Unique Alabama onsite training center reaches underserved communities
by Diana G. Duran
E-train Editor

Having the willingness to work together for the benefit of all seems to be the motto of a hardworking group that recently organized the Alabama Onsite Wastewater Training Center.

Located in Livingston, a small community of about 4,500 people that is home to the University of West Alabama (UWA), the training center will address the needs of an area where current onsite systems experience a high failure rate.

“The soil here is the poorest and most challenging for proper septic system operation. The idea was that if a system will work in Livingston, it will work anywhere,” says Lesley Garner, the center’s director (right).

A unique center takes shape

In many areas of the Blackbelt region, the soil does not percolate or drain, adequately for conventional septic tanks to work. The soils are thin and have an underlying layer of Selma chalk that turns black when it decays. The Alabama Department of Public Health (ADPH) estimates that, over time, current onsite disposal systems in rural regions of west Alabama can anticipate a 90-percent failure rate.

When conventional systems fail, the improperly treated effluent surfaces and enters the water system, polluting streams and water supplies.

“A training center was needed because most traditional septic tank systems will not work in this area—in installers, public health officials, and local citizens needed to be educated on alternative wastewater systems,” says Garner, adding that a hands-on

One trainer’s perspective
Lifelong learning is the key to opportunities
by Natalie Eddy
NETCSC Contributing Writer

“We should all strive to be lifelong learners. That is one thing I believe very strongly—no matter who we are or what our chosen profession may be.”

In that statement, Jan Boyle, Montana Environmental Training Center (METC) coordinator, sums up her philosophy on life and her approach to training.

With eight years’ experience implementing and administering water quality and other environmentally related training programs, Boyle speaks about her job as facilitator with enthusiasm and passion.

“I believe greatly in the potential for adults to continue the learning process. Experience and interest contribute to that lifelong learning process. It can be in a formal sense, but it doesn’t have to be. Wanting to be the best operator you can be—or whatever career you’ve chosen—is what’s important,” she says.

Boyle applies the philosophy of lifelong learning to herself. When she was hired as METC coordinator in 1990, she had just completed her master’s degree in education with an environmental emphasis from University of Montana-Missoula. She received her

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Twelve courses added to multimedia series

BNA Communications, Inc., a subsidiary of The Bureau of National Affairs, Inc., has announced the release of 12 additions to its Training on a Disk™ multimedia safety training series on CD-ROM.

The 12 new titles offer coverage in areas such as accident investigation; accident prevention; asbestos awareness; environmental awareness; hazardous waste management; small spills; forklift safety; hearing conservation; ISO 14,000; laboratory safety; safety overview; and workplace violence.

A free demo disk and video are available by calling (800) 217-2338. You may also write to BNA Communications, Inc., 9439 Key West Ave., Rockville, MD 20850.

Instruction design workshop scheduled

The 1997–98 schedule for “Designing Instruction: How To Design Cost-Effective Training That Facilitates Quick Skills Transfer” has been released by Friesan, Kaye, and Associates (FKA), training consultants.

The three-day program is scheduled in designated cities throughout the U.S. and Canada from September 1997 through March 1998.

Topics include pre-project study and planning, determining training content to meet performance needs, designing the program, and developing instructional strategies, support materials, and evaluation tools.

The registration fee is $995. Volume discounts are available.

For dates and locations, information, or to register, contact FKA, 3448 Richmond Rd., Ottawa, ON, Canada 82H 8H7, or call (800) FKA-5585 or (613) 829-3412. You may also fax your request to (613) 829-0845, or e-mail to FKA@fka.com.

Groundwater Foundation joins forces for conference

The Groundwater Foundation announces that the “Priming the Pump” groundwater education workshop and the annual Groundwater Guardian Designation Conference will be combined this year under the theme, “Joining Forces: Education and Action for Groundwater.” The combination workshop and networking event will be held November 22–24, 1997, at McDonald’s Corporation’s Hamburger University in Oak Brook, Illinois.

The theme, “Joining Forces,” reflects the fact that the synergy between water educators and local groundwater activists is a natural one, and will combine to strengthen the efforts of both groups. Each day the conference will have a special focus, including presentations and workshops on what’s new in groundwater education, community programs, and local groundwater protection policy and technology.

Topics include educational outreach, pollution prevention, public policy, conservation, and management practices. Experiences on the practitioner level will be emphasized.

For information about the conference, contact the Foundation at (800) 858-4844, or visit their home page at http://www.groundwater.org.
Solid waste conference scheduled

The Thirteenth International Conference on Solid Waste Technology and Management will be held November 16–19 in Philadelphia, Pennsylvania.

Sponsored by The Journal of Solid Waste Technology and Management, the conference will cover landfills, recycling, energy recovery, economics, technology, policy, industrial waste, case studies, and other subjects. More than 100 speakers from 20 countries will offer specialized workshops.

For information, contact Dr. Ronald Mersky, Department of Civil Engineering, Widener University, One University Place, Chester, PA 19013-5792; call (610) 499-4042; fax (610) 499-4059; or e-mail solid.waste@widener.edu. The conference Web site can be reached at www.widener.edu/solid.waste.

Environmental briefing held in Virginia

The 1997 Washington Environmental Briefing will be held in Alexandria, Virginia, October 16–17. Tuition is $999.

The course provides the latest in-depth legislative and regulatory developments, as well as a review of the U.S. Environmental Protection Agency’s enforcement priorities and budgeting developments affecting businesses.

Topics include the current administration, Safe Drinking Water Act and Clean Water Act updates, Superfund developments, developments in environmental auditing, Resource Conservation and Recovery Act regulations and corrective action, the Pollution Prevention Act, and more.

For information or to register, contact Jesus Ferro at Government Institutes, 4 Research Place, Suite 200, Rockville, MD 20850; phone (301) 921-2345, or fax (301) 921-0373.

NETCSC to be downlink for solid waste video conference

The National Environmental Training Center for Small Communities (NETCSC) will serve as a downlink site for a live, interactive video conference, “The Nuts and Bolts of Pay-As-You-Throw . . . from Those Who Know.” Targeted to municipal solid waste officials, the program will air October 9, 1997, from 1–3 p.m. and is accessible at no charge to downlink locations nationwide.

Local government solid waste managers will speak about their experiences in designing and implementing pay-as-you-throw (PAYT) programs in their communities. The panel will then address callers’ questions and concerns for a full hour. The program will also feature dozens of successful PAYT programs.

The video conference is sponsored by the U.S. Environmental Protection Agency (EPA) in partnership with several national solid waste and governmental organizations, including the American Public Works Association, the International City/County Management Association, The United States Conference of Mayors, the National Solid Wastes Management Association, the Solid Waste Association of North America, and the National Association of Counties.

For information or to be a downlink site, contact EPA Satellite Forum, c/o ERG, 2200 Wilson Boulevard, Suite 400, Arlington, VA 22201-3301; call (703) 841-2313; fax (703) 841-1440; or e-mail to satforum@erg.com.
The Rural Community Assistance Program
Help for small communities

by Mollie Cox Bryan
RCAP Communications Director

Editor’s note: This, the first of two articles, profiles the Rural Community Assistance Program (RCAP) and its work with small, rural communities. A second article in the Winter E-train will discuss ways in which NETCSC and RCAP have worked together to serve small community environmental trainers and technical assistance providers.

Small rural communities often want to improve their quality of life through enhancing their drinking water or wastewater treatment systems, but they may lack the resources to do so. Many times, these communities find it difficult to operate and maintain the facilities they already have, and in some cases, they do not meet state and federal quality standards.

The national Rural Community Assistance Program (RCAP) is a network of six regional offices. The organization has multistate service areas, a national office in Leesburg, Virginia, and staff members and agencies at state and local levels. The program serves these small rural communities by providing technical assistance and training—free of charge.

The specific technical assistance to be provided in a community is determined by that community’s need, often in conjunction with federal, agency, or state involvement. And training programs help ensure safe system development, operation, and maintenance.

Technical assistance

RCAP’s technical assistance providers (those in the field working with the communities) are highly skilled and can help communities with anything from identifying and addressing water or wastewater disposal problems to assisting in training of systems operators or obtaining bond counsel and legal services. In many cases, RCAP field staff become such a vital part of the community that they are the first people the communities call upon in times of distress.

For example, Herb Pratt, an RCAP technical assistance provider, was working with the community of St. Maurice, Louisiana—population 436—to get upgrades to bring their water system into compliance with the Safe Drinking Water Act (SDWA) when a fire destroyed their pump house. St. Maurice was out of water. Herb Pratt received a call for help.

The next day, he was there, assessing damage, organizing a clean up, and taking an inventory of parts needed to restore water service. Pratt met with the water board; he contacted the Louisiana National Guard and coordinated with them to bring in one 6,000-gallon water tank and three 250-gallon water tanks to St. Maurice for a temporary source of water.

In addition, he helped the community complete an application for an emergency loan from The U.S. Department of Agriculture’s (USDA) Rural Development to pay for equipment replacement to restore water service. He coordinated with the state Health Department on behalf of the community. Pratt’s efforts helped restore water service to the community in less than a month.

In addition, he helped the community complete an application for an emergency loan from The U.S. Department of Agriculture’s (USDA) Rural Development to pay for equipment replacement to restore water service. He coordinated with the state Health Department on behalf of the community. Pratt’s efforts helped restore water service to the community in less than a month.

Pratt’s work is typical of the extra effort and onsite technical assistance RCAP delivers—and has delivered for more than 25 years.

Technitrain

Geared to helping small, rural areas with low-income families, Technitrain is in its ninth year and is currently assisting more than 550 communities across the U.S. Through this project, RCAP trains small systems operators.

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and managers and assists with system finances.

Most of the communities assisted by Technitrain have existing facilities that are in need of repair, upgrades, or staff training. Some of the other activities that RCAP may coordinate with communities include completing needs assessments, conducting public meetings, and setting up budgets, record keeping, billing, management, and accounting systems.

**Solid Waste Training & Technical Assistance V Project**

This project focuses on giving onsite training and community-specific technical assistance to landfill owners and operators, as well as community and tribal leaders and residents. Currently, it is reaching 76 low-income, small rural communities, counties, and tribal governments in 22 states.

It helps make certain that rural areas are included in regional solid waste management to guide residents in developing and maintaining solid waste programs. Some of the activities RCAP may facilitate include establishing a community recycling program, conducting training workshops, and accessing resources and information not readily available to small communities.

As part of its services, RCAP offers a variety of free publications, including a calendar with photographs and information relating to rural community development issues. To be placed on the mailing list or receive a calendar and a list of publications, or for more information, please contact Mollie Cox Bryan, communications director, National RCAP, 602 S. King St., Suite 402, Leesburg, VA 20175; phone (703) 771-8636, or visit RCAP’s Web site at http://www.rcap.org.

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**Other RCAP programs and projects . . .**

These RCAP programs and projects also serve small rural communities by providing technical and other assistance.

- **Small Community Wastewater Project**

  This project provides opportunities for small rural communities to have safe, reliable, and affordable wastewater treatment systems so that they live in healthier conditions and are in compliance with the Clean Water Act. RCAP supports these communities with management, financing, construction, operations, and other technical needs.

- **Safe Drinking Water Assistance Project**

  RCAP aids community leaders, system owners and operators and local residents to provide access to safe, reliable, and affordable drinking water supplies for low-income rural people and to ensure that their drinking water systems are developed, managed, or maintained in compliance with Safe Drinking Water Act requirements.

- **The MESA (Migrant Environmental Services Assistance) Program**

  Through MESA, RCAP works with migrant health centers, community health centers, public health agencies, and other organizations on behalf of migrants and seasonal farm workers. RCAP fosters MESA projects addressing water, wastewater disposal, housing, field sanitation, pesticide safety, and occupational health needs.

- **Access for All**

  A response to the USDA’s Water 2000 initiative, calling for a concerted national effort to provide safe drinking water and basic indoor plumbing to all rural Americans, Access for All is attending to those low-income, rural communities that are completely unserved—and have never been served.

- **RCAP Environmental Justice Project**

  In these target communities, RCAP serves low-income, rural, minority residents suffering poor environmental and human health conditions stemming from a lack of services and resources. RCAP helps identify and assess the need for upgraded or new wastewater facilities (especially for homes that have never had access to wastewater services) and helps to organize, design, and finance wastewater treatment and disposal facilities or their construction.
Partnerships make $ense
Reflections of an environmental trainer

by Sherry Swint
NETCSC Training Resource Specialist

As the door closed on the Boeing 757, I looked out the window and sighed. I thought back to December when I met Gary Olson, director of the Southwest Public Recycling Association (SPRA). After letters, calls, and faxes, that meeting led to the National Environmental Training Center for Small Communities’ (NETCSC), SPRA’s, and the City of Tempe, Arizona’s, providing a “Managing Groups and Conflict” train-the-trainer session and an “Economics and Marketing of Recyclables for Small Communities” workshop.

Our hard work—all the planning and preparation—paid off in a successful training event.

It’s the details
As I thought about the past few days, I remembered the first indication I had that the trip would be successful. The car rental agency at the Phoenix airport asked if I would mind a free upgrade from the compact I had reserved. I wondered if the rest of the trip would go well—if the details I and many others had planned would fall into place.

The materials I shipped had arrived the day before, and the City of Tempe supplied the location and refreshments. I met Carol Eshelman at the hotel, called my office for a final participant list, and then visited the training site to make final preparations for the “Managing Groups and Conflict” training.

Carol, principle of Group CK, was my training colleague for this day-and-a-half course. As its title implies, the course is divided into two major sections: group management and conflict management. Carol presented most of the information in the conflict management section, and I taught group management techniques.

By the end of the workshop, we had developed a rapport, shared experiences, and learned from each other through our work preparing, delivering, and debriefing—we had formed a partnership.

Learning from experience
Wrapping up the session, I asked Carol her opinion of the training. “The training went well,” she replied. “Some participants had already encountered some of the conflict situations. Their experiences certainly added to the success of the program.”

I agreed, recalling the more memorable anecdotes. One of the participants had been involved in a public meeting about a controversial landfill permit. The building’s security officer planned an escape route for our participant and the other public officials just in case irate citizens became violent. In another instance, a landfill hired off-duty police after receiving threats from residents who now had to pay for disposal of their garbage at the landfill instead of dumping for free.

Carol reminded me that participants’ sharing the difficulties and issues they’ve faced enhances any training and is a big part of why networking is invaluable.

Active learning wanted
Fourteen participants attended the Tempe session, with the majority coming from Arizona and New Mexico. This group in particular was active, and evaluation comments suggested “more hands-on activities after lunch,” and someone wanted “a week-long program with more role playing.”

The curriculum contains a number of activities, and in this session, the role play was most effective. The “Differentiating Between Conflict” section contains a scenario of a public hearing on a certificate of need for a new local landfill. Participants were assigned to the solid waste management authority, the audience, representatives from the developers, opponents to the landfill, reporters, and citizens.

Participants assumed their assigned roles with gusto. Everything imaginable happened.

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The state regulatory representative said he had just been transferred to the department and knew nothing about the case. The local community opponents to the landfill had a university professor there as an expert to convince the board that there were too many problems with the site. The solid waste management authority members mainly ignored what the public said, or said, “I understand how you feel, but . . . .”

The group’s experiences provided a successful role play. When the class debriefed, I heard a lot of, “She played a typical council member. Instead of using words to relieve the conflict, she fanned the debate.” Another participant, who played the role of an advocate for the landfill, felt that the citizens’ minds were already made up before they arrived. He also found it hard to be on the opposite side of the citizen’s vehement opinion, and said, “I felt there was nothing I could do but scrouch down in my chair and try not to be noticed.”

Co-sponsorships work

As Carol and I packed the last of the boxes to be shipped, Gaylan Oliphant, a sanitation inspector and one of the participants, stopped by and thanked us for a job well done. Gaylan works for the City of Tempe, one of NETCSC’s co-sponsors for this training. His feedback was gratifying.

NETCSC partners with regional and local organizations like SPRA and the City of Tempe to provide needed training. Co-sponsors’ responsibilities vary depending on the training being delivered, the needs of the area, the organization’s ability to assist in training, and other variables.

The success of this particular training event was ensured by the co-sponsors—SPRA who distributed promotional materials and secured the location by working with the City of Tempe Solid Waste Services. The city also provided the refreshments, equipment, and logistical support. Having this kind of local support for training sessions provides an opportunity for the City of Tempe to bring quality training to the area—and at a lower cost to all involved.

I said farewell to Carol and Gaylan and got in my car to head north. My destination . . . Sedona.

The next day I joined Ann Lozon and Mitra Khazia from SPRA at the “Keep Sedona Beautiful” office. Sedona is where the Red Rocks of Arizona rise above the canyons. It is indeed lovely—and a great place for a training program.

Ann and Mitra were setting up for the “Economics and Marketing of Recyclables for Small Communities” training, so I gave them a hand. Minutes later, the site was transformed into a training room. As co-sponsors, NETCSC supplied the training materials and one trainer, SPRA furnished two trainers, and the “Keep Sedona Beautiful” program provided the building and refreshments.

Ann, Mitra, and I formed the training team. I presented “Small Community Characteristics,” one of the five training modules. Mitra delivered the modules on local market development and the cost and benefits of operating and expanding recycling services. Ann led the discussion on improving recycling program efficiencies and marketing recyclables.

Participants benefit most from this team teaching. They get the advantage of learning from several experts in varying fields. NETCSC often provides this type of trainer support when co-sponsoring training.

Study cases and take tours

Fifteen participants, most of whom were recyclers, attended the training. Jan Kerata from Flagstaff and Kate Blevins from Sedona gave short presentations about improvements to their recycling programs. Jennifer Means from the City of Mesa discussed how the city is increasing public participation through educational outreach. Their presentations, along with group discussions, gave the participants information that they might not otherwise have gotten.
History repeats itself

Search for pure drinking water continues

Safe drinking water is one of the elements most crucial to human survival. And throughout history, people have tried one method or another to ensure a fresh, tasty drink of water. To illustrate humankind’s thirst for pure water, On Tap, a quarterly newsletter published by the National Drinking Water Clearinghouse (NDWC), published a three-part series about the history of water treatment and waterborne diseases that ran in the Summer 1996, Fall 1996, and Spring 1997 issues.

The first installment looks at our quest for clean water from ancient times to present, using various treatment methods. From the first known clarifying device pictured on the tombs of ancient Egyptian kings to modern rapid sand filters, the article illustrates our need for clean water.

The second installment discusses waterborne diseases, our efforts to find their causes, and our realization that contaminated water can make us more than just a little ill. The article traces the puzzlement we faced in finding out why so many people in the same area were getting sick, to our understanding of the cause, and how we finally put proper sanitation methods to use.

The final installment looks at modern drinking water treatment methods and how they sprang from ancient wisdom. Coagulation, flocculation, sedimentation, filtration, and disinfection are all discussed in this article.

To order any of these free back issues of On Tap, call the NDWC at (800) 624-8301 or (304) 293-4191. Shipping and handling charges will apply.

Source: OnTap, Fall 1997, Vol.6 No. 3

Partnerships make Sense

Reflections of an environmental trainer

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The session ended around 4 p.m., allowing enough time for a tour of Sedona’s recycling collection and processing center. The center is fairly new, and while it was under construction, recycled materials were incorporated into the facility. Sedona Recycles, a nonprofit recycling organization, relies primarily on community support and volunteers.

Kate Blevins, the executive director of Sedona Recycles, guided the site tour, pointing out that the building’s walls and carpeting were made from recycled materials, and that they salvaged and reused materials such as doors, windows, paint, and hardware whenever possible. It was an excellent opportunity for participants to discuss Sedona’s operation and compare it to their own centers and experiences.

The day was complete.

By land or air I roam

As I turned from my window on the plane, taking one last view of the unforgettable desert and canyons of this warm western state, I reflected on a productive partnership and the sense of a job well done.

For more information about these training packages, how you or your organization can become a co-sponsor of a NETCSC training program or receive training assistance, contact Sherry Swint or John Hoornbeek at (800) 624-8301 or (304) 293-4191, or fax your request to (304) 293-3161.

Source: OnTap, Fall 1997, Vol.6 No. 3
EPA’s Allbee: Extra effort needed to help small communities

by P.J. Cameon
NETCSC Contributing Writer

The U.S. Environmental Protection Agency (EPA) is eager to increase the level of assistance small communities and tribal groups receive to handle wastewater-related needs—including training—according to Steve Allbee.

Allbee is chief of the Municipal Assistance Branch in EPA’s Office of Wastewater Management.

In a recent interview for the Small Flows newsletter, Allbee shared his views on what EPA and other organizations must do to meet the training and other needs of these underserved populations.

“There are people providing this training, but there’s no comprehensive strategy,” he says.

He stresses cooperative efforts among the EPA, other federal agencies, and assistance organizations, such as the work of the National Environmental Training Center for Small Communities (NETCSC), to meet small system needs.

“We all have a responsibility to help local institutions be successful.”

Training needs

Allbee says he doesn’t know exactly how many people in the country work in drinking water and wastewater facilities, but he says he knows it is a large number—several hundred thousand. He says meeting the basic training needs of all of those workers and keeping them current with new technologies are huge challenges.

“Every time I meet with a plant operator or go to a facility, one thing I always notice is the great pride that some of the people have in regard to their systems and their communities. What a tremendous asset they are. The commitment they have is just amazing,” Allbee says.

“The emphasis in this part of EPA is measuring our success to a large degree by whether or not the populations that previously haven’t been served are getting served and whether or not the type of information and technical support provided are helping to get the job done,” he says.

Appropriate technology

The positive impact of capital funding assistance and training can be even more effective if small communities have appropriate technologies in place to meet their drinking water and wastewater treatment needs.

Of the 24 million households in rural America, according to Allbee, only 6.5 million households—about 25 percent—are served by centralized wastewater systems.

Allbee says EPA has to make sure the training and technical assistance for these non-conventional systems reaches the same level as the help available for conventional systems.

Allbee further states that the issues he’s concerned with are “fundamental,” adding that “there are not many things more basic than the ability to have clean water and sanitation.”

For more information about wastewater, drinking water, and solid waste training curricula, products, and assistance for small communities, call (800) 624-8301 or (304) 293-4191, or fax your request to (304) 293-3161.

approach is the best way to teach. “Learning is easier when you can see how to install the system and how to handle any problems that might arise.”

The idea to build an onsite training center at UWA in Livingston grew out of a Tombigbee Resource Conservation and Development (RC&D) Council constructed wetland project in the Sumter County area in 1995. The poor soil quality was the first reason to build a training center, along with the university’s donation of 20 acres of land.

The training center is uniquely located to reach an underserved sector of the public that has failing septic tanks. The center will serve as the certification clearinghouse for installers and designers, and the ADPH has asked that the training center be a demonstration area for new technologies in the state.

The alternative onsite systems will all be installed on the same tract of land. The training center will work with the UWA Environmental Science Program and the Environmental Education Training Center.

Initially, the onsite training center will have five alternative systems at the demonstration site—a sand filter, a peat system, a constructed wetland, a low-pressure distribution system, and a drip emitter system. The onsite center’s purpose is to demonstrate and teach alternative ways to dispose of household sewage in a safe and effective manner.

Each system will contain a duplicate so that one will have sewage—pumped from the adjacent neighborhood—and the other will have fresh water taken from Lake Livingston. The system with sewage will enable the installers to see the system working in actual conditions, whereas the system with fresh water will be used for troubleshooting and assembly.

“We've also had requests from recreational groups for help with alternative systems that can be operated without electricity,” Garner says. “At the training center, there will be a composting toilet that can be operated with solar power. A portable marina pumpout will also be used for demonstration at the center in Livingston as well as at marinas around the state.”

**Partners work together**

After the decision to locate the training center in an area that has poor soils, UWA was contacted. The partnership that developed is unique. A state onsite committee has been established because of the many onsite projects in Alabama.

The people on this committee represent a diverse partnership: public health officials, members of the Alabama Onsite Wastewater Association, Water Watch members, Alabama Department of Environmental Management (ADEM) workers, UWA faculty, engineers, representatives of the Tombigbee RC&D Council, members of the Home Builders Association, and sales representatives of the manufacturers of alternative systems.

“The committee is further divided into subcommittees to handle all the projects and aspects of the training center,” says Garner. “We believe that it takes people with different backgrounds to make the training center a reality.”

The training center is funded through a grant from the U.S. Environmental Protection Agency Region IV. Patti Hurley, environmental scientist with the ADEM, oversees the project funding, and the Tombigbee RC&D Council is responsible for installing the alternative systems and developing the classes.

“This project would not have been possible without the donations from the private and public sectors,” Garner adds. “Special thanks goes to the ADPH who has volunteered an enormous amount of time to this effort.”

**Classes, learning to begin**

Although there is no long-range schedule of classes yet, Garner says that work has

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begun. The center is projected to be fully operational by spring 1998 and will offer classes throughout the year to train installers, public health workers, and the general public.

Classes will include installation techniques, troubleshooting, and designing alternative disposal systems, along with others. Garner says that the center will also offer opportunities for environmental education training. Both certification and continuing education units will be available.

Students will learn about water quality in general, and how to analyze and test the water from each of the systems using the lab at the center.

Training center instructors include faculty members at UWA, industry representatives, trainers from the ADPH and the ADEM, as well as participants from the "train-the-trainer" workshop. To offset overhead costs, the center will charge fees for the classes, but they have not yet been set.

A state committee for onsite disposal has developed a task force, made up of engineers, installers, regulatory agencies, and academicians, to serve as liaisons to the training center.

“Our long-range goal is to develop a year-round training center that includes examples of all new technology that work in the South,” says Garner. “We want to continue to develop material to keep the public, decision makers, and others informed and aware of technology changes and opportunities to protect our water resources.”

If you have any questions about the training center or have an alternative system that you would like to have installed at the center, contact Garner at (205) 652-3400, ext. 3242, or e-mail your request to lcg@uwamail.westal.edu.

Other Onsite Wastewater Training Centers

Arizona
Arizona On-Site Wastewater Training Center
Contact Colin Bishop, (520) 757-0901

California
California On-Site Wastewater Training Center
Contact Bill Cagle, (916) 889-7364

Florida
Florida On-site Training Center
Contact Kevin Sherman, (904) 488-4070

Missouri
Missouri Small Wastewater Flows Education and Research Center
Contact Dennis Sievers, (573) 882-7855

North Carolina
North Carolina State University On-Site Wastewater Training Facility
Contact Mike Hoover, (919) 515-7305

Oregon
Oregon On-Site Wastewater Training Center
Contact Harold Ball, (541) 459-4449

Rhode Island
University of Rhode Island On-Site Wastewater Training Center
Contact George Loomis, (401) 874-4558 or David Dow, (401) 874-5950

Texas
Texas On-Site Wastewater Treatment Training Center
Contact Bruce Lesikar, (409) 845-7453

Vermont
Northern New England Wastewater Training Center
Contact Jeff Higgins, (802) 234-9279

Washington
Northwest On-Site Wastewater Training Center
Contact Dave Lenning, (360) 352-1163

Wisconsin
University of Wisconsin Small Scale Waste Management Project
Contact Jerry Tyler, (608) 262-0853
Order online at NDWC’s Web site

For easier access to its services, the National Drinking Water Clearinghouse (NDWC) recently redesigned its Web site and now includes e-mail ordering for products and online access to its “Tech Briefs” fact sheets.

Located at http://www.ndwc.wvu.edu, the site contains an overview of the NDWC program and its services, a public education section called “Water Facts,” and links to other relevant sites. It also provides online access to the program’s newsletters, On Tap and Water Sense, and to its products catalog.

The NDWC now offers its Tech Briefs online as well. These four-page fact sheets provide concise technical information about drinking water treatment technologies relevant to small systems. Five fact sheets have been developed and address disinfection, filtration, corrosion control, ion exchange and demineralization, and organics removal.

These Tech Briefs and all of the NDWC’s products may be ordered via the site’s new e-mail link at ndwc_orders@std.wvu.edu.

Future plans for the site include online discussion groups that address drinking water topics. These discussion groups will be monitored by NDWC staff to ensure accurate information is being exchanged. A calendar of drinking water related events will soon be added as well.

For more information about the Web site, call the NDWC at (800) 624-8301 or (304) 293-4191.

NDWC’s new products catalog is available

The National Drinking Water Clearinghouse (NDWC) has just published a new version of its products catalog, which describes nearly 200 free or low-cost products that address small community drinking water issues.

Available for free, the Drinking Water Products Catalog includes items that detail drinking water system finances, management, regulations, operations and maintenance, public education, and the health effects of contaminants.

The catalog contains a brief explanation of each product, lists the organization that developed it, the year it was developed, the cost, and a product number. To make it easier for users to find the products they are looking for, an index by key word is provided.

To request a hard copy of the catalog, call the NDWC at (800) 624-8301 or (304) 293-4191. You also may request a copy via e-mail at ndwc_orders@ndwc.wvu.edu. The guide is also available via the NDWC’s Web site at http://www.ndwc.wvu.edu.
Vermont plans new onsite training center

A planned onsite wastewater training center at Vermont Technical College will provide valuable instruction for wastewater professionals.

In addition to Vermont, the Northern New England Wastewater Training Center will serve Maine, New Hampshire, and possibly parts of neighboring states.

“There has been a great need for training in Vermont and the surrounding area for a long time,” says Jeff Higgins, head of technology extension at Vermont Technical College.

“In our preliminary discussions with professionals in the field, they have been very excited about the opportunities they are going to get at the training center.”

Last year’s federal budget included $50,000 to develop the onsite training center, and the National Small Flows Clearinghouse (NSFC) was designated as the managing entity because of its long involvement and expertise in onsite wastewater issues, according to Mike Aiton, NSFC special assistant.

“NSFC encourages these kinds of projects, and we want to help enhance onsite training efforts and infrastructure around the country,” Aiton says.

Training needs to be studied

“We are going to spend the next 10 months in the planning phase, assessing the training needs of onsite technicians and engineers,” Higgins says.

“We hope to find out what type of skill enhancement practitioners want for the future,” he adds.

“Our assumption is that area contractors, technicians, engineers, and health officers all want a place to get training and skill enhancement. We want to get these groups together to identify their needs so we will be ready to offer assistance in 1998.”

Higgins says the training center also will initiate a plan to take over soils training and testing in Vermont within the next 10 months. He explains that currently site technicians are required to be state certified.

“It’s a good way to work as partners with the state on this whole process. It will make it easier for practitioners. We will be able to offer courses more often than the state,” he says. “It will be better for the state too. They don’t have the resources to do the training and testing like we do.”

For more information, contact Higgins at the Northern New England Wastewater Training Center at (802) 234-9279, or Aiton at the NSFC at (800) 624-8301 or (304) 293-4191. For a listing of other state onsite wastewater training centers, see sidebar on page 11.


NSFC report now available


Find out:

• the cost to install/construct a new onsite system
• which local agencies work with onsite systems
• who has responsibility for onsite system maintenance
• how often onsite system inspections are performed
• commonly cited reasons for onsite system failure

To order a copy of the report, contact the National Small Flows Clearinghouse (NSFC) at (800) 624-8301 or (304) 293-4191, and request Item #WWBKGN89. The cost of the report is $17.50, plus shipping and handling. Contact the NSFC for the exact shipping and handling charge.
One trainer’s perspective

Lifelong learning is the key to opportunities

continued from page 1

bachelor of science degree in biology in 1972 from the University of Wyoming in Laramie.

Currently, Boyle has completed 21 semester credits toward a doctorate in education at Montana State University-Bozeman, and plans to focus her research proposal on environmental education for adults.

“I was exploring job opportunities when this one opened two or three months after I received my degree. It was a brand new position,” says Boyle. “I knew I could handle the work. I just wasn’t sure what they expected, which direction I should take. I work at being creative and innovative.”

Boyle’s teaching methods exemplify her efforts as a training coordinator. “I have tried to incorporate some of the ideas I have for teaching in developing our training programs. We try to avoid ‘information dump’ and actively involve the participants in the learning process,” she says.

“One way to involve participants is by conducting onsite tours and field work. It is also helpful to include them in discussions. We work with instructors for our workshops and encourage that type of delivery.”

Boyle has also incorporated a “train-the-trainer” course every year at METC. “We invite all trainers to take the course at no cost to brush up on their skills and acquire new ones,” she adds.

Expanding audiences

Before Boyle took over as coordinator, METC, located at Montana State University-North (MSU-N) in Great Falls, had a specific audience in mind, mainly water and wastewater system operators. At that time, METC offered only entry level, intermediate, and advanced course training.

Since Boyle’s arrival, METC’s audience has expanded to include others involved in the water quality field, such as sanitarians, well drillers, environmental engineers, and tribal government leaders. Boyle believes this indoctrination is a key reason for the center’s success.

“We definitely provide an opportunity for operators or any other interested individuals to expand their knowledge base—expand their horizons—in the area of water and water quality,” says Boyle. “I see it as providing these folks with opportunities. We are able to reach a broader audience with a wider range of opportunities.”

An annual training calendar, which METC produces and publishes, is another successful idea Boyle introduced. The calendar incorporates METC training sessions with five other training organizations. “We function as a base for state training organizations,” she says.

“We coordinate, cooperate, and communicate with other organizations that provide training. That way we broaden the opportunity base for people. A big reason I decided to do that is so we don’t reinvent the wheel. If something is being done well, why duplicate it? This way there is not a lot of repetition, and training opportunities are more readily available to participants.”

Boyle believes the calendar makes METC unique, and she views the coordination of this information as one of her main tasks.

Creating and exploring networks

In addition, Boyle has associated METC with other water quality related organizations, such as the “Know Your Watershed” workshops, which have been supported by the state Certification Office.

“I have also linked the center with other educational organizations to provide an understanding of where we live and our watersheds. That way participants can take advantage of a variety of training opportunities,” she adds.

Boyle is proud of the array of workshops METC offers today. Subjects range from pumps and motors, chlorine safety, and groundwater protection to more advanced topics, such as process control in wastewater and water.

She has also introduced customized

continued on next page
workshops for more specific audiences. Specialized courses include communication in the workplace or grant proposal writing for small communities.

In addition, Boyle has affiliated METC with MSU-N’s water quality lab and provides basic and advanced lab courses, using instruments to measure water quality and analyze pH and corrosiveness.

Boyle worked at her current position for four years by herself before acquiring and training her staff of two-and-a-half. The additional staff has given Boyle the time she needs to implement some of her new ideas.

Increasing environmental awareness

Boyle has always been interested in environmental issues. Prior to her position as training coordinator at METC, Boyle worked as a park ranger for seven years, for the U.S. Forest Service for three years, and for the Montana Department of Fish, Wildlife, and Parks for two years prior to that.

“I’m an outdoor person, very conscious of my environment,” she says. “When I say I’m environmentally aware, it means I am conscious of the impacts I can have on my surroundings, my use of water, solvents, etc.”

She plans to incorporate the idea of self-awareness in her doctoral research. “I would like to relate environmental consciousness to how I can better teach higher education and adult education courses. I want to find out what promotes that type of consciousness, how adults can discover the impact they have on their own environment,” she adds.

In keeping with her philosophy of lifelong learning, Boyle has stretched her professional life to include being an adjunct instructor at MSU-N. She has taught several semesters of environmental health-related courses.

“I do like working with adults or nontraditional students who are trying to further themselves in their careers or increase their knowledge,” says Boyle. “I’ve worked a lot with nontraditional students or returning adults. They seem to have a drive to continue to learn beyond the years of traditional education. I admire that.”

Boyle tries to incorporate environmental awareness into the training center’s curricula as well. “The training center is technically focused on the operation of water and wastewater systems. You can’t give participants the opportunity to view the entire picture without introducing the environmental impact of how their actions affect the place they live,” she adds.

Changing attitudes

“Some students have told me they were given the opportunity to see some things they had never thought about before. A change in attitude can sometimes promote behavioral changes.”

Boyle cites recycling as a good example of self-realization with regard to individual impact.

“Being able to look at something such as recycling with a new vision is what it is all about,” she adds. “Then, you may see some impact further down the line. If you change your own behavior, you’re contributing to an improvement in your own situation. You have an impact. It has to come from a personal desire to do something.

“If I have learned anything, I’ve learned to help people just get rid of the feeling that they are done with learning after their formal education is completed.

“Most high school graduates, many of the people we work with as adults, don’t stop learning when their formal education is completed. Learning is a lifelong process. It’s both formal and informal. It’s part of our experiences and desires. As adults we have to strive to keep learning. We have to keep the desire to learn alive.”

For more information about METC and its training programs, contact Boyle at METC, 1211 NW Bypass, Great Falls, MT 59404, or call (406) 454-2728.
Adults as learners: Stages of development

by Anne H. Nardi, Ph.D.

Editor's note This, the first of two articles on the adult learner, discusses the stages of adult development from a theoretical standpoint and forms a foundation for a second article. The Winter E-train will discuss the physiological, cognitive, and motivational aspects of the adult learner and how they impact training.

When a trainer faces a new assignment, the focus is often on the content, what to cover, timelines, and room location. Audience needs, and certainly audience comfort and satisfaction, come into play when the site for training is confirmed, but the audience—the adult learners themselves—may not be the focus unless they are “a great group to work with” or “the pits.”

Trainers are assumed to possess the knowledge and the skills their target audience does not. Any group of adult learners may not be knowledgeable about all the specific content of any given training session, class, or course, but as adults they bring considerable information and experience to the learning environment.

Learners and clients

Just who is the adult learner, and why is the learner worth considering? Most often, 21 is seen as the official start of adulthood, but professional literature stresses that ages 25–27 signal entry into the world of adult learners, the “non-traditional” learners on college campuses, for example.

From this context comes the perspective that these adults are clients to be attracted to a college campus. This learner-as-client model stems in part from the work of educators Malcolm Knowles and Alan Knox in the late 1970s, who pointed out the importance of learner characteristics and needs.

As we consider adult learners, it is worth examining age-related stages of adult development, such as those set forth by psychologists Erik Erikson and Daniel Levinson in the late 70s and early 80s. These stages indicate the primary motivators and needs that affect adults.

The key stage of adulthood, according to Erikson, is generativity, which means that the individual needs to achieve a sense of personal accomplishment or productivity, that is, to see oneself as productive, as making a difference or impact even in a small way.

The participant may ask, “How will this workshop change my life for the better? How can I use this? How will it help me do my job better or avoid compliance penalties?”

For the trainer, this means that an important aspect of the training should be activities in which the participant can see direct applicability to work requirements.

Generativity is a key theme in adulthood, and one of the key aspects of any training experience is to help the learner see him/herself as changing and becoming more effective—avoiding the dangers of stagnating in the same old routine.

Levinson places the notion of stages of life—and their associated crises—in the context of social issues confronting adults, and uses the metaphor of a ladder to illustrate them. If these concepts appear somewhat familiar but Levinson’s name is not, it is worth noting that his research was used by Gail Sheehy in her book Passages.

Stages and structure

Adult development results from the adult’s interaction with the world, and developmental stages are believed to provide order or predictability across the life-span. According to Levinson, these periods alternate in their functions between building new structures and changing existing ones.

Levinson divides adulthood—the years between 22 and 60—into two eras: (1) early adulthood, beginning with age 22 and ending with a mid-life transition between ages 40 and 45; and (2) middle adulthood, beginning during the mid-life transition just mentioned and extending through a transition to late adulthood between ages 60 and 65.

In early adulthood, the individual finds a place in the world. This is a time of great opportunity for satisfying experiences as well as for experiencing the stresses associated with marriage, raising a family—and the demands of work. Young adults are learning new skills, assuming more responsibility, and pursuing learning opportunities.

Early adulthood presents several tasks required to establish a life structure connecting the self as a mature adult with society. Age 30 presents a significant or “marker” age that the individual uses as a benchmark to assess what has been achieved thus far in adulthood and what changes should be attempted.

The next period (ages 33–40) is often seen as one of “settling down” when one works to achieve the dreams of youth, such as gaining professional status, career prominence, and even...
more responsibility. Levinson uses the image of a ladder, placing the young adult on the bottom rung, a junior member of society starting to achieve personal and professional goals.

The transition to middle adulthood begins at approximately 40. Although the energy of early adulthood may diminish somewhat, physical capacity is still more than adequate to lead an energetic life.

As “senior members” of society, most adults in their 40s and 50s become increasingly influential, not only for what they themselves do but also for affecting the younger adults who work with them.

As this era approaches, its transition to late adulthood brings with it the need to re-examine one’s place as the pre-retirement years approach. The trainer should note that this is another period when receptivity to new learning and training may meet with resistance from some who are threatened by change or who fear the arrival of retirement and loss of identity in the workplace.

**Assessment and change**

Middle adulthood begins with a self-appraisal that characterizes mid-life transition. It is at this time that most adults become aware of their own mortality, and a sense of urgency permeates the assessment of personal achievements.

For most adults, this leads to change, namely marked shifts for some in career goals and work, as well as lifestyle and marital status. Opportunities for making significant changes may be found in a training experience that “opens new doors,” providing alternatives or options.

According to Levinson, the focus on personal achievement reaffirms that a sense of productivity is central to adult life. During the adult years, the individual typically continues to learn new skills, achieve proficiency, and acquire new information as it and technology change. Training, then, and re-training are inherent to the individual’s sense of accomplishment and productivity.

The motivation and interest the adult learner brings to a learning environment depend on the contrast between previous expectations and reality. Tension results from the recognition of what has been accomplished compared to original goals. In other words, the life structure sets the scene for an adult learner’s acceptance of—or resistance to—learning.

Any group of adult learners will likely reflect more individual differences than similarities. They are likely to be at different stages of development.

One of the trainer’s responsibilities is to anticipate the individual differences in any group of adult learners. Their stages of development, their life experiences, and what they bring to the learning experience should be used—and sometimes overcome—to ensure that learning occurs.

Anne H. Nardi is Associate Dean in the College of Human Resources & Education at West Virginia University (WVU). She was previously the chair of the Department of Educational Psychology and Foundations at WVU. Her doctorate is in life-span developmental psychology.

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**Adult Developmental Periods**

- **Early Adulthood: Age 22–40**
- **Middle Adulthood: Age 40–65**
- **Late Adulthood: Age 65 and up**
Internet training resources
Let your fingers do the surfing

by Jamie Knotts
NETCSC Promotions Editor

You’ve decided to tackle the Internet, and you’re determined to find useful training information. It’s there for sure. But where should you go in that maze, the World Wide Web? With thousands of different sites, you could easily spend days or weeks checking them out. But who’s got the time to search? Busy trainers surely don’t.

Helpful Web sites that we’ve found right at your fingertips this quarter include a trainer’s resource center and a water and wastewater training curricula site.

By pointing your Web browser to http://www.tcm.com/trdev/, you’ll reach TCM’s (the site does not explain the acronym) Training & Development Resource Center, a site that bills itself as a “virtual” gold mine of resources for the training and distance education online community!” And it lives up to its claim.

Some of the more notable items on this site include:

• a training and development business section that lists links to nearly 50 suppliers of training products and services;
• a bookstore for purchasing titles covering such subjects as career development, learning organizations, mentoring, and others;
• a job bank for trainers to post resumes and search for available positions;
• a professional’s toolbox chock full of handy links to sites including news, Internet information, search tools, travel aids and information, personal development, and reference guides;
• a list of Internet browser-based news groups that discuss training issues; and
• an extensive list of nearly 30 e-mail-based discussion listservs covering adult education, distance learning, instructional technology, and many more.

Those looking for distance learning courses on drinking water and wastewater operation and maintenance should visit The Office of Water Programs site at California State University-Sacramento (CSU-S) at http://www.owp.csus.edu/.

The site focuses on correspondence training materials developed for the U.S. Environmental Protection Agency and administered and monitored by CSU-S. Students study the materials at their own pace and return their work for grading.

Courses can usually be completed within 50 to 150 hours of study. Continuing education units and certifications of completion are awarded when course work is completed, and university credit can also be obtained.

Wastewater topics include operation and maintenance of treatment plants, industrial and pretreatment courses, advanced waste treatment, and treatment of metal wastestreams.

Drinking water topics include water treatment plant operation, small water system operation and maintenance, and water distribution system operation and maintenance.

Prices for manuals range from $10 to $30, with the enrollment fees also in that range. For instance, the “Operation of Wastewater Treatment Plants, Volume I” manual costs $20, and the enrollment fee is $30. Instructor’s guides are available for CSU-S’s courses, but are sold only to instructors expecting to teach the course.

And while you’re Web surfing, be sure to check out our site here at the National Environmental Training Center for Small Communities (http://www.netc.wvu.edu). Later this fall, our new training discussion forum will let you network with other trainers and technical assistance providers. Post a training related question, or just browse through the posted topics that interest you. Your input could help a fellow trainer, or maybe you can find the help you’re looking for.

Have you bookmarked an especially useful training-related Web site that others should know about too? Send your suggestions for upcoming Web site reviews to Jamie Knotts at jknotts@wvu.edu or contact him at (800) 624-8301 or (304) 293-4191. Faxes may be sent to (304) 293-3161.
Training

**The 1997 ASTD Training & Performance Yearbook**

by John A. Woods and W. James Cortada, eds.

Developed by the American Society for Training and Development.

**Content:** This yearbook consists of six parts:
- Background for training and performance;
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**Use:** Trainers may use this book to stay current with developments in training and performance improvement. It provides an annual documentation of the most useful ideas, techniques, and case studies in the field of training and performance technology and serves as an updated reference to publications, Web sites, organizations, and other information.

ISBN #0-07-024535-5

Book, 541 pages–1997

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**Contact:** Director of Special Sales, McGraw-Hill, 11 West 19th St., New York, NY 10011, (614) 759-3663.

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Wastewater Operation and Maintenance Training Videos

by Kenneth Kerri. Sponsored by the Office of Water Programs, California State University.

**Content:** Actual wastewater collection crews have been used to film this set of six videos. Guardians of Health, the first video of the series, discusses the importance of inspection and testing. TV Stars illustrates closed circuit television inspections. Pipe Detectives shows various pipeline cleaning and maintenance methods, whereas Way Makers explains pipeline cleaning and chemical control. Flow Movers and Motor Specialists are about wastewater lift station operations.

**Use:** Each of the videos was developed to complement the current two-volume set of training manuals entitled *Operation and Maintenance of Wastewater Collection Systems*. Trainers would enjoy using these videos as audiovisual enhancements to a training session.

Videos/Set of six, 30 minutes each–1997

$100

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**Contact:** Kenneth Kerri, Office of Water Programs, CSU-Sacramento, 6000 J St., Sacramento, CA 95819-6025, (916) 278-6142.
Fax (916) 278-5959, or e-mail wateroffice@csus.edu. Web site, http://www.owp.csus.edu.

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NETCSC offers a new training resource

Coping with Varied Entry Level Skills: Tailoring for All Learners, an 18-page booklet published by Training Consultants, Inc., assists trainers in identifying entry-level skills and applying strategies to keep participants working at their potential.

Topics include assessing entry level skills, withholding final judgment, tailoring presentations and exercises, assigning pre-training and evening work, formal assessment, summary, alternative exercises and development worksheets, and a self evaluation.

To order this booklet, contact NETCSC at (800) 624-8301 or (304) 293-4191, and ask for Item #TRBKTR11. The cost is $15, plus shipping and handling.
Look for these articles and others in the next E-train...

Adults as learners, Part II

A review of computer-assisted training tools

RCAP and NETCSC: A partnership for small communities

“... it frightens me just a little that barbers require more job-related education than do water treatment operators.”

Larry Rader
Program Specialist
West Virginia Rural Water Association
Mountain State Water Line, Summer 1997

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