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Envision

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Arnold Engineering Development Center Installation Restoration Update

A publication for Coffee and Franklin county residents

Environmental Public Affairs

Arnold AFB, Tennessee

JOINING AEDC TEAM – CAPT. Elmer Standridge, AEDC vice commander, and Charles King, chief of the environmental management division, welcome Doyle Brittain, EPA remedial project manager, to Arnold AFB by presenting him with a "Team AEDC" cup. Brittain represents EPA Region 4 on installation restoration program projects at AEDC. The presentation was made during the Restoration Advisory Board (RAB) meeting at the Oak Restaurant in Manchester on July 21.

AEDC continues well testing

During the past several months, environmental officials at AEDC in cooperation with the Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation, have been sampling private water wells near the borders of Arnold AFB.

In July, 14 residential wells in the Spring Creek area south of the base and six wells on the Old Tullahoma Highway across from the Coffee County landfill were tested by AEDC. The results of this testing revealed that the water from these wells is within the limits of the Safe Drinking Water Act.

AEDC is now asking residents living west of the Arnold AFB airfield for permission to sample their water wells. Many of these wells were sampled originally in 1988.

"We would like to test these wells again so that we can utilize the sampling information to complete our remedial strategy for our western boundary," Brandon said. "In this program we will probably sample the wells of 40-50 residences."

He said AEDC would like to test their wells as a precautionary measure because

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RAB to meet Oct. 13

The next Arnold AFB Restoration Advisory Board (RAB) meeting is set for 4:30 p.m., Tuesday, Oct. 13, in Winchester. The meeting will take place at the City Hall Annex Conference Room on 1st Ave. at the Police Station.

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

well testing...

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of their proximity to a 14-acre landfill and leaching pit located near the retention pond on base.

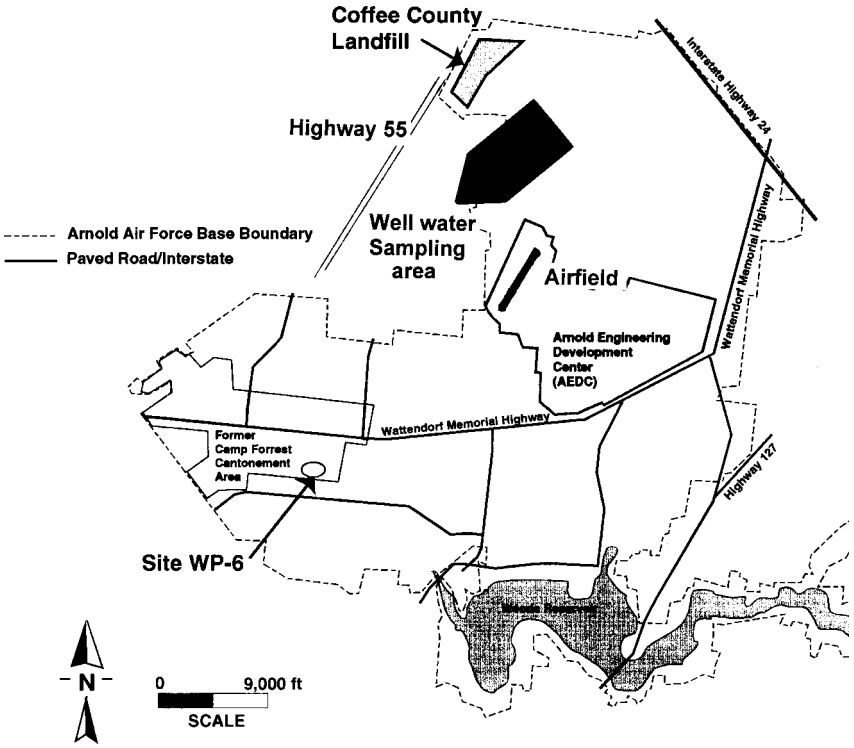
The landfill was capped in November 1997 as a project of the AEDC installation restoration program. The $1.56 million cap consists of clay soil, a synthetic clay liner and a gas venting system.

This landfill was used from the 1950s into the 1970s for disposing of hazardous and solid waste including construction debris and facility garbage.

Most of the homes with wells to be sampled are located on Hawkersmith, Brandontown and Shipley roads. The owners were mailed a letter in early September outlining AEDC's proposed testing of their wells.

"As soon as we have the result of the water well samples, we will call each resident and relay the information to them," Brandon said. "After we have had a chance to study the results and compile the information, we will also provide them a detailed chemical summary of the tests."

Brandon stressed that anyone with questions regarding the AEDC private well water testing program should contact him at 454-7115 or the AEDC environmental public affairs officer, Marty Martin at 454-4353. If you prefer to talk to a representative from the Tennessee Department of Environment and Conservation, please call Roger Donovan at (615) 532-0864. You may also contact the Environmental Protection Agency representative, Tiki Whitfield in Atlanta, at (404) 562-8530.



WATER WELL TESTING AREA – The arrow points to a residential area west of the airfield where the AEDC environmental management division is testing off-base private water wells as part of the Installation Restoration Program. Over 30 residents are being asked by AEDC for permission to sample their wells. In July and August, AEDC sampled wells across from the Coffee County landfill and south of Site 6.

ENVIRONMENTAL BRIEFING – During a tour of environmental facilities on base, Col. Michael L. Heil, AEDC commander, learns about the Bradley Creek pump back compliance project from Charles King, environmental management division chief. Accompanying the commander on his tour were Jim Nicholson, ACS general manager, and Col. Bob Brown, AEDC support director.

Coffee County landfill cap nears completion

Construction of the 97-acre Coffee County landfill cap, a major AEDC installation restoration program project, is set for completion in November.

"The cap would have been finished in August or September if the weather would have cooperated," said Dennis Flatt, restoration project manager. "Thunderstorms in August impacted the contractor's fill and top soil operations. However, the laying of topsoil and seeding continues on the cap."

According to Flatt, following completion of the cap, the contractor will have another 111 days to finish work at the borrow pit. He said that the 76-acre borrow pit will be graded and the upland slopes will be provided a seed mixture that will help the area revert back to a wildlife area.

"The base will continue to monitor the landfill even after the cap is completed," he said. "In fact we are drilling 15 new monitor wells across from the landfill near the old and new Tullahoma highways. These wells will monitor the effectiveness of the groundwater capture and treatment system."

AEDC environmental officials also tested six private water wells across from the landfill in July for traces of contamination from the landfill. These properties were not included in the project that extended public water to other residences in that area in 1992.

"We are happy to report that the wells tested across the Coffee County landfill showed no traces of contamination and are well within the limits of the Safe Drinking Water Act," said Clark Brandon, deputy chief of the environmental management division.

Construction started on the engineered clay cap immediately after a groundbreaking ceremony Feb. 28, 1997. The contract for $2.1 million, awarded to ENSR Corporation of Piscataway, N.J., called for the moving of approximately one million cubic yards of soil from the borrow area and placed on the cap.

AEDC owns the landfill property but shared its use with Coffee County and the communities of Manchester and Tullahoma throughout its period of operation from January 1972 to February 1989. Groundwater contamination exists from household refuse, garbage, construction debris, metal salts, acids, solvents, resins, plant sludge, hospital waste and animal carcass disposal.

An interim groundwater extraction system became operational at the site in the spring of 1995 and treats approximately 17,000 gallons of water a day. Efforts concerning future system expansion are currently under study.

According to Brandon, the Air Force along with the City of Manchester and Coffee County, worked together to extend the public water system in 1992 and established services to residents near the landfill.

"This action was initiated as a good neighbor policy to eliminate any possible future exposure to the public from groundwater contamination," he said.

When completed, the landfill will reduce leaching of contaminants into underground aquifers by promoting surface water drainage. The cap prevents rain water from infiltrating into the landfill and coming into contact with contaminents.

WELL DRILLING – Drilling specialists from Boart Longyear, under contract from CH2M Hill Inc., drill one of 15 monitor wells near the Old Tullahoma Highway. The wells are used by the AEDC Environmental Management Division to monitor how well the groundwater capture and treatment system is working at the Coffee County landfill cap.

RAB becomes CAB at Oct. 13 meeting

The AEDC Restoration Advisory Board (RAB) will officially become a Community Advisory Board (CAB) during the Oct. 13 meeting in Winchester at the City Hall Annex Conference Room.

Tony Thompson, community co-chair of the RAB and Charles King, AEDC co-chair, will sign the new CAB charter and members will take on additional duties. Instead of being an advisory board just for installation restoration programs at AEDC, the CAB will also give advise to the environmental management division on the conservation, compliance and pollution prevention programs.

Other items on the agenda include briefings on public water well sampling, the Coffee County landfill cap, and an overview of the restoration program budget.

As always, the 4:30 p.m. meeting is open to the public. For more information concerning the board and public participation opportunities, contact the AEDC environmental public affairs office at 454-4353.

Spill affects 17 employees

A hazardous material spill of approximately 500 gallons of Trichloroethylene occurred in the Engine Test Facility at AEDC on July 17.

Seventeen people were taken to the AEDC dispensary for precautionary evaluation after being exposed to the chemical. All were treated and released.

AEDC emergency response teams contained the spill and the cleanup was completed that week.

VACUUMING OUT THE SYSTEM – Gene Bair (center), AEDC environmental official, observes two McCullough Company employees, Pat Murpy and Mark Lee, vacuum a section of the base underground storm water drainage system. The system will then be flushed and cleaned with water before it can be filmed.

AEDC videos storm water system

It may not be suitable for viewing on home VCRs, but AEDC has a videotape of 76,500 linear feet of the inside of the base underground storm water drainage system.

The photo mapping of the storm water drainage system became necessary after the Tennessee Department of Environment and Conservation became concerned with the increased flow through the sewer system.

"They suspected that some of the increased flow in the sewer system was coming from cracks and leakage in the storm water drainage system," said Gene Bair, AEDC environmental official. "This the first time that the inside of the storm water system has been looked at since the system was installed 40 years ago."

"All pipes in the storm water system were filmed, ranging from four inches to 80 inches in diameter," Bair said. "We had problems in some of the lines due to manholes filled with dirt, rocks and debris. We also had a considerable amount of concrete build up due to contractors flushing excess concrete into the drains."

Before video taping could start, all the lines were flushed with water.

"Pushing water through the lines at 2,000 pounds of pressure really cleaned out the system including the manholes," he added.

Lowered into 235 manholes, the camera ran the length of the underground storm system from manhole to manhole. A controller sitting in a van operated the camera by remote control.

"We are interested in obstructions, cracks, and missing pipe where water could leave the system," Bair said.

Clark Brandon, deputy chief of the environmental management division, said, "We will look at the video tape and determine what corrective action to take to remedy the storm water system. We'll probably have to rebuild or refurbish some of the lines."

ECAMP praises AEDC's commitment to environment

AEDC has an excellent environmental program and operational procedures plus management committed to environmental stewardship—that was the overall assessment of an Air Force Materiel Command environmental compliance assessment and management program (ECAMP) inspection conducted here July 13-17.

The ECAMP evaluation of AEDC looked at 13 major environmental compliance categories to see if they were in compliance with all applicable federal, Tennessee, Department of Defense and Air Force environmental regulations.

Headed by Michael Trimeloni of Headquarters AFMC, the 21-person ECAMP team identified 67 findings, 39 major and 28 minor, across the center, down from 109 total findings during the last command ECAMP in July 1995.

By way of comparison, AEDC environmental officials say ECAMP inspectors at similar-size installations routinely yield in the neighborhood of 400 findings.

"The inspection went very well and the ECAMP inspectors were impressed with our overall environmental management program," said Clark Brandon, deputy chief of the environmental management division. "The number of findings may sound like a lot, but with all things considered, it's really not."

"Many of our findings were administrative and we were able to take care of some of them on the spot—such as labeling a drum that wasn't labeled," said Brandon

In fact, the ECAMP team listed six positive findings during the inspection. They included the development of protocol "Smartbooks," a reduction of pesticide chemical usage, a good marine spill response plan, an asbestos inspection survey, an infiltration/inflow monitoring program, and the program of cross-training water operators.

"We had no significant negative findings in any aspect of environmental management at AEDC," said Charles King, chief of the environmental management division. "And there were no major negative findings in the air emissions, installation restoration program, natural resources and toxic substance protocols."

The category with the most findings was hazardous materials with 16 major and five minor write-ups. A majority of these findings addressed improper management of compressed gas cylinders and improper storage of flammable materials.

Cultural resources had two major and one minor negative findings. A lack of an integrated cultural resources management plan was the key finding.

Hazardous waste management logged six major findings ranging from open drums and incorrect reporting to an out-of-date spill prevention and response plan.

Other environmental issues had one major finding and five minor and pesticide management had two major and three minor findings. Solid waste management, storage tank management and wastewater management categories each had two major findings and a total of five minor findings.

Five major and four minor findings were uncovered in Petroleum, oil and lubricant (POL) management. The main problem was a lack of site-specific spill plans.

The remaining category, water quality management had only one major and one minor finding.

AEDC's favorable showing during the ECAMP was the result of a lot of hard work by a lot of people, said King. "A tremendous amount of effort went into preparing for this inspection and it obviously paid off."

Brandon added, "we appreciate all the work the entire work force did in preparing for the ECAMP."

Heil takes command

Colonel Michael Heil is the new commander of Arnold Engineering Development Center. He replaced Col. Robert W. Chedister who has been reassigned to the Pentagon.

Colonel Heil assumed command of AEDC on July 2 during a change of command ceremony conducted by Gen. George Babbitt, commander of Air force Materiel Command.

"I consider myself a people person and like to have people work as a team and build a consensus. Together, we'll work hard to uphold the high standards of the Air Force and AEDC," Col. Heil said.

The colonel is the 22nd commander in the 47-year history of AEDC

Bats call AEDC dam site home

Fishermen enjoying a mosquito-free venture near Arnold Engineering Development Center's Elk River Dam, might want to give a big "thank you" to the Gray Bats who make the dam their home. They gorge themselves on the pesky mosquitoes every day.

Hundreds of the Gray Bat or Myotis grisecens, take up residence in the dam during the summer. Their stay does not affect operation of the dam, which creates Woods Reservoir, source of cooling water for AEDC's wind tunnels.

According to John Lamb, AEDC zoologist, the bats were first discovered at the dam in the mid-1970s. "We took a count of the bats in 1986 and estimated there were 500 bats making the dam their home. Another count in July 1994 put the population at about 300-400."

The Gray Bat was federally listed as endangered in 1976 because of declining numbers due to the loss of habitat. The bat is particularly susceptible to decline because they use caves for both summer homes and winter hibernation. Many caves suffer from human disturbance such as vandalism or commercialization, eliminating the bat population.

Gray Bats make their home only in the southeastern part of the country with populations found mainly in Alabama, northern Arkansas, Kentucky, Missouri and Tennessee. They sometimes make a rare appearance in other areas of the U.S. Hubbards Cave near Chattanooga, is home to one of the largest colonies in the U.S.

"The bats arrive at the dam during late April and leave for hibernation in late October or early November," Lamb said.

The critical period for bat propagation seems to begin in June and lasts through September.

"We estimate that 50 juvenile bats were born this year in the dam maternity colony. It is important that they not be disturbed," he said. "The disturbance of a maternity colony can result in young bats being dropped to the floor. Since Gray Bats will not pick up dropped young, they will die. Too much disturbance can result in the abandonment of the colony."

"One of the dam gate rooms contain females which is used as the maternity colony," said Lamb. "The females currently residing at the dam is one of a handful of maternity colonies in the U. S. using manmade structures for maternity roosts."

He said a bachelor colony occupies one of the other gate rooms.

To determine the reproductive status of the maternity colony at Woods Reservoir Dam, a rough count of juveniles in the maternity roost was conducted on June 22, 1998.

The U.S. Fish and Wildlife Service prohibit entering the roost and counting adult bats. "They are afraid that human entry into the roost will scare the adults causing them to abandon their young," said Lamb.

Maintaining the Woods Reservoir Gray Bat population is just one aspect of the AEDC ecosystem environmental program. "We consistently seek to better integrate the management of irreplaceable species such as the Gray Bat within the overall framework of AEDC's test mission," said Clark Brandon, deputy chief of the environmental management division.

BOXED IN – Randy Jones, AEDC environmental engineer, works among 100 recycling boxes being assembled for a pilot study in the environmental management division building. The three compartment box with spaces for trash, high grade and mixed grade paper, does away with the traditional office trash can and recycling containers. The cardboard ReBox is more aesthetic and takes up less room. It also should make people more conscious of what they discard as trash and have to take to a central collection point.

Status report on IRP sites

The status of all installation restoration programs as of 31 August. 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 will be 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 resutls.

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.