Texas On-Site Insights
Information about On-Site Wastewater Treatment Systems in Texas
Volume 7, Number 3, September 1998

Council Funds New Studies Exploring Subsurface Drip Irrigation, Microbial Pathogens; Fact Sheets

The Texas On-Site Wastewater Treatment Research Council (TOWTRC) approved two research studies and an educational project in May 1998. The research projects are led by Bruce Lesikar of the Texas A&M University (TAMU) Agricultural Engineering Department.

In one study, Lesikar will work with George Sabbagh, also of TAMU Agricultural Engineering, to investigate characteristics of soil media where subsurface drip irrigation is used to distribute residential wastewater. The researchers will examine five existing sites in which subsurface drip irrigation is now used in association with on-site wastewater systems. Sites that will be studied are located in various regions of Texas, including Houston, Weslaco, College Station, D'Hanis, and Stephenville. The goal is to determine changes in soil hydraulic conductivity in absorption fields as well as variations in soil characteristics near drip emitters that may result when on-site wastewater systems are used. In particular, Lesikar and the research team want to assess how subsurface drip irrigation systems used for on-site wastewater can be designed and maintained to avoid soil clogging.

In another investigation, Suresh Pillai of the TAMU Research and Extension Center at El Paso will lead this study. The goal is to explore issues related to the removal and fate of microbial pathogens from on-site systems. The goal of this study is to determine the survivability of Cryptosporidium, Giardia, Salmonella, and Shigella throughout on-site wastewater treatment and disposal systems. This includes measuring the extent to which these organisms are found in many individual system components, including septic tanks, aerobic units, sand filters and constructed wetlands. The researchers will attempt to determine if relationships can be established between indicator organisms (total coliform, fecal coliform, and coliphages) and the survival and retention of microbial pathogens. Finally, he will consider how seasonal climate variations influence the populations of these microorganisms.

Lesikar is also leading efforts to develop a series of 15 colorful fact sheets which will explain a variety of on-site wastewater issues in an easy-to-read manner. After individual fact sheets have been completed and approved, 30,000 copies of each fact sheet will be printed. So far, fact sheets describing septic tanks and soil absorption fields, evapotranspiration beds, constructed wetlands, and sand filters have been created and are

available from the Council WWW site (http://towtrc.tamu.edu) as Adobe Acrobat PDF files. In the future, fact sheets will be created to discuss subsurface drip irrigation, spray irrigation, effluent filters, aerobic treatment, low pressure dosing, gravel-less pipe, leaching chambers, disinfection systems, pump chambers, trickling filters, and mounds.

For details, contact TOWTRC Executive Secretary Warren Samuelson at (512) 239-4799 or wsamuels@tnrcc.state.tx.us, or Lesikar at (409) 845-7453 or b-lesikar@tamu.edu.

TEEX Publishes Schedule for Upcoming OSSF Training Courses

The Texas Engineering Extension Service (TEEX) has announced its on-site wastewater (OSSF) training schedule for the near future.

Courses offered by TEEX include the following dates and sites. The Installer I class will be taught October 6-7 in San Antonio, November 3-4 in Mesquite, December 8-9 in Abilene, and January 26-27 in Austin.

The Installer II course will be offered September 29-October 1 in Bryan, October 6-8 in Houston, October 13-15 in Mesquite, October 20-22 in Austin, October 27-29 in Amarillo, November 3-5 in Abilene, November 10-12 in San Antonio, November 17-19 in Bryan, December 1-3 in Longview, December 15-17 in Corpus Christi, January 12-14 in Houston, and January 19-21 in Bryan.

The Site Evaluator class will meet September 22-24 in Corpus Christi, September 29-October 1 in LaGrange, October 6-8 in Tyler, October 13-15 in Brownwood, October 20-22 in San Antonio, October 27-29 in Waco, November 10-12 in Mesquite, November 17-19 in Houston, December 8-10 in Abilene, December 15-17 in Bryan, and January 12-14 in Austin.

The Designated Representative class will be taught November 10-13 in Austin and January 26-29 Abilene.

The TEEX Public Sector recently published a new newsletter which contains information on the cost of these classes, who is eligible to participate, how to register, and other related information.

To obtain a copy of the newsletter or for more information, contact TEEX at (800) 252-2420 or (409) 845-6246 or e-mail OSSF program coordinator Gregory Lewis at psglewis@teexnet.tamu.edu. Information about TEEX's OSSF training programs is also available on the WWW at http://towtrc.tamu.edu.

Council Report Examines Economics of New Texas On-Site Rules

A new report from the Texas On-Site Wastewater Treatment Research Council compares the cost of complying with "old" and "new" regulations governing the installation of on-site wastewater systems in Texas. The report, titled "Cost Comparative Study of On-Site Sewage Facilities (OSSF) - The 1990 Texas Rules Versus the 1997 Texas Rules," was prepared by Charles Digges, Gene Thacker, and George Zapata of the Guadalupe

Wastewater Company in Kerrville, TX, which designs, installs, and maintains many on-site systems.

The origin of the project began soon after the new rules were adopted in 1997, when some policy makers and industry professionals expressed concerns that the regulations may make it more costly to install on-site systems. As a result, the Council issued a request for proposals to study the problem.

In the project, Digges gathered information on the cost of installing four different types of on-site systems - a standard septic tank and drainfield, low pressure dosing, aerobic units and evapotranspiration beds - in each of six geographic regions under both the old and new rules. First, Digges sent out 142 questionnaires to installers throughout Texas. Then, Thacker contacted roughly 40 individuals who are involved with installing and regulating on-site systems to get an idea of the actual costs. Finally, Digges and Zapata combined the survey data with considerations of how such site-specific environmental factors as soils and groundwater tables influenced which types of systems could be installed in each region. Using this information, as well as "hard" cost estimates of the material and labor needed for site specific situations, the study team estimated the cost of installing systems in each region which would meet the new code.

What does the report show? The most impressive finding is that Digges estimates the new regulations will likely result in a statewide cost savings of roughly $19 million per year. In general, Digges says, the research results suggest that there may often be a cost savings when installing conventional systems under the new rules. This is largely due to the fact that requirements for the size of the septic tank and the drainfield have been lessHomeowners may save roughly $980 when installing a conventional septic tank and drainfield system in areas with shallow groundwater tables and soil restrictive layers, because the new rules require less trench bottom separation distances (down from 4' in the old rules to 2' in the new rules). Other highlights of the report show that the new rules may lessen the cost of installing a conventional system in clay loam and silty loam soils by as much as $1,000, and that the cost of installing low-pressure dosing systems rises slightly in most areas (an average of roughly $260) because installers must now comply with the National Electrical Code. Meanwhile, the cost of installing evapotranspiration beds increased by an average of roughly $1,900 per system, although it should be noted that few systems of this type are commonly installed in Texas.

Digges believes another value of the report is that it contains useful information that may assist industry professionals as well as consumers. For example, the report includes tables which depict the cost of installing each of these technologies in individual regions.

"We think these numbers should be pretty much on-target and can guide homeowners as to what to expect, in general terms, when they look to install a system."

The report also summarizes the number and types of systems that were recently installed. For example, Digges' data show that most of the on-site wastewater systems installed in Texas in 1996 were conventional septic tanks and drainfields (59% or 20,647 systems), followed by aerobic units (15%), low-pressure dosing (7%), evapotranspiration beds (3%).

Digges also discovered that there was a good deal of confusion about how the old rules should be interpreted and implemented. As a result, many survey respondents mistakenly felt that the new rules represented a significant leap forward, both in terms of regulatory requirements as well as costs. Digges says, in reality this isn't really the case. "Often, we found that professionals in the field weren't aware of the old rules or sometimes chose not to follow them. This was especially true for such issues as how to properly conduct a percolation test and what constitutes proper backfilling. As a result, there was quite a jump when some people moved from not following all the old rules to complying with the new regulations."

The bottom line of the study, Digges says, is that his research confirms that the new regulations are fair and do not impose an economic burden on those in the industry or their customers.

NOTE: For details, contact Digges at (830) 895-1809. The report can be obtained from the Council by contacting Executive Secretary Warren Samuelson at (512) 239-4799. A detailed summary of the report, which includes a map of the regions and many tables, is on the Council World Wide Web site at http://towtrc.tamu.edu. For a full report go to http://towrc.tamu.edu/CharlieDigges/CharlieDigges.html.

TEEX Publishes New, Updated Versions of On-Site Wastewater Training Manuals

The Texas Engineering Extension Service (TEEX) recently published a series of four manuals which provide detailed information about on-site wastewater treatment and disposal systems as well as applicable state and federal regulations.

The manuals were developed by TEEX staff who cooperated with on-site wastewater program personnel of the Texas Natural Resource Conservation Commission (TNRCC). All the manuals in this series were published in 1997 or 1998. Titles include the following: On-Site Sewage Facilities (Installer I Training Course), On-Site Sewage Facilities (Installer II Course), On-Site Sewage Facilities (Designated Representative Course), and On-Site Sewage Facilities (Site Evaluator Course).

The cost for each manual is $50 plus shipping and handling. It should be noted that the manuals are intended to be used with the TEEX on-site wastewater training program and are distributed to individuals who register for and participate in those classes. Although the manuals can also be purchased separately by those who are not enrolled in TEEX courses, merely buying and reading a manual does not qualify individuals to take certification tests which TEEX administers for the TNRCC. Individuals still have to complete a TEEX training course to qualify for the testing.

For more information or to purchase a manual, contact Gregory Lewis of TEEX at (409) 845-6246 or psglewis@teexnet.tamu.edu.

Why Should the TNRCC Enforce On-Site Wastewater Rules?

By Richard Craig, Manager, Installer Certification Section, Compliance Support Division, On-Site Sewage Facilities (OSSF) Program, Texas Natural Resource Conservation Commission, Austin, TX

Why enforcement? This may sound like one of those very dumb questions. Everyone knows the reason for any enforcement system is to insure that people comply with the law or rules.

In a perfect world, enforcement would not be necessary. We would establish reasonable rules, and everyone would accept those rules and comply with them without any further instruction. Unfortunately, it doesn't work that way. Why do lots of people drive 75 miles per hour, or faster, on Texas' highways? Because they think they can do so and not get a ticket.

So, why is there an On-Site Sewage Facility (OSSF) Enforcement Program? Is it so that people will comply with the rules? Or, is it to define what people can do and still not get in trouble? I guess those are some of the hoped-for results. But, the objective of the Texas Natural Resource Conservation Commission (TNRCC) is not to force people to comply - it is to bring about voluntary compliance with the rules. Voluntary compliance is one of the TNRCC guiding principles, and that principle steers the enforcement philosophy of the OSSF Program.

Let's examine the voluntary compliance philosophy. First, we make the assumption that most people want to do what is right. The OSSF industry is not full of crooks. The industry is managed by hard-working professionals who want to make an honest living, satisfy customers, and keep the environment clean. Based on these assumptions, when a problem arises, our first approach is to try to resolve the issue - to make it right in accordance with the rules. If everyone does it right and requirements are satisfied, that is as far as it will go in the enforcement chain. If rules were violated, the TNRCC will send the violator a Letter of Reprimand, which points out the rules which were violated and encourages the person to refrain from future violations. The TNRCC would like all violations to be resolved in this manner. Then, there would be no need for a formal enforcement system.

Unfortunately, not all actions can be resolved this easily. There are some violations which, because of their nature, can not be resolved in this manner. Operating without the proper license or polluting the environment usually will not be resolved without going through some of the formal enforcement process. Also, there are times when the people involved may not want to stop activities which violate the rules or may want to contest the allegations. In keeping with our voluntary compliance philosophy, another opportunity is offered to resolve the issue. If it is resolved at that time, a letter of reprimand is written and sent and the enforcement action is stopped.

If it is unresolved at the meeting, the action will go to the next level of enforcement where an agreed order is prepared. Again, the person involved is given an opportunity to make things right. Are you starting to get the picture? At each step in the process, the violator is given the opportunity to correct things and halt the enforcement process. This is the principle of voluntary compliance in action.

Let me restate the concept - the TNRCC desires full voluntary compliance with the standing rules. With full voluntary compliance there would be no need for an enforcement program.

It is sad to report that, in the OSSF field, we have not yet arrived at full voluntary compliance. In fact, we have a long way to go. There is some cleaning up to be done. As a result, the TNRCC is taking measures to step up OSSF enforcement. Additional personnel will be utilized, and procedures are being established which will streamline the processing of enforcement actions. Even though our goal is voluntary enforcement, it is time for the industry to receive the message that non-compliance will not be tolerated. We will continue to push towards voluntary compliance, but TNRCC's mission of protecting human health and the environment must be met. As a result, the TNRCC will do everything it can to focus its resources on compliance of the current rules.

I don't want to leave this subject on a negative note, so I will close with some positive things. First, for the most part, the new rules are widely accepted throughout the state. They seem to be working and compliance doesn't appear to be too difficult. Next, I am glad to report the majority of people in the industry do want to comply and are making a sincere effort to do so. Every day the TNRCC's OSSF programs receive many calls at both the central and regional offices to clarify program requirements. Also, I am glad to report that all of our certification courses have been in place for more than a year and are being taught. This has led to a better understanding of the rules.

Lastly, the best news of all is that the OSSF industry is starting to take itself seriously and is becoming more professional. As a result, people in the industry are now cleaning up some of their compliance problems. This, in time, will reduce the need for enforcement. Unfortunately, we will probably always have a few folks who don't get the message, which will require us to keep some enforcement in place. Meanwhile, as we continue to proceed, I am confident that we will have a cleaner Texas. We who are involved in OSSF issues will be proud to have been a part of keeping Texas clean.

NOTE: Craig can be contacted at (512) 239-6328 or rcraig@tnrcc.state.tx.us .

A&M-Commerce Researchers Evaluate Use, Performance, of Recirculating Sand Filters

Researchers at Texas A&M University-Commerce (A&M-Commerce) have recently begun a research project to evaluate the performance of recirculating sand filters as an on-site wastewater treatment technology. The project is led by John Harrison of the Agricultural Sciences Department. The research is funded by the Houston Livestock Show and Rodeo.

Harrison says the study is needed because many sites near Commerce (roughly 60 miles east of Dallas) are not suitable for conventional septic tanks and drainfields. The main obstacles that prevent the use of conventional systems are heavy clay soils and shallow, perched, groundwater tables. In addition, high levels of fecal coliform bacteria have been found in many of the region's waters, creating a heightened awareness of the need for improved wastewater treatment. Although aerobic systems are an alternative technology that works well here, Harrison says many homeowners are looking for a system that is easier and less expensive to maintain. He feels sand filters may be the answer.

"I think recirculating sand filters have the potential to be a viable, reliable, cost-effective system throughout much of this region," Harrison says, "but we need to test this technology in the field and demonstrate that it works. We hope our project can provide some needed performance data that people in this region can use."

In the first phase of the project, which is now underway, Harrison is surveying many residents in the region to determine what kinds of systems they now use, if they are experiencing operating problems, and which types of systems they would consider using in the future.

In the near future, the researchers hope to install as many as four systems at individual residences near Commerce. In this system, wastewaters will first flow to a 1,000-gallon septic or "trash" tank and into a 500-gallon pump tank. Filtered wastewaters will be dosed roughly every 30 minutes from the pump tank to a recirculating sand filter, which will sit on top of a gravel layer. Plastic pipe at the bottom of the sand and gravel filter will collect wastewaters which drained from the sand filter and will divert them to a final treatment tank. From there, roughly 75% of the effluents will be routed back to the pump tank and reapplied to the sand filter for further treatment. The remaining 25% of the effluents will be disposed of using subsurface drip irrigation.

Harrison plans to sample the system each month and test how individual components of the system influence water quality. Some of the water quality parameters to be evaluated include various forms of nitrogen, biochemical oxygen demand, pH, and chlorides. In addition, samples will be taken quarterly for phosphorus and volatile organic chemicals.

"We think this system has the potential to perform well, because we will apply the effluent in doses," Harrison says. "Many experts believe that you need to apply effluents often enough to provide both water and nutrients to the sand filter, in order to keep the microorganisms which live on the sand filter alive. The microorganisms perform the lion's share of treatment in these systems." Harrison says this technology has been shown to be very effective in reducing the levels of fecal coliform, viruses, organic matter, and nitrogen compounds from on-site systems.

In addition to these field studies, Haydn "Chip" Fox of the A&M - Commerce Geosciences Department will investigate hydrological issues associated with the performance of these systems in a university field laboratory sited a few miles south of Commerce. The field lab is instrumented so that the flow of water, and water quality, can be traced as it travels from the surface and into nearby aquifers. "We need to determine how well recirculating sand filters remove nitrogen from on-site systems and to assess how these systems can perform where there are shallow aquifers. The hydrologic field testing will provide data to answer some of these questions."

Ultimately, Harrison hopes to expand this research and perform field evaluations of recirculating sand filters in many regions of Texas. He feels there are a number of reasons homeowners may embrace this technology, including competitive installation costs (about the same price as aerobic systems), low operating expenses, and the reliability of these systems. Although homeowners will be the largest group that may want to use these systems, Harrison believes recirculating sand filters may be a reliable on-site wastewater treatment system for small businesses and industries as well as restaurants.

For more information, contact Harrison at john_harrison@tamu-commerce.edu .or (903) 886-5354.

TWRI Implements "SepticTalk" Internet List Server to Increase Communication About On-Site Issues

The Texas Water Resources Institute (TWRI) recently initiated a new "list server" for people who want to discuss issues associated with on-site wastewater issues through the Internet. The list server, "TWRI SepticTalk" is a mailing list that individuals can subscribe to so that they can automatically receive e-mail messages.

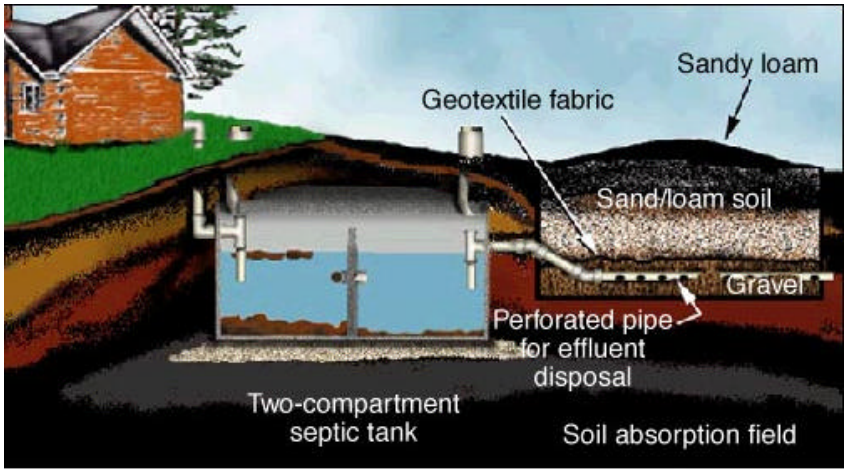
TWRI Information Specialist Ric Jensen and student worker Jonathan Jones created SepticTalk in June, 1998. So far, roughly 20 individuals have subscribed to this service. The purpose of SepticTalk, Jensen explains, is to supplement the work TWRI currently performs for the Texas On-Site Wastewater Treatment Research Council. Currently, TWRI publishes the "Texas On-Site Insights" newsletter and maintains the Council World Wide Web site, http://towtrc.tamu.edu..

"We hope that SepticTalk provides a rapid method the Council can use to communicate important information to people who want to learn about or participate in Council programs and activities," Jensen says. Other uses of SepticTalk are to provide updates about regulatory information and to make people aware of supplemental resources and opportunities. "The ultimate goal of SepticTalk," Jensen explains, "is to create a dialog in which people who are interested in Texas on-site wastewater issues can ask questions, make comments, and discuss issues with one another."

Typically, only two or three messages are distributed through SepticTalk each day. Individuals can choose to receive separate messages or can subscribe to a digest version in which they are only sent one mailing per day. Messages sent out via SepticTalk are also archived on the Council WWW site where they can be viewed.

For more information or to subscribe to SepticTalk, contact Jensen at (409) 845-8571 or rjensen@tamu.edu.

New TAEX Fact Sheets About Constructed Wetlands, Sand Filters, Available from TOWTRC WWW Site



Two new fact sheets have been produced by the Texas Agricultural Extension Service (TAEX) that discuss the basics of on-site wastewater systems. The new fact sheets, "Constructed Wetlands" and "Sand Filters," were both written by Bruce Lesikar of the Texas A&M University Agricultural Engineering Department and TAEX.

The constructed wetlands fact sheet (TAEX publication number E-4, 6-98) discusses the components of these systems, how wastewater is treated, factors that should guide system design, and considerations for operations and maintenance. The sand filters fact sheet (TAEX publication number E-3, 6-98) discusses general principles about how sand filters work and describes intermittent and recirculating sand filters. Guidelines for operations and maintenance and design are also included.

These fact sheets, as well as previous publications dealing with septic tanks and evapotranspiration beds, can be downloaded from the Texas On-Site Wastewater Treatment Research Council (TOWTRC) WWW site at http://towtrc.tamu.edu. The fact sheets are in the Adobe Acrobat format and you will need the Adobe Acrobat Reader to view them. For details on the subject matter of the fact sheets, contact Lesikar at (409) 845-7453 or b-lesikar@tamu.edu.

New TAES WWW Site Contains Diagrams of On-Site Systems

A new World Wide Web (WWW) site has been created by scientists at the Blackland Research Center in Temple, TX which contains diagrams of many on-site wastewater systems. The WWW site, "the Texas A&M Septic System Home Page," is located at http://waterhome.tamu.edu/septic. It was created by Steve Dagitz and Dennis Hoffman of the Texas Agricultural Experiment Station. The site contains schematic drawings which show the typical layout of conventional systems, one- and two-compartment septic tanks, aerobic units, constructed wetlands, evapotranspiration beds, gravel-less pipe, low pressure dosing, sand filters, septic tank effluent pumps, and subsurface drip irrigation. The WWW site also describes the Nolan Creek project, which is funded by the U.S. Environmental Protection Agency and the Texas State Soil and Water Conservation Board. Hoffman and other TAES scientists are demonstrating innovative approaches to treating wastewater on-site throughout Central Texas. The site also contains a list of training courses offered by the Texas Agricultural Extension Service. For details, contact Hoffman at (817) 770-6602 or hoffman@brcsun0.tamu.edu.

NOWRA Annual Conference Meets Oct. 22-25 in KY

The National On-Site Wastewater Recycling Association (NOWRA) will hold its annual meeting October 22-25 at Fort Mitchell, KY (near Cincinnati, OH). The theme of the meeting is "Onsite Treatment: First Choice for Protecting the Environment." Sessions will focus on a variety of meeting future needs; evaluation of product performance; custom installations in small communities; centralized management of decentralized systems; municipal onsite wastewater management planning; and many other issues.

A copy of the full program for the conference as well as other meeting information can be obtained from the NOWRA World Wide Web site at http://www.nowra.org, or by calling them at (847) 559-9233.

TEEX Tackles a Huge Challenge of Implementing, Managing, Statewide On-Site Training Program

By Ric Jensen, Editor, "Texas On-Site Insights"

In the past year - ever since the new on-site wastewater regulations were approved by the Texas Natural Resource Conservation Commission (TNRCC) - the training programs for professionals and regulators in this industry has changed substantially. This article summarizes the successes of the enhanced training program and points out possible challenges.

Background Information

Gregory Lewis supervises the on-site wastewater training (OSSF) program for the Texas Engineering Extension Service (TEEX), which is the organization that teaches courses individuals need for licensing and certification by the TNRCC. He says the task of

training the sizable number of people who want to enroll in these courses is a big one, but that progress is being made.

According to Lewis, more than 1,783 individuals have enrolled in the Installer I program and roughly 1,831 persons have participated in the Installer II class. In addition, roughly 446 people have taken the designated representative course, while more than 606 individuals have enrolled in classes to become site evaluators.

To meet this challenge, TEEX has beefed up the number of instructors it uses. For example, while Paul Morris of TEEX has taught Installer I classes for a number of years and continues to teach on a full-time basis, there are a number of new part-time instructors including Bob Fischer of TEEX, Bruce Lesikar of the Texas Agricultural Extension Service, and Bobby Doran, Clark Benson, and Rick Conlin of the private sector. Lewis notes that the instructors have traveled over most of Texas to teach classes at 26 locations, including such geographically diverse sites as Tyler, Amarillo, El Paso, Lubbock, College Station and Houston, and many points in between.

Some of the changes are obvious. For example, instead of the "old" Installer I class (which used to be taught before the rules were changed), new courses have been created for the Installer II, Designated Representative, and Site Evaluator classifications. A new manual has been published for each class. These courses were created by a team of TEEX professionals who cooperated closely with TNRCC staff. Additional input was provided by individuals in the private sector.

The result, according to Lewis, has largely been positive. For example, TEEX records show that roughly 85% of those people who took the Installer I course passed, followed by Installer II (87% pass rate), Designated Representative (81%), and Site Evaluator (96%). "We feel good about the progress we've been able to make, largely because of the great cooperation we have received from TNRCC staff," Lewis says. "Keep in mind that, until last year, three of these four classes did not even exist. Imagine the challenge of trying to create these courses, find and train instructors for them, market them, and administer them. This process has not been easy, and we can't please everyone, but we hope these courses are meeting the expectations of the people taking the classes as well as the TNRCC staff."

Although each class is unique, there are some common threads that run throughout the program, Lewis says. "First, we make sure that the TNRCC program requirements are

clearly explained and that our courses present information that is consistent with the new TNRCC rules. Secondly, whenever possible, we try to include some hands-on experiences. The best way to get the hands-on training is to take classes at one the Texas On-Site Wastewater Treatment Research Council's training centers at Bryan, Weslaco or El Paso." Finally, Lewis notes that the classes try to develop some problem-solving skills in participants through the use of simple mathematical exercises.

The classes also include an evaluation component. For example, applicants who fail a test will receive notification from TEEX about how well they correctly answered questions regarding different topics that were covered in the examination, including rules and regulations, mathematics, construction methods, and wastewater characteristics. However, the applicants will not be informed of which specific questions were answered incorrectly.

Challenges in Administering the Program

Although he's been pleased with the program's success, Lewis says he wishes a number of program areas could be improved.

First, Lewis encourages individuals wishing to take these classes to sign up as soon as possible because the demand is high. Otherwise, they may not be able to get the training and licensing they need as soon as they desire. To help solve this problem, Lewis is working to determine if more classes can be offered at additional locations.

Second, Lewis encourages individuals who may have failed an examination to make sure they apply for a retest soon after they have taken a course. He notes that the first retest is free, and two other retests can be taken for a relatively small fee, if individuals retake these exams within a year of having failed the test for the first time.

Third, Lewis cautions that the role of TEEX is only to offer and administer the tests, but it cannot be in the position of interpreting how the TNRCC training regulations are implemented. For example, Lewis notes that he gets a good number of phone calls from experienced installers who wonder why they cannot apply for the Installer I class and exam without first having been an apprentice.

Finally, Lewis notes that initially there were a number of complaints from professional engineers and others who wondered why they would have to take the site evaluators course, despite their extensive training. However, Lewis adds that since the program has been up and running many engineers have contacted him and said they were pleasantly surprised at how much they learned, especially as it pertains to the diversity of soils and their function in on-site wastewater systems. In addition, evaluations of participants in all classes indicate people are, in general, well pleased with the classes.

Summary

Lewis notes that TEEX is now considering the development of continuing education classes for on-site wastewater professionals and regulators, in addition to the certification and licensing courses. He also notes that the manuals developed for each class can be purchased separately, although he warns that simply buying a manual will not allow you to take the certification test - people still need to participate in the class.

For details on the TEEX training program, contact Lewis at (409) 845-6246 or psglewis@teexnet.tamu.edu. For more information on the TNRCC OSSF program, contact Warren Samuelson at (512) 239-4799 or wsamuels@tnrcc.state.tx.us.