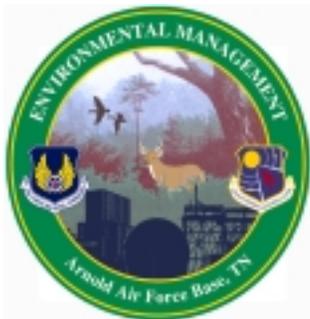


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Envision

a cleaner environment

Arnold Engineering Development Center Installation Restoration Update

A publication for
Coffee and Franklin
county residents

*Environmental
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*Arnold AFB,
Tennessee*



RAB BECOMES A CAB – Charles King, AEDC co-chair, puts his signature on the charter officially changing the AEDC Restoration Advisory Board to a Community Advisory Board. Community co-chair, Tony Thompson awaits his turn to sign as members of the CAB, Phyllis Adams of Manchester, Jack Turner of Manchester, Stephen Cope of Tullahoma, William Prince of Winchester, and Ted Hackney of Manchester, observe the ceremony. The CAB meets Feb. 23 at 4:30 p.m., at the Hampton Inn in Tullahoma.

Restoration Advisory Board becomes CAB

The Restoration Advisory Board at Arnold AFB, Tenn., officially became a Community Advisory Board (CAB) during the quarterly RAB meeting in Winchester, Tenn. on Oct. 13.

Tony Thompson, community co-chair of the advisory board and Charles King, Arnold AFB co-chair, signed the charter creating the CAB. Members of the CAB will now give advice to Arnold Engineering Development Center (AEDC) on all aspects of the base's environmental program. As a RAB, the advisory board was limited to offering advice

on the restoration program underway at AEDC.

“As a CAB we can not only look at the restoration program but at other areas of the environmental program such as compliance, pollution prevention, recycling and conservation,” said Thompson. “These are areas that board members have expressed an interest in.”

The basis and authority for the CAB is contained in the Comprehensive Environ-

CAB to meet Feb.23

The next Arnold AFB Community Advisory Board (CAB) meeting is set for 4:30 p.m., Tuesday, Feb. 23, 1999 in Tullahoma. The meeting will take place at the Hampton Inn, 1922 North Jackson St.

Members of the public are welcome to attend CAB meetings and/or apply for membership on the board. For more information, call the environmental public affairs office at 454-4353.

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AEDC wraps up private well sampling program

With cooperation from both the Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation (TDEC), AEDC has completed its three-months of random private water well testing.

The 56 wells and streams sampled were located in the Spring Creek area, along Old Tullahoma Highway and west of the AEDC airfield.

Clark Brandon, deputy chief of the environmental management division, stated, "All the wells sampled are within the Safe Drinking Water Act limits except one." He then added, "The lone well that tested positive for trace levels of Trichloroethene has had a filtering system installed as a precautionary measure."

Although it was not certain the well has been contaminated by AEDC, the filtering system was installed as part of AEDC's "good neighbor" policy.

It is known that contamination does exist in the groundwater near this landfill that was used from the 1950s to the 1970s as a disposal unit for hazardous and solid wastes. As of November 1977, the landfill was capped with a layer of clay and a synthetic liner, costing over \$1.5 million dollars. Other efforts such as a groundwater pump and treatment unit have been installed to contain and treat contaminated groundwater at the source.

Questions regarding the well sampling program can be directed to the AEDC environmental public affairs office at (931) 454-4353.



LAKE AREA CLOSED BECAUSE OF LITTER — Excessive litter left by visitors at a Woods Reservoir recreation area has forced AEDC to close the area to the public. MSgt. Eric Hogan and Tim Morrison of the AEDC Facilities Division check the barrier that will keep visitors out of the area. AEDC had to close the area because the Tennessee Department of Environment and Conservation issued the base a "notice of violation" for litter and garbage found at the site. Even though AEDC and other volunteers have picked up 11 tons of trash around the lake in the past 15 months, thoughtless visitors continue to litter lake recreational areas and boat ramps.

Public health agency to visit AEDC

Members of the Agency for Toxic Substances and Disease Registry in Atlanta will visit AEDC Feb. 22-26 to perform a public health assessment of base functions and facilities.

The ATSDR team will look for possible AEDC releases of hazardous substances into the environment and assess any impact on public health. If releases of hazardous substances are found, the agency will recommend actions needed to solve any health problems.

According to Clark Brandon, deputy chief of the environmental management division, the February visit does not indicate the existence or suspected existence of any health-threatening conditions. "This is basically a follow-up visit to a visit they made in April 1995," he said.

During the 1995 visit, no major

public health concerns were uncovered. However, they did recommend that advisories continue to be posted telling the populace that catfish in Woods Reservoir are contaminated with PCBs. The Tennessee Department of Environment and Conservation placed signs at Woods Reservoir in 1985 warning fishermen that the catfish are unsafe for food.

"During this visit, ATSDR will review available information about hazardous substances being used at AEDC and whether exposure to them might harm people," Brandon said. "The agency uses health assessments to determine whether any health actions are needed."

ATSDR is a federal public health agency functioning under the um-

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ATSDR visit...

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brella of the U.S. Department of Health and Human Services. Created by Superfund legislation in 1980, the agency's mission is to prevent or reduce adverse human health effects and diminished quality of life resulting from exposure to hazardous substances in the environment.

Although ATSDR is not a regulatory agency, it acts to protect public health through a variety of programs – including health studies, environmental health education, applied substance-specific research and through work with other federal, state and local government agencies to protect public health.

Brandon said that throughout the visit, base and community members may be asked about their knowledge of sites slated for cleanup and to express any site-related health concerns. He asked that anyone with questions concerning the visit and the public health assessment process to call the environmental public affairs office at 454-4353.

Woods Reservoir shoreline stabilized

AEDC has prepared an environmental assessment and finding of no significant impact (FONSI) for the stabilization of a portion of Woods Reservoir shoreline located east of Arnold Village Military Family Housing. This area has experienced severe erosion in the past.

These documents are available for public review at the information repository, Coffee County Lannom Memorial Library in Tullahoma or by calling (931) 454-4353.

Arnold RAB becomes CAB...

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mental Response, Compensation, and Liability Act (CERCLA), a bill passed by the Congress in 1980 and amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986.

“We currently have eight members but would like to expand to 10 members,” said King. “CAB members are volunteers who reside in nearby Franklin or Coffee counties and are willing to represent the citizens of their county and its communities.”

CAB members review, evaluate and comment on technical documents and other material relating to installation restoration program activities and other significant environmental issues in the compliance, pollution prevention and natural resource conservation areas.

Current CAB members besides Thompson and King are Phyllis Adams, Ted Hackney and William Condra from Manchester; Anna Johnson, David Griffith and Stephen Cope from Tullahoma; and William Prince of Winchester. One new member, John “Jack” Turner from Manchester, was appointed to the board during the Oct. 13 meeting.

King who is also chief of the environmental management division at AEDC said, “since we have openings on the CAB we would like to see local citizens with an interest in areas such as conservation, recycling or pollution prevention apply for membership.”

The RAB has been operational at AEDC since December 1994 and was created at that time to replace the Technical Review Committee. The original RAB charter had seven members; four of them, Thompson,

Griffith, Adams and Johnson are still active. Other participants at meetings include representatives from the Environmental Protection Agency, Tennessee Department of Environment and Conservation, and AEDC agencies.

Next meeting of the CAB is Tuesday, Feb. 23 at the Hampton Inn, 1922 North Jackson Street in Tullahoma beginning at 4:30 p.m. All CAB meetings are open to the public and copies of meeting minutes are available for public review in the Information Repository located at the Coffee County Lannom Memorial Library.

AEDC constructs storm water basins

Arnold Air Force Base has prepared an environmental assessment and finding of no significant impact (FONSI) for the construction of two storm water basins on base adjacent to two permitted landfills. The basins will collect storm water runoff from the landfills and prevent silt from reaching nearby streams.

The basins are required under the Clean Water Act and approved by the Tennessee Department of Environment Conservation.

These documents are available for public review at the information repository, Coffee County Lannom Memorial Library in Tullahoma.

Questions pertaining to the storm water basin construction can be directed to the environmental public affairs office at 454-4353.

Trees may fight pollution at AEDC

Man has relied on trees for centuries for shelter, warmth, paper, nourishment and other essentials. Now, the AEDC environmental management division is studying the use of trees to remove pollutants from installation restoration program (IRP) sites.

"This emerging technology called phytoremediation has the potential to augment or replace conventional pump and treat remedies at some contaminated sites like landfills," said Dr. Roger Painter, AEDC senior engineer. "If it works, AEDC could cut the cost of its environmental restoration program in regard to treating groundwater contamination.

Six poplar trees have been planted in containers and are currently being studied in the phytoremediation program. If the study proves fruitful, over 400 trees could be planted at the Coffee County Landfill in the future.

Painter said, poplar trees are of particular interest to us because they are deep rooted and soak up a large volume of water. It is estimated that a fully-grown poplar tree will use about 40 gallons of water per hour during its growing season. In addition to the de-watering capabilities of the poplar, they may also promote the destruction of chlorinated solvents in the soil and water in the area reached by the roots of the trees.

"For example, researchers have demonstrated that Trichloroethene (TCE) degrades rapidly in slurries surrounded by the roots of poplars," Painter said. "Perhaps trees planted on and adjacent to a landfill would draw upon the water infiltrating beneath the landfill cap and even wa-



POPLAR TREE FARM – J. T. Coleman, environmental technician, shows Capt. Paul Sand, environmental project officer, poplar trees under study as part of the phytoremediation program underway at AEDC. It is hoped that the study will prove that the trees will help fight contamination at AEDC environmental restoration sites.

ter from aquifers. The trees could stop contamination migration from the landfill by removing infiltrating water before leaching can occur."

"The primary goal of the study is to determine the technical feasibility of implementing a full scale phytoremediation remedy at the Coffee County Landfill," said Clark Brandon, deputy chief of the environmental management

division. "If we can use this system instead of convention groundwater treatment units at the landfill, it could save the environmental restoration program big money."

Painter cautioned that this is a pilot program and that the full potential of the program will not be known until the results of our phytoremediation program are studied.

Great Blue Heron calls AEDC home

AEDC is home to many species of birds and those large blue birds with wingspans up to six feet seen flying overhead are just one of our summer residents. The Great Blue Heron uses the Sinking Pond area to build nests, mate and raise their young.

The pond, located in the northern forest area of AEDC, contains one of the largest Great Blue Heron rookeries in Tennessee. A rookery is a colony of birds. Around 1,500 adult birds and another 1,500 fledglings call this area home in spring and early summer.

“The Sinking Pond colony enjoys protection from human disturbance and encroachment from developers,” said John Lamb, AEDC zoologist. “These were two major causes of the decline of the bird in the late 1960s and early 1970s.”

Lamb said that the Great Blue Herons like to build nests in trees like those in Sinking Pond where the water makes it difficult for predators to get to their eggs or young. They will recycle nests by simply repairing or adding to old nests from previous years.

The Great Blue Heron is the largest member of the heron family in Tennessee and adult birds can reach 52 inches in height to go along with their 72 inch wingspan. This bluish-gray bird with long legs for wading in water can be distinguished from a crane when flying overhead by the way it folds its long neck in flight while a crane will fly with its neck extended.

Great Blue Herons can be observed fishing in shallow water areas such as farm ponds, streams or



on the lake shore in our area. Herons seen in surrounding counties are probably from the Sinking Pond rookery as they can range up to 18 miles looking for food.

According to Lamb, the Sinking Pond rookery was first censused in 1965 by a member of the Tennessee Ornithological Society and 25 active nests were counted. Another count in 1988 by a member of the Tennessee Valley Authority listed 227 active nests.

AEDC environmental management division personnel conducted the latest observation on June 15-18. Natural Resources interns, Geoff West, Laura Jennings, Brian Carver and Ryland Moore completed the census.

“They used canoes to travel quietly through the rookery to reduce disturbance to the nesting birds,” Lamb said. “Not only did we count the number of nests, we logged the position of each nest and tagged and numbered each tree.”

“Our four counters wore hats and rain ponchos in self defense,” he said. “Agitated herons have a habit of regurgitating on anyone approaching their nests.”

Great Blue Heron nests were found in 319 trees containing 856 nests. Of these nests, 743 were determined to be active.

“This is a marked increase in the number of active nests,” said Lamb. “We estimate that there are 1,500 adult Great Blue Herons nesting in the Sinking Pond area. Other studies have estimated that each mating pair will produce two offspring.”

“Because the Great Blue Heron is at the top of the food chain in wetland habitats, it can serve as a biological indicator of the health of our wetland ecosystem,” he added.

AEDC expects to do another heron inventory in two years.



SHOW AND TELL--Capt. Paul Sand and Mike Fitzgerald, representing AEDC's environmental management division, explain the center's pollution prevention program to a visitor at the Arnold AFB exhibit during the Tennessee Recycling Coalition's conference in Nashville, Oct. 21-23.

Cleanup campaign nets four tons of litter

Volunteers from AEDC and the local community teamed up Saturday, Nov. 7, to pick up four tons of trash in and near the shoreline of Woods Reservoir. This makes 15 tons of trash collected during the past year. Five tons were gathered last November and another six tons on May 2.

“We had 100 volunteers and they did a tremendous job,” said Col. Bob Brown, support director. “We all use the recreational facilities at Woods Reservoir and it’s our obligation to try and keep it clean.” He said that the next cleanup would probably be in March or April of next year.

Woods Reservoir is part of Arnold AFB and supplies cooling water for AEDC test facilities. It is critical to the test operation that the lake water be kept clean and pollutant free. AEDC also allows the lake to be used for recreational purposes such as fishing, boating and swimming.

According to Capt. Doug Pinkerton, chief, facilities division operations, “we emphasized cleanup in the dam area, dam causeway area, Dabbs Ford bridge, the Franklin County beach area, and an area east of the Morris Ferry Dock.” Among the larger items collected were numerous tires, several batteries and two dead skunks in a bag.

Each of the volunteers were provided with plastic bags and gloves and given an ample supply of food and refreshments by TSgt. Lonnie Diener, cleanup project officer, and his staff. The Company Grade Officers Association and Civilian Club employees association pro-



UNLOADING TRASH BAGS—TSgt. Bobby Munda of the environmental management division, unload bags of litter gathered by the volunteers into dumpsters. Four tons of trash were gathered by the group.

vided the food and refreshments.

Among the volunteers were members of the AEDC Saddle Club, Woods Ski Club, Highland Yacht Club, Running Club, Highland Rim Shooters Club, UTSI, Tennessee Wildlife Resources Agency, and area girl and boy scouts. AEDC volunteers came from the operations and

support directorate, command section, medical aid station, and public affairs. Support also came from ACS and Sverdrup members.

“I want to thank everyone for their help in the cleanup,” said Col. Michael Heil, AEDC commander. “I was pleased to see such a diverse group of people from Team AEDC.”



KEEPING THE BUGS AWAY—Ronnie Crabtree, Civil Engineering pest management, uses new pest control measures during treatment of dining facilities at AEDC. He was recognized for developing pesticide management techniques for use in food handling facilities that eliminates all traditional pesticide chemicals and application techniques. His new application allows treatment without covering food matter and shutting down the facility.

Status report on IRP sites

The status of all installation restoration programs as of 31 December. Eighteen sites have been closed and no further action is planned.

Site 1, Landfill 2 and leaching pit 2: Construction of a \$1.56 million modified clay cap with a geosynthetic clay liner was completed in November 1997. Groundwater treatment facility treats approximately 1,700,000 gallons of water per month. Private water wells are being sampled west of airfield as a precautionary measure.

Site 2, Retention reservoir and J-4 draining area: No further action on the retention reservoir and recommended no further action for the J-4 drain area.

Site 3, Landfill 4: Construction of a \$2.1 million cap started in March 1997 was completed in November. Groundwater treatment facility treats about 17,000 gallons of water per day.

Site 4, Surface drainage, Bradley Creek: This site is recommended for no further action having completed the RCRA facility assessment and confirmatory sampling.

Site 5, Surface drainage, Rowland Creek: No further action based upon the RCRA facility assessment.

Site 6, Camp Forrest water treatment plant: Corrective measure study underway including sampling of private water wells in Spring Creek area. Interim corrective measure in the form of a groundwater treatment facility that treats about 400,000 gallons of water per month. Additional effort will include long-term monitoring.

Site 7, Main test area: Corrective measure study underway. Interim corrective measure in the form of a groundwater treatment facility in operation.

Site 8, Leaching pit no. 1: Corrective measure study underway. Groundwater treatment facility and solvent/water separator brought on-line in May. Interim corrective measure in the form of a groundwater treatment facility in operation. Previous interim measures include low temperature thermal desorption soil treatments.

Site 9, Surface drainage-Brumalow Creek: Additional effort will include long-term monitoring. This site is recommended for no further action.

Site 10, Fire Protection Training Area 2, Landfill 1, Burn area 2: No further action on all three areas with long term monitoring.

Site 11, Chemical treatment pond: No further action. This former site is not part of the retention reservoir flow through treatment process.

Site 12, Retention leach/burn area: An interim corrective measure to biologically treat soils and RCRA facility investigation is complete. The site is proposed for no further action with long-term monitoring.

Site 13, Fire Protection Training Area: Proposed for no further action.

Site 14, Surface drainage-Crumpton Creek: Proposed for additional sampling and long-term monitoring.

Site 15, High energy fuel burn/burial area: No further action based upon completed confirmatory sampling results.

Site 16, Beryllium leaching area: No further action based upon completed confirmatory sampling results.

Site 17, Burn area no. 2: No further action based upon completed confirmatory sampling results.

Site 18, Building 1421 area: This site is proposed for no further action based upon confirmatory sampling results.

Site 19, Camp Forrest area: Thirty six monitor wells installed at nine former Camp Forrest gasoline stations/motor pools. A work plan for Camp Forrest is being developed.

Site 20, Steam plant ash pits: No further action based upon source removal and confirmatory sampling results.

Site 21, Three hazardous waste storage buildings and one non-hazardous waste storage building: No further action on all four buildings. These were previously permitted storage units that underwent RCRA closure.

Site 22, Entire RCRA corrective action program: Some areas required more study and some areas are no further action. A corrective measurement action focused on groundwater is underway

Site 23, Salvage yard: No further action.