impact, we are helping Army Transformation by preparing a Strategic Environmental Assessment and a Programmatic Environmental Impact Statement, using Mobile District's resources. The Strategic Environmental Assessment will lay out the environmental issues the Army and the Corps must address during the transformation process. The Programmatic Environmental Impact Statement, expected to be completed this month, will provide the macro look at all the environmental issues for the entire process.

We are focused on defining engineer requirements during the Army Transformation, matching Corps capabilities to those requirements and integrating engineering support into the transformation process – most notably through installation support and research and development.

Supporting Army Transformation while sustaining the environment is a challenge, but it's the right thing to do.

# Huntsville Center 'franchises' OE work to districts

**BY PAT RIVERS**
***Environmental Division***

The U.S. Army Engineering and Support Center, Huntsville, has made significant changes in its Ordnance and Explosives (OE) work to maximize the Corps' vast resources.

Its current OE business model involves positioning the Corps to be responsive to current and future OE program growth by "franchising" the work to Corps districts. According to Col. Harry Spear, Huntsville Center Commander, his use of the word franchising means, "you can go to any of these Corps districts and receive the same consistent safety and quality of OE execution work. This is the same concept used by private industry franchises."

The Huntsville Center was designated the Mandatory Center of Expertise and Design Center for OE in 1990 and until recently, executed all OE projects. For FY01, Huntsville Center has transferred more than $40 million of execution work to three designated OE removal districts (Los Angeles, Omaha and Sacramento) and Baltimore District. Louisville and Fort Worth were also recently designated OE removal districts and both are preparing to execute OE removal projects.

Huntsville Center recognizes that having geographic districts execute OE work is an effective business practice. Each district knows and understands best its regional customer base and local community needs and can respond to its issues. Having the districts execute those projects locally is a perfect example of the "One to Door to the Corps" concept that is advocated in the Corps' strategic plan. Spear emphasizes that it is the OE Center of Expertise's responsibility to continue to oversee this ever-changing and complex program by developing guidelines that support the Corps' environmental mission of stewardship and safety.

The OE Center of Expertise continues to build upon its "franchising" concept by developing procedures for mentoring guidance at Corps Major Subordinate Commands, or divisions, that plan to designate separate "design center districts" to develop designs for removal districts. Omaha and South Pacific Divisions have already initiated this process with the OE Center of Expertise.

The OE program's rapid growth is expected to exceed Huntsville Center's execution capacity, so all of these changes are designed to help the Corps leverage its divisions to execute OE studies, designs and removals on their own. The Corps' environmental program is committed to ensuring that all resources and capabilities are being used to their fullest extent.

*For more information about the Huntsville Center initiatives, contact Toni Hamley at 256.895.1761.*

# *Sacramento District bioremediation project receives award*

**BY DAVID KILLAM**
***Sacramento District***

In January, the Sacramento District's Hawthorne Army Depot project team was awarded former Vice President Gore's Hammer Award, which recognizes innovative and cost-saving initiatives in government. The award was given to Team Hawthorne for its innovative method of cleaning toxic soil on Hawthorne Army Depot in Nevada, and saving $4 million in the process.

Hawthorne Army Depot, which now serves as an active munitions depot, once served as a production plant and storage facility for munitions. During the production of the munitions, wash water from the production lines was disposed of into unlined washout basins. As the water evaporated, the contamination was left in place. In 1997, Team Hawthorne was faced with the clean-up responsibility of approximately 70,000 cubic yards of soil contaminated with explosives and 10,000 cubic yards of soil contaminated with ammonium picrate, a missile propellant.

"We examined our options," said Judy Soutiere, Sacramento District project manager. "We could have used the bio-slurry method – this uses water and organic matter to decompose the contamination. However, this was rejected because with Nevada's dry climate it would be too expensive. Another option was to transport the contaminated soil to an incinerator. This was also rejected: the nearest incinerator was in Utah. A third option was bioremediation by composting, which had been tried at Umatilla Army Base in Oregon."

Bioremediation by composting consists of mulching organic matter such as hay, woodchips and manure with the contaminated soil. It decomposes the contamination by breaking down the explosives to their base components.

Several factors led to the selection of the bioremediation by composting method, according to Soutiere. "Bio-remediation looked promising after we performed a pilot study, and it eliminated expensive transportation costs since it could be conducted on-site," she said. A public meeting also allowed the community to see the process during the implementation of the pilot study.

Project-specific innovations separated the Hawthorne project from similar bioremediation projects. Instead of installing a building and a concrete pad like the Umatilla project, the team decided to perform the bioremediation operations on a much larger earthen pad with windbreaks to control the treatment environment. Stockpiled ammunition crates were also processed as a source of wood chips needed for the treatment and saved both the costs of purchasing this additive and the cost of disposing the crates into a landfill. Main ingredients were all locally purchased to help the local economy. The manure, wood chips, hay and potatoes were added to the contaminated soil, then mulched in with some water, which eventually yielded a compost material with no detectable explosives

Team Hawthorne included Soutiere, Dennis Potter and Glen Mitchell from the Corps' Sacramento District; U.S. Army Environmental Center; U.S. Army Support Command; Hawthorne Army Depot; State of Nevada Department of Environmental Protection; and contractors Zimmermann Corporation and Tetra Tech.

# District uses Internet-based coordination for FUSRAP project

**By D. CONBOY**
***Buffalo District and***
**L. DURHAM**
***Argonne National Laboratory***

A virtual team, working through the Internet, is helping the Buffalo District coordinate the precise excavation and off-site disposal of soils contaminated with low levels of residual radioactivity.

The approach, which has been applied at the Formerly Utilized Sites Remedial Action Program (FUSRAP) Ashland 1 and Ashland 2 sites in Tonawanda, N.Y., helps ensure a complete remediation of the sites while controlling costs.

Experts from several Corps organizations, including the Hazardous, Toxic and Radioactive Waste (HTRW) Center of Expertise in Omaha, are participating with Buffalo on the virtual team, resulting in real-time sharing of data and real-time decision making.

One area in which rapid data collection improves remedial activities is precise excavation. Pre-remediation data are seldom adequate for accurately and confidently delineating contamination footprints, particularly when subsurface soils are affected. When the preferred remedial action involves the excavation and off-site disposal of impacted soil at several hundred dollars per cubic yard, as at the Ashland sites, significant cost savings can be realized by ensuring that only contaminated soil is excavated and disposed.

Precise excavation also provides additional data to confirm that the remediation is being implemented correctly. In the precise excavation approach, contaminated soil is removed one layer at a time, and the contaminated footprint is redefined by rapid data collection techniques.

Implementing a precise excavation approach imposes additional logistical demands on remediation. Instruments that measure surface contamination and the global positioning system (GPS) receivers generate large quantities of characterization data in a short period of time. Data then must be integrated, analyzed, and disseminated to allow work to continue unimpeded.

When excavation crews are deployed and waiting, there are significant incentives to eliminate down time while excavation decisions are being made.

A dedicated project Web site was a particularly effective means for enabling precise excavation at Ashland. The Web site was secure, and access was limited to users with the appropriate login and password. Internet-based data management made information available to all users at all times.

**Internet-based data management made information available to users at all times. Using a secure Web site, team members could review data throughout the remedial process. Turnaround time from the point of collection on-site to dissemination on the Web was typically less than 24 hours.**

The principal sources of real-time data at the Ashland FUSRAP sites were gamma walkover surveys, coupled with GPS data-logging systems and soil sample results from an on-site gamma spectroscopy laboratory. Gamma walkover surveys were conducted with detectors that measure gross gamma radiation. The walkover surveys provided complete coverage of an exposed surface, generating thousands of data points a day. To be useful for excavation-control purposes, this data had to be integrated, mapped, analyzed, and redistributed to field staff in a matter of hours.

After the gamma walkover data indicated that the sites were sufficiently remediated, additional samples were collected for off-site laboratory analysis to confirm the remediation was complete. The off-site laboratory data, along with other information such as the on-site gamma spectroscopy results, air-quality sampling results, waste characterization data for off-site soil shipments, electronic documentation and digital photos of work were posted on the Web sites.

Dedicated Web sites were established for both the Ashland 1 and Ashland 2 projects. The sites were constructed using Microsoft Access ™ as the database, Allaire's ColdFusion™ as the interface between Web pages and Access, and the Maps and Data (MaD) browser from Argonne National Laboratory for serving dynamic maps.

The MaD browser provided basic geographic information system capabilities for maps that were downloaded over the Internet. These maps are linked back to underlying databases, allowing users to select specific XYZ coordinate locations on the maps and retrieve the results associated with those locations.

On-site contractors had a local Internet service connection to transfer data electronically to Argonne, where information was loaded into databases, mapped, analyzed, and posted on the Web for review by the Corps team. Turnaround time for the gamma walkover data from the point of collection to dissemination on the Web typically was less than 24 hours, and in some cases, it was almost immediate.

The New York State Department of Environmental Conservation staff was able to review data throughout the remedial process. By reviewing real-time data, the regulators could identify potential issues before they became problems. This ultimately helped expedite the final site closure process.

The Internet-based data management approach ensured the identification and removal of contaminated soil that was not previously identified during the remedial investigation. Additionally, the high cost of off-site disposal was avoided, because soil originally identified as contaminated was proven to be below the cleanup criteria.

A cost analysis of the precise excavation work conducted at the Ashland 2 site estimated a minimum cost savings of $6 million when compared to a more traditional soil removal process. The additional expense of implementing the precise excavation approach and its associated Internet-based data management infrastructure was approximately $200,000, a 30 to 1 cost benefit ratio.

*For details, contact David Conboy at 716.879.4436.*

# *Water Resources Development Act 2000 establishes Tribal Partnership Program*

**By PAUL RUBENSTEIN**
***Corps Headquarters***

Section 203 of the Water Resources Development Act of 2000 (WRDA 2000) authorizes the Secretary of the Army, in cooperation with Indian tribes and the heads of other federal agencies, to study and determine the feasibility of carrying out projects that will substantially benefit Indian tribes.

This Tribal Partnership Program (TPP) will focus on work that would be undertaken primarily in areas that are within Native American / Alaska Native communities and lands inside the boundaries of Indian reservations. For each of Fiscal Years 2002 through 2006, $5 million per year is authorized for the TPP.

## Broad mandate

The TPP is a broad legislative mandate that will allow tribes to collaborate with the Corps in new and important ways. This new authority emphasizes the Corps' ability to partner with tribes as local sponsors in not only "traditional" civil works projects such as flood damage reduction and environmental restoration and protection, but also in projects for preservation of cultural and natural resources.

According to Chip Smith, Assistant for Environment, Tribal and Regulatory Affairs in the Office of the Assistant Secretary of the Army (Civil Works), "The objective is to have a water resources program focused on the unique challenges of working in Indian country. The Army recognizes its federal trust responsibility and the status of tribes as sovereign nations." Smith observed that, "The Army must consult with tribes, develop consultation procedures and work to understand tribal beliefs and values."

Maj. Gen. Hans Van Winkle, Director of Civil Works, recently sent a memorandum to Corps commanders informing them of the new TPP. To capture the broad meaning of this WRDA 2000 provision in implementing guidance, the director is seeking commanders' views on the range and character of study opportunities that may arise. Commanders have also been asked to solicit views and input from tribal representatives expressing their needs and objectives.

## Corps IWR study

In support of the work underway at the Corps Headquarters and the Assistant Secretary's Office, the Corps Institute for Water Resources (IWR) is initiating a Tribal Partnership Program Policy Study. The IWR team will examine the challenges and opportunities unique to the TPP. Among these are policy and procedural issues relevant to program implementation, credits for in-kind services and the use of non-economic factors to support justification of Section 203 recommendations.

In scoping the study, the IWR team noted that it will be "helpful to build upon existing procedures and methods. IWR also recognizes that unique considerations of resource significance and cultural values may be relevant and the study will examine how this information can be used in project formulation and evaluation."

Tribal communities and governments have diverse needs and the program must be responsive to those needs. According to John Sparlin, Native American Coordinator for the Corps' Tulsa District, Indian communities in Oklahoma have expressed great interest in the TPP.

Oklahoma is home to 36 federally recognized tribes that serve the largest Native American population of any state. Sparlin, in coordination with local tribes, has identified several projects for which the new program might be a perfect match.

## Other partnering

In addition to the Corps' interaction with tribal entities, the TPP will engage other agencies in cooperative efforts. Rich Taylor, Corps Headquarters Interagency and International Services Division representative, sees the TPP provision of WRDA 2000 as an excellent opportunity to partner with the Department of the Interior. "We are currently engaging Interior's Bureau of Indian Affairs representatives in discussions regarding WRDA 2000 and how it can mutually benefit all parties," Taylor said.

The TPP is the most recent expression in recognition of the Corps' unique relationship with Native American tribal governments.

Van Winkle expressed the Corps' considerable interest in this program when he recently wrote that implementation of the TPP "will be an effective means of fostering government-to-government relations with Indian tribes and offer opportunities to protect, preserve, restore and develop vital tribal trust resources."

*For more information, contact Paul Rubenstein at 202.761.4251.*

# Evaluating HAZWOPER's applicability to a project

## Prudent use of OSHA standard can reduce costs, increase contractor pool

**By MARK FISHER**
***HTRW CX***

The Occupation Safety and Health Administration's (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120/ 29 CFR 1926.65), when properly applied, provides needed protection for hazardous waste site cleanup workers. The good news is because the hazardous waste site cleanup industry has matured, most project planners understand how the standard works and have developed smooth, easy processes for implementing it on a corporate and project specific level. The bad news is that cleanup industry project planners do a poor job of evaluating HAZWOPER standard applicability, and often require the standard to be implemented where it is not necessary.

Inappropriate application of the HAZWOPER standard is costly and burdens small business program performance. There are generally three areas that need to be addressed concerning its application: 1) explaining when, and more importantly, when not to apply OSHA's HAZWOPER standard; 2) describing cost benefits of appropriate HAZWOPER application and; 3) describing small business program performance improvement opportunities, where the standard is appropriately applied.

### Appropriately applying the standard

First and foremost, hazardous waste site remedial action construction projects should be reviewed and evaluated by qualified safety and occupational health personnel (preferably industrial hygienists) during the project planning stages to determine which construction tasks will actually require application of the standard and which will not. Criteria for application of the HAZWOPER standard are as follows:

- The task must be directly related to cleanup of contaminants at a government recognized, uncontrolled hazardous waste site.
- The cleanup related construction task must cause workers to be exposed to the site contaminants.

Both criteria must be met for HAZWOPER to apply to the remedial action construction task.

### HAZWOPER standard not always applicable

Some typical construction tasks performed on hazardous waste site cleanups where the HAZWOPER standard need not be applied, and where the work can be safely performed by contractors who are not "HAZWOPER-ready" are as follows:

Landfill Capping – Placement of a landfill cap is a cleanup task that does not have worker exposure potential to contaminants in the landfill. Landfill caps require large volumes of clay and dirt to be moved and graded. There are many capable "dirt moving" contractors in the construction industry, and they are not required to be "HAZWOPER-ready."

Fencing – Installation of security fencing around hazardous waste sites is a cleanup task that, most likely, does not have the potential for workers to be exposed to site contaminants. Many highly qualified local fence installation contractors for cleanup projects are likely to be found if HAZWOPER training and medical surveillance requirements are omitted from the fencing task.

Groundwater Treatment Plant Construction – Groundwater treatment plant construction is part of the cleanup process, but if the plant is constructed on "clean" (uncontaminated) ground, workers constructing the plant should have no potential exposure to site contaminants and the HAZWOPER standard should not be applied. Application of HAZWOPER on a project that requires many different construction trades would make it very difficult to obtain locally all of the "HAZWOPER-ready" disciplines needed.

Hazardous waste site cleanup project planners are encouraged to review individual remedial action construction tasks to determine if they are indeed cleanup related and involve worker exposure to site contaminants. Planners can save money and improve small business program performance by excluding HAZWOPER requirements from the tasks that do not meet both "cleanup" and "worker exposure" criteria.

### Inappropriate application costly

Inappropriate application of the standard is costly, not only because of what the standard requires in terms of personnel, equipment, training, medical surveillance, etc., but more importantly because HAZWOPER contractor qualification requirements may impede competition in the bidding process. To be qualified to bid on a HAZWOPER designated task, either as a sub or a prime, the contractor must have its personnel enrolled and up-to-date with the training and medical surveillance requirements of the standard. In other words, the contractor has to be "HAZWOPER-ready" or he/she will be unable to fulfill the requirements of the contract.

There are many qualified construction contractors, but few of them are "HAZWOPER-ready." Unilateral application of HAZWOPER to all tasks on a hazardous waste site remedial action project, some where it is not necessary, eliminates many highly qualified contractors from the competitive bidding process. Limiting the competition in the bidding process usually drives up the cost of doing business.

The Corps' small business program goals for FY 2001 are for 38 percent of all prime contracts and 62 percent of all subcontracts to go to small businesses. Inappropriate application of HAZWOPER to all aspects of hazardous waste site construction projects can negatively impact small business program goals. Very few small businesses are "HAZWOPER-ready," and, as a result, are not allowed (or it is very difficult for them) to participate on remedial action construction projects where HAZWOPER is applied.

Therefore, prudent evaluation of site tasks and proper application of HAZWOPER will permit the use of more hazardous waste projects in achieving small business program goals.

*For more information, contact Mark Fisher at 402.687.2587.*

# Pacific Ocean Division hosts FUDS interagency meeting

**By DOUG MAKITTEN**
***Honolulu District***

Nearly 30 participants from a variety of state and federal agencies and the Commonwealth of the Northern Mariana Islands took part in an interagency Formerly Used Defense Sites meeting and workshop at Pacific Ocean Division headquarters on Jan. 19.

The meeting, organized jointly by the Corps and the U.S. Environmental Protection Agency, was an initial attempt to more effectively address regulatory and stakeholder interests and concerns at FUDS properties.

Brig. Gen. Randal R. Castro welcomed the group and left them with several goals:

- to speak as a voice to the needs of the region's FUDS needs;
- to adopt a "team of teams" philosophy to work together for the common good and;
- to work together to prioritize what needs to be done.

Castro also noted the Corps is in the quality of life business, which certainly applied to its participation in this effort. He said the Corps is committed to improving the quality of life for American military service members and their families through military construction, the quality of life of our nation through management of inland waterways and water infrastructure, and the quality of life of the entire planet with its environmental work.

In addition Castro shared his philosophy of leadership captured in the acronym "TIPS" which stands for:

- **T**alk with others;
- keep others **I**nformed;
- make others' lives **P**redictable by not surprising them and;
- be **S**ensitive to others' needs.

Speaking on behalf of Honolulu District commander Lt. Col. Ronald N. Light, Deputy District Engineer for Programs and Project Management and chief of Programs and Project Management Division Ray Jyo emphasized the importance of the FUDS program to the District. "We believe that by meeting like this and working together we can better coordinate our efforts and better execute the FUDS program," said Jyo.

The gathering's morning session was devoted to a series of presentations, while the afternoon was dedicated to facilitated group discussion about the many aspects of the FUDS program.

Pacific Ocean Division Environmental Program manager George Kimura provided a national and division-wide overview of the FUDS program. "The goal of the FUDS program is to reduce, in a timely and cost effective manner, the risk to human health and the environment resulting from past Department of Defense activities at formerly used Department of Defense properties," said Kimura.

The FUDS program was established by Congress in 1984. The Army is the Executive Agent for FUDS and the Corps is responsible for carrying out the program. Nationwide there are more than 2,500 FUDS properties requiring cleanup and more than 1,300 projects are under way according to a Corps headquarters brochure.

The Defense Environmental Restoration Program requires DoD to carry out DERP "in consultation with" EPA. Kathleen Shimmin, EPA Region IX FUDS program manager, said her agency's goals in the initial interagency FUDS meeting were to describe the programs, identify the players, and make a start toward developing a coordinated effort in dealing with FUDS issues. Shimmin said EPA hoped that, in this and future meetings, the group would identify major issues of concern, categorize those issues and form working groups to manage the process.

Photo by Frank Ono

**The Corps' contractor, Environmental Chemical Corporation, places heavy-duty plastic sheeting for a containment cell at the Tanapag Village, Commonwealth of the Northern Marianas PCB-remediation project site. Excavated PCB-contaminated soil will be stored in the cells until the cleanup portion of the project begins. Each containment cell holds approximately 1,500 cubic yards of material.**

Honolulu District FUDS program and project manager Helene Takemoto followed Kimura. She provided an informative history of the FUDS program and an overview of FUDS activities in the district. Takemoto said Honolulu District has completed 31 FUDS projects and has another 114 FUDS properties where projects are either under way or planned.

According to Takemoto, Honolulu District's FUDS work ranges from complex efforts such as the ongoing Tanapag, Commonwealth of the Northern Mariana Islands, PCB-remediation, to relatively simple removals of underground storage tanks. She said a major challenge is the level of funding — Honolulu District projects are in competition with all others in the Corps. That makes careful prioritization essential.

During the afternoon session, facilitators Robert Curnyn, from the Division's Directorate of Engineering and Technical Services, and Shimmin led the group through the process of developing issues and concerns. Topics listed ranged from how sites are included in the FUDS program and how work is funded to the authority of various agencies and the need for improved communication, both internal and external.

Next, the organizers of the meeting will go through notes from the brainstorming session, group related issues together and work toward a consensus on how to tackle key recurring themes. Attendees included representatives of the Corps, EPA, the National Park Service, U.S. Fish and Wildlife Service, U.S. Coast Guard, the U.S. Public Health Service's Agency for Toxic Substances and Disease Registry, the State of Hawaii Department of Health, and the Commonwealth of the Northern Marianas' Department of Environmental Quality.

*For more information, contact Doug MaKitten at 808.438.9862.*

# Wisconsin, Corps save Native American burial ground

**By HOLLIS ALLEN**
***ERDC***

Shoreline erosion threatened a Native American burial ground at Rice Reservoir in northern Wisconsin. In May 1998, the U.S. Army Engineer Research and Development Center (ERDC) Environmental Laboratory, Vicksburg, Miss., entered into a Cooperative Research and Development Agreement with the Wisconsin Department of Natural Resources and the Wisconsin Valley Improvement Company, a reservoir management firm headquartered in Wausau. The agreement provided the means of sharing expertise through a partnership designed to employ bioengineering reservoir shoreline stabilization measures at Rice Reservoir. Bioengineering (combining plants with engineered structures and materials) was used to stabilize the shoreline, protect the burial mound, and enhance fisheries and other natural resources of the reservoir. The bioengineering treatments used at Rice Reservoir have served as a demonstration for employing similar measures at other Wisconsin reservoirs.

**Shown in 1999, the eroding bank at Rice Reservoir threatened a Native American burial ground.**

In April 1999, the partners sponsored a hands-on workshop to learn bioengineering techniques and share expertise with federal, state, and local agencies, as well as private entities.

The effort drew upon expertise from several ERDC laboratories (the Environmental, Geotechnical, and Structures Laboratories) in terms of designing plans that would combine a rock toe and vegetative geogrid and other bioengineering treatments. These labs assisted the Wisconsin Valley Improvement Company in the construction of the treatments before, during, and after the workshop. The effort to restore the shoreline and protect the most significant archeological feature in northern Wisconsin was successful. This project illustrates what can be done with bioengineering treatments when the Corps, state agencies, and private firms combine their technical expertise and capabilities.

*For more information about this project, contact Hollis Allen at 601.634.3845.*

**The archeological site remains protected 16 months after the bioengineering treatment restored the eroded shoreline.**

# The Nature Conservancy, Corps formalize partnership

WASHINGTON--Former Assistant Secretary of the Army for Civil Works, Dr. Joseph W. Westphal, recently formalized a partnership among the U.S. Department of the Army, the U.S. Army Corps of Engineers and the nation's largest private, nonprofit conservation organization, The Nature Conservancy.

Under the Memorandum of Understanding (MOU), the partners pledge to work together, within the Corps' civil works and regulatory missions, to develop innovative solutions for managing water resources in a way that meets human needs while conserving native plant and animal species and restoring natural ecological processes.

"This MOU will enhance the Corps' ability to implement restoration and protection projects working with local partners across the country," Westphal said. "I am excited about this new partnership with The Nature Conservancy. The Conservancy has a great reputation for results, collaboration, using a science-based approach, and for having the kind of relationships at the local level that the Corps can tap into to develop successful projects."

W. William Weeks, Executive Vice-President of the Conservancy, said, "Much of North America's most distinctive, most important and most threatened biodiversity depends on the rivers and streams of this nation. We are very hopeful about the prospect of facilitating the Corps' intention to apply its engineering capabilities toward the challenge of managing the nation's water resources for biodiversity and ecological health, as well as for the other social and economic benefits that have driven Corps projects and decision-making in past years."

Lt. Gen. Robert B. Flowers, Commander and Chief of Engineers for the U.S. Army Corps of Engineers, added: "This agreement will formalize a long-standing working relationship with the Nature Conservancy. We have worked together successfully on a limited and largely ad hoc basis. Our partnership with the Conservancy will increase our ability to resolve the nation's water resource challenges."

During the next year, the Corps and the Conservancy will begin a process for planning, implementing, and evaluating proposed projects and programs contemplated under the MOU. The MOU is neither a fiscal nor a funds obligation document and does not establish authority for the noncompetitive award to The Nature Conservancy of any contract or other agreement. Hard copies of the MOU will be distributed to divisions and districts in the near future and it will also be posted on the Corps' Civil Works Planning and Policy Web site.

*For details, contact Ellen Cummings at 202.761.4558.*

# Careful evaluation of lead-based paint guidelines needed for disposal decisions

**By SANDRA FRYE**
***HTRW CX***

Recently, the EPA issued a clarification memorandum pertaining to the management of lead-based paint (LBP) waste generated by contractors at residential structures. Per the EPA memo, contractors may dispose of hazardous LBP wastes from residential lead paint abatements as household garbage subject to applicable state regulations.

The primary driver behind the proposed changes is to encourage more lead abatement activities by making it easier and less costly to dispose of these wastes generated during lead-based paint activities.

The memo, issued on July 31, 2000, states that contractor generated LBP wastes from abatement activities at residential structures were included in the Resource Conservation and Recovery Act (RCRA) household waste exclusion of 40 CFR 261.4(b)(1).

EPA hopes the clarification in the memo will "facilitate additional residential abatement, renovation and remodeling, and rehabilitation activities, thus protecting children from continued exposure to lead paint in homes and making residential dwellings lead safe for children and adults." A summary of the EPA memo and a link to the actual memo is available at www.epa.gov/lead/fslbp.htm.

The Army has issued a policy memorandum pertaining to the July EPA memo. The policy states: "Where consistent with state requirements, Commanders shall dispose of LBP wastes generated at residences by Army personnel or contractors as non-hazardous waste under the RCRA household waste exclusion. This policy guidance will be included in the next revision of AR 200-1, Environmental Management."

The Army policy emphasizes that the exclusion does not apply to LBP wastes generated from buildings or locations other than residential structures (e.g., housing, barracks, billeting, hotels, etc.), or to the non-residential portions of combined function buildings.

The Army memo also points out that states may have more stringent regulations for LBP waste disposal. It is important that installations know their specific state's requirements prior to disposing of LBP wastes under the RCRA household waste exclusion.

While the Army's policy is to take full advantage of the household waste exclusion, other Corps customers may not wish to do so. EPA has, in the past, made it clear that it does not consider concentrated LBP wastes such as paint chips and sludges to be in the same category as LBP architectural debris and structural components. This difference is stated in a 1998 proposal by the EPA to exempt LBP waste and debris from RCRA regulation as hazardous waste. The proposed rule first appeared in the 18 December 1998 Federal Register (63 FR 70189). The proposed rule would exempt LBP debris from RCRA regulation as a hazardous waste and allow for its disposal in a RCRA permitted Subtitle D construction and demolition type landfill or a RCRA permitted Subtitle C hazardous waste disposal facility. Disposal at Subtitle D municipal waste landfills would not be allowed under the proposed rule. However, the exemption applied only to architectural components and other LBP debris as defined in 40 CFR 745.303. The proposed rule specifically stated that concentrated LBP wastes such as LBP chips, dust, blast media, solvents, sludges and treatment residues were not included in the exemption. Such concentrated wastes would remain subject to RCRA hazardous waste regulation.

Corps personnel should carefully weigh the RCRA household waste exclusion against the EPA's position in the 1998 proposed rule before applying the household waste exclusion to concentrated LBP wastes generated at civil works projects and facilities.

In addition, Corps personnel conducting LBP activities for non-Army customers need to discuss the disposal of LBP wastes under the household waste exclusion with their customers. All customers should fully assess the benefits and risks associated with their decision to invoke or not invoke the RCRA household waste exclusion. Non-Army customers may not wish to take the RCRA household waste exclusion due to their own policy or potential Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) issues associated with the disposal of concentrated lead wastes in a non-hazardous RCRA Subtitle D facility.

*For details, contact Sandra Frye at 402.697.2635.*

**The EPA recently issued a clarification memorandum pertaining to the management of LBP waste generated by contractors at residential structures.**

# Corps lab leads 'ATTACC' on training area management

## First field test at Lousianna Army National Guard site proves successful

**By DANA FINNEY**
***ERDC-CERL***

A method to show military training impact on lands has helped the Louisiana Army National Guard (LAARNG) site a new maneuver area at Camp Beauregard, La. Using the Army Training and Testing Area Carrying Capacity (ATTACC) tools, land managers chose 277 acres that can best support training requirements with least impact on the land and at the lowest cost to restore.

ATTACC is one of several tools being developed at the Engineer Research and Development Center's Construction Engineering Research Laboratory (CERL) to help land managers implement the Integrated Training Area Management (ITAM) program. "We needed a scientific means to know a training area's carrying capacity," said Maj. Michael Tarpley, LAARNG ITAM Coordinator. "Without that, no one has a complete ITAM program."

Louisiana Guard combat engineer units train at Camp Beauregard before rotating to the National Training Center at Fort Irwin, Calif. LAARNG conducts year-round training and in the past has used maneuver areas at nearby Fort Polk. However, the growing competition for Polk's training areas prompted the Guard to develop maneuver areas on its own lands.

Tarpley led a team that designed and built the first-ever mechanized maneuver area at Camp Beauregard. One of the team's goals was to choose a site for the training area using ITAM's principles. ITAM is a land monitoring and management program developed over time with input from CERL, the Army Training Support Center, the Army Environmental Center, Major Army Commands, and the Office of the Deputy Chief of Staff (Operations). It is funded for more than 100 Army installations with significant training land. It includes sub-programs such as environmental awareness, threatened and endangered species management, Land-Condition Trend Analysis (LCTA), and others. ITAM's purpose is to ensure training capability and provide a realistic landscape — with the least impact on the environment.

"ITAM managers need a simple, straightforward method to determine how much impact an area can take before you should take it out of service and rehabilitate," said Tarpley. "That's what ATTACC does. We have a lot of data from the other elements of ITAM, but this is the only quantitative way to show impact related to training intensity and environmental factors."

According to Alan Anderson, one of the program's developers at CERL, ATTACC is actually a set of tools and procedures designed to help all the players in the ITAM process. "The people who are ITAM coordinators, GIS [geographic information system] specialists, and LCTA managers are often located in separate places, and they also use different types of computer tools," he said. "ATTACC has separate software programs that support each of these different parts of ITAM."

The bottom line that ATTACC provides land managers is called the "training area carrying capacity," which is measured in Maneuver Impact Miles (MIMs). "ATTACC gives us a threshold value in MIMs for the amount of training we can allow on a particular area. When we get to that point, we can go out to the site and inspect it to see how much damage was actually sustained. In this way, we can validate what ATTACC tells us and adjust higher or lower, depending on factors such as more or less rainfall in a year," Tarpley said.

Several pieces of information go into an ATTACC analysis. Most of it comes from the other sub-elements of ITAM. Data from the installation's GIS layers and LCTA program (for example, rainfall, soil type, erosion status, slope) are used to compute the Universal Soil Loss Equation, which feeds ATTACC. Training intensity is captured in the Range Facility Management Scheduling System. Budget information comes from another system, and so on.

"ATTACC complements the other parts of ITAM," said Tarpley. "An area's training capacity is essential to connect the other components into a complete training land management tool. Without knowing capacity, we can only guess the extent to which troops can safely and wisely use the land.

"All this sounds complicated when you hear words like 'equation' and 'model,' but ATTACC is really very simple and straightforward to use," he added. "The program does the calculations."

Anderson calls ATTACC a useful planning tool. "The results tell you not only that the land area is OK to use, but also shows how much it will cost to maintain it. The goal is to choose a site that has the best impact resistance and the lowest cost revegetation needs," he said.

LAARNG next plans to use ATTACC to design another maneuver area that will support battalion-sized armored training. CERL, in partnership with the Office of the Deputy Chief of Staff (Operations) and the Army Environmental Center, continues to develop ATTACC for use in other geographic regions.

*For more information, contact Alan Anderson at CERL, 217.352.6511, ext. 6390, a-anderson@cecer.army.mil, or Maj. Mike Tarpley at LAARNG, 318.641.5773.*

**The Army Training and Testing Area Carrying Capacity (ATTACC) tools, developed by the Corps' Construction Engineering Research Laboratory (CERL), helps determine which training areas can best support training requirements, such as the maneuvers shown above, with the least impact on land and the lowest cost to restore.**

# Technology integration key to progress, improvement of OE work

**By SCOTT MILLHOUSE**
***Huntsville Center***

With unexploded ordnance (UXO) problems, the Corps is continually balancing the issues of risk reduction and cost. Technology integration accomplishes both--a more thorough job in eliminating UXO risk while reducing costs. Significant progress has been made since 1995 with technology investments, but there is still much to be done. Three areas of technology integration (footprint reduction, geophysics and removal) are key to the continued progress and improvement of Ordnance and Explosives (OE) projects.

## Footprint reduction

A site's UXO problem is never well defined. Frequently, extensive effort is expended to characterize large areas that are uncontaminated to prove to the stakeholders that the areas are clean.

Various engineering-based methodology have been performed to achieve footprint reduction. Applied technologies have included the occasional use of remote sensing and image processing of historical aerial photos to focus investigations. Recent demonstration and validation tests of airborne and ground based sensors have been applied to either map the entire potentially contaminated area or to make predictions from statistically based geophysical samples.

Footprint reduction is the area where new technology development and a well-accepted engineering approach can initially save DoD the most money and make the stakeholders more comfortable with planned efforts. Sites should be further assessed with an engineering analysis that includes historical image processing and then ground validation. The resultant areas then need application of a screening sensor to assist in locating remediation boundaries and UXO objectives.

A suite of validated airborne screening sensors needs to be further developed that meets stakeholder acceptance for all UXO objectives for all site conditions. The result of this process is well-defined areas of contamination with predictions on the magnitude of UXO anomalies.

This process will provide a defendable engineering basis for funding, project schedule and future land use by focusing and defining work to contaminated areas only.

## Geophysics

Until recently the only widespread methodology of mitigating the hazard caused by UXO contamination has been the traditional "mag and flag" approach. This approach is not directly reproducible and has no discrimination capability. Typically there is about a 100:1 ratio of trash to potential UXO involved in a removal.

Ground based Digital Geophysical Mapping (DGM) of contaminated areas has been used to a limited extent as part of the characterization process for the past eight years. Its value has been well proven by technology development and demonstration/validation investments. It is currently being transitioned as the preferred methodology for the removal process.

The process is still evolving and the instrument is only a small part of it. Navigation, positioning, data processing, anomaly selection and interpretation are all used to create dig sheets and then the reacquisition and excavation of the chosen anomaly.

At this time, there is no industry standard for performing DGM or determining performance. Individual anomalies are discriminated and selected thereby determining the magnitude of removals. Technology investments are needed to create individual components, and then assemble them into a turnkey system with validated performance. Once there is a suite of systems available with highly accurate, dense, consistent data, discrimination capability can be greatly improved. Development will ensure that a UXO geophysical signature database that permits accurate anomaly discrimination can be created. Application will greatly reduce or eliminate non-OE excavations. Technology development can improve performance by removing more hazardous items through a reproducible scientific and engineering-based process with a proven record.

## Removal technologies

The current methodology of removals is generally manual excavation by a highly trained safety specialist at great cost and potential explosive risk. Items then must be disposed of with concern for range residue. For specialized needs, construction equipment has been modified for limited remote operation.

A system and collection of tools to safely remove, render safe and dispose of explosive items without human risk is needed. This involves a number of technologies to include directed energy disposal, remote excavation, identification, sorting and rendering items safe to inert materials. Technologies are needed for individual item removal such as remote excavators. For heavily contaminated areas a system that excavates the soil, sorts out the OE and breaks it down into inert components for scrap disposal is needed. Scrap must then be tested for explosive residue and remediated prior to recycling. Alternative methods such as directed energy burns out the energetic material to make an item safe. The greatest benefit of removal technologies will be the reduction in risk to the public and to the UXO safety specialist.

**Digital Geophysical Mapping is now the preferred method for characterizing OE sites. Technology integration can continue to improve the process.**

Technology integration will make the entire project an engineering process with engineering and scientific justification. These proposed changes could eliminate much of the current stakeholder and regulatory confusion by using facts to justify the applied methodology.

*For more information, contact Scott Millhouse at 256.895.1607.*

# Huntington District, Fish and Wildlife office sign innovative partnering agreement

**By GINGER MULLINS**
***Huntington District***

The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service took a giant step forward together in Huntington, W. Va., by creating an innovative partnering agreement. After a two-day joint session between representatives of the Corps' Huntington District and the U.S. Fish and Wildlife Service's Elkins, W. Va., Field Office, both agencies signed a formal agreement on Dec. 8, 2000. This partnership agreement provides a unique framework for the two agencies to seek a better understanding of their respective missions.

Debbie Wegmann, a biologist in the District's Plan Formulation Branch, is excited about the spirit of cooperation provided by the partnership.

"[Previously] we would come together and sit on our side of the table with our agenda, and they would sit on their side of the table with their agenda. Now, we have our agenda. I find that compelling," Wegmann said.

## Business initiative

The springboard for this agreement, initiated by Huntington District Commander, Col. John Rivenburgh, began at a staff retreat designed to update the District's Strategic Business Plan. One of the initiatives of the plan was to establish a formal partnering agreement with the Fish and Wildlife Service. Jeff Towner, the Field Supervisor for the Service, located in Elkins, readily became a proponent of a partnering agreement, because he had consistently sought ways to improve communication between the two agencies.

Towner, who previously worked in planning and regulatory in the Chicago, Detroit and Alaska Districts, is in a unique position to comment on the new partnership and is very complementary of Rivenburgh's partnering concept.

"Col. Rivenburgh should be credited for having the vision to see the value in the Corps and Fish and Wildlife Service partnering more effectively. The agreement we signed, just weeks ago, is already resulting in better communication, more effective project execution and in time, I believe, will provide greater protection of natural resources," he said. "I hope other districts and Fish and Wildlife field offices will follow the example we have set in West Virginia."

The Partnering Agreement's mission statement is: "to foster better communications and coordination. This will lead to better decisions, and improve efficiency in accomplishing our collective agencies' mission of quality public service, effective project execution, and protection of important natural resources."

## Corps program goals

In support of this mission, certain goals and objectives were agreed to in three Corps programs: Regulatory, Planning, and Operations. One common goal to all three programs is to meet regularly with the Service to share information, discuss specific projects, provide education about respective programs, and develop ways to improve interagency processes. Other goals include identifying environmental concerns and resources, formulating resource values, developing mitigation plans and alternatives, and identifying opportunities for fish and wildlife enhancement in Corps studies, project proposals, and operating projects under existing operation and maintenance (O&M) authorities.

**This wetland is part of the Greenbottom mitigation area for the lock chamber replacement at Robert C. Byrd Locks and Dam, a project coordinated with the U.S. Fish and Wildlife Service and the West Virginia State resource agencies.**

## First meeting

The Service hosted the first of the interagency meetings in Elkins on Jan. 24-25. Participating with the Service were representatives from Planning and Operations. The agenda included learning more about the Fish & Wildlife Coordination Act, improving the field review process, updating project status, discussing environmental issues in the navigation industry, dredging and associated studies, and establishing environmental teams to look at projects and identify ways to improve the environment and lower O&M costs. Time was allowed for open discussion on any issues or concerns.

The partnering agreement sets in place a highly effective mechanism that encourages participants to seek first to understand, then to be understood.

## Synergy

"The 7 Habits of Highly Effective People," by Stephen Covey, advocates that the door is opened to creative solutions and third alternatives when participants begin to understand each other. Covey goes on to state that differences are no longer stumbling blocks to communication and progress but, instead, are stepping-stones to synergy.

The partnership, and its synergy, provides the opportunity to create new ways of doing business together. Both the Huntington District and the Elkins Field Office are committed to developing improved working relationships that will promote and support both missions, and ensure quality public service.

*For more information contact Ginger Mullins at 304.528.7419.*

# Consider situation carefully before applying TCLP

**By CHERYL GROENJES**
***HTRW CX***

Toxicity Characteristic Leaching Procedure (TCLP) was promulgated in 1990 under the Resource Conservation and Recovery Act (RCRA) to evaluate solid wastes and determine if they are "hazardous" as defined by EPA. The TCLP has become a common testing procedure employed during environmental investigations and cleanups.

The regulatory purpose for the TCLP is to support an evaluation of the toxicity characteristic for the contaminants presented in 40 CFR 261.24. TCLP methodology is Appendix II of 40 CFR 261 or SW-846 Method 1311. However, the procedure is sometimes misapplied, applied unnecessarily, or misunderstood as to what information is obtained.

TCLP is designed to simulate the leachability of an industrial waste under a mismanagement scenario, i.e., when it is co-disposed with municipal solid wastes. The method uses an acetic acid buffer as the extraction fluid to simulate organic acids found in municipal landfill leachates. Prior to extraction, the solid component of the sample is separated from any liquids (initial filtrate). The solid's particle size is reduced, if necessary, and a subsample is processed for approximately 18 hours with a volume of extraction fluid equaling 20 times the weight of the solid subsample. This extraction filtrate is then separated and combined with any initial filtrate to become the "TCLP extract." If these filtrates are not soluble (compatible), they are analyzed separately and the results mathematically combined to represent the "TCLP extract." For liquid wastes (containing < 0.5 percent solids), the initial filtrate is the 'TCLP extract'.

**Do I have to perform analysis on TCLP extracts if I already have data from the analyses of the waste itself (total analysis)?**

Not necessarily. For instance, if the analysis of the waste demonstrates that individual analytes are not present, or are at such low concentrations that the regulatory levels could not be exceeded, the TCLP need not be run. Refer to the following for information on this data conversion: "Use of the Toxicity Characteristic Leaching Procedure (TCLP) vs. Totals Analysis When Determining if Waste Exhibits a RCRA Toxicity Characteristic," which is available at http://hq.environmental.usace.army.mil/tools/lessons/list/ll2050/ll2050.html.

**Should I use the TCLP to evaluate the potential fate and transport of a non-landfilled waste to ground water or surface waters?**

Within this scenario, the waste is not co-mingled with municipal solid waste; therefore using the TCLP extraction fluid is not appropriate to evaluate the mobility of contaminants. Another test recommended for this purpose is the Synthetic Precipitation Leaching Procedure (SPLP). The SPLP simulates the effect of acid rain on on-site wastes. The SPLP provides a more realistic assessment of contaminants' mobility under actual site conditions, i.e., what happens when it rains or snows. In general, the SPLP is identical to the TCLP regarding the sample processing and extraction process. The key difference between the two tests is the extraction fluid used. For the SPLP, the specific fluid chosen depends on (1) the region of the country in which the waste is disposed (east or west of the Mississippi River), (2) knowledge of the waste being tested, and (3) the chemical analysis to be performed. The SPLP extraction fluids are unbuffered mixtures of sulfuric and nitric acids that have a pH of 4.2 (+/- 0.05) for soils east of the Mississippi River, a pH of 5.0 (+/-0.05) for soils west of the Mississippi River, and another that uses only reagent water to have a pH of 7 (neutral). The SPLP data can be used with project specific information (depth to ground water, soil type, contaminant retardation potential, etc.) to evaluate the potential impact to ground or surface waters.

**Can I use the TCLP to test the leachability of non-TCLP listed contaminants (compounds not included in 40 CFR 261.24)? How about TCLP prior to cyanide analysis?**

Depending on the contaminants assessed and their potential similarity to any of the 40 promulgated TCLP contaminants, the use of the TCLP may not provide scientifically valid results. However, the SPLP's neutral extraction fluid is designed for use with cyanide-containing wastes, prior to cyanide and volatile analyses, and other contaminants not appropriate for an acidic extraction.

Proper planning with consideration of project goals, site conditions, environmental matrices, and subsequent analyses must be done to generate data that is both cost effective and usable for its intended purpose.

*For more information, contact Cheryl Groenjes at 402.697.2568.*

## Youkey selected as OE CX Chief

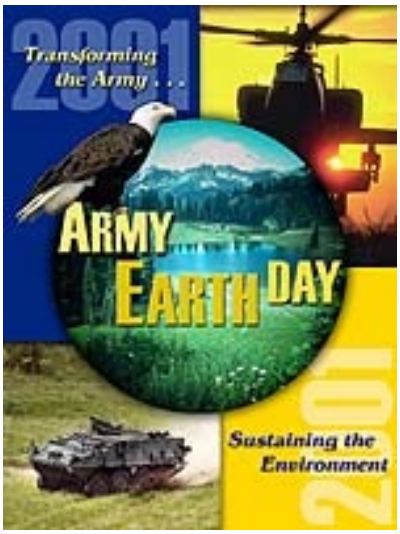
**Carol Youkey, OE CX Chief**

Carol Youkey was selected chief of the Huntsville Center's Ordnance and Explosives Center of Expertise in February. As chief of the OE CX, she oversees guidance and development for OE work done by the Corps of Engineers.

Youkey received a Bachelors of Science degree in Civil Engineering from the University of Alabama in 1972. She joined Huntsville Center in 1982 after working in private industry for 10 years. She has worked in the Huntsville Center OE Directorate since 1995.

Youkey also has a Masters of Science degree in Engineering Management from the University of Alabama in Huntsville and is a registered professional engineer and land surveyor in the State of Alabama.

*Youkey can be reached at 256.895.1563.*




# Earth Day 2001

### *Transforming the Army...Sustaining the environment*

Earth Day 2001 is April 22, and this year the Army's theme is "Transforming the Army...Sustaining the environment." Gen. Eric K. Shinseki, Army Chief of Staff, summarized the theme in his 2001 Earth Day message: "The Army is one of America's foremost environmentally sensitive stewards of land. Our programs protect endangered species and cultural resources; they ensure compliance with appropriate environmental standards. We lead the way in the employment of state-of-the-art technologies to clean up our lands, and pollution prevention has become a noticeable part of our industrial operations."

Earth Day is an opportunity to share the Army's and the Corps' good news about its transformation and environmental sustainment operations.

**The U.S. Army Environmental Center (AEC) can provide information and planning materials for Earth Day activities. The AEC Web site at http://aec.army.mil has ideas, downloadable resources and order forms for this year's Army Earth Day poster.**

## *Secretary of the Army environmental award winners announced*

WASHINGTON--The Department of Army has announced the winners of the Secretary of the Army Fiscal 2000 Environmental Awards. Each year, environmental professionals from around the world compete for Army awards in the categories of Natural Resources Conservation, Cultural Resources Management, Environmental Quality, Pollution Prevention and Environmental Restoration.

The best in the Army advance to compete with winners from the Navy, Air Force, Marine Corps and Defense Logistics Agency for the Secretary of Defense Environmental Security Award.

Following are the fiscal year 2000 winners for each award category.

**Natural Resources Conservation**

Winning installation of more than 10,000 acres: U.S. Army Alaska

**Cultural Resources Management**

Winning installation: Fort Bliss, Texas

Winning team: Cultural Resources Management Program Team, Fort McCoy, Wis.

**Environmental Quality**

Winning industrial installation: Lake City Army Ammunition Plant, Mo.

Winning overseas installation: 409th Base Support Battalion, Grafenwoehr, Germany

**Pollution Prevention**

Winning non-industrial installation: Fort Eustis, Va.

Winning team: Pollution Prevention Action Team, Fort Bliss, Texas

**Environmental Restoration**

Winning installation: Fort Meade, Md.

The Army will present its awards during a Pentagon ceremony May 2. The Defense Department awards ceremony takes place May 3. To arrange interviews with award recipients or site visits to winning installations, contact Ms. Cynthia Houston at the U.S. Army Environmental Center Public Affairs Office, 410.436.1270 or Cynthia.Houston@aec.apgea.army.mil.

*For a complete listing of runners-up and honorable mentions or for more information on the Secretary of the Army 2000 Environmental Awards, please visit the U.S. Army Environmental Center's Web site at http://aec.army.mil/. Click on the "News Room" button to locate complete press information.*

## Army Environmental Progress Report 2000 available

The Army Environmental Stewardship 2000 Progress Report was officially released on Dec. 5, 2000, at the Army Worldwide Environmental and Energy Conference. The report articulates the Army's commitment to environmental stewardship and highlights progress made thus far in reducing the Army's environmental "footprint."

The report also explains the importance of environmental stewardship in supporting the Army Transformation, in sustaining installations and promoting the well-being of communities and neighbors. The report is available on the ACSIM/ODEP Web site at www.hqda.army.mil/acsimweb/env/.

*For more information contact Lt. Col. David Jones at 703.693.0545.*

Tech update

## Corps guidance for Interim Final Management Principles for Implementing Actions at Closed, Transferring, Transferred Ranges available on Web site

On March 7, 2000, the office of the Deputy Undersecretary of Defense (Environmental Security) and the office of the EPA Assistant Administrator for Solid Waste and Energy Response, released the *Interim Final DoD and EPA Management Principles for Implementing Response Actions at Closed, Transferring and Transferred (CTT) Ranges* ("UXO Management Principles"). The principles were distributed in August 2000 to the Department of the Army, which requested that Major Commands distribute to their field organizations. *The Department of the Army emphasizes that "the 'management principles' are only intended to be an interim measure during the period prior to promulgation of the Range Rule."*

The U.S. Army Corps of Engineers has developed guidance for use by Corps project managers and project engineers for application at Ordnance and Explosives (OE) sites for which it has primary responsibility. The Corps' implementing guidance follows the specific UXO Management Principle being addressed.

Two documents, the Corps' memorandum regarding transmittal of the UXO Management Principles, and its "UXO Management Principles Implementation Guidance" are included on the Web site. The Implementation Guidance also includes the Department of the Army Memorandum transmitting the Management Principles to Army organizations.

The documents are available at www.hnd.usace.army.mil/oew/policy/mgtprin.pdf.

*For more information about development of the Corps' guidance, contact Toni Hamley regarding OE Center of Expertise issues at 256.895.1761, or Margaret Simmons regarding OE legal issues at 256.895.1104.*

## Environmental *kudos*

**By ANNEMARIE HARVIE**
***New England District***

The Commonwealth of Massachusetts recently recognized Dr. Joseph Westphal, former Assistant Secretary of the Army for Civil Works, Col. Brian E. Osterndorf, New England District Engineer commander, and members of the New England District for the environmental work of the Army Corps of Engineers at a ceremony where Westphal was honoring others for their efforts in the same field.

Westphal and District representatives were presented plaques and letters of appreciation signed by former Vice President Al Gore to members of the Massachusetts Corporate Wetlands Restoration Partnership.

Ms. Mindy Lubber, Regional Administrator of EPA Region I, co-presented the awards with Dr. Westphal, who is the National Chair of Coastal America. The honors were presented to the partners for their significant contributions to restoring coastal resources during a ceremony at the Sheraton Inn in Plymouth, Mass., November 30.

Westphal and Osterndorf were also recipients of a special award during a surprise presentation by Robert Durand, Secretary of the Massachusetts Executive Office of Environmental Affairs. Durand presented the award as special recognition for the Corps' work with Coastal America and for supporting the Commonwealth of Massachusetts Executive Office of Environmental Affairs Wetlands Restoration Program while assisting with the Section 22 and Section 1135 projects taking place in Massachusetts.

# The Challenge To Excel

## Professional Development Opportunities

**The following FY01 Environmental Restoration and Compliance Training sessions currently have spaces available. For more information on these sessions, contact Joy Rodriguez of the Professional Development Support Center (PDSC) at 256.895.7448.**

| | | | |
|---|---|---|---|
| #141 | HTRW Const Inspection | April 30 - May 4, 2001 | Philadelphia, PA |
| #225 | Env Sampling | May 8-11, 2001 | Omaha, NE |
| #222 | HTRW Risk Assessment | June 11-15, 2001 | Omaha, NE |
| #255 | CWM Workshop | June 12-14, 2001 | Huntsville, AL |
| #223 | HW Manifesting | July 16-20, 2001 | Norfolk, VA |
| #399 | Exp Ord Res & Safety | August 6-10, 2001 | Huntsville, AL |

**Below is a list of FY01 PROSPECT environmental courses for next quarter that have a limited number of spaces still available. Please contact your local training coordinator about enrollment, or John Buckley of the Professional Development Support Center (PDSC) at 256.895.7431.**

| | | | |
|---|---|---|---|
| #168 | Ecological Resources | April 30- May 4, 2001 | Vicksburg, MS |
| #263 | Coastal Ecology | May 21-25, 2001 | Monterey, CA |
| # 280 | Ecosystem Restoration | May 21-25, 2001 | Vicksburg, MS |
| #272 | Fund Wetlands | June 4-8, 2001 | Annapolis, MD |
| #280 | Ecosystem Restoration | June 11-15, 2001 | Vicksburg, MS |

**Additional information about the PROSPECT program can be found in the Purple Book and PROSPECT Training Needs Survey FY01 (CEHRP 350-1-1) available in your local training office or at the PDSC Web site listed below. Look for the new FY02 Training Needs Survey in May 2001.**

**All PDSC training information is available on-line at http://pdsc.usace.army.mil.**


**UXO/Countermine Forum**
April 9-12, 2001
New Orleans, La.
POC: Charlotte Gaylon
Phone: 1.888.808.5303
E-mail: TheForum@tva.gov

**27th Annual Environmental Symposium and Exhibition**
April 23-26, 2001
Austin, Texas
POC: Bob Fenlason
Phone: 202.761.8801
E-mail: Bob.W.Fenlason@HQ02.usace.army.mil

**Tri-Service Environmental Technology Symposium**
June 18-20, 2001
San Diego, Calif.
Web Site: www.ets-2001.com
POC: Jean Thomas
Phone: 756.357.4011
FAX: 757.357.5108
E-mail: jattmc@aol.com

**2001 National EPA Community Involvement Conference**
June 19-22, 2001
San Antonio, Texas
Web Site: www.epancic.org
Phone: 301.589.5318
E-mail: ciconference@emsus.com

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# Closing Notes

### Environmental Remediation/ Ecosystem Restoration Conference

The first Corps-wide workshop combining all personnel engaged in environmental activities will be held April 17-19, 2001 in Portland, Ore. Technical and project management representative from HTRW/ Environmental Remediation, Ecosystem Restoration, Natural Resources Management, Health & Safety, Water Quality, Installation Support, Geo-technical, Environmental Compliance, and Outdoor Recreation will give presentations. Lt. General Robert B. Flowers will give the keynote address. Additional information and registration for the workshop can be found at http://hq.environmental.usace.army.mil/edw2001/. For more information, contact Mike Klosterman at 703.428.7337.