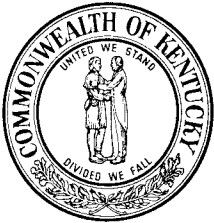


**KENTUCKY'S MANAGEMENT OF NONPOINT
SOURCE WATER POLLUTION**

AUGUST 2001 – PERFORMANCE AUDIT



**EDWARD B. HATCHETT, JR.
AUDITOR OF PUBLIC ACCOUNTS**

The Auditor Of Public Accounts Ensures That Public Resources Are Protected, Accurately Valued, Properly Accounted For, And Effectively Employed To Raise The Quality Of Life Of Kentuckians.



EDWARD B. HATCHETT, JR.
AUDITOR OF PUBLIC ACCOUNTS

August 2, 2001

To the People of Kentucky

The Honorable Paul E. Patton, Governor
James Bickford, Secretary, Natural Resources and Environmental Protection Cabinet
Robert Logan, Commissioner, Department for Environmental Protection
Jack Wilson, Director, Division of Water

Re: Performance Audit of Kentucky's Management of Nonpoint Source Water Pollution

Ladies and Gentlemen:

We present our report on Kentucky's management of nonpoint source water pollution. We are distributing this report in accordance with the mandates of Kentucky Revised Statute 43.090. In addition, we are distributing copies to members of the committees of the General Assembly exercising oversight authority for natural resource issues, as well as other interested parties.

Kentucky Revised Statute 43.090 (1) requires an agency to which a report of the Auditor of Public Accounts pertains to notify the Legislative Research Commission and the Auditor of Public Accounts, within 60 days of completion of the audit report, which of the audit recommendations have been implemented and which have not. After an appropriate period, we will contact the Division of Water to determine whether the report's recommendations are implemented and will advise the Legislative Research Commission regarding the status of that implementation. Once we are advised that the recommendations have been implemented, they will be considered closed.

Our Division of Performance Audit evaluates the effectiveness and efficiency of government programs. The Division also performs risk assessments and benchmarks government operations. We will be happy to discuss with you at any time this audit or the services offered by our office. If you have any questions, please call Gerald W. Hoppmann, Director of our Division of Performance Audit, or me.

We appreciate the courtesies and cooperation offered to our staff during the audit.

Respectfully submitted,

Edward B. Hatchett, Jr.
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Executive Summary

Audit Objective

Determine whether Kentucky's efforts are effective to detect and prevent water pollution resulting from animal feeding operations, improper sewage disposal, and mining operations.

Background

Earlier water pollution control strategies addressed pollution that entered the nation's waters at distinct points. Known as "point source" pollution, this is the type of pollution the federal government and the individual states, including Kentucky, targeted for regulation.

Nonpoint source (NPS) pollution poses an equal, if not greater, threat to water quality. It is defined as pollution from diffuse, diluted sources that results from a variety of commercial or private human activities. Animal feeding operations, improper sewage disposal systems, and mining activities are some examples. Since this type of pollution does not originate from easily identifiable sources that produce point source pollution, it is much more difficult to track and regulate. The Division of Water (DOW) reports that 91 percent of Kentucky's impaired waters are polluted as a result of nonpoint source pollution.

State Permits Are Not Effectively Applied to Animal Feeding Operations and Compliance With Federal and State Regulations Is Not Enforced

Concentrated Animal Feeding Operations (CAFOs), with high numbers of confined animals, and other smaller Animal Feeding Operations (AFOs) generate large amounts of animal manure and wastewater that threaten Kentucky's water quality. CAFOs are required to be regulated as point sources by the federal Clean Water Act. However, they have not historically been subject to permitting under the Kentucky Pollutant Discharge Elimination System (KPDES), which is required by the federal Environmental Protection Agency (EPA).

Under the alternative permitting system employed by Kentucky, over 50% of the Commonwealth's CAFOs and AFOs operate without permits. Furthermore, the Commonwealth has had limited success in identifying or enforcing compliance with federal and state regulations governing agriculture's threat to water quality. Currently, the Commonwealth is making efforts to become more compliant with EPA regulations; but without active enforcement of these regulations, pollution from animal feeding operations will not be controlled.

Number and Location of Straight Pipes and Faulty Sewage Systems Are Unknown

Many communities and homes in the Commonwealth use straight pipes or faulty sewage systems, often because of rocky geography and poor economic conditions. Although numerous entities attempt to monitor and mitigate the effects of straight pipe discharges and faulty sewage systems, there is no statewide effort to locate and document improper sewage disposal.

Oversight and Mapping of Mining Operations is Fragmented and Uncoordinated

DOW does not sufficiently monitor compliance with KPDES permits issued for coal mining and reclamation operations. According to a 1983 MOU between DOW and the Department of Surface, Mining, Reclamation, and Enforcement (DSMRE), DOW issues KPDES permits but is not responsible for the monitoring and testing of permittees (operators). As a result, DOW is not taking the proper steps to ensure that mining operations do not threaten water quality.

No state agency is singularly responsible for identifying and mapping abandoned underground mines. While the Department of Mines and Minerals (DMM) and DSMRE are beginning to scan existing maps and locate abandoned underground mine shafts, they are encountering statutory or other obstacles, which have limited their success. A fully developed and publicly accessible graphic information system displaying the locations and boundaries of underground abandoned mines in the Commonwealth could identify water bodies vulnerable to acid mine drainage. It could also identify unstable conditions affecting coal slurry impoundments as well as private and commercial land development.

Executive Summary

Recommendations

This report contains 14 agency recommendations, which are summarized as follows.

- DOW should enforce two regulations related to the permitting of CAFOs.
- DOW should seek to amend one regulation to ensure that all animal feeding operations go through the same type of permitting process.
- DOW should regularly investigate all AFOs and CAFOs to ensure compliance with federal and state regulations.
- DOW should consider developing KPDES permits that apply to middle-tiered operations and consider permitting watersheds.
- DOW should work with applicable federal, state, and local entities to ensure the planning requirements of the Agriculture Water Quality Act (1994) and other regulations are met.
- The Natural Resources and Environmental Protection Cabinet and the Cabinet for Health Services should develop an action plan to target straight pipes.
- DOW and DSMRE should work together to ensure that KPDES monitoring and testing results are communicated to DOW.
- DOW and DSMRE should work jointly to develop a database to store KPDES monitoring and testing results.
- DOW and DSMRE should revise a 1983 MOU cooperative agreement regarding monitoring and enforcement responsibilities.
- DSMRE should report to DOW any acid mine drainage identified through testing or monitoring.
- DSMRE, the Division of Abandoned Mine Lands (AML), and the Division of Mines and Minerals (DMM) should work together to locate, scan and computerize underground abandoned mine locations in the Commonwealth.
- The Department for Environmental Protection (DEP) should improve administrative procedures related to investigations.
- DEP should institute a toll free number for residents to call with environmental complaints.
- DEP should link internal planning to the budgetary process.

Our report also contains six Legislative Recommendations, which are summarized as follows.

The General Assembly should consider:

- Requiring agriculture operators to certify water quality plans.
- Funding an inventory of straight pipes and abandoned mines.
- Preventing the transfer of property until a sewage management disclosure has been made.
- Creating a state funded program similar to the Personal Responsibility in a Desirable Environment (PRIDE) initiative.
- Determining whether mine maps should be included as part of the Kentucky Open Records Act.
- Reviewing statute to determine whether AML can use money from the Abandoned Mine Reclamation Fund (Fund) to locate, scan, and computerize abandoned underground mine locations.

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Acronyms and Abbreviations

AFOs	Animal Feeding Operations
AML	Division of Abandoned Mine Lands
Authority	Agriculture Water Quality Authority
BMPs	Best Management Practices
Cabinet	Natural Resources and Environmental Protection Cabinet
CAFOs	Concentrated Animal Feeding Operations
DEP	Department of Environmental Protection
DMM	Department of Mines and Minerals
DMME	Virginia Department of Mines, Minerals, and Energy
DSMRE	Department for Surface Mining Reclamation and Enforcement
DOW	Kentucky Division of Water
EPA	United States Environmental Protection Agency
EQC	Environmental Quality Commission
Fund	Abandoned Mine Reclamation Fund
KNDOP	Kentucky No Discharge Operation Permit
KPDES	Kentucky Pollutant Discharge Elimination System
KRS	Kentucky Revised Statutes
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NOT/COM	Notifications and Complaints
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
PRIDE	Personal Responsibility in a Desirable Environment

Initial Water Quality Programs Focused on Point Source Pollution

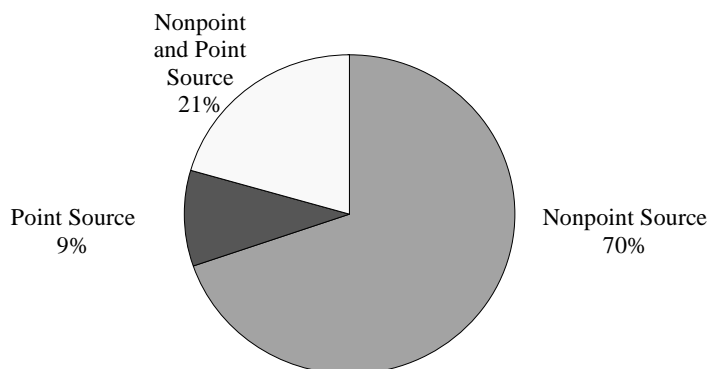
Historically, Kentucky's management of water quality has focused on detecting and preventing point source pollution. Point source pollution is defined as pollution entering the water at a distinct, identifiable point. Since the passage of the Federal Water Pollution Control Act in 1972 (commonly referred to as the Clean Water Act), federal regulations concerning water pollution have likewise targeted point source pollution. Federal and state regulations allow for a specific amount of pollutant discharge from a Kentucky point source if the polluter has secured a permit from the Commonwealth's Division of Water (DOW). Examples include discharge from industrial plants and factories, power plants, and wastewater treatment plants.

Nonpoint source (NPS) pollution, on the other hand, comes from sources that are difficult to regulate and monitor using traditional permitting methods. NPS refers to diffused, diluted sources of pollution that result from a variety of human activities. These activities could be commercial, such as agriculture and mining, or private, such as improper sewage disposal from homes or boats. NPS pollution from land-based activities is exacerbated by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, depositing them into surface and ground water. The types of NPS pollutants vary with the activity and include sediment, nutrients, pesticides, pathogens (such as bacteria and viruses), salts, oil, grease, toxic chemicals, and heavy metals.

Nonpoint sources of pollution came into focus after DOW had established monitoring procedures for point source pollution. There was a realization that pollution was not confined to metropolitan industrial or municipal sources, but that rural activities were also contributing to the Commonwealth's problems. Since 48% of Kentucky's population lives in rural areas and over 1,000,000 Kentuckians rely on groundwater sources for drinking water, NPS pollution is a major concern.

In a June 1998 report, DOW reported that 196 unique stream segments and 34 lakes have water quality impairments. The most frequent cause of impairment to streams is fecal coliform bacteria contamination, which primarily comes from nonpoint sources. The primary pollutant of lakes consists of nutrients from agricultural nonpoint sources. The figure below illustrates the significant impact of NPS pollution on Kentucky's water quality.

Figure 1
Breakdown of Pollution Sources Impairing Kentucky's Waters



Source: Auditor of Public Accounts, from the Division of Water's 1998 303(d) Report and the March 1999 Kentucky Nonpoint Source Assessment Report.

Federal and State Focus Is Shifting to NPS Pollution

The DOW has the primary responsibility for managing and protecting the state's surface and ground waters. The DOW is within the Natural Resources and Environmental Protection Cabinet (Cabinet) and is divided into nine branches to carry out its duties. Appendix II contains the organizational chart of the Cabinet, a brief summary of the responsibilities and staffing of the nine branches, and DOW expenditure information.

In 1987, the U.S. Congress amended the Clean Water Act to include Section 319, Nonpoint Source Management Programs. DOW responded by developing Kentucky's Nonpoint Source Management Program document in 1988, which the Environmental Protection Agency (EPA) approved in 1989. This document is a compilation of goals and best management practices (BMPs) that Kentucky will use to control NPS pollution. BMPs are guidelines recommended for use when participating in land-based activities, such as agriculture, mining, construction, and forestry.

In Kentucky, BMPs are usually voluntary, although the Agriculture Water Quality Act of 1994 requires a plan to develop applicable BMPs and implement them by October 2001. KRS 224.71-110 requires the creation of a permanent Agriculture Water Quality Authority (Authority) to develop a statewide agriculture water quality plan. The Authority is appointed by the Governor and consists of representatives from state and federal agricultural entities who serve various terms.

Based on the statewide plan, each agriculture operation located on 10 or more acres is required to develop and implement an individual agriculture water quality plan that addresses the prevention of water pollution. In addition, according to 401 KAR 5:037, agriculture operations located on fewer than 10 acres must develop a "groundwater protection plan." These plans should discuss the BMPs designed to specifically provide protection against groundwater pollution.

Audit Focus

The objective of this audit is to determine whether the Commonwealth's efforts to detect and prevent water pollution resulting from animal feeding operations, improper sewage disposal, and mining operations are effective. Specifically, we examine how the Commonwealth is permitting animal feeding operations, preventing improper sewage disposal, and averting acid mine drainage from mining operations. It should be noted that in the course of our audit work, we discovered that certain animal feeding and mining operations are technically considered point source polluters. Therefore, we address both nonpoint and point source pollution in this report.

Background information on the three areas of our audit focus is provided in the following sections.

Animal Feeding Operations

Animal feeding operations pose a risk to water quality because of the large amounts of animal manure and wastewater generated. According to the *1998-99 State of Kentucky's Environment* report prepared by the Kentucky Environmental Quality Commission (EQC), agriculture was the leading source of water pollution in monitored waterways in 1997. Runoff and spills from ruptured or poorly constructed waste lagoons or waste storage structures result in water contamination. Excessive rainfall also causes spills that result in water pollution.

Nutrients such as nitrogen and phosphorous from manure produce excess algae and other microorganisms. According to the United States Department of Agriculture “explosive algae populations can lower the level of dissolved oxygen, which can cause fish and other organisms to die.” This results in a health risk to humans due to exposure to “bacteria, protozoa, and viruses.”

When an animal feeding operation has a large number of confined animals, it is classified as a concentrated animal feeding operation (CAFO), thereby subjecting it to permitting as a point source polluter. According to 401 KAR 5:002, a CAFO is an animal feeding operation with more than the following numbers of confined animals:

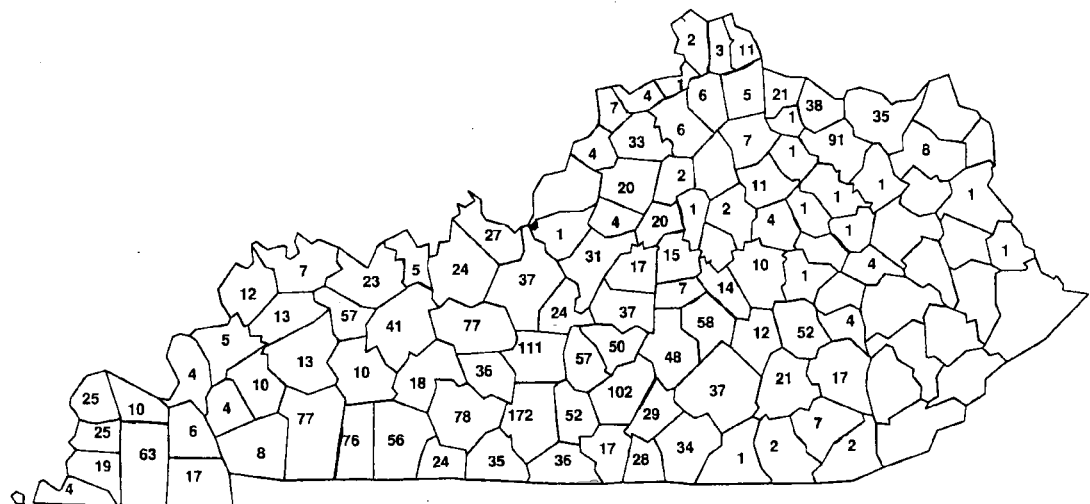
- 1,000 beef cattle
- 700 dairy cattle
- 100,000 hens or broilers (poultry)
- 2,500 swine

We use the acronym AFO to denote animal feeding operations with less than the number of animals shown above. However, an AFO with fewer confined animals may be designated as a CAFO if an on-site inspection reveals that a facility is a significant contributor to water pollution.

CAFOs are considered point source pollutants, and EPA guidelines require that they be regulated and permitted to prevent pollution. According to a DOW official, CAFO discharges generally occur as a result of “over-application” of manure on crops or as a result of overflows from a lagoon or other waste handling system.

DOW has estimated that there are approximately 245 CAFOs and 2,410 AFOs in the Commonwealth. The following maps display the number of known AFOs and CAFOs in each county and illustrate the high number of CAFOs in the western part of Kentucky.

**Figure 2
Number of Estimated Animal Feeding Operations (AFOs) in Kentucky**



Source: Auditor of Public Accounts, from information provided by the Division of Water.

Operator liability means that farm owners as well as integrators, who own the animals and contract with farmers, are responsible for the conditions on which a permit is issued. This means that the farm owners and integrators are both liable for damages to waterways as a result of operations. A contractual relationship between company and farmer is common in both the poultry and swine industries.

According to an EPA official, Kentucky has been progressive in the area of integrator liability. Proponents of integrator liability argue that without this liability the farmer could be held liable for a CAFO violation while the corporate entity may suffer no consequences. Opponents contend that integrators will move their CAFOs out of Kentucky to states that are not so restrictive. The Kentucky Farm Bureau is involved in litigation with the state arguing that under state law, KRS 13A.120, state regulations cannot be stricter than federal regulations.

Under 401 KAR 5:074E, poultry feeding operations are required to have permanent litter storage structures by October 2001. Permanent litter storage structures prevent litter's exposure to rainfall and curtail waste runoff. This regulation establishes various requirements for barns, lagoons, poultry houses, litter storage structures, composting sites, and waste-handling structures constructed or expanded after February 14, 2000. For example, poultry houses are required to be constructed no closer than 2,000 feet from an incorporated city limit and no closer than one mile from any downstream public water supply surface water intake.

DOW's decision to move the permitting of CAFOs from under KNDOP to permitting CAFOs under KPDES was two-fold. One, there has been a huge increase in the number of poultry farms in western Kentucky over the past five years, which has increased the potential for water pollution. Secondly, the EPA notified DOW on September 21, 1999 that if a state's current CAFO permit process is not consistent with the federal permitting process, "the State must propose permit procedures by October 1, 1999, such that permits can be used by January 2000."

Improper Sewage Disposal

Many communities and homes in the Commonwealth use straight pipes or faulty sewage systems. Tough, rocky soil and hilly terrain make sewage systems expensive and difficult to construct. Defective sewage systems contribute to the pollution found in streams and rivers.

104 (53%) of 196 impaired streams contain fecal coliform contamination. Fecal coliforms indicate the presence of other pathogens that can cause human health problems. Much of this pollution comes from straight pipe and faulty sewage system discharges.

In a 1999 Kentucky EQC report, it was estimated that "600,000 (40% of total in Commonwealth) housing units in Kentucky rely on septic tanks and other onsite systems for wastewater treatment." The report goes on to reveal that in 36 counties "less than 25% of the housing units are connected to public sewers." Furthermore, according to the National Rural Community Assistance Program, "Kentucky ranks first in the nation in the number of rural homes without adequate plumbing."

The report contains other important data, namely:

- The Commonwealth received 5,000 public complaints regarding onsite sewage in 1997.
- Onsite sewage is the 4th leading source of water pollution in monitored waterways.
- Nearly half of the private drinking water wells sampled by the Cabinet for Health Services tested positive for coliform bacteria, an indication that the wells may be contaminated with disease carrying pathogens.
- Thirty-seven percent of new home constructions in the Commonwealth use onsite systems for wastewater treatment.
- The 5th Kentucky Congressional District has the 7th highest number of onsite sewage systems in the nation.

Fecal coliform pollution is one of the targets of a program called PRIDE (Personal Responsibility in a Desirable Environment). This program, sponsored by U.S. Representative Hal Rogers and supported by Cabinet Secretary James Bickford, seeks to eliminate or reduce sewage and debris in a 40-county area within the southern and eastern portions of Kentucky. It is the first joint federal, state, and local effort to address water pollution problems in the Commonwealth. Since 1997, Congressman Rogers has secured over \$25 million in federal funding for various PRIDE projects and activities.

Federal funding in the form of NPS Section 319(h) grant funds has also been used to install septic systems for Estill County residences. Approximately 40% of the septic systems have been installed with Section 319(h) funds (approximately \$219,000) and other funds such as PRIDE (\$20,000).

Coal Operations and Acid Mine Drainage

According to the *1998-99 State of Kentucky Environment* report prepared by the Kentucky Environmental Quality Commission, coal-mining activities involving active, inactive, and abandoned mines were the source of 19% of the pollution in monitored waterways in 1997. Acid mine drainage from abandoned mines is one of the main coalmine pollutants in Kentucky. Acid mine drainage kills aquatic wildlife and vegetation, eats away concrete and metal structures, raises water treatment costs, and turns the color of stream banks to bright orange and red.

Active coal mining operations are required to have KPDES permits for all discharge points, and the Department for Surface Mining Reclamation and Enforcement (DSMRE) has been given primary monitoring and enforcement responsibility. In 1983, in an effort to reduce duplicative procedures and conserve manpower, a Memorandum of Understanding (MOU) was effectuated between DOW and DSMRE to coordinate KPDES permitting activities. The Cabinet envisioned that DSMRE, with 80 inspectors covering all coal-producing counties, was better positioned to determine KPDES compliance.

As stipulated in the MOU, the Surface Coal Mining and Reclamation Operations Permits issued by DSMRE are contingent on compliance with KPDES requirements. DSMRE agreed to perform inspection, monitoring, and enforcement duties associated with both permits. The MOU also requires DSMRE to submit quarterly and annual reports to DOW that summarize noncompliance and enforcement actions.

DSMRE's mine discharge monitoring procedures consist of performing quarterly independent field tests and reviewing operator data to track instances and patterns of noncompliance. These field tests include sampling mining operation discharge points. Additionally, the coal mining and reclamation operators are required to sample the water at the discharge points twice per month. The sampling results are compiled by the operators in a Discharge Monitoring Report (DMR), which is sent to DSMRE for review. According to DSMRE officials, when the DMR indicates a water quality violation, a DSMRE inspector will go to the site and take an independent sample for testing to determine if enforcement actions should be taken. In contrast, DOW can take enforcement actions based solely on the results of DMRs.

KRS 350.550 created an Abandoned Mine Lands Program, which is administered within the Cabinet by the Division of Abandoned Mine Lands (AML). An Abandoned Mine Reclamation Fund (Fund) was also created for "reclamation and restoration of land and water resources adversely affected by past coal mining." The provisions of KRS 350.550 took effect in 1982 and made reclamation funding available for those mines abandoned before this date. Consequently, mines abandoned after 1982 are ineligible for funding.

The Fund consists of money from reclamation fees, user charges for reclamation services, donations, and interest credited to the fund. Since the inception of the program, the Fund has received a total of \$49,152,921, which has been used for projects that protect the public health and safety of the Commonwealth. The following is a further breakdown of the money:

- For FY98, the Fund received \$15,739,392.
- For FY99, the Fund received \$16,284,418.
- For FY00, the Fund received \$17,129,111.

KRS 350.555 establishes priorities for expenditures from the Fund. The main priorities identified are threats to public health and safety such as landslides and coal refuse fires. According to AML officials, environmental restoration is seen as a third priority, with acid mine drainage and reclamation efforts seen as lower priorities.

AML inspectors investigate complaints received in Frankfort. Through initial and subsequent site visits, inspectors determine whether complaints involve abandoned mines. If not, the files are closed and complainants are notified. If an inspector determines that complaints involve an abandoned mine, but are low priority, AML does not resort to the Fund to correct the problem. Instead, AML may monitor the site. If complaints pertain to cases affecting public health or safety, the Fund may be used to address the problem.

In October of 2000, a coal slurry impoundment constructed over an abandoned mine in Martin County failed, sending coal sludge and wastewater surging through an abandoned underground mine into streams and surrounding land. Approximately 250 million gallons of coal sludge and wastewater inundated the mountain community of Inez. This disaster sent a clear signal to regulators that the location of abandoned underground mines is an important issue. However, attempts by the Department of Mines and Minerals (DMM) and DSMRE to locate, scan, and computerize the location of abandoned mines have been limited.

Audit Objective

This performance audit on water quality was performed in conjunction with a joint performance audit sponsored by the National State Auditors Association (NSAA). Twelve states participated with Tennessee as the lead state. The Tennessee Division of State Audit will consolidate the information presented in the state audit reports into a national report.

In light of the impact of NPS pollutants on Kentucky's water quality, our audit focused on this area. Specifically, we examined animal feeding operations, improper sewage disposal, and acid mine drainage, to address the following objective:

Determine whether Kentucky's efforts are effective to detect and prevent water pollution resulting from animal feeding operations, improper sewage disposal, and mining operations.

We reviewed state and federal statutes and regulations. We also reviewed other states' statutes and regulations and interviewed officials from other states on best management practices. We interviewed staff with the Natural Resources and Environmental Protection Cabinet and other state agencies. We also interviewed EPA officials in 4 different regions. In conducting this audit, we followed *Government Auditing Standards* promulgated by the Comptroller General of the United States.

See the Scope and Methodology section in Appendix I for additional information.

Efforts to Detect and Prevent Water Pollution Related to Nonpoint Sources

Few Federal KPDES Permits Have Been Issued as Required by EPA

Under emergency regulations, DOW has issued only three federal Kentucky Pollutant Discharge Elimination System (KPDES) permits for CAFOs as required by the EPA, applying instead an older, less comprehensive state permitting process.

In 1983 DOW entered into a Memorandum of Agreement (MOA) with the EPA to establish policies, procedures, and responsibilities to administer the National Pollutant Discharge Elimination System (NPDES) in accordance with the Clean Water Act. The Commonwealth's program equivalent of NPDES is the KPDES. The MOA states in part that the Commonwealth will "process in a timely manner and propose to issue, reissue, modify or deny KPDES permits to various categories including CAFOs."

Nevertheless, according to DOW officials, no CAFO has been issued a permit under 401 KAR 5:060, the administrative regulation promulgated in 1983 to comply with the MOA. Instead, DOW has continued to issue federally-noncompliant permits under 401 KAR 5:005, an administrative regulation promulgated in 1975. By opting to sustain a permitting process that is federally-noncompliant, DOW has not carried out mandates agreed upon in its MOA with EPA and has perhaps rendered the Commonwealth attractive to potential CAFO polluters.

The Commonwealth's decision not to issue permits under 401 KAR 5:060 apparently mirrors inadequate permitting and enforcement practices in other states. According to EPA, "inconsistent interpretation of current regulations over the years by state and federal regulators has resulted in inadequate permitting and enforcement practices across the country."

DOW is, however, moving toward federally compliant permitting with the promulgation of emergency regulations by the Governor's office in response to a recent push from the EPA. As of July 1, 2001, three individual KPDES permits have been issued for CAFOs in the Commonwealth. Individual permits are typically used to apply site-specific requirements. They are issued for:

- CAFOs that are subject to an existing individual KPDES permit.
- CAFOs greater than 1500 animal units.
- CAFOs that the director has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard or to the impairment of a 303(d) listed basin.
- CAFOs that could discharge into surface water, which has been classified as an Exceptional or Outstanding State or National Resource Water.

General permits for feeding operations that raise dairy, beef, and swine have been issued. All operations between 1000 and 1500 animal units are eligible for coverage under a KPDES General Permit with some exceptions. Approximately 100 operators have applied for coverage under one of these general permits.

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Efforts to Detect and Prevent Water Pollution Related to Nonpoint Sources

DOW’s State Permitting Process Has Provided Inadequate Protection

DOW’s state permitting under 401 KAR 5:005 requires a permit for only AFOs and CAFOs that use liquid waste handling systems. In addition, DOW has no procedures calculated to identify operations that should be permitted under 401 KAR 5:005. As a result, the majority of AFOs and CAFOs in the Commonwealth operate without a permit.

By only permitting the operations using a liquid waste handling system, DOW increases the possibility that operations with dry manure will pollute the Commonwealth. As shown in Tables 1 and 2, there are 183 CAFOs and 1,173 AFOs in the Commonwealth that are not permitted by DOW. This represents almost 75% of all CAFOs and 49% of all AFOs. As a result, these facilities are operating with little oversight from DOW. Without an adequate permitting process, DOW cannot be sure that CAFOs and AFOs are disposing of their waste properly, and that the Commonwealth’s surface and groundwater are protected.

Table 1
Concentrated Animal Feeding Operations (CAFOs)

	# Operations	# Permitted
Beef	4	1
Poultry	174	2
Swine	61	56
Dairy	2	1
Combination	4	2
Total	245	62

Source: Auditor of Public Accounts, from information provided by the Division of Water.

Table 2
Animal Feeding Operations (AFOs)

	# Operations	# Permitted
Beef	272	184
Poultry	266	0
Swine	402	359
Dairy	1427	672
Combination	42	21
Rabbits	1	1
Total	2410	1237

Source: Auditor of Public Accounts, from information provided by the Division of Water.

The Majority of Poultry Feeding Operations Obtain No Permit

Although poultry feeding operations compose 71% of the CAFOs (174) and 11% of AFOs (266) in the Commonwealth, only two poultry feeding operations have permits. Based on estimates from DOW, poultry CAFOs in Kentucky generate more than 180 million pounds of poultry litter annually. DOW officials also report that almost all poultry feeding operations in the Commonwealth use dry waste handling systems, scraping waste out of barns and storing or removing it from the premises to be used as crop fertilizer.

Currently, the Commonwealth has limited information about the extent of water pollution resulting from these operations since virtually none of them are permitted. Because they are not required to have permits, the Commonwealth has

Chapter 2

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an unverified estimate of how many chickens are in each operation, the type of waste storage being used, or the number of acres available for land application of waste.

Other states, Tennessee for example, have perceived the importance of permitting poultry feeding operations, even though they do not use liquid waste handling systems. The EPA has recently granted Tennessee federal approval to begin issuing water quality permits for new dry manure poultry operations with 20,000 or more birds locating in the state after May 1, 1999. As part of the new regulations promulgated by Tennessee, poultry farms with 20,000 or more broilers and/or laying hens that use dry manure management are considered CAFOs and are permitted by the state. EPA is also in the process of proposing new regulations requiring that these types of operations be permitted.

DOW's Method of Identifying Sites That Should Be Permitted Under 401 KAR 5:005 Is Inadequate

DOW officials report that in the past they have relied upon complaints to identify sites which should be permitted under 401 KAR 5:005. They also note that the KPDES Branch, which is responsible for permitting AFOs and CAFOs, has no staff whose primary focus is to identify AFO and CAFO sites operating without permits.

However, the permitting process has relied heavily on voluntary compliance. That is, operators may voluntarily request permitting in order to receive cost share dollars under KRS 146.115 to implement best practices. Since 1995, over \$18,000,000 has been awarded to agricultural operators to implement best management practices. DOW staff stated that of the CAFOs and AFOs that are permitted, more than 90% are the result of voluntary requests incentivized by the cost share money.

The failure of DOW to identify CAFOs and AFOs operating without permits, coupled with the application of 401 KAR 5:005 to only those AFOs and CAFOs using liquid waste handling systems, deprives Kentucky of an effective permitting process. According to DOW, complaint investigations by field inspectors into alleged pollution violations may result in the discovery of AFOs or CAFOs that require permitting. However, the official also noted that such facilities may not be compelled to apply for a permit because limited resources prevent follow-up. It should also be noted that DOW does not regularly visit permitted sites to confirm compliance with DOW regulations.

Some Integrators Avoid CAFO Status by Relocating Animal Units to Different Sites

According to DOW officials, some integrators avoid CAFO status by transporting animal units to an AFO at an alternate site. This circumvents the KPDES permit requirements of 401 KAR 5:074E. Integrators thereby avoid liability, and the operations do not have to meet the permanent litter storage or setback requirements.

The DOW is aware of instances where operations were structured so as to fall just beneath the threshold triggering CAFO status. The practice of legally avoiding regulatory coverage in this manner is not new, nor one that has been adequately addressed.

Tennessee's approach is to develop NPDES permits that apply to middle-tiered operations (301-1,000 animal units). According to EPA, it approved Tennessee's NPDES general permit for middle tier operations in impaired watersheds.

EPA is currently in the process of proposing similar regulations to reduce the amount of water pollution from CAFOs for all states. These proposed regulations would either lower the number of animal units to qualify as a CAFO from 1,000 to 500, or develop a three tiered permitting system. The three tiers would include feeding operations with more than 1,000 animal units, those with 300 to 1,000 animal units meeting certain conditions, or operations the permit authority designates as CAFOs. In addition, EPA is recommending that “dry manure handling poultry operations” be designated as CAFOs. EPA plans to take final action on these regulations by December 15, 2002. If these proposed regulations take effect, all states must comply. However, these permits for newly defined CAFOs will not be required until three years after final regulations are published (January 2006).

Another option for states concerned about operators breaking up CAFOs into smaller AFOs is to adopt watershed permits. For example, a state could adopt a watershed permit that requires operators to seek permits for any AFOs located in these areas. States could thereby identify watersheds that are more fragile than others, and require stricter permitting. With respect to permitting operations in impaired watersheds, according to DOW officials Kentucky has already accounted for this in the permitting process. DOW may deem an operation a CAFO if the director of DOW determines that the operation may reasonably be expected to contribute to a violation of water quality standards or to the impairment of a 303(d) listed basin.

No Mechanism Exists to Ensure That Operators Are Developing Required Plans and Carrying Out BMPs

There is no statutory requirement that the Authority, DOW, or local conservation districts ensure operators are developing Agriculture Water Quality plans. Neither are these entities required to review the contents of the individual plans for compatibility with the statewide plan. In addition, DOW does not routinely visit operators to determine whether they are implementing BMPs. As a result, there is no way to ensure that complete and effective plans are being developed to implement BMPs invoked in the statewide plan.

Under KRS 224.71-120, all agriculture operations of 10 acres or more are required to develop and implement an Agriculture Water Quality Plan by October 2001. Individual plans should comply with applicable requirements and implement BMPs discussed in the statewide plan developed by the Agriculture Water Quality Authority. According to DOW officials agriculture operations will be subject to enforcement actions if the plans are not implemented by October 2001.

BMPs are defined in KRS 224.71-100(3) as “the most effective, practical, and economical means of reducing and preventing water pollution.” The statewide plan discusses the following BMPs for farmsteads and livestock operations:

- Solid waste procedures
- Septic systems and on-site sewage disposal
- Waste management systems
- Waste storage ponds
- Waste storage structures such as holding tanks
- Waste treatment lagoons
- Waste utilization
- Equine or poultry waste feed

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- Feeding and heavy use area management
- Dead animal disposal

KRS 224.71-120(3) gives the Authority some responsibility for identifying modifications to operators' agriculture water quality plans that are not preventing water pollution. The same provision also states that conservation districts should assure that "technical assistance is made available to assist persons engaged in agriculture operations with the implementation of the statewide plan." These provisions are helpful for the proactive operators who seek out advice from the Authority and conservation districts, but do little to ensure that all operators are meeting statutory requirements.

Local conservation districts also provide a repository for those operators who proactively submit certifications of their plans. Certifications are merely a written attestation of the operator that a plan has been developed. Operators are not required to file their plans. As of November 2000, 15,519 operators have completed plan certifications.

DOW Does Not Ensure That Groundwater Protection Plans Are Being Developed

DOW does not have a consistent and proactive approach to ensure that groundwater protection plans are being developed for agriculture operations on fewer than 10 acres of land. Since poultry feeding operations are more likely than other feeding operations to operate on fewer than 10 acres of land, and the majority of them are not permitted under 401 KAR 5:005, it is important for DOW to make sure plans are developed. Without adequate oversight, DOW can neither make sure quality plans are being developed nor that related BMPs are being implemented.

According to DOW, 401 KAR 5:037 gives it authority to require groundwater protection plans by those individuals conducting activities that could pollute groundwater on less than ten acres of land. This requirement only applies to commercial agricultural operations that store, treat, or dispose of hazardous or other wastes. The plans should prevent pollution and protect groundwater through the implementation of BMPs.

DOW has developed a generic "Groundwater Protection Plan for Poultry Facilities on Less Than 10 Acres." According to DOW, generic plans have not been developed for cattle and swine since those operations usually occur on more than ten acres. Poultry operators use the generic plan in lieu of developing their own plans.

DOW officials stated that Groundwater Branch staffing levels are not adequate to ensure that operators are developing plans. Rather, the issue of plan development is addressed on a reactive basis, when investigating complaints. In addition, the Branch focuses its attention more on ensuring that plans are developed for protecting wellheads. Wellheads are areas surrounding a water well, well field, or spring that supplies a public water system. The lack of staff coupled with a focus on wellhead issues prohibits DOW from ascertaining the extent of groundwater protection plan development.

Straight Pipes and Faulty Sewage Systems Are Polluting Waterways in the Commonwealth

Discharges of fecal coliform from straight pipes and faulty sewage systems are threatening our waters. However, the number and location of straight pipes and faulty sewage systems that discharge into the Commonwealth's surface and ground waters are not known. There has not been a comprehensive effort to identify the communities and homes that are creating this type of pollution. According to officials from the Cabinet for Health Services and DOW, there were 15,216 sewage system complaints lodged from 1997 to 2000.

Although existing state law does not deal directly with the removal of straight pipes and faulty sewage systems, the Commonwealth has made an effort to control the practice of using straight pipes. For example, KRS 211.350, which was amended in 1998, prohibits the connection of electricity to new residences unless the owner has an approved plan to install adequate sewage disposal facilities. This statute apparently has caused an increase in the number of onsite sewage permits issued. Unfortunately, it does not address the problem of existing straight pipes in Kentucky.

Other States Have Addressed Sewage Discharges

Minnesota addressed the problem of sewage discharges in a 1994 law that prevents the transfer of property until a sewage management disclosure has been made by the transferor. According to an official from Minnesota's Pollution Control Agency, the law has had positive results in that it requires seller disclosure to potential buyers and requires a certificate of compliance before the addition of a bedroom on property. However, the law has no impact on faulty sewage disposal from residences that are not being sold or expanded. Under Minnesota's law, "a seller or transferor who fails to disclose the existence or known status of an individual sewage treatment system at the time of sale...is liable to the buyer or transferee for costs relating to bringing the system into compliance..."

In North Carolina, the Wastewater Discharge Elimination Program, which has the primary focus of eliminating straight pipes, was started in 1996. The state is in the process of initiating a statewide survey of straight pipes and failed sewage systems at an estimated cost of \$30,000 to the counties. North Carolina is also setting up training and technical assistance for the survey staff, as well as a trust fund to provide low-interest revolving loans and grants to households for the removal of straight pipes and to upgrade faulty septic systems.

Kentucky's Attempt to Identify Straight Pipes and Faulty Sewage Systems Has Been Limited

The Commonwealth has been mildly successful in attempting to catalog straight pipe discharges and faulty sewage systems. For example, the Gateway District Health Department recently estimated that of 96 homes visited in the Bath County community of Preston, approximately 34% (33) have systems that are classified as failed. A failed system is one that had visible effluent surfacing in the yard, or a straight pipe. For 53% (51) of the homes visited, no determination could be made about the condition of the sewage systems.

The Harlan County Environmental Coordinator and DOW conducted a similar study in July of 2000. This study discusses severity levels of sewage pollution (either from straight pipes or faulty sewage systems) on various waterways in the county. It found that certain areas in the county had critical or serious problems. More specifically, it found that at least 1,118 households in the county either had a failing septic system or straight pipe.

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Another study conducted in 40 counties by various area development districts identified over 36,000 straight pipes in those counties. These counties were reviewed, in part, because of their participation in the PRIDE program. Over \$6,000,000 has been loaned to residents of PRIDE counties to install or improve almost 2,700 septic systems.

Although there are several state and local entities attempting to monitor and mitigate the damages of straight pipe discharges and faulty sewage systems, the exact impact on Kentucky's waterways is not known. Without a statewide, coordinated effort to locate and eliminate improper sewage disposal, contamination from these sources will continue.

DOW Does Not Sufficiently Monitor the KPDES Permits Issued to Mining and Reclamation Operations

DOW does not sufficiently monitor compliance with more than 3,000 KPDES permits issued for coal mining and reclamation operations. According to a 1983 MOU between DOW and the Department for Surface Mining Reclamation and Enforcement (DSMRE), DOW issues the KPDES permits but is not primarily responsible for the monitoring and testing of permittees (operators). Although the MOU delegates this responsibility to DSMRE, monitoring and testing information is not always communicated to DOW. In addition, there are no established procedures in place to ensure that DSMRE informs DOW when acid mine drainage has been detected through its monitoring and testing procedures. As a result, DOW is not taking the proper steps to ensure that active coalmines are not negatively impacting the quality of Kentucky's water.

Although DOW issues KPDES permits, it does not actively review the mandatory Discharge Monitoring Reports (DMRs) submitted to DSMRE by the operators. For the last three to four years DSMRE has not forwarded the DMRs to DOW as required by the MOU. As a result, DOW has no way of knowing whether violations are occurring. From interviews with both DOW and DSMRE officials, there is confusion about the responsibility for sending DMRs to DOW and whether all DMRs or only the DMRs that report violations should be forwarded. Without having DMRs to review, DOW staff stated that it has not issued a Notice of Violation to an operator for the last three years. DOW will take enforcement action when a DMR shows a water quality violation.

In addition, DOW does not request or receive the results of DSMRE's quarterly field tests of mining operation discharge points, nor does it request or receive the results of the testing performed when a DMR indicates a water quality violation. According to DSMRE officials, when the DMR reports a water quality violation, a DSMRE inspector is required to visit the site to take an independent sample for testing. If the independent sample shows that a violation did occur, DSMRE is required to initiate enforcement action. However, the results of these tests and enforcement actions are not forwarded to DOW for review.

DSMRE also stopped generating and sending DOW quarterly and annual enforcement action reports in 1994. These reports were required in the 1983 MOU to provide data on noncompliance and enforcement actions. Officials from both DOW and DSMRE are not sure why these reports are no longer generated. By discontinuing these reports, DOW's oversight of the KPDES permitting process is hampered, since it does not receive information on related violations. For example, for calendar year 2000, the Surface Mining Information System (SMIS) contains 38 water quality violations that required enforcement actions, all of which were not communicated to DOW.

There are no established procedures to ensure that DOW is informed of the detection of acid mine drainage or that DOW performs independent on-site inspections when water quality violations are reported. DOW officials stated that they have no interaction with DSMRE on the issue of acid mine drainage. DOW inspectors perform inspections on an emergency basis or if a complaint has been received, but they do not perform any on-site inspections to confirm that corrective action has been taken by the operators. DOW stated that there is no need to perform an inspection if the DMR reports a violation.

DOW is now in the process of designing a database that will monitor all DMRs, allow more complex data analysis, and give both DOW and DSMRE access to all DMRs. The database will include information on the estimated 207,540 DMRs that come in annually. This database should enable both DOW and DSMRE to appropriately monitor KPDES compliance. According to DOW officials, there is currently no timetable for completion of the database. However, it appears that completion could be two years away since the project is only in the design phase.

Complete Documentation and Computerized Access to Maps of Abandoned Underground Mines Are Not Available

Since no state agency is required to keep track of the number and location of underground abandoned mines and related mine openings in the Commonwealth, abandoned mining operations have not been completely documented, scanned, or computerized. While some agencies have begun to address this problem, they have run into statutory or other obstacles which have limited their success. A fully developed and publicly accessible graphic information system available via the Internet that denotes the location and boundaries of underground abandoned mines in the Commonwealth could help agencies identify water bodies vulnerable to acid mine drainage. In addition, such a system could identify unstable conditions existing among coal slurry impoundments as well as private and commercial land development.

The Department of Mines and Minerals (DMM) has been digitizing mining operations for years, but is now beginning to scan annual operator-submitted maps of active mines that reflect mining activities during the previous year. These maps have been maintained by DMM since 1884. Digitizing typically means the creation of vector data or outlines and scanning is a process to copy original mine maps or related microfilm. This information can then be computerized for easier access. However, despite these efforts, there is still a great deal of missing mining information because of a DMM fire in 1948 that destroyed approximately 30,000 to 40,000 maps.

DMM is statutorily restricted from providing mine maps to the general public. According to KRS 352.480, the duplication of a mine map requires consent from the licensee, owner, lessee, or operator by a signed affidavit. The general public can visit DMM and examine the maps, but cannot obtain a copy without an affidavit. According to a DMM official, a change to this statutory language has been attempted for the past 10 years without success.

In order to obtain copies of mine maps, state agencies have signed a memorandum of agreement with DMM stating that they will keep the maps secure and unavailable for re-release. The Department for Surface Mining Reclamation and Enforcement (DSMRE) also considers this restriction to be a major problem that needs to be resolved before digital maps can benefit all parties.

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According to DMM, the federal Office of Surface of Mining (OSM) is in the process of scanning complete images of approximately 8,000 Kentucky maps from microfilm provided to OSM during the past five years. In spite of an oral agreement to the contrary, OSM plans to place the maps on a federal Internet site for public use. Also, OSM has expressed interest in scanning images of an additional 120,000 Kentucky maps. However, these maps have not been sent to OSM because of the restrictions of KRS 352.480, according to a DMM official. He also stated that by allowing OSM to scan the map images, the Commonwealth could save up to \$500,000.

The Division of Abandoned Mine Lands (AML) and DSMRE are also having limited success in tracking and filling abandoned mineshafts in Western Kentucky. Because of citizen complaints, AML has taken action in this part of the Commonwealth to use money from the Abandoned Mine Reclamation Fund (Fund) to fill and seal abandoned mine shafts. However, readily available information on the location and boundaries of abandoned mines has not been computerized for public access. DSMRE is now looking at using other funds to make this information more accessible via the computer. According to DSMRE officials, this effort will include both state and federal agencies, because these agencies, in addition to the public, will benefit.

Although AML is using money from the Fund to fill and seal abandoned mineshafts because of their immediate threat to the public safety, officials interpret KRS 350.555 to preclude the use of money from the Fund to locate, scan, and computerize all abandoned underground mines in Western Kentucky or statewide. Instead, they believe money from the Fund should be used for higher statutory priorities that immediately threaten people's health, safety, and welfare, such as landslides, coal refuse fires, and the contamination of water supplies from acid mine drainage. Therefore, they have concluded that spending money from the Fund on a project to locate, scan, and computerize abandoned mine locations would reduce funding for their top priorities.

Kentucky is not alone in this area. For example, the State of Virginia embarked on a coalbed-mapping project that started in 1991. The project resulted in the inventorying and digitizing of much of Virginia's underground mines. Funded by both state and federal dollars (\$3.2 million), this effort was designed to give Department of Mines, Minerals, and Energy (DMME) officials a better understanding of where underground mines were located. DMME officials are now able to use this information to make better decisions about the construction, expansion, and review of coal slurry impoundments.

Continuing to locate and computerize maps of underground mines would be beneficial to the Commonwealth in many ways. DOW officials have stated that such tools could be used to determine the source of acid mine drainage and assist in identifying new water resources. If the location of each mine is fully mapped and computerized for public access, private and commercial land development could be more successful. Additionally, the Division of Abandoned Mine Lands could better prioritize the spending of reclamation funding.

Complaint Tracking System Has Positive Attributes Although Some Areas Could Be Improved

The Department for Environmental Protection's (DEP) Notifications and Complaints (NOT/COM) system has improved its complaint tracking and investigation process. Prior to the development of an automated system in 1993, the complaint process was manual. The NOT/COM system was placed on line in 1999 and made available to field offices in 2000.

NOT/COM has improved accountability and communication among the Frankfort central office and field staff through electronic processing of complaint investigations. The majority of the closed complaints reviewed were investigated in a timely manner. The time from receiving the complaint to inspection or investigation was 10 days or less. In addition, the majority of the complainants were satisfied with the complaint resolution.

Although the NOT/COM system generally has positive attributes, there are issues that appear to need improvement. Some complainants stated that inspectors did not keep them apprised of investigations. In addition, we found one instance where a required follow-up was not conducted and there were no policies regarding the follow-up process. We also identified concerns of the field inspectors that use the system and other concerns discussed in an internal audit.

Of the four complainants contacted, three stated that the inspector never contacted them about the progress of the complaint. Frankfort's complaint coordinator stated that inspectors should contact the complainant two times during the investigation but there was no written policy stating this.

One inspector did not perform a necessary follow-up inspection. He noted that no follow-up was completed because the "responsible party" stated they took care of the problem, so he closed the investigation. The inspector said that he may follow-up with the responsible party to make sure the problem has been remedied. There was no written policy requiring an inspector to perform a follow-up inspection before closing a complaint.

The field inspectors contacted made the following comments concerning the NOT/COM system:

- The system requires too much time to enter the information.
- It is difficult to keep up with system updates.

DEP also identified similar problems in a January 2000 internal audit of the system. In the audit, a DEP auditor found numerous user problems that dealt mainly with users of the system entering inconsistent and incorrect data. According to DEP officials, they are working to resolve issues identified in the internal audit by providing additional education.

DEP does not provide a toll free number for the public to use for lodging complaints. Providing toll free access may encourage the public to contact DEP regarding pollution activities.

The NOT/COM system was created for DEP only and has not been expanded to the Cabinet's other departments. Currently, agencies within the Department for Natural Resources and the Department for Surface Mining Reclamation and Enforcement do not have access to the NOT/COM system, yet they are asked to

respond to NOT/COM complaints applicable to their areas. The Cabinet should consider making NOT/COM accessible to all departments. If the Cabinet employs a common database to track complaints, communication between the departments should improve.

DOW Does Not Track Objectives and Performance Indicators

Although DOW is engaged in various planning activities, it does not develop and track measurable and timebound objectives and performance indicators related to its budget. In a United State General Accounting Office (GAO) report entitled *Standards for Internal Control in the Federal Government*, the development and review of performance measures and indicators is cited as an example of a control activity.

In our review of DOW's budget request for 2000-02, we identified performance measures stating the number of CAFOs inspected and number of AFOs inspected for groundwater protection plans. However, DOW branch officers who are responsible for permitting, inspecting, and developing groundwater protection plans were not aware of these performance measurements.

The Cabinet Engages in Various Planning Activities

The Cabinet for Natural Resources is currently in the process of developing a strategic plan to meet the mandates of HB 502 of the 2000 General Assembly. HB 502 requires executive branch agencies to submit strategic plans with their 2002-2004 budget requests. It goes on to state that strategic plans should include, but not be limited to, a statement of the cabinet's mission, identification of goals for the next four years, specification of objectives for meeting the goals, and definition of performance indicators to be used to measure progress toward meeting specified objectives.

According to the Cabinet Secretary, he intends to develop a cabinet vision and mission, as well as goals and measurable strategies for each department. The Cabinet, as well as its departments, divisions, and branches have already developed various strategic and management plans for internal purposes and federal reporting. For example, the DEP developed a strategic plan for 1997-2003. The plan discusses various goals, strategies, and tactics related to the protection of the environment and public participation. Although the plan is a step in the right direction, it does not include measurable and timebound targets, as required by HB 502.

DOW is also engaged in planning activities in order to effectively and efficiently use its resources. For example, it developed a management plan for 1996-1998 that addresses environmental priorities, programmatic trends, public perceptions, workflow, improving agency performance and strategic planning. The management plan also includes a strategic plan, which includes goals, objectives, and strategies.

Recommendations**Agency Recommendations**

1. DOW should enforce 401 KAR 5:060 and 401 KAR 5:074E related to the permitting of CAFOs.
2. DOW should seek to amend 401 KAR 5:005 by removing the liquid waste handling system provision from the regulation to ensure that all animal feeding operations go through some type of permitting process.

3. DOW's KPDES Branch should investigate all AFOs and CAFOs on a regular basis to enforce compliance with federal and state regulations.
4. The KPDES Branch should consider developing KPDES permits that apply to middle-tiered operations of 300 to 1,000 animal units so operators will no longer be motivated to shift animals to new site locations to avoid CAFO status. In addition, the KPDES Branch should consider KPDES permitting of watersheds, requiring all operators to obtain permits before operating on selected watersheds.
5. DOW and the Division of Conservation should work with operators and applicable federal, state, and local entities to ensure they meet the requirements of the Agriculture Water Quality Act (1994) and 401 KAR 5:037 related to water quality and groundwater protection plans.
6. The Natural Resources and Environmental Protection Cabinet and the Cabinet for Health Services should develop an action plan to target straight pipes through multi-agency investigations and enforcement ventures. Both cabinets should also apply for 319(h) money to help carry out this recommendation.
7. DOW should work with DSMRE to ensure that all information from DMRs is communicated to DOW.
8. DOW and DSMRE should work together to develop a database to store information from DMRs.
9. DOW and DSMRE should revise a 1983 MOU cooperative agreement regarding monitoring and enforcement responsibilities and consider whether KPDES annual enforcement action reports should be generated.
10. DSMRE should report to DOW any acid mine drainage identified through testing or monitoring.
11. DSMRE, AML and DMM should work together to locate, scan, and computerize all underground abandoned mine locations in the Commonwealth. This effort should include mines that have not yet been mapped as well as mines related to those maps destroyed by fire in 1948.
12. The NOT/COM complaint database administrative procedures should be improved in the areas of follow-up investigations and notifying complainants. The Cabinet should also consider expanding NOT/COM access to all potential users within the Cabinet.
13. A toll free number for environmental complaints should be created and advertised so that citizens of the Commonwealth are more informed and motivated to report environmental complaints.
14. The Department for Environmental Protection should continue in its planning efforts and assure that quantifiable objectives and performance indicators are developed as part of the budgetary process.

Legislative Recommendations

The General Assembly should consider:

1. Amending KRS 224.71-120 or the Agriculture Water Quality Plan to require agriculture operators to certify their plans with local conservation districts to ensure the plans are being created.
2. Funding a county-by-county inventory of straight pipes and abandoned mines in Kentucky.
3. Enacting legislation that prevents the transfer of property until a sewage management disclosure has been made by the transferor. Minnesota passed a similar law in 1994, which has had positive effects.
4. Creating a state funded program similar to the federal PRIDE program to ensure the most cost effective and appropriate wastewater systems are installed throughout the Commonwealth.
5. Reviewing KRS 352.480 to determine whether mine maps should be included as part of the Kentucky Open Records Act.
6. Reviewing KRS 350.555 to determine whether statutory language precludes AML from using money from the Fund to locate, scan, and computerize abandoned underground mines.

Scope

We conducted our audit in accordance with *Government Auditing Standards* promulgated by the Comptroller General of the United States. The audit's purpose was to address the following objective:

Determine whether Kentucky's efforts are effective to detect and prevent water pollution resulting from animal feeding operations, improper sewage disposal, and mining operations.

Due to the fact that much of Kentucky's water pollution is attributed to nonpoint source pollutants, this became the focus of our audit. Specifically, we concentrated on animal feeding operations, improper sewage disposal, and acid mine drainage from mining operations.

The Auditor of Public Accounts performed this audit on water quality in conjunction with a national performance audit sponsored by the National State Auditors Association (NSAA). Twelve states have chosen to participate in this joint water quality audit with Tennessee as the lead state. The Tennessee Division of State Audit will consolidate the information presented in the audit reports of each state into a national report.

We also reviewed the 319(h) grant process. Because our findings and recommendations related to this area were not significant to our audit's objective, they will be communicated to Kentucky's Division of Water (DOW) in a separate management letter.

Although we reviewed applicable agency policies and procedures, we did not assess management controls or computer generated data. These areas were not significant to our audit objective or our audit findings.

Methodology

We conducted interviews with staff from the following agencies to determine their involvement with nonpoint source pollution issues:

- Kentucky Department for Environmental Protection (DEP), Commissioner's Office
- Kentucky DEP, Division of Water
- Kentucky Department of Mines and Minerals
- Kentucky Department of Natural Resources (DNR), Division of Conservation
- Kentucky DNR, Division of Forestry
- Kentucky Department for Public Health
- Kentucky Department for Surface Mining Reclamation and Enforcement
- University of Kentucky Agriculture Extension Service
- Kentucky Transportation Cabinet, Department of Highways, Division of Operations and Division of Environmental Analysis
- United States Environmental Protection Agency, Regions 3, 4, 5, and 7
- Kentucky Resources Council

We reviewed Kentucky's applicable statutes and regulations regarding nonpoint source pollution control issues in the areas of agriculture operations, sewage disposal, and mining. We reviewed the federal regulations addressing the same topics in order to compare Kentucky's requirements to federal requirements.

Determining the Impact of Nonpoint Source Pollution

We reviewed documents and reports from various agencies and associations to determine the impact of nonpoint source pollution. These documents included the following:

- Kentucky Division of Water's 1998 *303(d) List of Waters for Kentucky*
- *Kentucky Nonpoint Source Assessment Report*, March 1999
- *Kentucky Nonpoint Source Management Program – 2.0*, February 2000
- Kentucky Division of Water's 1998 *Kentucky Report to Congress on Water Quality*
- *1998-1999 State of Kentucky's Environment*, prepared by the Kentucky Environmental Quality Commission
- *Onsite Sewage in Kentucky: An assessment of issues and policy options to improve onsite sewage management in Kentucky*, prepared by the Kentucky Environmental Quality Commission on November 15, 1999

To identify other stakeholder concerns in Kentucky, we contacted six associations involved with nonpoint source pollution control. The following three associations were the only ones to provide us with feedback:

- Kentucky Onsite Wastewater Association
- Kentucky Waterways Alliance
- Kentucky Farm Bureau

Review of Water Complaint Files

We assessed the Department for Environmental Protection's notification and complaint (NOT/COM) system to evaluate its effectiveness. This system logged 3,984 water-related notifications or complaints from 10/1/99 through 7/01/00. We first took a random sample of 25 complaints. This sample resulted in only 1 complaint that involved nonpoint source pollution specifically. We then examined one complaint per each of the 9 nonpoint source categories.

Review of 319(h) Projects

To evaluate Kentucky's 319(h) grant process, we interviewed the responsible officials to obtain an understanding of its history, ranking procedures, and reporting requirements. We obtained a listing of all 319(h) projects for federal fiscal years 1994 through 1999. From this listing, we determined that there were 31 competitively funded projects during this time period that dealt with the 3 areas of our audit (agriculture operations, sewage disposal, and mining). From the 31 projects, 8 (26%) projects were reviewed to determine compliance and effectiveness.

We also went on 3 site visits with Nonpoint Source Section staff to review 319(h) projects firsthand. These site visits involved mining, straight pipe sewage disposal, and animal feeding operations.

Benchmarking With Other States

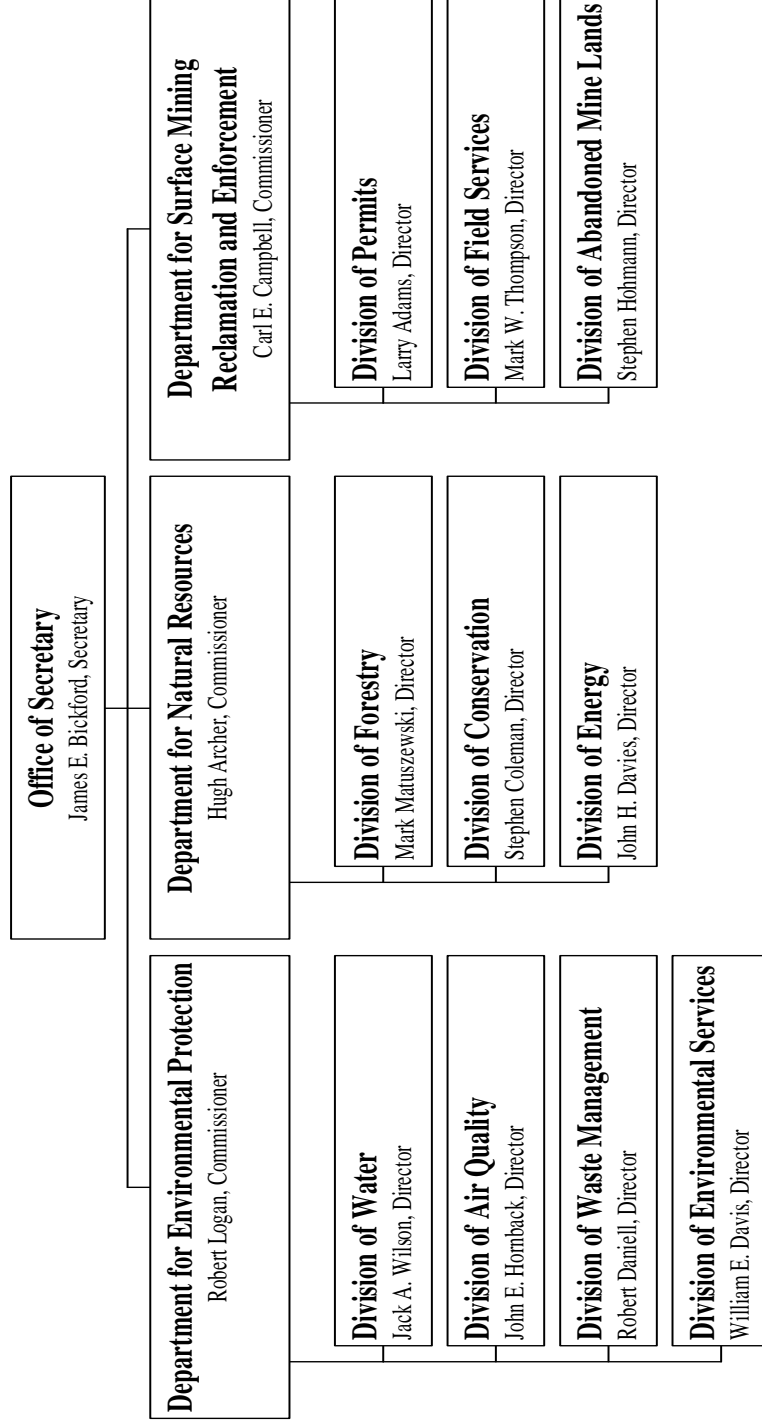
To develop an understanding of other states' nonpoint source pollution control requirements, we reviewed the applicable laws for the following states:

- Illinois
- Indiana
- Minnesota
- Missouri
- Tennessee
- Virginia

We also surveyed the surrounding states to determine their best management practices in controlling nonpoint source pollution. We received and reviewed information from the following states:

- Illinois
- Indiana
- Missouri
- Ohio
- Tennessee
- Virginia
- West Virginia

Natural Resources and Environmental Protection Cabinet's Organizational Chart



Source: Auditor of Public Accounts, from information on the Natural Resource and Environmental Protection Cabinet's website.

Organizational and Administrative Information

Division of Water's Branch Responsibilities and Staffing

Branch	Responsibility	FTEs		
		FY 1998	FY 1999	FY 2000
Water Quality Branch	Collect and assess physiochemical and biological data to review water quality impacts, and identify and control NPS pollution of surface and ground waters.	30	33	41
Enforcement Branch	Initiate enforcement actions referred by other branches. Train and certify water and wastewater treatment plant and distribution system operators.	21	22	20
Kentucky Pollutant Discharge Elimination System Branch	Review and approve Kentucky Pollutant Discharge Elimination System permit applications and construction and no-discharge permits for wastewater including agricultural operations.	28	28	29
Groundwater Branch	Research and develop knowledge of, and protection for, the state's groundwater resources and respond to groundwater contamination incidents as needed.	20	22	20
Water Resources Branch	Coordinate floodplain activities, inspect dams, and manage water quantity.	20	21	20
Drinking Water Branch	Protect public health by ensuring the provision of potable water through technical assistance, education, plans review, monitoring, implementation, and enforcement of regulations.	25	28	31
Facilities Construction Branch	Issue construction permits for private and municipal sewage treatment systems. Issue approvals for municipal and other sewage line extensions.	30	26	28
Field Operations Branch	Conduct inspections of public drinking water systems and point source discharges. Respond to citizen complaints and public inquiries concerning environmental compliance issues.	74	68	72
Program Planning and Administration Branch	Prepare and monitor a biennial management plan and conduct long-range planning for the Commonwealth's water resources.	12	12	13

Source: Auditor of Public Accounts, from information provided by the Division of Water.

Division of Water's Expenditures for Fiscal Years 1998, 1999, and 2000

Expenditure Category	FY 1998	FY 1999	FY 2000 (Still in Review Status)
Personnel Costs	\$12,002,988	\$12,755,794	\$13,886,022
Operating Expenses	\$2,480,364	\$2,486,100	\$2,399,639
Grants, Loans, Benefits	\$1,261,969	\$1,406,174	\$1,958,226
Capital Outlay	\$726,746	\$513,573	\$638,947
Construction	\$0	\$10,000	\$0
Total Expenditures	\$16,472,067	\$17,171,641	\$18,882,834

Source: Auditor of Public Accounts, from information provided by the Division of Water.

Total Number of CAFOs and Permitted CAFOs by Type

County	Beef # Per County/ # Permitted	Poultry # Per County/ # Permitted	Swine # Per County/ # Permitted	Dairy # Per County/ # Permitted	Combination # Per County/ # Permitted
Allen	3/0	1/0	8/5	0/0	0/0
Anderson	1/1	0/0	0/0	0/0	0/0
Ballard	0/0	1/0	2/2	0/0	0/0
Bourbon	0/0	0/0	1/1	0/0	0/0
Breckinridge	0/0	0/0	1/1	0/0	0/0
Butler	0/0	5/0	1/1	0/0	0/0
Caldwell	0/0	0/0	4/4	0/0	0/0
Calloway	0/0	4/0	1/1	1/1	0/0
Carlisle	0/0	1/0	1/1	0/0	0/0
Casey	0/0	0/0	1/1	0/0	0/0
Christian	0/0	3/0	0/0	0/0	2/1
Clinton	0/0	1/0	0/0	0/0	0/0
Crittenden	0/0	2/0	1/1	0/0	0/0
Cumberland	0/0	2/0	0/0	0/0	0/0
Daviess	0/0	5/0	3/2	0/0	0/0
Edmonson	0/0	0/0	1/1	0/0	0/0
Graves	0/0	17/0	3/2	0/0	0/0
Grayson	0/0	1/0	1/1	0/0	0/0
Hancock	0/0	1/0	2/2	0/0	0/0
Hardin	0/0	0/0	2/2	0/0	0/0
Henry	0/0	0/0	0/0	1/0	0/0
Hickman	0/0	11/0	0/0	0/0	0/0
Hopkins	0/0	18/0	3/3	0/0	0/0
Larue	0/0	0/0	1/1	0/0	0/0
Logan	0/0	0/0	1/1	0/0	0/0
Marion	0/0	0/0	2/2	0/0	0/0
Marshall	0/0	4/0	1/1	0/0	0/0
McLean	0/0	31/0	5/5	0/0	0/0
Meade	0/0	2/0	0/0	0/0	0/0
Monroe	0/0	1/0	0/0	0/0	0/0
Muhlenberg	0/0	10/1	1/1	0/0	0/0
Nelson	0/0	0/0	5/5	0/0	0/0
Ohio	0/0	19/0	0/0	0/0	0/0
Shelby	0/0	0/0	1/1	0/0	0/0
Simpson	0/0	0/0	3/3	0/0	1/1
Todd	0/0	1/1	2/2	0/0	1/0
Warren	0/0	0/0	2/2	0/0	0/0
Webster	0/0	33/0	1/1	0/0	0/0
TOTAL	4/1	174/2	61/56	2/1	4/2

Source: Auditor of Public Accounts, from information provided by the Division of Water.

The Total Number of AFOs and Permitted AFOs by Type

County	Beef # Per County/ # Permitted	Poultry # Per County/ # Permitted	Swine # Per County/ # Permitted	Dairy # Per County/ # Permitted	Combined # Per County/ # Permitted	Rabbits # Per County/ # Permitted
Adair	3/3	0/0	1/1	97/40	1/1	0/0
Allen	4/0	2/0	13/7	15/6	1/0	0/0
Anderson	9/9	0/0	1/1	10/10	0/0	0/0
Ballard	0/0	11/0	13/13	1/1	0/0	0/0
Barren	14/14	2/0	1/1	154/81	1/1	0/0
Bath	0/0	0/0	1/1	0/0	0/0	0/0
Bell	1/1	0/0	1/1	0/0	0/0	0/0
Boone	0/0	0/0	0/0	2/2	0/0	0/0
Bourbon	1/1	0/0	9/9	0/0	1/1	0/0
Boyle	3/3	0/0	1/1	3/0	0/0	0/0
Bracken	5/4	0/0	0/0	12/7	4/4	0/0
Breckinridge	4/4	0/0	20/17	0/0	0/0	0/0
Bullitt	0/0	0/0	1/1	0/0	0/0	0/0
Butler	0/0	4/0	12/12	2/2	0/0	0/0
Caldwell	0/0	0/0	4/0	6/2	0/0	0/0
Calloway	1/1	13/0	3/3	0/0	0/0	0/0
Campbell	10/6	0/0	0/0	0/0	1/1	0/0
Carlisle	0/0	13/0	10/10	2/2	0/0	0/0
Carroll	1/1	0/0	2/1	1/1	0/0	0/0
Carter	1/1	0/0	0/0	7/0	0/0	0/0
Casey	10/10	0/0	3/3	34/19	1/1	0/0
Christian	1/0	3/0	8/5	65/5	0/0	0/0
Clark	3/3	0/0	0/0	1/1	0/0	0/0
Clay	17/2	0/0	0/0	0/0	0/0	0/0
Clinton	3/2	1/0	1/1	22/6	1/0	0/0
Crittenden	0/0	0/0	1/1	4/1	0/0	0/0
Cumberland	0/0	0/0	0/0	16/6	1/0	0/0
Daviess	0/0	3/0	10/10	9/6	1/0	0/0
Edmonson	2/1	6/0	4/4	23/12	1/1	0/0
Estill	0/0	0/0	0/0	1/1	0/0	0/0
Fayette	0/0	0/0	2/2	0/0	0/0	0/0
Fleming	19/10	0/0	3/2	69/23	0/0	0/0
Franklin	2/2	0/0	0/0	0/0	0/0	0/0
Fulton	0/0	2/0	2/2	0/0	0/0	0/0
Gallatin	0/0	0/0	0/0	1/1	0/0	0/0
Garrard	0/0	0/0	1/1	10/3	3/0	0/0
Grant	0/0	0/0	0/0	5/0	1/0	0/0
Graves	0/0	44/0	18/16	1/1	0/0	0/0
Grayson	1/0	18/0	15/13	42/8	1/1	0/0
Green	1/1	0/0	0/0	56/18	0/0	0/0
Hancock	0/0	0/0	5/3	0/0	0/0	0/0

The Total Number of AFOs and Permitted AFOs by Type (Continued)

County	Beef # Per County/ # Permitted	Poultry # Per County/ # Permitted	Swine # Per County/ # Permitted	Dairy # Per County/ # Permitted	Combined # Per County/ # Permitted	Rabbits # Per County/ # Permitted
Hardin	1/1	0/0	24/20	11/11	1/1	0/0
Harrison	2/2	0/0	3/3	2/2	0/0	0/0
Hart	4/4	0/0	1/1	106/40	0/0	0/0
Henderson	0/0	3/0	4/4	0/0	0/0	0/0
Henry	2/1	0/0	0/0	29/9	2/0	0/0
Hickman	0/0	8/0	8/8	3/3	0/0	0/0
Hopkins	0/0	5/0	8/8	0/0	0/0	0/0
Jackson	45/23	0/0	0/0	7/5	0/0	0/0
Kenton	0/0	0/0	0/0	3/1	0/0	0/0
Knox	6/4	0/0	0/0	1/1	0/0	0/0
Larue	0/0	0/0	6/6	17/17	1/1	0/0
Laurel	17/17	0/0	1/1	3/3	0/0	0/0
Lawrence	1/1	0/0	0/0	0/0	0/0	0/0
Lewis	3/1	0/0	0/0	32/6	0/0	0/0
Lincoln	2/1	0/0	1/1	55/30	0/0	0/0
Livingston	0/0	3/0	1/1	0/0	0/0	0/0
Logan	0/0	1/0	18/18	35/15	2/0	0/0
Lyon	0/0	0/0	3/3	1/1	0/0	0/0
Madison	3/3	0/0	4/3	3/1	0/0	0/0
Marion	7/0	0/0	10/10	20/20	0/0	0/0
Marshall	0/0	6/0	0/0	0/0	0/0	0/0
Martin	0/0	0/0	0/0	1/0	0/0	0/0
Mason	2/1	0/0	1/1	35/12	0/0	0/0
McCracken	0/0	4/0	2/2	4/2	0/0	0/0
McCreary	1/1	0/0	0/0	0/0	0/0	0/0
McLean	0/0	26/0	28/28	2/1	1/1	0/0
Meade	6/6	5/0	15/8	1/0	0/0	0/0
Menifee	0/0	0/0	0/0	1/1	0/0	0/0
Mercer	3/3	0/0	0/0	12/11	0/0	0/0
Metcalf	3/3	0/0	0/0	49/40	0/0	0/0
Monroe	3/2	0/0	1/1	32/26	0/0	0/0
Montgomery	0/0	0/0	0/0	1/1	0/0	0/0
Muhlenberg	0/0	4/0	6/6	0/0	0/0	0/0
Nelson	0/0	0/0	16/16	12/12	3/2	0/0
Nicholas	0/0	0/0	0/0	1/1	0/0	0/0
Ohio	3/2	27/0	9/9	1/0	1/1	0/0
Oldham	0/0	0/0	1/1	3/3	0/0	0/0
Owen	0/0	0/0	0/0	3/1	3/0	0/0
Owsley	4/4	0/0	0/0	0/0	0/0	0/0
Pendleton	1/0	0/0	0/0	4/3	0/0	0/0
Pulaski	2/2	1/0	0/0	33/11	1/1	0/0
Robertson	1/1	0/0	0/0	0/0	0/0	0/0
Rockcastle	4/0	0/0	2/1	6/3	0/0	0/0
Rowan	1/1	0/0	0/0	0/0	0/0	0/0

CAFOs and AFOs by County

The Total Number of AFOs and Permitted AFOs by Type (Continued)

County	Beef	Poultry	Swine	Dairy	Combined	Rabbits
	# Per County/ # Permitted	# Per County/ # Permitted	# Per County/ # Permitted	# Per County/ # Permitted	# Per County/ # Permitted	# Per County/ # Permitted
Russell	1/1	0/0	1/1	27/23	0/0	0/0
Shelby	2/2	0/0	1/1	17/17	0/0	0/0
Simpson	0/0	3/0	9/7	12/3	0/0	0/0
Spencer	0/0	0/0	0/0	4/4	0/0	0/0
Taylor	6/5	0/0	2/2	40/19	2/0	0/0
Todd	7/0	7/0	18/16	39/12	4/2	1/1
Trigg	0/0	0/0	7/7	1/1	0/0	0/0
Trimble	0/0	0/0	0/0	7/0	0/0	0/0
Union	0/0	0/0	12/11	0/0	0/0	0/0
Warren	1/1	15/0	9/9	51/20	2/1	0/0
Washington	5/5	0/0	1/1	11/11	0/0	0/0
Wayne	1/1	15/0	0/0	18/4	0/0	0/0
Webster	0/0	11/0	2/1	0/0	0/0	0/0
Whitley	2/2	0/0	0/0	0/0	0/0	0/0
Wolfe	4/4	0/0	0/0	0/0	0/0	0/0
Woodford	0/0	0/0	1/1	0/0	0/0	0/0
TOTAL	272/184	266/0	402/359	1427/672	42/21	1/1

Source: Auditor of Public Accounts, from information provided by the Division of Water.

JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
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July 31, 2001

Edward B. Hatchett, Jr.
Auditor of Public Accounts
2501 Georgetown Rd Ste 2
Frankfort, KY 40601-5539

Dear Mr. Hatchett:

Thank you for the opportunity to respond to your report of the Performance Audit of Kentucky's Management of Nonpoint Source Water Pollution. We appreciate your consideration of the remarks we made on the draft report. Your staff spent a great deal of time and effort gaining knowledge of the diverse ways that nonpoint source water pollution is managed in Kentucky and the report reflects this. The following comments are in response to the final draft of the dated report of July 2001. They are presented for your consideration on a page by page basis.

1) Page ii, Recommendations. (Also pages 19 and 20, under Agency Recommendations)

Recommendation #2 - The basis for permitting only liquid waste handling systems is driven by statute, not regulation. Therefore, this recommendation is beyond the purview of the Division of Water (DOW) and might be better placed under legislative recommendations.

Recommendation #3 - To be consistent with page ii, page 20 should say DOW rather than KPDES. The Division is not currently staffed to investigate every Animal Feeding Operation (AFO) and Confined Animal Feeding Operation (CAFO) in Kentucky.

Recommendation #4 - The DOW is not required to develop KPDES general permits for middle-tiered operations, and does not currently anticipate doing so. Rather, where an operation meets the criteria for requiring an individual KPDES permit (as already issued in the existing general permits for poultry, swine, beef, and dairy operations), that operation would be required to obtain an individual KPDES permit. With respect to permitting watersheds, the DOW will be issuing KPDES permits for CAFOs on a watershed permitting cycle, and has already developed a schedule to do so. Further, operations within impaired watersheds could trigger the KPDES individual permitting process rather than the KPDES general permitting process.

Recommendation #7 - The DOW agrees that any violations found in the review of the Discharge Monitoring Report (DMR) data submitted to the Department for Surface Mining Reclamation and Enforcement (DSMRE) is to be forwarded to the DOW for further enforcement action.



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Edward B. Hatchett, Jr.
Page Two
July 31, 2001

Recommendation #8 - The DOW is evaluating how best to store DMR data. Currently, we use the federal Permit Compliance System (PCS) system. This system, however, is not able to maintain Coal DMR data. A proposal has been made to the American Management Systems (AMS) to incorporate this feature into a TEMPO system under the Empower Kentucky process.

Recommendation #9 - The DOW will evaluate whether the 1983 Memorandum of Understanding needs to be modified in order to address various responsibilities among the two departments.

2) Page 10, 1st paragraph, 2nd sentence. The DOW does have procedures for identifying who should be permitted under 401 KAR 5:005. An operational permit (KNDOP) must be obtained prior to beginning operation of a non-discharging sewage system. "Sewage system" means individually or collectively those constructions or devices used for collecting, treating, and disposing of liquid or waterborne sewage, industrial, or other wastes. Non-discharging sewage systems include closed circuit systems, subsurface injection, and land application of effluent.

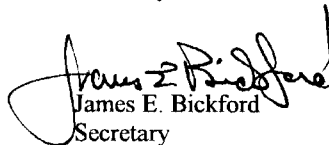
3) Page 10, 2nd paragraph, 1st sentence. The DOW does not have regulatory or statutory authority to permit dry manure systems under the KNDOP program. It is not a matter of "requiring", rather the authority to require.

4) Page 11, 3rd and 4th paragraphs, 1st sentence in each respectively DOW does not rely "solely" upon complaints, nor is the permitting process relied upon voluntary compliance. In reality, both have been used to initiate the permitting process in addition to routine compliance/inspection.

5) Page 11, 5th paragraph, 1st sentence. The DOW disagrees with this statement. See comment 3 above for authority to require KNDOPs. In addition, the DOW has identified a number of operations in the course of its survey of agricultural operations that need to be permitted and is in the process of permitting those operations that warrant such.

Thank you again for the opportunity to respond to the final draft of the report. We will be evaluating your final recommendations to determine how they may best be integrated into Kentucky's nonpoint source management efforts.

Sincerely,


James E. Bickford
Secretary

JEB:TPA:dh

JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR SURFACE MINING RECLAMATION & ENFORCEMENT
FRANKFORT, KENTUCKY 40601
CARL E. CAMPBELL
COMMISSIONER

July 24, 2001

Mr. Edward B. Hatchett, Jr.
Auditor of Public Accounts
Suite 144, Capitol Annex
Frankfort, Kentucky 40601-3448

Dear Mr. Hatchett:

Reference is made to the findings we received (July 9, 2001) from your staff pursuant to the recent performance audit conducted by your office. In particular, your office conveyed a number of recommendations concerning the working relationship between this agency and the Kentucky Division of Water. Your staff also suggests that the DSMRE seek ways to fund the digitizing of abandoned underground coalmines throughout the Kentucky coalfields. I will respond to each recommendation individually, and our responses should provide you with a sense of how this agency is, or will be, addressing these perceived insufficiencies.

1. **Recommendation:** DOW should work with the DSMRE to ensure that all information from DMRs is communicated to DOW. **Response:** The DSMRE is currently working with the DOW to revise and improve upon our 1983 Memorandum of Understanding (MOU). Providing DOW with all information on Discharge Monitoring Reports is one of the issues that will be included in the revised MOU.
2. **Recommendation:** DOW and DSMRE should work together to develop a database to store information from DMRs. **Response:** The DSMRE is currently working with the DOW to revise and improve upon our 1983 MOU. Developing and maintaining a DMR database that will be accessible to the DOW is one of the issues that will be addressed in the revised MOU.
3. **Recommendation:** DOW and DSMRE should work together to update the 1983 MOU and consider whether quarterly and annual action reports. **Response:** The DSMRE is currently working with the DOW to revise and improve upon our outdated Memorandum of Understanding. The DSMRE will, as part of the revised MOU, make sure that the DOW is provided with a copy of all quarterly and annual water quality enforcement action reports.



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Mr. Edward B. Hatchett, Jr.
Auditor of Public Accounts
DSMRE Response to Division of Water audit
July 24, 2001

4. **Recommendation:** DSMRE should communicate with the DOW if routine testing identifies levels of acid mine drainage (AMD). **Response:** The DSMRE has already provided the DOW with access to, and background on, our computerized AMD Inventory. Our AMD database is constantly being updated and maintained, and DOW is now able to quickly access this information through the state computer network.

5. **Recommendation:** DSMRE, AML and DMM should work together to locate and digitize all abandoned underground mines in the Commonwealth. This effort should include mines that have not yet been mapped as well as mines related to the maps destroyed by fire in 1948. **Response:** DSMRE, the federal Office of Surface Mining (OSM) and the Kentucky Geological Survey (KGS) are presently attempting to schedule a workshop this year (late September) to work on this very issue. The intended outcome of these meetings will be to devise a method of mapping and subsequently digitizing the all underground coalmines located throughout the Commonwealth through a cooperative multi-agency effort. Locating the funds for this exercise shall be one of the issues discussed at the meetings.

We will provide your office with a copy of the revised MOU once it has been finalized. We shall also update you on the outcome of the multi-agency meeting to be conducted later this fall should you so desire. Please let us know if you have any additional questions or recommendations.

Sincerely,



Carl E. Campbell
Commissioner

cc: Mark Thompson, Director
Division of Field Services

Larry Adams, Director
Division of Permits

Bob Logan, Commissioner
Department for Environmental Protection

Jack Wilson, Director
Division of Water

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 Frankfort, Kentucky 40601

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General Questions

General questions should be directed to Harold McKinney, Intergovernmental Liaison, at (502) 564-5841 or the address above.