



North Carolina Division of  
Pollution Prevention and  
Environmental Assistance



# FOCUS

**Providing pollution prevention assistance to North Carolina industries since 1984**

## DPPEA: Championing Compliance Assistance



Since responding to its first request for technical assistance in 1983, DPPEA has been DENR's lead agency in helping North Carolina organizations eliminate, reduce, reuse and recycle wastes and pollutants. As the demand for these specialized services increased, the division also recognized the need to provide comprehensive environmental resources, including compliance assistance.

"Helping our state's regulated community meet and exceed its environmental obligations is DPPEA's mission," said DPPEA Director Gary Hunt. "Our experienced staff strive to create solutions that are cost-effective and practical to ensure the organization maintains compliance, decreases liabilities and improves environmental performance."

DPPEA provides free, non-regulatory compliance assistance by using pollution prevention (P2) to address multi-media regulatory concerns. DPPEA's compliance assistance helps the regulated community (industry, government, commercial business and agribusiness) to:

- understand and meet regulatory environmental obligations;
- develop cost-effective ways to improve or go beyond compliance using P2, environmental management systems, and innovative technologies; and
- promote environmental stewardship to sustain or even improve the environment, conserve natural resources, and provide long-term economic benefits.

DPPEA provides compliance assistance in the form of education, technical assistance and incentive programs. Education provides the regulated entities with an understanding of pollution prevention methods and technologies for use in complying with new and existing environmental requirements. DPPEA provides outreach through industry trade group workshops, employee training, state government conferences and its Web site at <http://www.p2pays.org>. Technical assistance is available through on-site waste assessments, technology research, Web resources [fact sheets, case studies (<http://www.p2pays.org/main/case.asp>), guidance documents] and referrals to experts. DPPEA also administers the Environmental Stewardship Initiative

(<http://www.p2pays.org/esi/>) that promotes and encourages superior environmental performance by the state's regulated community.

In support of these efforts, in 2003 DPPEA conducted 26 on-site compliance assistance assessments and provided 32 training sessions and presentations. A selection of work to help those regulated organizations included:

- Assisting a home appliance manufacturer locate a lead source in the facility's wastewater; subsequent lead levels have been below regulatory limits;
- Developing a recordkeeping tool for a wood furniture finisher to track coating usage to ensure timely and accurate reporting;
- Helping a screen printer successfully switch to low-VOC materials, which lowered regulatory status; and
- Assisting a POTW to pinpoint mercury dischargers and working cooperatively with sources to reduce/eliminate mercury at facility operations to meet state/local requirements.

This issue contains actual success stories from North Carolina organizations that decreased their environmental impacts and improved regulatory compliance with DPPEA's technical services. For further information on long-term, sustainable and cost-effective solutions to environmental problems, please contact DPPEA at (800) 763-0136 or visit <http://www.p2pays.org>.

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## DENR Divisions Highlights Compliance Activities

DENR recognizes that compliance assistance comes in many forms, including education, technical assistance and either positive or negative performance incentives. Any of these activities - if used early, before a violation occurs - can be just as effective an enforcement tool as monetary penalties or court actions such as injunctions. However, depending on the level of awareness and willingness of the regulated entity, compliance assistance may prove as much or more effective than traditional enforcement. Many of DENR's divisions use compliance assistance as one of their many enforcement tools, and these divisions have seen increased compliance and the associated environmental results within their regulated universe.

DENR emphasizes the importance of compliance assistance by highlighting division activities in its annual DENR Compliance Report. View the 2003 report at <http://www.enr.state.nc.us/assets/applets/compliance2003.pdf>.

### DENR regulatory divisions provide compliance assistance by:

- training the regulated communities through workshops and seminars;
- conducting on-site compliance assistance visits;
- maintaining division Web sites;
- distributing newsletters with regulatory information and contacts; and
- updating guidance materials to ensure availability of current and accurate information.

## Compliance Assistance: Leading Principle of DENR Enforcement

"In an ideal world, regulation is replaced by stewardship, an inherent respect for the environment. In this concept of stewardship, everyone takes responsibility for their actions and the use of resources for the benefit of the community." - excerpted from DENR's Principles of Enforcement.

In the real world, conflicting capabilities, priorities, values and perspectives can compromise stewardship. This creates the need for regulation and enforcement. The challenge for regulators is to balance the use of compliance tools with the recognition of stewardship efforts. Regulated entities must be made aware of the conditions for compliance, made to feel the consequences of non-compliance, and provided an opportunity to demonstrate behavior beyond compliance.

When enforcement is necessary, it should be fair, focused, visible and timely. DENR's primary enforcement principle states that "Compliance is the first step toward the ultimate goal of stewardship." The remaining key areas of DENR's enforcement strategy are:

- Enforcement will be balanced with education, technical assistance and incentives to achieve compliance and encourage stewardship.
- Enforcement will be an effective deterrent against future violations.
- Enforcement actions will increase in severity for regulated entities with poor compliance histories.
- The cost of non-compliance should be greater than the cost of compliance.

- Resources will be used proportional to the potential impact on human health and the environment and in keeping with statutory responsibilities.
- DENR will support the development and use of alternative tools to traditional enforcement that achieve compliance and encourage going beyond compliance.
- DENR will trust, empower and support its employees to make enforcement decisions and use enforcement discretion where appropriate.
- DENR will ensure that its employees are well-trained and informed to make enforcement decisions which are measurably consistent.
- Enforcement policies, procedures, pertinent data and other critical information will be accessible to any interested party.
- Enforcement decisions will be defensible, documented and proportional to the degree of potential harm.
- DENR will foster partnerships internally and externally to realize shared responsibilities in environmental stewardship.

### In 2003 DENR:

- Managed 116,991 regulated entities
- Conducted 62,026 inspections
- Spent 219.2 inspection FTEs\*

\*FTE = Full-Time Equivalent based on a 40-hour work week

## Textile Co. Achieves Significant COD Reductions

Kayser Roth Corporation's Golden Lady plant in Lumberton knits, prepares, dyes and finishes nylon hosiery. The facility processes an average of 20,000 pounds of goods per day, generating approximately 200,000 gallons of wastewater that are discharged to the city of Lumberton's wastewater treatment plant.

In 2003, the Golden Lady plant began investigating ways to reduce its loading of chemical oxygen demand (COD). While the facility did not have compliance issues related to COD, the city of Lumberton was charging the company extra fees for COD levels exceeding 600 mg/l. Approximately half of the monthly sewer charges resulting from these surcharges were for excessive COD.

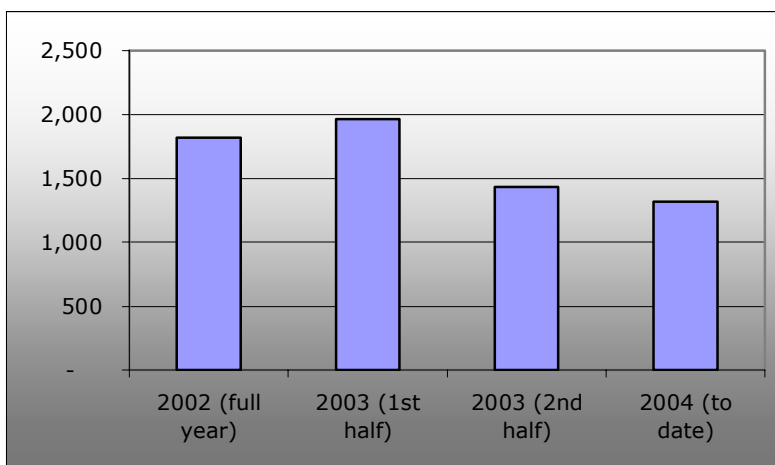
In April 2003, the facility contacted the N.C. Division of Pollution Prevention and Environmental Assistance (DPPEA) to assist with its COD reduction efforts. In the year prior to this effort, the facility averaged 1,873 mg/l of COD in the effluent. Kayser Roth and DPPEA established a process-sampling program to assess the COD contribution from various wet-processing operations including preparation, dyeing, finishing and line flushing. Results from these studies showed dye bath discharges of dark shades were a significant load of COD due to auxiliaries used in the dye bath, specifically leveling agents and defoamers.

Once identified, Kayser Roth worked to reduce or eliminate the use of specific auxiliary chemicals. The facility eliminated the use of defoamer in all dye baths and began purchasing higher quality dyes that resulted in more frequent first-time right dyeing using less adds. The facility went from adds on 78 percent of the dye baths to 25 percent. Additionally, Kayser Roth installed a crude aeration line in its 16,000-gallon equalization basin. For the year following these activities, Kayser Roth's average COD loading was 1,483 mg/l during which time production increased approximately 10 percent.

In April 2004, Kayser Roth purchased 40 fine bubble diffuser heads to install in the aeration basin to improve COD reduction resulting from aeration. Since that time the facility has averaged 1,270 mg/l COD in the effluent. See below for average reduction in COD loading.

While the facility continues to seek ways to reduce COD loading, it has successfully reduced COD concentrations by 30 percent through a combination of source reduction and pretreatment. This table provides a breakdown of the approximate savings for the activities implemented by Kayser Roth. Contact John Burke at (336) 249-1480 or [John.Burke@ncmail.net](mailto:John.Burke@ncmail.net) for inquiries on this pollution prevention case study.

**Kayser Roth: Reductions in COD, average mg/l**



**Annual Savings, Kayser Roth**

Activity	Savings, \$/yr
Defoamer Elimination	\$13,000
Higher Quality Dyes (reduced adds)	\$12,000
Aeration of Effluent + Changes above	\$36,000
<b>Total Savings</b>	<b>\$61,000</b>

## Manufacturer Investigates Air Compliance Strategies

A textile plant experiencing infrequent instances of excessive smoke from one or more of its tenter frame vents had received a Notice Of Violation (NOV) for exceeding the visual emissions limit. The facility's management and technical staff worked on ways to address the air quality problem; however, the issue persisted. The N.C. Division of Pollution Prevention and Environmental Assistance (DPPEA) was requested to assist in developing and evaluating alternative solutions.

**Equipment Operation and Maintenance Practices Evaluation.** One possible resolution was to replace the fans and clean the stacks. The tenter with the most frequent troubles ran an epoxy coating where vapors driven off in the oven were plated out on the fans and the sides of the stacks. Various methods of cleaning the stacks were considered including water-blasting, solvent cleaning and sand blasting. Due to the design of the tenters, the subsequent cleanup of the units was a major concern. Replacement of the stacks, which weren't major pieces of equipment, was also reviewed.

The temperature profile of the tenter was also examined, particularly in view of the smoking problem usually being only from the stack for the earlier stages of the tenters. Was the ramp-up profile too fast? It was believed the rate at which the solvents are driven from the coatings could have a significant effect on what happened in the stacks. For example, were some of the solvents driven out too soon and still burning in the stack and causing smoke? Some were plating out, but were some also getting out the stack?

**Materials Review.** The materials used to coat the fabrics were assessed along with potential new materials/processes. The plant was using water-based coatings. Faculty members from N.C. State University's School of Textiles were consulted about the latest alternate coating materials. A new type of fabric requiring a different process had been tested and looked promising, but the market was not yet ready for a complete conversion. The mesh size of the screens and the frequency of cleaning were also analyzed.



Would a smaller mesh and more frequent cleanings solve the problem?

**Operation Optimization.** The above efforts resulted in improvements; however, the smoking problem still existed. A consultant with considerable experience in specialized software and equipment for controlling the operation of an oven optimally was contacted. This consultant had developed a sensing instrument that rides through the tenter and sends pertinent information to a computer for analysis. Oven care and operation were looked at by first reviewing in great detail the condition of the various parts of the oven and then checking for leaks that might interfere with the designed air flows.

The design and operation of tenter ovens could appear to be straightforward to some of us, but to operate at the optimum efficiency requires proper instrumentation, proper set-up, good maintenance and periodic detailed review to ensure it's still being operated as designed. To date this facility has maintained compliance with its visible emissions limits with increased efforts to ensure equipment and materials review. For more information on this and other air quality compliance assistance case studies, contact Bill Albright at (919) 715-6499 or [bill.albright@ncmail.net](mailto:bill.albright@ncmail.net).

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## EPA's Performance Track Offers Incentives

On April 22, 2004, new incentives took effect for members of the U.S. EPA's National Environmental Performance Track program. The first incentive available to participating members offers large quantity hazardous waste generators up to 180 days, and in certain cases 270 days, to accumulate hazardous waste without a Resource Conservation and Recovery Act (RCRA) permit or interim status. The second incentive offers simplified reporting requirements for facilities governed by the Maximum Available Control Technology (MACT) provision of the Clean Air Act (CAA). The provision applies to member facilities that are minors, synthetic minors and federally reportable minors

sources. The provision does not apply to facilities that are CAA majors. Additional incentives are currently being developed.

Performance Track is a national voluntary program that recognizes and rewards top environmental performance among participating U.S. facilities. Members commit to be in compliance, commit to have implemented an environmental management system (EMS), commit to future environmental improvements, and commit to public reporting. For more information on incentives for members, contact Bob Sachs, (202) 566-2884 or [Sachs.Robert@epamail.epa.gov](mailto:Sachs.Robert@epamail.epa.gov) or visit the Performance Track Web site at <http://www.epa.gov/performance-track/>.

## Compliance Opportunities for CRTs/Fluorescents

It would be hard to find more ubiquitous items in business, industrial and institutional settings than computer monitors and fluorescent lights. And yet, when they reach the end of their useful life, these products can pose compliance “opportunities” for everyone who has them. Non-household generators of cathode ray tubes (CRTs), found in most monitors and televisions, are not allowed to dispose of these items as solid waste in Dumpsters and landfills (see fact sheet on CRTs at <http://www.p2pays.org/ref/26/25957.pdf>). For fluorescent lights, only generators who can prove that their lights are non-hazardous ~ a potentially costly endeavor ~ can dispose of them as solid waste. For more information on the regulatory status of fluorescent lights, see: <http://www.p2pays.org/ref/14/13912.pdf>.



Fortunately, regulatory compliance for generators of CRTs and fluorescent lights is fairly simple and straightforward. In both cases, it is always worth asking vendors of the products about any kind of take-back or recycling services they provide. Most larger computer OEMs offer recycling of their equipment, and many lamping companies also do the same.

If generators are forced to find outlets for these materials on their own, many options are listed in North Carolina’s Recycling Markets Directory at <http://www.p2pays.org/DMRM/start.aspx>. DPPEA staff at (919) 715-6500 can help answer questions about the

listed markets and can provide other sources of information on outlets for CRTs and fluorescents.

Generators can always enhance their compliance record by choosing CRT and light products with long-use lives, and in the case of CRTs, finding reuse opportunities within a business, industry or institutional operation. Generators also may save a little money by not necessarily buying new monitors every time a computer is replaced if the current monitor is in working order. If a purchase needs to be made, flat panel LCD-based monitors are becoming more common as replacements for the CRTs, and are more energy-efficient in use than their lead-bearing counterparts.

For fluorescents, generators would be well-served by investigating how much light is needed for certain applications, and exploring whether other sources of light (e.g., daylighting) can be used to reduce the number of lamps needed. Using less lighting in general has the obvious side benefit of reducing energy consumption and cooling loads in buildings. Users of fluorescent lighting can also practice pollution prevention by specifying lower mercury-content lamps.

For further information on this illuminating topic refer to: <http://www.p2pays.org/ref/26/25979.pdf>  
<http://www.p2pays.org/ref/26/25978.pdf>.

## DENR Offers P2 Grants to ESI Participants

DENR continues to encourage and support Environmental Stewardship Initiative (ESI) participants in their environmental improvement efforts by now offering Pollution Prevention (P2) grants. With funding provided through EPA funds, each ESI grant could be funded up to a maximum of \$5,000 with a 50 percent match, with the hopes of funding six or more projects. Projects must address pollution prevention, result in measurable reductions, and be completed in one year. ESI participants are encouraged to set aggressive environmental performance goals and implement projects to reduce the environmental impacts of their operations. These grants will help ESI participants meet those goals. Applications, due Oct. 1, 2004, will be evaluated on a number of criteria outlined in the request for proposal and how the project relates to the facility’s ESI environmental performance goals.

ESI is a DENR program designed to promote and encourage superior environmental performance by the regulated community.



It is a voluntary program that assists facilities to develop and implement programs that use pollution prevention and other innovative approaches to meet and exceed their regulatory requirements. For more information contact Lisa Grosshandler at (919) 715-6527 or [lisa.grosshandler@ncmail.net](mailto:lisa.grosshandler@ncmail.net) or visit <http://www.p2pays.org/esi>.

## Air Quality News

### Outdoor Burning Banned On Air Quality Action Days

Outdoor burning is now prohibited in major metropolitan areas across the state when air quality forecasts call for high levels of ozone in those areas. The rule is aimed at reducing emissions that contribute to ozone and particle pollution when the air quality is expected to be poor. The ban will be triggered on "air quality action days," when the Division of Air Quality (DAQ) or local air programs forecast Code Orange, Red or worse ozone conditions for a particular metro area.

"The ban on outdoor burning will help us improve air quality and protect public health in areas experiencing Code Orange and Red days," said Keith Overcash, DAQ director. "Smoke from outdoor fires is unhealthy to breathe, particularly for people with respiratory problems, and it contributes to ozone and particle pollution."

Many of the counties covered by the air quality forecasts are included in non-attainment areas. The burning ban is one of a series of steps the state is taking to bring these areas back into compliance with national air quality standards. Areas covered by the new open burning rule include 39 counties in the Asheville, Charlotte, Fayetteville, Hickory, Triad and Triangle metro areas. A map showing all of the forecast counties is posted on the DAQ web site at <http://daq.state.nc.us/airaware/ozone/monitors/>. The ban does not apply to the Rocky Mount area because EPA designated Nash and Edgecombe non-attainment for ozone but

citizens in those counties are encouraged not to burn outdoors on Code Orange and Red days.

North Carolina law restricts open burning because the smoke from outdoor fires can cause serious health problems and pollute the air. Under the open burning rule, it is always illegal to burn non-vegetative materials such as:

- Garbage, paper and cardboard;
- Tires and other rubber products;
- Building materials, including lumber;
- Wire, plastics and other synthetic materials;
- Asphalt shingles and heavy oils;
- Paints, and household and agricultural chemicals.

State and local air quality programs issue year-round air quality forecasts for ozone and fine particles in the Charlotte, Hickory and Triad metro areas. Forecasts are issued May - September for ozone in the Triangle, Asheville, Fayetteville and Rocky Mount metro areas. Meteorologists issue the forecasts at 3 p.m. every day for the following day. The color-coded forecasts show whether air quality is likely to be good (green), moderate (yellow), unhealthy for sensitive groups (orange), or unhealthy (red).

Air quality forecasts can be found at the DAQ Web site, [www.ncair.org](http://www.ncair.org). Go to <http://daq.state.nc.us/enf/openburn/> for DAQ's open burning brochure.

## Your Prescription for P2 Info...

The Pollution Prevention Resource Exchange (P2Rx) was created in 1997 by the U.S. Environmental Protection Agency. It strives to be a seamless national network of easily accessible, high quality pollution prevention information that promotes waste reduction throughout the United States.

P2Rx is a consortium of eight regional pollution prevention information centers, funded in part through grants from EPA. These centers all provide pollution prevention (P2) information, networking opportunities and other services to states, local governments and technical assistance providers in their region. The centers support a broad constituency, including state and local pollution prevention programs, manufacturing extension partnerships, cooperative extension and nonprofit organizations. The diversity of audience contributes to an overall breadth of P2 information and opportunities.

The Waste Reduction Resource Center (WRRC), co-located with DPPEA, is the P2Rx center for the 13 states in EPA Regions 3 & 4. One of the unique resources available at the WRRC Web site is its P2 library that currently contains more than 31,000 P2-related documents available electronically. The library can be accessed in the P2 Infohouse at <http://wrrc.p2pays.org/SearchRLIBY.asp>. WRRC also provides a Rapid Response service offering individual

assistance by providing answers to specific questions or gathering resources on a topic. The service can be used electronically at <http://wrrc.p2pays.org/AskRudy/> or by calling (800) 476-8686.

In addition to the clearinghouse, P2Rx has constructed 45 topic-specific information hubs at Pollution Prevention Resource Exchange (P2Rx) Topic Hubs. The WRRC also offers P2 core references in the Industry Sectors section that include technical references, fact sheets and case studies on pollution prevention for selected industry sectors. These documents are deemed to be the "best" by the entities that compiled them and are located at <http://wrrc.p2pays.org/industry/indsector.htm>. In addition to acquiring and converting current P2 research documents, DPPEA staff develops, updates and maintains the WRRC Web site, industry sector content, and select P2Rx topic hubs.

P2Rx and the WRRC strive to be your "one-stop" resource for the P2 information you need! Please check it out the next time you have P2 questions. For further information on this comprehensive P2 resource, contact Curt McCracken at (919) 715-6514 or [curt.mccracken@ncmail.net](mailto:curt.mccracken@ncmail.net).



## Waste Management News

### Fraudulent Environmental Practices Punished

In June 2004, an employee who misrepresented facts about environmental work to DWM was found guilty of two criminal counts of willfully making false material statements and representations. The U.S. District Court ordered the defendant to pay \$107,741 in restitution and to serve two years probation. The monies will be used to perform environmental work that was neglected by the employee.

The false documents and statements were directed to the state's Underground Storage Tank Section. The case was brought by the U.S. Environmental Protection Agency in partnership with the N.C. State Bureau of Investigation's Environmental Crime Unit.

"I hope this case sends a message to anyone else contemplating fraud in the environmental sector. Threatening the health of North Carolina residents or their environment will not be tolerated," said EPA Criminal Investigator, Ivan Vikin.

As an employee of a hazardous waste service company, the defendant routinely worked on underground storage tank removals. After tanks are removed, EPA and state regulations require soil samples to be taken for laboratory analysis to detect contaminants. According to court documents, the samples were never sent to the lab. Instead, the employee falsified data to state regulators and pocketed the company's reimbursement for lab fees.

"To protect the environment and public health, we must receive credible data regarding cleanup activities," said Dexter Matthews, director of the state's Division of Waste Management (DWM). "I hope this case sends a strong message that activities such as these will not be tolerated in our efforts to safeguard the public."

### Illegal Landfill Shutdown

An illegal landfill that threatened neighbors' health in Forsyth County was closed and ordered to clean up, state solid waste officials and Attorney General Roy Cooper announced in April 2004. The operation was unlawfully accepting wastes from construction sites.



"State law requires landfills to be permitted and operate under rules that protect public health and the environment," said Dexter Matthews, DWM director. "This action sends a clear message that it is more profitable - as well as environmentally protective - to operate in compliance with the law."

The case was brought by DENR and Attorney General Roy Cooper's office. The judgment marked the first time that the state has won money earned by an illegal landfill.

"Most businesses play by the rules but this one did not, and our health and natural resources were in jeopardy," said Cooper, whose lawyers argued the case. "Those that violate our laws and our environment will pay the price."

The judgment required immediate closure of the operation, removal of all wastes from the site, payment of \$4,600 in penalties, forfeiture of \$643,1000 in illegal profits, and testing and monitoring of area methane levels.

"Illegal landfills can pose a danger to human health and the environment," said Matthews. "During warmer months when construction work is at its peak, we see an increase in this activity. We are fortunate to have a new enforcement tool to combat illegal waste disposal."

For more information on these non-compliance cases, contact DWM at 919-733-4996 or <http://wastenot.enr.state.nc.us/>.

*FOCUS: Waste Minimization* is published by the divisions of Pollution Prevention and Environmental Assistance, Waste Management, Air Quality and Water Quality of the N.C. Department of Environment and Natural Resources (DENR). It is intended to provide North Carolina industries and other interested parties with current information concerning proper waste management and waste reduction. The information contained in this publication is believed to be accurate and reliable. However, the application of this information is at the reader's own risk. Mention of products and services in the publication does not constitute an endorsement by the state of North Carolina. The information contained in this publication may be cited freely.

If you have comments, waste minimization case summaries, resource information or questions for the next issue of the *FOCUS* newsletter, call Norma Murphy at (919) 715-6513, fax (919) 715-6794, e-mail [Norma.Murphy@ncmail.net](mailto:Norma.Murphy@ncmail.net), or write the N.C. Division of Pollution Prevention and Environmental Assistance (DPPEA), 1639 MAIL SERVICE CENTER, RALEIGH NC 27699-1639.

State of North Carolina: Michael F. Easley, Governor; William G. Ross Jr., DENR Secretary; Gary Hunt, DPPEA Director.



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DPPEA  
online:

[www.p2pays.org](http://www.p2pays.org)

## Environmental Management Systems (EMS) for North Carolina Pork Producers



North Carolina's swine population outnumbers that of humans, with about 9.6 million hogs raised annually. These significant production rates have led to environmental concerns for groundwater, odors and surface water pollution. Increased regulation and scrutiny of pork production have resulted in the realization that regulation alone may not provide the necessary level of environmental protection for these operations. Interest in improved control technologies has led to the consideration of alternative management practices including environmental management systems (EMS).

DPPEA received a grant funded by EPA's Office of Enforcement and Compliance Assurance to evaluate the effectiveness of EMS as a compliance assistance tool for swine producers. This is a voluntary program for pork producers seeking help with compliance issues. Most producers wish to improve their record-keeping, public image and overall farm operations. An EMS is an invaluable opportunity for producers to address these as well as other issues.

As part of a previous grant with seven pilot pork producers, online assistance tools were developed by DPPEA, including a pork producer EMS template and sample manual. The manual template can be downloaded and customized to create an EMS unique to the user's operation. Additionally, an interactive aspects and impacts identification and ranking program is available. Both programs can be accessed at <http://www.p2pays.org/porktool>. Using these tools over the next two years with the support of coaches, six new producers will be able to create, implement and monitor their EMS while determining its value to compliance assistance.

A participant from the first grant found his EMS to be a tremendous asset on his operation. "In my operation I had done all that was possible to identify environmental issues," said Chuck Stokes. "However, with an operation my size this was not enough. Invariably I found myself behind the problem rather than in front of it. Although the EMS has not instantaneously corrected all of my problems, it has given me the vision needed to address environmental impacts related to my farm. Within the year I feel confident that my overall operation will be dramatically enhanced by the implementation of EMS."

Following EMS implementation, DPPEA will evaluate a variety of pertinent measures to assess if and how an EMS helps to improve compliance. In addition, coaches will administer a quarterly questionnaire to farm workers and managers to assess their knowledge of environmental impacts produced from the farm. In the future, DPPEA hopes to work with technical assistance providers to offer assistance to other livestock producers who may also benefit from an EMS. For more information on this project, contact Jamie Ragan at (919) 715-6519 or [jamie.ragan@ncmail.net](mailto:jamie.ragan@ncmail.net).

### Does Your Waste

### Have a Home?

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Near You...*

[www.ncwastetrader.org](http://www.ncwastetrader.org)

N.C.'s Industrial Waste Exchange

### Have Your Waste Ready!

*for more information, call:*  
Tom Rhodes, (919) 715-6516



## CALENDAR OF EVENTS

EVENT	DATE	LOCATION	CONTACT
<b>Carolinas Air Pollution Control Association Fall Meeting</b>	Oct. 20-22	The Hilton Myrtle Beach, S.C.	(919) 676-6099
<b>North Carolina Landfill Gas Conference</b>	Dec. 3	McKimmon Center	Scott Mouw (919) 715-6512