

GEORGIA ENVIRONMENTALIST

The official publication of the Georgia Environmental Health Association

Volume 26, Issue 1

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The **Georgia Environmental Health Association, Inc.** is a nonprofit organization incorporated under the laws of Georgia, and the recognized Georgia affiliate of the National Environmental Health Association. Dues are \$25.00 per year payable July 1 through June 30.

Cover art: Travis Mitchell, 13, lives in Lawrenceville and attends Five Forks Middle School. His interests include reading, video games, art, music, hockey and playing the clarinet. Travis would like to become a veterinarian.

Cover design: Jane Perry

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MESSAGE FROM THE GEHA PRESIDENT

Melba Bridges, R.E.H.S.

The Annual Education Conference will be held this year at Callaway Gardens. I always enjoy visiting this beautiful area. Not far from Callaway is the small town of Warm Springs. Warm Springs is a reminder to all of us who work in professions that prevent disease about the battle against polio, a crippling disease that 50 years ago struck fear in the hearts of many families. It was not known how it spread. No one could advise you on how to avoid being exposed to it. It affected mostly children and young adults. Many who contracted it did not survive. Those who did survive were often left paralyzed.

Warm Springs was a rehabilitation center for many of the victims of polio. It became widely known after former President Franklin D. Roosevelt visited the center and believed that the warm, soothing waters from the natural spring helped his paralyzed legs.

I remember visiting Warm Spring as a 6-year-old child. My Mother's younger sister contracted polio in the epidemic of the early 1950's. She spent a year hospitalized at Grady and Emory Hospitals confined to an iron lung. My family visited every weekend, bringing her 2 daughters, both under 2 years old, with us. No one under 12 was permitted in the hospital. My Daddy would park our car on a side street near the window to her room. My sister and I would crawl up on the roof and then be handed the two babies to hold up where their mother could see them. All she was able to do was to turn her head, but she could get a glimpse of them. Only after I had children myself could I imagine her agony at not being able to hold her children in her arms.

My Aunt fortunately survived polio. She was transferred to Warm Springs for rehabilitation. I now assume that the happy and hopeful feelings I noticed came from the realization that her life was then out of danger. Although she was never able to walk again, she led a very productive life and lived long enough to see her first grandchild born.

I also remember the joy felt by everyone, when not long after this, the first polio vaccine was developed. The battle against polio was so successful that the disease is no longer a threat in this country. Several years ago when teaching a health class to middle school students, I was astounded that not one of the students had even heard of polio.

All of us who are members of GEHA work to prevent disease on both a personal and professional level. GEHA is an organization that assists us with this task. I hope that this year's conference will provide everyone who attends with the knowledge needed and renewed motivation to continue this task.

Melba

We encourage you to write to us! Send letters to editor@geha-online.org.

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Questions about GEHA	478.892.8343
Membership	478.892.8343
Georgia Board of Registered Environmental Health Professionals	478.892.8343

CALL FOR ARTICLES

The Georgia Environmental Health Association, Inc. (GEHA) invites environmental health professionals, educators, researchers, and other persons or entities to submit manuscripts for possible publication in the *Georgia Environmentalist*. Original technical papers, review articles or reports on experiences, research, endeavors, management techniques, or current issues are considered. Guest commentaries, letters to the editor, cover art, and other items of interest to the readership are also encouraged. Authors receive no monetary compensation for their contributions. All material is subject to peer review.

Submit articles and letters for publication to: editor@geha-online.org, or call (404)657-6511 for information. If you would like to be added to the mailing list for this publication, you must become a member of GEHA. Please complete the membership form on page 35, or call GEHA Membership at 478.892.8343.

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The **GEORGIA ENVIRONMENTAL HEALTH ASSOCIATION, INC.** promotes and supports the efforts of, and provides training and registration for, individuals working in environmental health fields in government, academia, industry and business. The field of ENVIRONMENTAL HEALTH developed decades ago by successfully using the epidemiologic model for the sole purpose of preventing disease. Today, environmental concerns are becoming more prevalent among our citizens and, in Georgia; GEHA members are leaders in the field of ENVIRONMENTAL HEALTH.

**GEORGIA DEPARTMENT OF HUMAN RESOURCES
DIVISION OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH**

Inspecting and permitting on-site sewage management systems, food service establishments, tourist accommodations, and public swimming pools - childhood lead poisoning prevention - rabies and vector control - injury prevention - hazardous materials exposure investigations - epidemiologic investigations - indoor air quality - nuisance complaints - individual and non-public water systems - Georgia healthy farmers

**GEORGIA DEPARTMENT OF AGRICULTURE
CONSUMER PROTECTION DIVISION**

Inspecting and permitting food products including meat, eggs and milk in grocery stores, bakeries, food processing plants, bottled water and soft drink bottling plants, farmers markets and meat and seafood dealers - inspecting commercial scales and fuel pumps for accuracy - licensing and monitoring commercial nurseries, lawn care companies, exterminators, pesticides, pet and animal industries - testing dairy cattle and equipment - assuring proper formulation of fertilizers, pesticides, feeds and fuels - enforcing fair standards in the purchase of grain and livestock - monitoring the health of livestock in the state as well as those imported into Georgia

**UNIVERSITY OF GEORGIA
SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES**

The college of agricultural and environmental sciences promotes economic viability and global competitiveness of Georgia agriculture, fosters environmental stewardship and wise management of natural resources, and ensures the production and distribution of safe food, feed and fiber.

Mission:

- To provide baccalaureate and graduate education in agricultural and environmental sciences that promotes excellence in student achievement and prepares students to effectively contribute and excel in a changing world;
- To inquire into the nature of agriculture and the environment, through the discovery, interpretation and creative application of knowledge;
- To serve the public through timely education of producers, consumers and agribusiness using relevant, accurate and unbiased research-based information, and
- To improve the quality of life through youth development and life-long education.

BUSINESS AND INDUSTRY

Georgia business and industry support and encourage a wide variety of environmental leadership initiatives. They share a commitment to the environment based on the principle that they shall conduct business in ways that protect and preserve our environment. Furthermore, they promote a philosophy of shared responsibility, where all participants in the supply chain accept responsibility for the environmental impacts occurring in their specific part of the chain. Working together with suppliers, customers, regulators and other environmental partners, Georgia business and industry achieve an effective balance between responsible environmental and economic stewardship.

GEORGIA BOARD OF REGISTERED ENVIRONMENTAL HEALTH PROFESSIONALS

ENVIRONMENTAL HEALTH SPECIALIST/SANITARIAN REGISTRATION PROGRAM

Those desiring to be registered as an environmental health specialist/sanitarian in Georgia shall make a written request to the Board to take the environmental health specialist/sanitarian examination. The application shall:

Qualify that the applicant will possess, within 30 days after the examination and as certified by the head or Dean of the applicant's college or university, or already possesses, a degree from a four-year accredited college or university with a minimum of 45 quarter hours/30 semester hours plus one algebra or higher level math class, with exception that those with at least four years experience as of April 2002 may qualify with 40 quarter hours/27 semester hours of science.

If you believe you are qualified, the first step toward becoming registered is to request an application from the GBREHP address listed below. Examinations are given each July in conjunction with the GEHA Annual Education Conference and at other times and locations under the supervision of an approved proctor. An admission letter will be sent prior to the exam date. Registration will depend upon the final grade attained on the examination and evaluation of the applicant's experience.

Top 3 Reasons To Be A Registered Environmental Health Professional

1. Professional credentials are one way of demonstrating your earned expertise and validating your credibility. It is a way of telling your clientele that your training and experience have enabled you to answer their questions and to improve their safety. In a time of continuous budget-cutting, it is important for our clientele to know that you have the broad-base expertise important to community and individual health and safety.
2. Professional credentials are a way of expressing your commitment to achieving your personal best for the clientele you serve. Credentials proclaim that you care, that you are on the leading edge of your profession and that you endeavor to stay current on emerging issues in environmental health through continuing education.
3. The Georgia Board of Registered Environmental Health Professionals is a growing, mentoring body. It offers the environmental health professional opportunities for continuing education, responsible leadership, and job growth. Credentials make you more marketable, affording better flexibility, mobility and job security. Position upgrades for environmental health professionals are slowly being implemented throughout the state, partially as a result of the work of this Board. Getting the credential is just the first step. We have a lot of work to do, and we need every environmental health professional's participation to make environmental health in Georgia the best it can be.

Contact us and join the team!

The Georgia Board of Registered Environmental Health Professionals

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INDOOR AIR QUALITY: Questions About Molds?



By Maurice Redmond, MA, REHS
and Brad Wiggins, MSPH

In recent years, indoor air quality (IAQ) has become a major concern among homeowners and tenants. Molds, in particular, have received a great deal of media attention. Consequently, molds are the topic of the vast majority of indoor air quality questions posed to us in the field of Environmental Health. We do not conduct testing or inspections at the homes or facilities of concerned callers; however, we can provide them with basic information and resources to help assist them in solving IAQ problems.

What is indoor air quality (IAQ)? Indoor Air Quality is simply the condition of air inside of a building. The quality of air can be affected by many things: mold spores, asbestos, radon, dust mites, pollen, animal dander, secondhand smoke, lead, formaldehyde and other volatile organic chemicals (VOCs).

What does mold have to do with IAQ? Molds are organisms that use moisture and building materials in your home as food. In order to reproduce, molds spread microscopic spores into the air, just as plants spread pollen. Spores can be inhaled and cause respiratory and/or allergic problems in some individuals.

What are “toxic molds”? “Toxic molds” are molds that produce chemicals that can actually be harmful to humans under certain conditions. The chemical can adhere to the mold spores. The actual amount of the chemical required to cause a toxic affect from exposure through inhalation of indoor air has not been established by research. As with any mold, certain individuals will be more sensitive than others. *Stachybot-*

rys (pronounced stacky-ba-tris) is the most commonly identified “toxic mold” (see information below)..

Are all molds toxic? No. However, any mold in your home should be considered an unwanted mold. They all produce spores, which can lead to allergic reactions in some individuals, and mold growth can compromise the structural integrity of a building. Removal of mold is always recommended.

What advice should I give a homeowner who is interested in testing mold? Testing mold is generally not recommended. Test results can be confusing and may not give a clear answer. There is no current indoor air standard for mold spores. Concerned callers should be encouraged to eliminate all molds in their homes.

The homeowner insists on having the mold tested. Who do we send them to? A laboratory that offers mold testing should be accredited by the American Industrial Hygiene Association’s (AIHA) Environmental Microbiology Laboratory Accreditation Program (EMLAP). They can look in the phone directory under Environmental Laboratory, or on the Internet at www.aiha.org, for accredited laboratories and testing companies.

If mold growth is significant and items are valuable or important, you may wish to consult a restoration/water damage/remediation expert. If an area is greater than 10 square feet, professional assistance is suggested.

Stachybotrys chartarum (*Stachybotrys atra*), a slimy, greenish-black mold, grows on moisture-laden materials that contain cellulose, such as wood, paper, drywall, and other similar products. It does not grow on tile or cement. Exposure does not always present a health problem; however some people are sensitive to molds. These people may experience symptoms such as nasal stuffiness, eye irritation, or wheezing when exposed to this and other molds. Some people may have more severe reactions including fever and shortness of breath. People with chronic illnesses, such as obstructive lung disease, may develop infections in their lungs. The Centers for Disease Control and Prevention does not recommend taking different precautions with *Stachybotrys chartarum* than with other molds.

Source: www.cdc.gov

How do you eliminate mold and keep it from reoccurring? Mold needs moisture to live and reproduce. Therefore, one should alleviate any moisture problems in a building or residence. Moisture is generally caused by water leaks or condensation from poor ventilation. Once the moisture is removed, the mold can be wiped from hard surfaces with water and detergent. Cleaning methods will vary depending on the surface to be cleaned. In more extreme cases, the actual surface the mold is growing on may have to be removed and replaced. For large areas, a private company may be hired to remediate the mold. After removing the moisture and mold, the area should be periodically checked for reoccurring growth. If mold reappears, a moisture problem is still present.

How do I protect myself when cleaning molds? Always wear rubber gloves, goggles, and a dust filter mask (rated N-95) when removing molds. N-95 rated respiratory masks are fairly inexpensive and available at most hardware stores.

Where do I refer a homeowner who has a repeating mold or ventilation problem? Look under fire and water damage, restoration, mold or moisture control or heating ventilation and cooling (HVAC) contractors in the local phone directory. An Internet search using those key words would be another option.

MOLD CLEANUP METHODS FOR CLEAN WATER DAMAGE

1. Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dry). Steam cleaning may be an alternative for carpets and some upholstered furniture.
2. Damp-wipe surfaces with plain water or water and detergent solution (except wood -- use wood floor cleaner); scrub as needed.
3. High-efficiency particulate air (HEPA) vacuum when material is thoroughly dry. Dispose of the contents of the vacuum in well-sealed plastic bags.
4. Discard water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste. HEPA vacuum area again after it is dry.

Source: U.S. Environmental Protection Agency, *Mold Remediation in Schools and Commercial Buildings*, www.epa.gov/iaq/molds/mold_remediation.

MORE INFORMATION ABOUT IAQ

For more information and downloadable manuals about IAQ and molds, visit the U.S. Environmental Protection Agency Indoor Air Quality website at www.epa.gov/iaq
Hard copies of these manuals are available by calling the Information Clearinghouse at 800.438.4318

Other Resources

Centers for Disease Control and Prevention

National Center for Environmental Health
"Questions and Answers on Stachybotrys chartarum and other molds."

www.cdc.gov/nceh/airpollution/mold/stachy

Certified Laboratories

American Industrial Hygiene Association
www.aiha.org/laboratoryservices/html/emlap
703.849.8888

Georgia Department of Community Affairs

"Questions Frequently Asked by Tenants and Landlords"

www.dca.state.ga.us/housing/landlord/contents

Georgia Landlord—Tenant Law Hotline

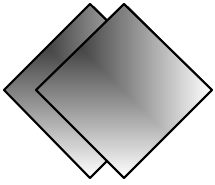
800.369.4706

U.S. Environmental Protection Agency

www.epa.gov/iaq/molds/moldresources

"Mold Remediation in Schools and Commercial Buildings"

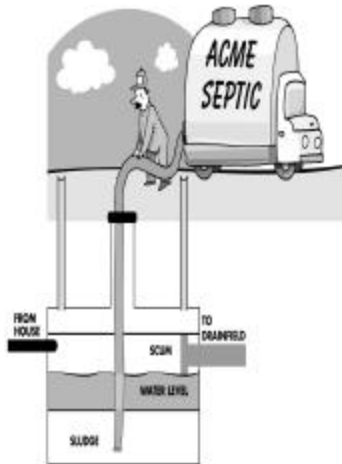
www.epa.gov/iaq/molds/mold_remediation



Educating Your Community about Septic System Maintenance and Care

By Tina Pagan

A septic system is an investment that requires routine maintenance and care. However, after a few years, a system that is not maintained can malfunction and pose a health threat by contaminating drinking water supplies and negatively impacting the environment with untreated human waste.



There are many reasons a septic system may not be working properly. Commonly, a septic system that has not been maintained, may have a series of issues to address, such as, trees or shrubs closer than 50 feet that clog the drainfield with roots. The same system may need to be pumped more often than the suggested three to five years if the septic system owner is unaware of household practices that harm the helpful bacteria in the system. It is important that homeowners understand their septic systems, evaluate its condition on a regular basis, and maintain the septic tank and drainfield to prevent damage and costly repairs.

Protecting Your Water and Septic System is a new tool designed by the University of Georgia to increase awareness and promote routine maintenance of septic systems. It is an easy to follow, well illustrated, four-page publication demonstrating proper care of the system. What makes this tool different is that it contains a self-assessment that a homeowner can conduct on a routine basis. By answering a series of questions, a homeowner can identify potential problems with the septic system.

If the homeowner were to select a “high” risk statement, he/she would be alerted to a potential problem. To address a problem indicated by the assessment, the publication provides solutions to address these concerns and to improve the septic system. Also, it provides additional contacts and resources.

The ultimate goal of the publication is to involve homeowners in caring for their septic system and protecting their investment and health. The environmental health professional can benefit from the use of the publication. You may wish to keep a few in your office to send out with your card to homeowners that call you with questions. Also, you may wish



to distribute it to every new homeowner purchasing a home with a septic system. By no means does this publication substitute for a trained professional, but it can help to educate

and direct homeowners with the “right” questions to ask.

To request copies of *Protecting Your Water and Septic System*, contact Jorge Atiles, Family and Consumer Sciences Department, University of Georgia, at 706.542.8860 or email: jatiles@fcs.uga.edu. To view the publication, visit www.fcs.uga.edu/pubs/PDF/HACE-E-47.pdf.

*Tina Pagan is a Program Specialist with The University of Georgia, College of Agricultural and Environmental Sciences. She is the state coordinator of Georgia Farm*A*Syst, a program designed to assist farmers and rural resident in identifying potential sources of pollution, providing information on corrective actions, and ultimately encouraging them to address the concerns.*



The Housing Education Program offers eleven new circulars to teach Georgians how to reduce exposure to environmental contaminants in the home, enable consumers to acquire and maintain affordable housing, and the most efficient ways to manage household demands on natural resources.

The *Household Water Quality Series* can be found online at www.fcs.uga.edu/extension/house_pubs.php and is also available in Spanish.

- *Coliform Bacteria in Your Water*
 - *Corrosive or Scaling Water*
- *Disinfecting Your Well Water: Shock Chlorination*
 - *Home Water Quality and Treatment*
 - *Hydrogen Sulfide and Sulfate*
 - *Iron and Manganese*
 - *Lead and Copper*
 - *Nitrite in Water*
- *Pesticides, Solvents, and Petroleum Products*
 - *Protecting Your Well and Wellhead*
 - *Testing for Water Quality*

LAND USE PROGRAM WEBSITE

Georgia Department of Human Resources, Division of Public Health, Environmental Health Section

The **Land Use Program** has recently updated its website, and you can now find helpful information pertaining to:

- Program Responsibilities
- Rules and Regulations for On-Site Sewage Management Systems
- List of Certified Companies and Approved Products
- A Homeowner's Guide to Septic Tank Care and Maintenance
- Upcoming CEU Classes
- Non-Public Drinking Water Documents
- Committees:
 - Technical Review Committee (TRC)
 - Certification Review Committee (CRC)
 - Soil Classifiers Certification Advisory Committee (SCCAC)

The **Land Use Program** Mission: minimize health problems related to untreated human sewage:

- Regulation and inspection of more than 47,000 new on-site sewage management systems installed annually.
- Investigation and inspection of over 9,000 repairs made annually to improperly functioning on-site sewage management systems.
- Education, training, and certification for environmentalists, septic tank installers, pumpers, soil scientists, geologists, and engineers involved in installing, maintaining, and repairing on-site sewage management systems.

<http://health.state.ga.us/programs/envservices/landuse.shtml>

This same information can be accessed through GEHA's website: www.geha-online.org

FEATURED INTERVIEW

Sonny Perdue, Governor of Georgia



Sonny Perdue has proudly served his local community, as well as Middle Georgia, his state and the nation for his entire adult life. He has been a businessman, community leader, Sunday School teacher, State Senator, Majority Leader and President Pro Tempore of the Georgia State Senate, as well as an officer in the United States Air Force.

As a State Senator, Governor Perdue was often praised for tackling issues when no one else had the courage to do so, and for his ability to grasp the nuances of complex problems. He is recognized as a leading authority on numerous issues including agriculture, transportation, education, emerging technologies and economic development.

GEHA: *What are your favorite things about Georgia?*

Governor Perdue: I love Georgia's geographic diversity. As a pilot, I have had the opportunity to fly all across the state. I see the beauty from above. We have scenic mountains, a beautiful coastline, and acre upon acre of farmland and forest. And the folks in each area are just as unique and wonderful as their surroundings. I believe that Georgia's diversity has been a driving factor for our tremendous growth and prosperity. Who wouldn't want to live here?

GEHA: *What do you think will be the biggest environmental issue in Georgia over the next ten years?*

Governor Perdue: The unprecedented growth in Georgia has been a blessing, but it also pushes water to the forefront as a major issue. Providing our citizens with clean, healthy drinking water, while balancing the needs of agriculture and business is a difficult task. We must also take great care to maintain the natural environments of our many lakes, rivers, streams and wetlands.

I recently held a series of stakeholder meetings to get input from the public on water issues. I received a tremendous amount of valuable information that has aided me in the ongoing Tri-State water negotiations with the governors of Alabama and Florida.

GEHA: *What can we, as Environmental Health professionals, do to improve Georgia's environment?*

Governor Perdue: There are many specific policies that will help improve Georgia's environment over the next few years, but I want to encourage Environmental Health professionals to remain vigilant in your advocacy. I am a true believer in our representative process, and keeping public servants and the citizens of the state informed on the issues is critical.

GEHA: *What can other Georgia citizens do to help improve Georgia's environment?*

Governor Perdue: My father was a lifelong farmer. He taught me from a young age that if you took care of the land, then the land would take care of you. In other words, he taught me the enormous value of stewardship and leaving something better than you found it. We should all be good stewards because there is another generation coming up behind us that deserves the best. I have two precious granddaughters that will inherit the Georgia we leave them.

GEHA: *Who have been the major influences in your life?*

Governor Perdue: There are a lot of people in business and politics that have impacted my leadership style, but the lasting influence comes from my family. My mother and father taught me the values that guide my decisions.

My wonderful wife Mary has been steady as a rock throughout our marriage and gives me the love and support that helps keep me centered. And my children and grandchildren inspire me to go to work everyday and do what's best for the future of our state.

GEHA: *What is most rewarding about your job?*

Governor Perdue: Everyday I go to work and make decisions that can bring some degree of positive change to a family in Georgia. That's really what public service is all about. I am fortunate to be surrounded by a group of talented individuals that understand the importance of service, and we all feel rewarded when we do the right thing for Georgia.

GEHA: *What made you interested in pursuing a career in politics?*

Governor Perdue: Early in my life, I never really thought about running for office. However, in 1980, I was asked to serve on the Houston County Planning and Zoning Board. Planning and Zoning isn't exactly a launching pad for political careers, but my leadership style caught the attention of local community leaders, and I was asked to run for the Georgia State Senate. I won, and spent the next 11 years representing the people of Houston, Bibb, Bleckley, and Pulaski Counties in the General Assembly. I found it very rewarding and was extremely happy during my time in the Senate, but once again I was asked to run for another office. In December 2001, I resigned my Senate to campaign for governor.

GEHA: *Do you have any advice that you'd like to give to the members of GEHA?*

Governor Perdue: I know that all Georgians want a healthier environment in which to live and raise a family. So keep working hard and know that your input is welcome during my administration.

INTERVIEW BY JANE PERRY, EDITOR

WATERFIRST PROGRAM

In March 2003, Governor Perdue announced the launching of WaterFirst, a program designed to enable communities to better protect and manage water resources. The WaterFirst Community Program, a technical assistance and recognition program, will help communities make the connection between land use and water quality and quantity. Eleven communities were selected to participate in the inaugural WaterFirst class: the cities of Fairburn, Hartwell, Jesup, and Richmond Hill, Lee County, and the multi-jurisdictional applicants Flowery Branch-Gainesville-Hall County and Baldwin County-Eatonton-Putnam County. Other communities are being recommended for peer review to determine if they qualify for the WaterFirst designation, at which point they become eligible for benefits from multiple state agencies

The WaterFirst Community Program is a voluntary partnership between local governments, state and federal agencies and other organizations. The program focuses on eight water related components: Watershed Assessment and Planning; Storm water Management; Water Supply Planning; Water Conservation; Water Supply Protection; Wastewater Treatment and Management; Water Reclamation and Reuse; and Residual Biosolids Management.

For more information about WaterFirst, please contact the Governor's Office of Communications at 404.651.7774

Sonny Perdue was born on December 20, 1946, in Perry, Georgia, to a lifelong farmer, and a classroom teacher. He earned a doctorate in veterinary medicine in 1971 from the University of Georgia. While still in school he volunteered for the U.S. Air Force where he honed his flying skills by earning instrument, flight instructor, and multi-engine ratings. A licensed pilot for more than thirty years, Sonny has enjoyed traveling the state in his single-engine Bellanca Super Viking.

Following his honorable discharge from the Air Force in 1974 with the rank of Captain and a brief tenure as a practicing veterinarian in Raleigh, North Carolina, Sonny returned to his native Georgia and became a successful small-business owner. He started two businesses from the ground up, concentrating in agribusiness and transportation. Today, those businesses have grown to include several locations across the Southeast.

Sonny was already a dedicated leader in his church and his community when he decided to enter public service. After serving on the Houston County Planning and Zoning Board during the 1980's, Sonny was asked to run for the Georgia Senate. He won, and spent the next 11 years representing the people of Houston, Bibb, Bleckley, and Pulaski Counties in the General Assembly.

Governor Perdue is married to the former Mary Ruff of Atlanta. The couple has four children and twin granddaughters. Mary and Sonny also serve as foster parents for newborns awaiting adoption.

~ GEHA NEWS ~

2004 ANNUAL EDUCATION CONFERENCE (AEC)

Please join us for the next AEC. It promises to be full of fellowship, fun, and information about current trends in food service, on-site sewage, agriculture, hazardous materials, and much more! It will be held in Dillard, Georgia, July 9-12, 2004. Watch the GEHA website at www.geha-online.org for updated information, or call Vernon Mullins at 706.595.3408.

GEHA MAGAZINE CHANGES

GEHA will now provide members with two publications to keep them informed of all the exciting events and business affecting professional environmentalists in Georgia. In the fall, the newsletter will provide highlights of the annual education conference and award winners, as well as information about the next year's conference. The spring publication will be similar to the magazine that you are familiar with, but will focus more on technical articles addressing the challenges in our field.

GEHA welcomes comments on and suggestions about this new publications format. Contact us at editor@geha-online.org. Please see page 3, "Call for Articles" about how to contribute to these publications.

2003 SCIENCE FAIR AWARD

This year's GEHA Science Fair award went to **Heather Mispage**, a senior at Oconee County High School. Heather has been studying the characteristics of microorganisms that survive in wastewater treatment ponds and are discharged to the environment. Specifically, organisms that are antibiotic resistant, which we know is an important health problem today when physicians treat us for various conditions using antibiotics. She has received many of the most prestigious awards at the science fair each year and, again this year, represented Georgia at the International Science and Engineering Fair, where she won took fourth place!

ROWE ENVIRONMENTAL HEALTH AWARD

For 2003, GEHA awarded the Rowe Environmental Health Scholarship to **Eva Virginia Daneke**. This honor is bestowed on an undergraduate student showing excellent promise for success in environmental health practice. Eva recently graduated from the University of Georgia with a degree in Environmental Health Sciences, *magna cum laude*. She works for the Georgia Environmental Protection Division analyzing and providing health education for fish contamination and air toxics. Beginning in August 2003, Eva will pursue a Ph.D. in Toxicology at UGA under the direction of Dr. Jeffrey W. Fisher. Eva received a National Science Foundation Fellowship, "The Science Behind Our Food" for part of her graduate studies. Eva has lived in Duluth for 21 years.

SHEURING SCHOLARSHIP

The Shering Scholarship is presented by GEHA each year to a student enrolled in Environmental Health Sciences at the University of Georgia. This year's award went to **Emmy Sue Myszka**. She will be studying abroad next Spring in South America and hopes to combine Spanish and Environmental Health in her future career, either working in a heavily-populated Spanish-speaking area of the United States or in Latin America. Emmy grew up in the Midwest, and moved to Dunwoody in 1995 with her parents and younger sister.

Continued on page 26 . . .

The members of GEHA would like to congratulate all of the scholarship and award winners for this year! For information about these and other scholarships and awards available through GEHA, please see page 23.

SPOTLIGHT ON ENVIRONMENTAL HEALTH



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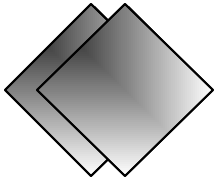
Serving manufacturers operating in more than 88 countries, NSF was founded in 1944 and is headquartered in Ann Arbor, MI USA. The NSF Mark is recognized for its value in international trade around the world and is respected by regulatory agencies at the local, state, and federal levels.

NSF has earned the Collaborating Center designations by the World Health Organization (WHO) both for Food Safety and for Drinking Water Safety and Treatment.

NSF International, a not-for-profit and non-governmental organization, is the world leader in standards development, product certification, education, and risk-management for public health and safety. For more than 58 years, NSF has been committed to public health, safety, and protection of the environment. While focusing on food, water, indoor air, and the environment, NSF develops national standards, provides learning opportunities through its Center for Public Health Education, and provides third-party conformity assessment services while representing the interests of all stakeholders. The primary stakeholder groups include industry, the regulatory community, and the public at large.

Sanitation is a way of life.
It is the quality of living that is expressed in the clean home,
the clean farm,
the clean business and industry, the clean neighborhood, the clean community.
Being is a way of life.
It must come from within the people; it is nourished by knowledge and grows as an obligation and an ideal in human relations.

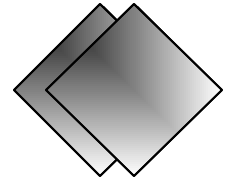
— NSF International



ASBESTOS

A Whisper in the Wind

By Pamela Noah, MA



Recent headlines highlight the plethora of information concerning asbestos. Much speculation surrounds asbestos, class action lawsuits and litigation abound, and a U.S. Environmental Protection Agency (EPA) consumer information program will soon warn the public about health effects from exposure. The EPA banned most asbestos-containing products in 1989; however, this ban was overturned in court, and currently only certain asbestos-containing materials (insulation, floor tile) are banned, and others (gaskets) are limited. Estimates are that as many as 35 million American homes and businesses may be contaminated with asbestos.

For example, Zonolite Mountain in Libby, Montana is the site where hundreds of residents and their families have been made seriously ill or died from asbestos mining operations. The Halliburton Company recently (December, 2002) filed court papers in a \$4 billion effort to settle asbestos-exposure claims.

Definition

Asbestos is the term generally applied to six types of naturally-occurring mineral fibers mined from rock. These fibers can be further classified into two main mineral groups: serpentines and amphiboles. They share several properties including: (1) occurring as bundles of fibers that can easily be separated; (2) exhibiting high tensile strength and flexibility; and (3) having thermal stability, incombustibility, and resistance to biodegradation. The usual asbestos definition excludes other fibrous minerals and references only those that are being or have been commercially exploited. The three most common types of asbestos used commercially are:

- **Chrysotile**, or white asbestos, contains curly fibers and is found in serpentine rock. This form of is used predominantly in the U.S.
- **Amosite** has brown rod-like fibers and is used less often than Chrysotile.
- **Crocidolite**, or blue asbestos, contains rod-like fibers and is the least likely form used in the U.S. More illnesses have been reported from handling blue asbestos than any other form.

The main characteristic of asbestos is heat resistance. The word “asbestos” is derived from Greek and

means “inextinguishable”. For this reason, it has been used in numerous industrial applications due to its unique properties of thermal, electrical, and sound insulation; matrix reinforcement (cement, plastic, resins), adsorption (filtration, liquid sterilization), friction, and chemical inertia (except in acids).

Canada and Russia remain the largest producers of chrysotile. Amosite is mined primarily in Africa and crocidolite comes mainly from Africa and Australia.

History/Historical Use

Heavily regulated now, the major markets for asbestos are in roof coatings, brake pads and shoes, and clutches. However, the first reported uses of asbestos date back to Finland (2500 B.C.) where amphiboles were used to reinforce clay utensils and pottery. Other historical uses include the fabrication of lamp wicks, crematory clothing, and asbestos paper. It was not until the early nineteenth century that industrial use of asbestos for textiles was exploited. The demand grew for asbestos fibers, especially for thermal insulation. In addition, World War II expanded the use of asbestos fiber production for military applications. Asbestos production reached its zenith in 1977 at 4.8×10^6 tons, and decreased to 1.9×10^6 tons by 2000.

Asbestos Exposure And Disease

Although nearly everyone will be exposed to asbestos during their lifetime, most people will not become ill from this exposure. In its natural state (rock), asbestos is not hazardous. It is only when it is broken up and the fibers and dust become suspended in air (friable) and inhaled does it pose a hazard. The underlying problem with asbestos is the fact that it does not dissolve once it enters the human body. Over time, accumulation of fibers produces scar tissue in the lungs and causes disease, including cancer.

Studies in the 1960's and 1970's showed that health problems were associated with long-term, heavy exposure to airborne asbestos fibers. Those who become ill usually share the same characteristic: direct contact on a regular basis with substantial amounts of asbestos in air. Since before WWII, millions of American workers have been exposed. The greatest risk for asbestos-

related health effects depends on the type of industry where exposure occurred. Certain jobs have higher exposure risks; for example, shipbuilding, mining, milling, and manufacturing of asbestos textiles, construction, firefighting, and brake repair, to name a few. It usually takes 10 - 40 years for symptoms of an asbestos-related illness to appear.

The identification of health risks associated with asbestos has incited strict regulation concerning its usage and set limits for the maximum exposure in the workplace. It has been widely recognized that inhalation of these fibers can induce or promote three types of disease: asbestosis, mesothelioma, and lung cancer.

Asbestosis

Asbestosis is a serious, non-cancerous respiratory disease that starts when inhaled asbestos fibers aggravate lung tissue resulting in scarring. It usually develops after 10 or more years after exposure. Asbestosis may also result in cardiac failure in its advanced stages. It is usually fatal and there is currently no treatment.

Mesothelioma

Mesothelioma is a rare form of cancer that occurs in the thin membrane lining the lungs, chest and abdomen. It spreads rapidly and almost all cases can be traced back to prior asbestos exposure. It usually develops after 20 or more years and is 100% fatal.

Lung Cancer

The largest number of asbestos-related deaths is caused by lung cancer. The incidence of lung cancer is greatest for those who were directly involved in the mining of asbestos or manufacturing of asbestos products. Smoking exponentially increases the risk of developing lung cancer when past exposure to asbestos is a risk factor. It usually develops 15 or more years after exposure, and it is often fatal.

Identifying and Managing Asbestos

An asbestos fiber is thinner than a strand of human hair. Laboratory analysis is the only verifiable method to identify asbestos. Asbestos is best left undisturbed. Asbestos bonded into finished products such as ceiling tiles and pipes exhibit no risk to health as long as the structures are not damaged or disturbed enough to release fibers into the air. Improper handling methods can often do more harm than good. If friable asbestos is suspected, it is best handled by a qualified professional. It is best to limit access to the area where the suspected asbestos material is located and not touch or disturb it. Do not dust, sweep, or vacuum debris that you suspect

may contain asbestos. Do not saw, sand, scrape, or drill holes into suspected asbestos-containing materials.

For one-time, small asbestos removal projects in your home or business (< 20 linear feet), the following minimum precautions should be put in place:

- Handle without others present in the room.
- Wear disposable gloves and wash hands after handling.
- Turn off all heating and/or cooling systems to minimize the spread of fibers into other rooms.
- Only disturb as much materials as needed.
- Place a plastic sheet on the floor below the area to be handled.
- Continuously wet the material using a fine mist of water with detergent while handling.
- Carefully cut the material and place the material into a clean plastic or glass container, or plastic bag. Tightly seal the container and wipe the outside of it with a damp paper towel and put into trash.
- Carefully dispose of the plastic sheet. Use a damp paper towel to clean up any material in the area.

FOR LARGER AREAS, CONSULT THE STATE REGULATORY AGENCY OR AN ASBESTOS REMOVAL PROFESSIONAL.

State Regulatory Procedures

The Georgia Environmental Protection Division (GEPD) handles inquiries and questions regarding asbestos. Once a complaint about asbestos is received by GEPD, it is assigned to an inspector for the county to which the property is located. An on-site investigation will be conducted and, if asbestos is found, a notice of violations letter is sent to the property owner. The violator must come into the GEPD office for an enforcement conference. Remediation will be conducted at the expense of the property owner.

FOR MORE INFORMATION

There are several agencies which provide information concerning asbestos. The U.S. EPA is the primary federal agency that governs laws regulating asbestos. In Georgia, contact the EPA at (404) 562-9199. The state agency responsible for asbestos regulation is the GEPD. Information about possible exposure to asbestos, abatement procedures, and accredited laboratory facilities can be obtained by contacting the GEPD at 404.362.2694. For workplace-related asbestos information, please contact the Occupational Safety and Health Administration at www.osha.gov.

CANCER RISK FROM ENVIRONMENTAL EXPOSURES

CANCER-CAUSING AGENT

CANCER RISK

- | | |
|---|----------------|
| 1. Skin exposure to the sun | 1 in 3 |
| 2. Radon in indoor air | 1 in 100 |
| 3. Cigarette smoking | 8 in 100 |
| 4. Radiation (cosmic rays) | 1 in 1,000 |
| 5. Second hand smoke | 7 in 1,000 |
| 6. Industrial area air | 1 in 10,000 |
| 7. Contaminants in indoor air | 2 in 10,000 |
| 8. Contaminants in food | 1 in 100,000 |
| 9. Contaminants in drinking water | 1 in 100,000 |
| 10. Exposure to contaminants at hazardous waste sites | 1 in 1,000,000 |

Source: U.S. EPA/1998

THANKS!

The President and Officers of GEHA express their sincere appreciation and thanks our sponsors and exhibitors for contributing to the success of the Georgia Environmental Health Association 2003 Annual Education Conference.

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For information, contact Cathy Coleman, GEHA Executive Clerk, at 478.892.8343.



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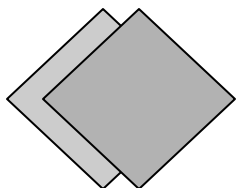
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SEVERE ACUTE RESPIRATORY SYNDROME: SARS in the News - Is it Also in the Air?

By Dr. Katie Arnold and Alison Han



Keynote Speakers: Alison Han (left) and Dr. Katie Arnold.

Katie Arnold is an infectious diseases physician and an epidemiologist with the Georgia Division of Public Health. She oversees projects in antibiotic-resistant diseases, respiratory diseases, meningitis, and hepatitis. Dr. Arnold received a B.S. in biology from Duke University, and an M.D. from Case Western Reserve University.

Alison Han is also an epidemiologist with the Georgia Division of Public Health. She coordinates surveillance for influenza, respiratory syncytial virus (RSV) and SARS. Ms. Han received a B.S. in biology and anthropology from Emory University, and an M.S. in Epidemiology from the Harvard School of Public Health.

Severe Acute Respiratory Syndrome (SARS) is an illness that has been reported in Asia, Europe, North America, South America, Australia, and Africa. It is caused by a newly recognized coronavirus, called SARS-CoV. The outbreak is thought to have originated in China in November 2002 and was officially reported to the World Health Organization in February 2003. The SARS virus is widespread in China, and after spreading to other countries, sporadic cases and localized outbreaks are ongoing. The first suspected case of SARS in the United States was reported on March 15, 2003. The first suspected case reported in Georgia was on March 29, 2003. Eight SARS cases in the U.S. have been laboratory-confirmed. At this time, there have been nine suspected cases in Georgia, but none have been laboratory-confirmed.

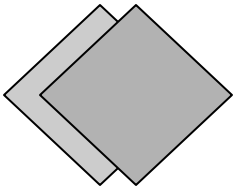
Currently, the worldwide incidence of SARS is on a downward trend. However, SARS outbreaks are uncontrolled in some places and much is unknown about the likelihood of persistence and spread in the future, it is important that we prepare for the possibility of SARS transmission in our communities. Research on

the clinical, epidemiologic, and environmental issues associated with SARS is continuing.

The spread of SARS is thought to occur primarily by direct inhalation of respiratory droplets in close proximity to a coughing SARS patient. Some patients have infected others more efficiently, resulting in concerns about possible airborne transmission. Initial studies indicate that the virus may be shed in feces, where it can persist at room temperature for at least one or two days. Despite this, no clear evidence of environmental spread of the disease has been confirmed; fecal and environmental exposure may play a relatively small role in transmission.

Based on observed patterns of disease transmission, personal protective measures have been recommended by CDC. SARS, like other coronaviruses, is susceptible to common disinfectants. At this time, goods, products, and animals arriving from SARS-affected areas are not thought to pose a risk of transmission to humans. While we have learned much about SARS and the coronavirus that causes it, much still remains to be learned.

Symptoms of SARS. In general, SARS begins with a fever greater than 100.4°F (>38.0°C). Other symptoms may include headache, an overall feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms. After 2 to 7 days, SARS patients may develop a dry cough and have trouble breathing. In 10%-20% of cases, the respiratory illness is severe enough to require mechanical ventilation. Currently, the mortality rate is 3.9%. (Source: www.cdc.gov)



IMPROVING FOOD SAFETY IN GEORGIA

By Melinda F. Scarborough, MPH, REHS

Many changes to rules and regulations for food service and food sales establishments, food processing and food importing have been made through the years. Even with all the work that has been done to make improvements, the Centers for Disease Control and Prevention (CDC) still estimates that there are 76 million illnesses, 325,000 hospitalizations and over 5,000 deaths each year in the United States, resulting from tainted food. Several factors contribute to this:

Biological and Chemical Agents:

- New pathogens have been detected following foodborne illness outbreaks, e.g. *E. coli* 0157:H7.
- Some foodborne illness outbreaks have been associated with foods that were previously thought to be non-potentially hazardous, e.g. lettuce and orange juice.

Environment:

- There is an increasing globalization of the food supply.
- Centralization of food processors is taking place and larger production facilities are being built.
- There are many concerns about possible contamination of the food source with needed adjustments in food preparation to protect the consumer.

Host:

- There is an increasing population of elderly and immuno-compromised persons.
- There is increasing immigration and international travel. New eating habits involve specialty foods, often with unfamiliar cultural preparation techniques.

At the state level, two agencies regulate food safety under the Official Code of Georgia Annotated, Title 26. The Georgia Department of Human Resources (DHR) is charged with regulating food service establishments. Under the same title, the Georgia Department of Agriculture (DOA) is charged with regulating food sales establishments and other food processing. Both agencies use the U.S. Food and Drug Administration's (FDA) recommended guidelines for food establishments as the basis for their rules and regulations. DHR last updated its

Rules and Regulations for Food Service in 1995. These rules included updated guidelines from the FDA 1993 Food Code. DOA last updated its Rules in 1996. These rules included updated guidelines from the FDA 1993 and 1995 Food Codes.

Change often comes slowly, and frequently with some resistance from all parties involved. Sometimes, catalysts occur that either aid or impede progress. For DHR, a state audit of the food service program that occurred in 2001-2002 possibly aided changes that were already in process. The audit report commended the program for taking steps to revise the Rules and Regulations for food service establishments, including prioritization of inspections, training restaurant personnel and inspector training and standardization. The audit report also stated that the DHR should take a more proactive role in ensuring the program is administered in an efficient and effective manner throughout the state. It said that DHR should continue its effort to revise the current inspection report and should take steps to ensure that county health departments are reasonably consistent in evaluating restaurants' compliance with food safety standards.

Another catalyst has been the development by the FDA of nine recommended program standards. These standards are thought to be necessary to promote and ensure food safety and to have efficiently run programs. The nine standards are:

1. Regulatory Foundation
2. Trained Regulatory Staff
3. Inspection Program Based on HACCP Principles
4. Uniform Inspection Program
5. Foodborne Illness Investigation & Response
6. Compliance & Enforcement
7. Industry & Community Relations
8. Program Support & Resources
9. Program Assessment

Currently, both DHR and DOA are working to adopt changes to their Rules and Regulations that regulate food safety based on the 2001 FDA Food Code. Through this and making other needed changes, both agencies are

striving to eventually meet all nine standards developed by the FDA. To summarize the major changes, both agencies have included the following in their proposed Rules and Regulations:

1. The definition for potentially hazardous food has been changed to be more specific about types of pathogenic microorganisms and foods that are not considered potentially hazardous.
2. A HACCP plan will be required for processes that vary from the Rules.
3. Demonstration of knowledge by the person-in-charge and employees will be required.
4. More specific criteria for excluding sick employees from establishments are given.
5. Correct hand washing procedure is more detailed.
6. The length of employees' fingernails is specified to be no longer than the tips of the fingers.
7. An allowance for employees to drink from a closed beverage cup with straw is allowed while working.
8. The required cooling procedure will be 140° F to 70° in 2 hours and 70°F to 41°F in 4 hours. (DHR will allow 135°F to 70°F in 2 hours.)
9. No bare-hand-contact with ready-to-eat foods will be required.
10. Required treatment of raw or partially cooked fish to kill parasites, except for some species, is specified.
11. The minimum internal cook temperature for pork is specified as 145°F for 15 seconds.
12. Datemarking requirements are specified.
13. Time as a public health control will be allowed in lieu of temperature when any left-over food after 4 hours will be discarded.
14. An adequate thermometer for the food being tested will be required.
15. An advisory notice is required if potentially hazardous foods are offered in raw or under-cooked form (DHR requires specific wording).
16. Frequency of cleaning food contact surfaces is based on room temperature.

In addition, DHR has included the following:

1. A Certified Food Safety Manager will be required in each food service establishment.
2. A double handwash using a nail brush, will

be required before beginning work and upon reentering the food preparation area.

3. The minimum hot holding temperature has been reduced to 135°F.
4. A Certified Pest Control Operator will be required to apply any pesticides.
5. Frequency of inspection will be based on the risk type designated for the establishment and on grade history.
6. Environmental Health personnel will be required to be certified by taking similar training and an exam as that of the Certified Food Safety Manager.

Both DHR and DOA will require Environmental Health Specialists and Sanitarians to be standardized in food safety inspection procedures. The agencies plan to work together on a customized standardization system for Georgia that is based on the system developed by FDA.

To complement the new rules and regulations, both agencies are working on revising the current inspection reports. The proposed inspection report designed by a Conference for Food Protection Committee is being used by each agency with modifications to coordinate with changes that have been made in each agency's rules. The proposed inspection report for DOA will not be a graded report. However, the inspection report for DHR will award a letter grade (A, B, C, or U) based on the type and severity of items violated. An inspection report pilot was conducted in April 2003 by DHR Environmental Health Specialists. As a result, many suggestions that were received are being used to revise and simplify the structure of the form.

As we strive to improve the safety of foods that we eat in Georgia, change is inevitable. In this time of increased public awareness of food safety issues, it is necessary to provide standards and information based on sound principles and scientific fact. This is why DHR and DOA, like similar agencies in most states, use the FDA Model Food Code as the basis for Rules and Regulations for food safety. Both agencies realize the importance of working together to improve food safety and look forward to continuing the good working relationship they share.

For more information, contact Melinda Scarborough, Georgia Department of Human Resources, Environmental Health Section, at 404.657.6534.

MEMORANDUM OF UNDERSTANDING NON-PUBLIC WATER SUPPLIES

This MOU is between the Georgia Department of Natural Resources (DNR), Environmental Protection Division (EPD), and the Georgia Department of Human Resources (DHR), Division of Public Health (DPH).

I. PURPOSE OF THIS AGREEMENT:

- 1) To protect the health of the citizens and visitors of the State of Georgia.
- 2) To protect the water resources of the State of Georgia.
- 3) To ensure a safe, quality and quantity of water is provided and maintained for regulated facilities.
- 4) To facilitate efficient and effective government function and actions.

II. BACKGROUND

In 1977, the EPD applied to and received authorization from the U.S. Environmental Protection Agency (EPA) to carry out the purposes and requirements of the Federal Safe Drinking Water Act of 1974 as amended. This federal act established definitions for public drinking water systems and established a permitting program for community and non-community drinking water systems in the United States.

To implement the purposes of the Federal Safe Drinking Water Act, EPD promulgated the Rules for Safe Drinking Water in 1977 (Rules) to establish the organizational and administrative procedures. These Rules require that drinking water systems meeting the definition of a Public Water System (PWS) obtain a permit from EPD. A PWS as defined by the Rules is a system that provides water to the public for human consumption through pipes or other constructed conveyances, if such system has at least fifteen (15) service connections or regularly serves an average of twenty-five (25) individuals daily at least 60 days out of the year. A PWS is either a Community Water System (CWS), a Non-Transient Non-Community Water System (NTNCWS), or a Transient Non-Community Water System (TNCWS) depending on the circumstances. The Rules contain standards for construction, operation, and reporting, and also establish standards for chemical, microbiological, radiological, and physical quality. Since 1977, EPD has issued permits to water systems according to the definition of a PWS. Permits

are issued to cities, towns, mobile home parks, schools, motels, as well as some businesses, industries and food service establishments that serve drinking water to 25 or more people 60 days or more per year.

The DHR Rules and Regulations for Food Service establish a definition for "potable" which states, "water intended for human consumption that meets the bacteriological and chemical requirements of the federal EPA's Safe Drinking Water Act, or other regulatory agency having equivalent authority." The Rules and Regulations for Food Service require a potable water supply but do not require the water supply to be permitted by EPD.

The Water Well Standards Act (O.C.G.A. 12-5-122) establishes the definition for a "non-public water well" as a "well constructed as a source of water supply for a water system which provides piped water to the public for human consumption, if such system has less than 15 connections or regularly serves less than 25 individuals, excluding individual water wells." The Act establishes minimum construction standards for non-public wells.

Because there are instances where the water supply systems that serve food service establishments and other facilities do not meet the definition of a public water system (and are therefore a non-public water system) a procedure is needed whereby the County Boards of Health and the DPH can assure that these food service establishments, tourist accommodations, and public swimming pools have a source of potable water that meets applicable codes.

This MOU seeks to ensure ongoing cooperation between EPD and DPH in matters relating to both PWS's and non-public water systems.

III. GUIDELINES AND PROCEDURES

The following are EPD's standard operating procedures with respect to non-community water system permitting for food service establishments and other facilities:

- 1) EPD's district offices will be the only department that distributes permit applications for Public Water System Permits.
- 2) EPD's district offices will evaluate applications for Public Water Systems Permits and will be the only department to assist the permit applicant in completing the application.

- 3) If the information on the application indicates that the water system is a non-community system, EPD will inform the applicant in writing of the requirements for approval and permitting. A copy of that letter will be sent to the local county health department.
- 4) If the application indicates that the water system is non-public, EPD will inform the applicant in writing that they do not require a permit for a PWS and they must conform to the applicable requirements of the DHR for their water system. A copy of that letter will be sent to the local county health department.

The following are DHR's and the local county health department's procedures for assuring potable water sources at food service establishments, tourist accommodations, and public swimming pools in Georgia:

- 1) The local county health department will ascertain whether an existing or proposed facility is served by a PWS permitted by EPD.
- 2) If the existing water system is not permitted by EPD, the local county health department will refer the owner of the existing facility to the appropriate EPD district office for permit evaluation.
- 3) If a proposed water system is not permitted by EPD, the local county health department will refer the owner of the proposed facility to the appropriate EPD district office for permit evaluation.
- 4) If EPD determines the water system serving the existing or proposed food service establishment, tourist accommodation, or public swimming pool is a PWS, then the water system will be required to meet EPD regulations and a letter will be sent to the county health department to notify them of the water supply's status.
- 5) If EPD determines that the water system serving the existing or proposed facility is a non-public water system, the local county health department will be copied on a letter to the owner of the establishment notifying him/her that the water system is a non-public system that must conform to the applicable DHR regulation for non-public water systems.

IV. INTERDEPARTMENTAL COOPERATION

EPD has in the past provided cooperative assistance

to DHR in sample analysis and in emergency assistance to individual and non-public water supplies following disasters. This cooperation will continue and EPD will provide technical assistance (when requested) to DHR in other areas to assist DHR in its role of assuring potable water for non-public water supplies serving food service establishments, tourist accommodations, and public swimming pools. DHR will provide assistance to EPD in the case of water-borne disease outbreaks in public water supplies and in other applicable situations.

Both DNR and DHR will ensure that this MOU is distributed to all relevant staff members of each agency at the field or point of delivery level and meetings, explanatory memos, or other means to promote awareness and proper utilization of this MOU are employed.

V. DISPUTE RESOLUTION

If there should arise a dispute between the local county health department and EPD's district office about a permitting issue the following procedure will be employed:

- 1) The dispute should be discussed and resolved at the lowest staff level possible, preferably between the Environmental Health Specialist with the local environmental health office and the Environmental Specialist in the EPD district office.
- 2) If the dispute can not be resolved at the level described above, the District Environmental Health Director and the EPD District Operations Manager or Region Manager will discuss and seek to resolve the dispute.
- 3) As a final resort, the Chief of EPD's Program Coordination Branch will review the facts surrounding the case and render a final decision for EPD and inform the Director of the DHR Environmental Health Section, the district health office and the county environmental health office in writing of the final decision.

VI. AGREEMENT

Whereas EPD has authority over all public water systems and some other aspects of water management in the State of Georgia, EPD agrees that DPH County Boards of Health should regulate water supply systems serving food service establishments, tourist accommodations, and public swimming pools that EPD determines are not PWS (See Page 22).

Georgia Department of Human Resources Division of Public Health Environmental Health Section

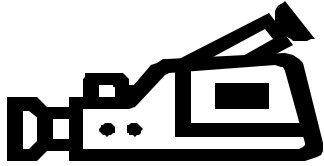
REVIEW PROCESS FOR NON-PUBLIC WATER SUPPLY Food Service Establishments, Tourist Facilities and Public Swimming Pools

If the EPD Regional Office determines that the proposed water system is or will be a non-public water system, then the following information must be submitted to the county health department for review.

1. A letter from EPD stating the water system is not a Public Water System.
2. A map showing the geographical location of the project, location of the governmentally owned and operated public water system closest to the project site, and a layout of the proposed facilities showing the location of the proposed well(s), storage tank(s) water treatment facilities, etc., as applicable must be included. Connection shall be made to a public water system when such system is available within two hundred feet (200') of the property line through a public access easement.
3. If the owner of the water system is other than the owner of the establishment, submit a business plan, contract, or trust agreement as needed which adequately addresses the source and amount of water provided.
4. For new facilities, a drilled well meeting the construction requirements established under the most current Rules for Safe Drinking Water is required. Engineering plans and specifications for the proposed water supply system, prepared by a professional engineer licensed to practice in the State of Georgia, may be required for review and approval.
5. For new facilities, a Well Data Sheet for each source, completed and signed by a water well contractor licensed to construct wells in the State of Georgia must be submitted for review.
6. Each new water system must be metered at the facility.
7. For existing facilities, a sanitary survey of the existing constructed facilities must be made by a water well contractor, licensed in the State of Georgia, or county Environmental Health Specialist to evaluate the well construction and protection.
8. Physical and chemical "screening" of the untreated water from each water source (well) must be performed for the following parameters by an approved water laboratory, and a copy of the results provided to the local health department. (EPD Test W-33).

Aluminum	pH	Zinc	Nitrate (as N)	Turbidity (NTU's)	Phosphorus
Boron	Alkalinity	Chloride	Nitrite (as N)	Manganese	Potassium
Copper	Hardness	Cadmium	Total Nitrate & Nitrate (as N)	Color (color units)	Calcium
Sodium	Carbon dioxide	Iron	Total Dissolved Solids	Sulfate	Magnesium
Chromium	Nickel	Molybdenum	Soluble Salts		

9. At least one untreated water sample must be collected from each source and submitted to an approved water laboratory for microbiological analyses (total and fecal coliform). A copy of the results must be submitted to the local health department.
10. Physical and chemical sampling must be performed annually. Microbial sampling must be performed quarterly. Sample results shall be submitted to the county health department. Failure to meet physical, chemical or microbial potable water standards will result in disapproval of the water supply for use in food service establishments, tourist facilities or public swimming pools.



!! NEW GEHA VIDEO !!

In 2002, Dr. Daryl E. Rowe, Professor and Biosafety Officer at the University of Georgia and Past President of GEHA, initiated the idea of making a video because of all the discussion surrounding environmental health as the “invisible profession.” The GEHA Board of Directors approved the production of the video to assist environmental health professionals with spreading their message. Dr. Rowe met with faculty and students at the University of Georgia, Grady College of Journalism and Mass Communications, with the idea. A student broadcast organization, Di Gamma Kappa, along with their advisor, Dr. Denise Matthews, chose to do the project. The video was made at a cost of about one-quarter of what a professional company would charge. GEHA formed an advisory group to represent members from various regions of the state, as well as from both public health and agriculture. The GEHA advisory group provided ideas and materials to the production crew who wrote the script, and shot and edited the video.

Thanks to Melinda Scarborough, who made copies for distribution. GEHA provides copies to public health and agriculture staff, as well as CDC, NEHA, and others. If you would like a copy for your office, please contact Dr. Rowe at drowe@esd.uga.edu to submit a request.

Let's acknowledge Dr. Rowe for his hard work and dedication to this very worthwhile project for GEHA!

GEHA AWARDS AND SCHOLARSHIPS

Member of the Year Award

The Member of the Year award is a way for GEHA to recognize one outstanding professional Environmentalist for their contributions to the field during the year. The winner is selected by the Nominations Committee after all nominations are received. The winner must be a GEHA member.

Lifetime Achievement Award

Lifetime membership is awarded to GEHA members who retire from the Environmental Health field.

Science Fair Award

The award recipient is selected from elementary, junior high and high school students at the Georgia State Science and Engineering Fair.

Certificates of Meritorious Service, Appreciation, and Recognition

Presented to GEHA members who exhibit outstanding service to the association.

John J. Sheuring Scholarship

This scholarship fund was established in 1967 in memory of John J. Sheuring. \$750.00 is awarded to a Junior in the University of Georgia Environmental Health Sciences Program.

Rowe Environmental Health Scholarship

This scholarship is awarded to one undergraduate University of Georgia, Environmental Health Sciences student based on a combination of characteristics that lead to success as a professional including, but not limited to: enthusiasm, interest in public health, integrity, involvement in environmental health organizations, and success in environmental health courses.

Irving Bell Golf Tournament Scholarship

This scholarship award is based on academic achievement, financial need, letters of recommendations, statement of why s/he is choosing a career in Environmental Health, and evaluation of internship. The scholarship will consist of: \$1550.00; recognition at GEHA's AEC awards banquet; hotel room, meal expenses, and \$100 for the AEC, courtesy of GEHA.

Please contact Cathy Coleman, GEHA Executive Clerk at 478.892.8343 for more information.

Georgia Department of Agriculture CONSUMER PROTECTION FIELD FORCES

The Consumer Protection Division administers state laws, rules and regulations for retail and wholesale grocery stores, retail seafood stores and places in the business of food processing and plants which are currently required to obtain a license from the Commissioner under any other provision of law: bakeries, confectionaries, fruits, nuts and vegetables, stores and places of business, and similar establishments, mobile or permanent, engaged in the sale of food primarily for consumption off the premises. This does not include "food services establishments" (restaurants and institutions are the purview of the Georgia Division of Public Health).

District 1

Georgia Department of Agriculture
P. O. Box 7638
1195 Jesse Jewell Parkway
Gainesville, GA 30504
Phone: 770-535-5955
FAX: 770-531-6483
Toll Free: 1-800-473-0119

District 2

Georgia Department of Agriculture
Administration Bldg. # 2
16 Forest Parkway
Forest Park, Georgia 30297
Phone: 404-363-7646
FAX: 404-362-2604
Toll Free: 1-800-359-3287

District 3

Georgia Department of Agriculture
224 Main Street
Thomson, Georgia 30824
Phone: 706-595-3408
706-721-2834/6293
FAX: 706-595-5478
Toll Free: 1-800-786-0175
Organic Certification
and Good Agricultural Practices Office

District 4

Georgia Department of Agriculture
P.O. Box 3566
Albany St. Farmers Market
701 Gaines Avenue
Albany, Georgia 31706
Phone: 229-430-4245/5310
FAX: 229-430-2999
Toll Free: 1-800-927-0112

District 5 5

Georgia Department of Agriculture
P. O. Box 631
533 N. First Street
Jesup, Georgia 31598
Phone: 912-427-5773
FAX: 912-427-5812
Toll Free: 1-800-874-0258

Poultry Grading Office

P. O. P.O. Box 7609
1195 Jesse Jewell Parkway,
Gainesville, GA 30501
Phone: 770-535-5704
FAX: 770-535-5763

Seafood Safety Office

701 U.S. Hwy. 80 West
Savannah, GA 31408
Phone: 912-963-2500
FAX: 912-966-7954

SUMMARY REPORT

ANNUAL MEETING OF THE GEORGIA BOARD OF REGISTERED ENVIRONMENTAL HEALTH PROFESSIONALS

The annual meeting was held Feb. 7, 2003 at the Georgia Music Hall of Fame in Macon. Highlights of the meeting:

Minutes from last year's meeting, financial report and audit report approved.

Advised members of new requirements of 45 quarter hours/30 semester hours plus one algebra or higher level math class, with exception that those with at least four years experience as of April 2002 may qualify with 40 quarter hours/27 semester hours of science.

New Study Group begins Feb. 28 in Macon and runs through the end of May.

Congratulations to new registrants this past year:

Gale Adler, RS (exam)

Scott Cosner, RS (exam)

Joe Malone, REHS (reciprocity)

Leisa Cook, RS (reciprocity)

Christy Kuriatnyk, REHS (reciprocity)

Voted to accept both PES & NEHA exams for credentialing.

Social security numbers will be removed from all files and forms.

Discussed proposed changes in By-Laws regarding term limits, background checks for applicants, limitations on running for office. A subcommittee and the Board will study and bring recommendations to the membership for vote next year.

Sushi/sashimi inspection training conference 2003: Seminars will be September 30 in Macon at the Farm Bureau and October 2 in Gainesville at the District Health Office.

*For more information on becoming registered,
please see instructions on page 5
or call 478.892.8343.*

GEORGIA FACTS

- ◆ Georgia is home to approximately 975 species of vertebrates, making it second among states in total number of vertebrate species (animals with backbones).
- ◆ The Red-cockaded woodpecker is the most endangered woodpecker found in North America. Georgia has only five remaining population centers.
- ◆ Found in Georgia, the Eastern Indigo snake is the longest snake in North America, reaching a length of 8.6 feet.
- ◆ The Ruby-throated hummingbird is the only hummingbird that breeds in Georgia
- ◆ Three species of fish live exclusively in the Chattahoochee and Flint River basins. The endemic species are the Bluestripe Shiner, Grayfin Redhorse, and Greater Jumprock.
- ◆ The coastal waters off Georgia and Florida are the only known calving grounds for the North Atlantic Right Whale.

Source: www.EEInGeorgia.org



74th Annual Meeting and Conference
September 2-5, 2003
Augusta, Georgia
Radisson Riverfront Hotel
www.gapha.org
770.927.1835
Margaret Park, Executive Director

~ GEHA NEWS ~

... Continued from page 12

2002 Member of the Year!

GEHA presented **Rob Blake** with the 2002 Member of the Year award. Rob is recognized for his numerous publications, being a frequent spokesperson at universities, GEHA, and NEHA conferences, participating in the metro Atlanta bioterrorism focus group, and helping to develop the EH Director's Group. He actively promotes and advocates for interagency partnerships in EH efforts. He has been instrumental in bringing about better cooperative efforts between metro county health departments and FDA, DHR, DOA, state epidemiology, and CDC. Rob is the Environmental Health Division Director for the DeKalb County Board of Health. He is a dedicated husband to wife Jill and their eight children. GEHA congratulates Rob for his many accomplishments!

The Member of the Year award is a way for GEHA to recognize one outstanding professional Environmentalist for their contributions to the field during the year. The winner is selected by the Nominations Committee. The winner must be a GEHA member. Winners are announced at the Annual Education Conference and given a plaque and official recognition from their peers.

2003 GOLF TOURNAMENT SCHOLARSHIP WINNER

This year's Irving Bell Golf Classic scholarship winner, **Nicole Campbell**, graduated from the University of Georgia in May 2003 with a B.S. in Environmental Health Sciences. At UGA, she was president of the Environmental Health Science Club, and worked as the Recruitment Coordinator during the 2002 Summer Orientation Resources Fair. During college, Nicole also held a part-time management position in the evenings with United Parcel Service, while attending classes during the day! Her internship was with the Environmental Safety Division at UGA under the supervision of Dr. Daryl Rowe, where she assisted with the University's compliance with the Patriot Act. Nicole currently works for the UGA Environmental Health Science Department as Program Coordinator for Recruitment, and is still employed with UPS. She is seeking full-time employment and would like to obtain an advanced degree in the future.

CERTIFICATES OF MERITORIOUS SERVICE

At the 2002 GEHA Conference, Certificates for Meritorious Service were awarded to:

- ◆ **Mark Norton**, Georgia Department of Agriculture.
- ◆ **Rob Blake**, Dekalb County Board of Health.
- ◆ The UGA Video Production Crew - **Dr. Denise Mathews**, **Micah Sherman**, **Brandon Betts**, and **Leia Travis**.

LIFETIME MEMBERSHIP AWARDS

In 2002, Honorary Lifetime Membership were awarded to the following retirees and members of GEHA:

Jimmy Taylor	Donald Hardigree
Fred Ingram	George Boyd
John Horvath	Russell McCall
Ken Dickson	

APPRECIATION AND RECOGNITION

GEHA also awarded a Certificate of Appreciation to **Dr. Swartwout**, Macon District Health Director, for continued support of GEHA, and a Certificate of Recognition to **Shannon Mosely**, Richmond County Health Department, for assistance with the Exhibits Committee.

For more information about these and other GEHA scholarships and awards, please see page 23.

GEORGIA PUBLIC HEALTH ASSOCIATION (GPHA) AWARD

Congratulations to **Ed Saidla**, Environmental Health Director of the Columbus Health Department, for being honored as GPHA's 2002 Environmentalist of the Year!

To nominate an outstanding environmental health professional for next year, visit the GPHA website at www.gapha.org, select the Award Nominations box and follow the instructions.

2003 ANNUAL EDUCATIONAL CONFERENCE
July 9—11, 2003
Callaway Gardens, GA

DOWN TO EARTH ENVIRONMENTAL HEALTH:
PROTECTING PEOPLE AND RESOURCES

AGENDA

WEDNESDAY, JULY 9, 2003

WELCOME-President-Elect **Vernon Mullins**
PRESIDENT'S ADDRESS-Melba Bridges
KEYNOTE ADDRESS -“Severe Acute Respiratory Syndrome”
Imported and Ethnic Foods
Morris Potter, US FDA
Addressing Problem Lots for Onsite Wastewater Systems
George Pidgeon, Environmental Wastewater Management Solutions
Chemical Hazards - Asbestos
Pamela Noah, GA DHR

FAMILY DINNER AND FUN AT BUTTS MILL FARM

THURSDAY, JULY 10, 2003

Temporary Food Establishments
Dan Redditt, RS, US FDA
Cave Systems in Georgia
Bill Smith, GA EPD
All Waste is Not Created Equal
Craig Goodwin, Northwest Cascade
Indoor Air Quality
Maurice Redmond, GA DHR
Lysteria
Dr. Jim Daniels, UGA
GA Department of Agriculture Food Safety Laboratory Program
Dr. Reuben Beverly, GA DOA
Collecting Food Samples at Food Service Establishments
Dr. Elizabeth Franko, GA DHR
Laboratory Panel Discussion
Dr. Elizabeth Franko, Dr. Reuben Beverly

CHILDREN'S ACTIVITIES AND DINNER
ANNUAL AWARDS BANQUET

FRIDAY JULY 11, 2003

Meth Labs
Randy Cockrell, US DEA
Conducting a Risk-Based Inspection
Kimberly Livsey, US FDA
What You Need to Know about NSF Protocol P155
Walter Ashcraft, Food Handler, Inc
Handwashing in Schools
Dr. Tom Keating, Project Clean

ANNUAL BUSINESS MEETING

GREAT SEAL OF GEORGIA



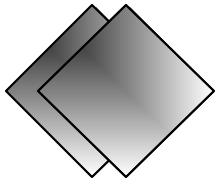
FRONT



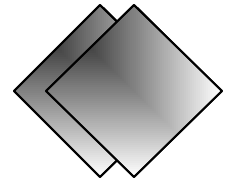
BACK

The current Great Seal of Georgia was adopted by the State Constitution of 1798. On its front side appear three pillars supporting an arch, emblematic of the three branches of government - the legislative, judicial and executive. A man stands with a drawn sword defending the Constitution whose principles are wisdom, justice and moderation. The reverse of the Seal shows a ship with cotton and tobacco, and a man plowing, representing the agriculture and commerce of the Seal's motto. In 1914, the date on the Seal was changed from 1799 to 1776 to correspond with the date of the Declaration of Independence. By law, the Secretary of State is the official custodian of the Great Seal, which is attached to official papers by executive order of the Governor.

Source: Georgia Secretary of State, www.sos.state.ga.us/state_capitol/education_corner/state_seal.



Bioterrorism, Food Safety, and the FDA



By Kathryn Ann Nagy, REHS

The need for safe food is as basic as the need for clean air, sanitary living conditions, potable water, and all the other factors that constitute the foundation of healthful living. The food we consume nourishes, nurtures, and comforts us. In the past we have taken for granted that the food we eat is safe. But events have taken place in the last couple of years that have eroded societal trust and caused us to question the sources, the quality, and the checks and balances that govern what we consume. Responsibility and accountability are being sought by the public in the areas of protection and regulation of the many processes that contribute to and beget our food supply.

The United States Food and Drug Administration (FDA) has been entrusted with this responsibility. As one of the Nation's oldest and most important consumer protection agencies, the FDA's mission, as defined in the FDA Modernization Act of 1997, includes the protection of public health by ensuring that foods (other than meat and poultry which are regulated by the USDA) are safe, wholesome, sanitary, free of contaminants, and properly labeled. FDA accomplishes this mission by performing new product reviews, risk assessment and identification, domestic and imported product evaluation, domestic and foreign firm inspections, the utilization of standards and regulations, and a variety of research activities. This mission is also accomplished by consulting with "experts in science, medicine, and public health, and in cooperation with consumers, users, manufacturers, importers, packers, distributors and retailers of regulated products."

The FDA has a long history of ensuring product safety, as evidenced by its almost 100 years of existence. The agency's origins go back to the start of the 20th century when revelations about filth in the Chicago stockyards shocked the nation into awareness that, in an industrial economy, protection against unsafe products is beyond any individual's means. The U. S. Congress responded to Upton Sinclair's best-selling book, *The Jungle*, by passing the Food and Drugs Act of 1906 that prohibited interstate commerce in misbranded and adulterated food and drugs. Enforcement

of the law was entrusted to the U.S. Department of Agriculture's Bureau of Chemistry. John P. Swann, PhD, of the FDA History Office, documents that "the Bureau of Chemistry's name changed to the Food, Drug, and Insecticide Administration in July 1927, when the non-regulatory research functions of the bureau were transferred elsewhere in the department. In July 1930 the name was shortened to the present version. FDA remained under the Department of Agriculture until June 1940, when the agency was moved to the new Federal Security Agency. In April 1953 the agency again was transferred, to the Department of Health, Education, and Welfare (HEW). Fifteen years later FDA became part of the Public Health Service within HEW, and in May 1980 the education function was removed from HEW to create the Department of Health and Human Services, FDA's current home." The passing of the Federal Food, Drug, and Cosmetic Act of 1938, the Kefauver-Harris Amendments of 1962, and the Medical Device Amendments of 1976 were among the numbers of formative measures put in place that have made the FDA what it is today — an agency that "...is required to keep tabs on the products of about 95,000 businesses, amounting to about \$1 trillion worth of goods a year, about a quarter of the American economy."

One of the most significant challenges that the FDA currently faces has been brought on by recent events; the attack on the World Trade Center on September 11, 2000 and the wars with Iraq and Afghanistan have opened the public's eyes to the realities of terrorism with the possibility of contamination of the Nation's food supply. On June 12, 2002 President Bush signed into law the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, which outlines measures to ensure the safety of the United States from Bioterrorism. The Act outlines major responsibilities in the area of food safety, and the FDA is responsible for carrying out certain provisions of the Act, particularly Title III, Subtitle A — Protection of Food Supply. Except for specified exemptions, FDA will propose new regulations that apply to all fa-

cilities and all foods and animal feed products regulated by FDA, which includes dietary supplements, infant formula, beverages (including alcoholic beverages), and food additives.

Registration of Food Facilities

Domestic or foreign facilities that manufacture, process, pack, distribute, receive, or hold food for consumption by humans or animals in the U.S. must register with the FDA no later than December 12, 2003. Registration will consist of providing information, including firm name, address, etc., to FDA. Farms, restaurants, retail food establishments, non-profit establishments that prepare or serve food, and fishing vessels not engaged in processing as defined in 21 CFR 123.3 (k), and facilities that are regulated exclusively by the U.S. Department of Agriculture, are exempt from this requirement. Also exempt are foreign facilities if the food from the facility undergoes further processing or packaging by another facility outside of the U.S. However, if the subsequent foreign facility performs only a minimal activity, such as putting on a label, both facilities would be required to register. FDA must have final regulations in effect no later than December 12, 2003, but facilities must register by this date in accordance with the Bioterrorism Act even if the regulations are not in effect. There is no fee associated with registration.

Prior Notice of Imported Food

Beginning on December 12, 2003, FDA must receive advance notice of each shipment of food into the U.S. The notice must include a description of all articles, each article's manufacturer and shipper, grower (if known), originating country, country from which the article is shipped, and anticipated port of entry. FDA must have final regulations in effect by December 12, 2003. If the regulations are not in effect by that date, the Act still requires importers to provide notice to FDA no less than 8 hours and no more than five days prior to shipment, until the regulations take effect.

Establishment and Maintenance of Records

Persons that manufacture, process, pack, transport, distribute, receive, hold, or import food will be required to create and maintain records that FDA determines are necessary to identify the immediate

previous sources and the immediate subsequent recipients of food (i.e., where it came from and who received it). This would allow FDA to follow up on credible threats of serious adverse health consequences or death to humans or animals by tracing the food back to its source. Farms and restaurants are exempt from this requirement. Again, FDA must issue final regulations by December 12, 2003.

Administrative Detention

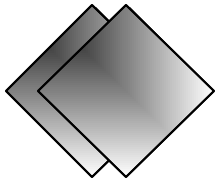
The Act authorizes FDA to administratively detain food if the agency has credible evidence or information that the food presents a threat of serious adverse health consequences or death to humans or animals. The Act requires FDA to issue regulations to provide procedures for instituting on an expedited basis certain enforcement actions against perishable foods, but does not specify a deadline.

Finally, in addition to the implementation of the Bioterrorism Act, the FDA is serious in its commitment to inform and educate the public and consumers, both in the United States and globally. FDA is working with a broad spectrum of industries that has formed the Food Security Alliance, a group dedicated to strengthening the physical security of industrial food production. With help from the industry, FDA is developing a Food Security Guidance that food producers can use to improve the protection of their products against tampering or terrorist actions. The guide will primarily focus on the management of food security as it applies to the plant, employees, raw materials, packaging, and finished products.

For more information about food safety, call FDA's toll free consumer information at 1.888.INFO.FDA (1.888.463.6332), or visit FDA on the Internet at www.foodsafety.gov.

Kathryn Nagy works for the U.S. Food and Drug Administration as a Consumer Safety Officer in the Investigations Branch. She is also a GEHA Officer.

Sources: George Kurian, ed., The Historical Guide to American Government (New York: Oxford University Press, 1998); Philip J. Hilts, Protecting America's Health: The FDA, Business, and One Hundred Years of Regulation (New York: Alfred A. Knopf, 2003); FDA/CFSAN, Protecting the Food Supply: FDA Actions on New Bioterrorism Legislation, 2003.



THE SAVANNAH RIVER SITE: A Symbol for National Policy Changes

By Jane Perry, MPH

In 1942, the United States developed technology capable of producing nuclear weapons under the U.S. Army Corps of Engineers' Manhattan Engineer District (known as the Manhattan Project). Initial efforts resulted in the first atomic bombs used at the end of World War II. With the Atomic Energy Act of 1946, nuclear weapons development and production was transferred to the newly-created civilian Atomic Energy Commission (AEC). AEC developed and managed a network of research, manufacturing, and testing sites, focusing the efforts of these sites on stockpiling an arsenal of nuclear weapons. In the late 1940s and early 1950s, during a period of great expansion of the nuclear weapons complex, most of these functions were consolidated into a complex of large, centralized, government-owned production facilities.

The Savannah River Site (SRS) is a 320-square-mile facility along the Savannah River near Aiken, South Carolina, across the river from Augusta, Georgia. It is owned by the U.S. Department of Energy and operated under contract by Westinghouse Savannah River Company. About 16,000 people work at SRS, making it one of the largest employers in the area. The site was built during the 1950s and made nuclear weapons material (tritium and plutonium) for the U.S. defense program from that time through the 1980s. Radioactive materials were created and hazardous chemicals were used by the nuclear reactors at SRS. The reactors were shut down in 1992. Currently, part of SRS's mission is to recycle and reload tritium to keep the nation's supply of nuclear weapons ready. SRS is the nation's only source for recycling tritium from reservoirs of nuclear weapons no longer in service. SRS is also focusing on national security work, economic development, technology transfer initiatives, environmental restoration and waste management activities. More than 400 inactive waste and groundwater units are undergoing environmental restoration. This work is expected to take decades to complete. Decontamination and decommissioning of more than 600 surplus facilities are also being conducted.

Over the years, SRS released toxic materials into the environment, and workers at the facility and the public

may have been exposed to these materials. It is important to determine if there have been any potential adverse health effects from exposure. This concern for the potential adverse health effects from exposure to environmental contamination in the area led to the establishment of the Savannah River Site Health Effects Subcommittee.

Savannah River Site Health Effects Subcommittee

The Savannah River Site Health Effects Subcommittee (SRSHES) is a diverse group of professionals from the affected area. An Environmental Health Section employee from the Georgia Department of Human Resources serves on the SRSHES as the Georgia State Liaison. The subcommittee is governed by the Federal Advisory Committee Act and focuses on the potential health effects to workers and the people in the surrounding communities from exposure to radioactive material and toxic chemicals from past operations at SRS.

The subcommittee advises the Centers for Disease Control and Prevention on the priorities for health research at SRS. The subcommittee provides a forum for residents and workers to seek and provide health-related information, as well as share their concerns with the federal agencies involved in the health research at the site.

The SRSHES is investigating exposures to contaminants released during facility operations have occurred, are occurring, or may occur in the future. The Georgia Environmental Protection Division (GEPD) is analyzing environmental samples to see if radioactive materials and hazardous chemicals released from SRS have affected air, soil, surface and groundwater, river sediment, food, vegetation, and milk in Georgia. Sampling is being conducted in areas within one to five miles of the Savannah River from Augusta to Savannah.

To share or get more information about the Savannah River Site or the SRSHES, please contact Jane Perry, SRSHES Georgia Liaison, at 404.657.6534, or visit the SRS website at www.srs.gov.



Counties Potentially Affected by Savannah River Site Activities



These stainless steel canisters, weighing 1,100 pounds each, are engineered to contain vitrified high-level waste for long-term storage and disposal. When full, the canisters weigh 3,700 pounds each and they are extremely radioactive. Although a long-term storage site is not yet available, solidifying the waste greatly reduces the risk of storing it. A total of over 5,500 are planned to be filled during the next 25 years.



Radioactive water discharged from the Savannah River Site flowed through wetlands near the Savannah River.

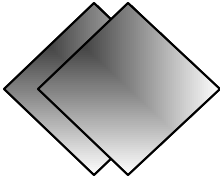


Barrels of plutonium-contaminated waste sit on a concrete pad in temporary storage. More than 300,000 barrels of such waste from nuclear weapons production are buried or stored around the country. Cleanup efforts throughout the weapons complex will add to the volume of this waste.



Boxes containing low-level radioactive waste lie in a shallow land burial trench. Alternative methods for the disposal of low-level waste are being developed.

*Sources: U.S. Department of Energy, [Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes To Their Environmental Consequences](#), 1/97; www.legacystory.apps.em.doe.gov. Agency for Toxic Substances and Disease Registry, *Environmental Health Education Needs Assessment Report*, (Draft), 9/02.*



XERISCAPING™

DEVELOPING A WATER-WISE LANDSCAPE

By Jane Perry, MPH

Tremendous amounts of water are often wasted on residential yards. A typical portable lawn sprinkler, for instance, applies about 300 gallons of water per hour. Water is lost to evaporation or run-off, or it is simply wasted when plants are given more water than they need.

By implementing the Xeriscape fundamentals, you can reduce your outdoor water use by as much as 50 percent without sacrificing the quality or beauty of the home environment. It is also an environmentally sound landscape, requiring less fertilizer and fewer chemicals. And a Xeriscape-type landscape is low maintenance – saving you time, effort and money. Any landscape, whether newly installed or well established, can be made more water efficient by implementing one or more of the seven steps of Xeriscaping. Significant water savings can be realized simply by learning about the different water needs of plants in your landscape.

The term Xeriscape (pronounced zera-scape) was coined in Colorado in 1981 in response to a prolonged drought. It derives from merging the Greek word "Xeros," meaning "dry," with the word "landscape." Today, Xeriscape programs exist in more than 40 states throughout the United States. The National Xeriscape Council's headquarters is in Atlanta, GA. Xeriscape-type landscaping is a package of seven common-sense steps for making a landscape more water-efficient:

1. PLANNING AND DESIGN

You may wish to start thinking immediately about what plants to use, but first you must solve any environmental and physical problems in an attractive and practical manner. Start with an accurate plan of the site, identify site problems and potentials. As your plan begins to take form, divide the landscape into water-use zones. Incorporate shade where possible, and develop your plan using appropriate plants.

2. SOIL ANALYSIS

A thorough analysis of both the physical and chemical characteristics of the soil is important when developing a water-wise landscape. Evaluate the planting soil, including its structure, texture, water-holding capacity and drainage.

3. APPROPRIATE PLANT SELECTION

Select plants according to the soil type, light level, temperature fluctuations, and soil moisture. Drought tolerance is important in a Xeriscape-type landscape. However, it should not be the only criteria used to select plants. Native plants are not necessarily the most drought tolerant. Even though a plant may be native to the area, it may not adapt to an adverse new environment (microclimate). When forced to grow in a harsh new environment, native plants can become a high-maintenance nightmare.

4. PRACTICAL TURF AREAS

Turfgrass is one of the most versatile, attractive, and functional plants in the landscape. Use turfgrass for a function or aesthetic benefit, such as an erodible slope, recreational area, or a welcome mat to the home. From a water management standpoint, turfgrass is recognized as one of the most effective plant covers to reduce runoff and erosion while recharging the ground water. Select a turfgrass that is adapted to the site and has good drought resistance. Turfgrass has a tremendous mitigating effect on the environment. For example, research documents that a turf area can be as much as 30°F cooler than a concrete or asphalt surface and 10°F to 14°F cooler than bare soil. This cooling effect from the average lawn is equal to the capacity from more than eight tons of air conditioning; the average home central-air unit produces three to four tons. Turf also absorbs dust and other air pollutants and produces oxygen. However, when managed incorrectly, turfgrass needs the largest amount of irrigation, so use it wisely.

AVERAGE WATER USE AND DROUGHT RESISTANCE OF SELECTED TURFGRASSES IN GEORGIA

Common Name	Water Use	Drought Resistance
Tifway Bermuda	Very low	Very high
Common Bermuda	Very low	High
Raleigh St. Augustine	Very low	Very high
Rebel 11 tall fescue	Very low	Medium
Centipedegrass	Low	Medium-high
Meyer Zoysia	Low	Low
K 31 tall fescue	Low	Low-medium

All turfgrasses recommended for Georgia can be used in any water-use zone and can survive most droughts without supplemental irrigation once they are established. During drought periods, a healthy turfgrass will wilt and turn brown, then regain its normal color and growth when it receives adequate water. You must be willing to accept a loss of quality and appearance during periods of limited rainfall when growing turf in non-irrigated areas of the landscape.

5. EFFICIENT IRRIGATION

Just as we zone plants in the landscape according to their different water needs, zone the irrigation system so that plants with different water needs are irrigated separately. Water turfgrass, for instance, separately from shrubs and flowers. Trees and shrubs in the low water-use zone would need supplemental water only during establishment (first 8 to 10 weeks after transplanting); plants in moderate water-use zones require water only during periods of limited rainfall when they show signs of stress. For these plants, a temporary system such as a soaker hose or hand watering may be all that is required. High water-use zones require frequent watering and may warrant a permanent system with automatic controls. Whenever possible, use highly efficient watering techniques. Hand watering individual plants and drip irrigation on ornamentals requires 30 percent to 50 percent less water than sprinkler irrigation. Water between 9 p.m. and 9 a.m. to avoid evaporative loss of water. Avoid watering according to a set schedule or habit.

6. USE OF MULCHES

Mulching is one of the most beneficial landscape practices. By preventing evaporation and maintaining an even moisture supply in the soil, mulches prevent fluctuations in soil moisture that can damage roots. Mulches also prevent crusting of the soil surface and allow water to penetrate readily to plant roots. They insulate the roots of plants from summer heat and winter cold, help control weeds that compete with plants for moisture, and help discourage soilborne diseases that stress plants and cause them to have a higher demand for water. Islands of unplanted mulch under trees and shrubs require no water and little routine maintenance. Some advantages and disadvantages of common types of mulch include:

- Pine straw—Excellent for water conservation. Flammable when extremely dry. Fades to a dull gray-brown color with age. Decomposes rather quickly.
- Pine bark—Mini-nuggets conserve moisture and stay seated on the landscape better than large nuggets. No disadvantages.
- Shredded/chipped hardwood bark—Provides a dura-

ble, long-lasting mulch. No disadvantages.

- Fall leaves—Stay seated better on the landscape and conserve moisture better than unshredded leaves. Not as neat or uniform in appearance as pine straw and pine bark.
- Grass clippings—No advantages. Decompose quickly, mat down and mold. Compost them instead. Not recommended.
- Pecan hulls—Acceptable and economical. Rough looking. Mold with age. Attracts wildlife when fresh.
- Gravel, marble chips, volcanic rock—Long lasting. Absorb and reradiate heat. Unnatural in appearance. Not recommended.
- Newspaper—Placed two sheets thick under organic mulch, helps conserve moisture while allowing water and nutrients to penetrate. When placed too thick it can serve as a barrier to water and nutrients.
- Landscape fabric—Allows nutrients and water to penetrate to plant roots. Prevents most weeds. Aggravating to install. Does not prevent nutsedge and other persistent weeds. Must be covered by an organic mulch.
- Plastic film—No advantages. Prevents oxygen, nutrients and water from reaching plant roots. Not recommended.

7. APPROPRIATE MAINTENANCE

The objective of Xeriscape maintenance is to discourage water-demanding new growth on plants. In other words, keep plants healthy, but do not encourage growth at all times. Depending on your current level of maintenance, this may require you to fertilize less often with less fertilizer, to prune only when necessary and lightly when essential and, of course, to irrigate less. Avoid plant stress by mowing properly, by thinning shrubs instead of shearing, and by controlling weeds and pests before they affect plant health. Remember, a Xeriscape-type landscape is a low-maintenance landscape. By working smarter, not harder, you'll save time, energy and water without sacrificing the beauty of the environment.

By putting the Xeriscape fundamentals into practice, you will become a good steward of the environment and you will be doing your part to ensure your family and future generations the same quality of life we all have grown to enjoy and appreciate in Georgia.

Source: The University of Georgia and Fort Valley State University, the U.S. Department of Agriculture and counties of the state cooperating., "Xeriscaping: A Guide to Developing a Water-Wise Landscape"; www.ces.uga.edu/pubcd/B1073.htm. Bound copies of this publication are available from the Georgia Water Wise Council, 770.483.9474.

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