Chapter 8: Consequences of Improper Management

The purpose of the law requiring operators of animal waste management systems is to reduce nonpoint source pollution, to protect the public health, and to protect the quality of the state’s water resources. As previously explained in Chapter 1, negative impacts to these water resources are possible consequences of mismanagement of animal waste. However, there are many other consequences which may be realized if animal waste is handled improperly. These consequences are realized by the actual owners, managers, and operators of animal facilities.

This section will deal with the regulatory and legal consequences of mismanagement, including failure to secure a waste management plan or designate a certified animal waste operator in charge at your facility.

**DISCHARGE OF ANIMAL WASTE**

A discharge of animal waste means that the waste is allowed to leave the animal waste management system. Treatment is usually accomplished by using a plant/soil system as part of a well-planned land application program that prevents the discharge of animal waste.

If a discharge of animal waste is witnessed or can be verified from an operation, there is the potential for regulatory action from DWQ. This discharge can take many routes, from a broken pipe to an overflowing lagoon. The discharge may also be the result of over irrigation of waste onto a field that results in runoff reaching surface waters.

Regardless of the method, it is a violation of state law for waste to reach surface water, UNLESS, the discharge was caused by a rainfall event that is classified as a 25-year, 24-hour storm. This type of storm delivers from 5 to 9 inches of rain in one 24-hour period, depending on the region of the state (Figure 8-1). It is important to realize that a long rainy spell of 3 to 4 days that may deliver 10 inches of rain does not “qualify” as a 25-year storm unless the predetermined amount of rain fell in one 24-hour period. In actual life, 25-year storms rarely occur, and rarely can be used for a defense if a discharge of animal waste has occurred.

A discharge as described above is subject to civil penalties of up to $10,000 per day, with each day the violation is noted constituting a separate offense (reference N.C. General Statute 143-215.6A). Major violations or continued acts of noncompliance may result in additional penalties, criminal enforcement, and the possibility of closure to stop the
pollution or health threat. The facility may also be required to obtain an individual nondischarge permit. Upon verification that a discharge has occurred, the operation will be notified by letter from DWQ that a violation has occurred. This letter will note the nature of violation, the surface water that is impacted, and what corrective action is required by a certain date. The letter may additionally state that an enforcement action will be initiated, which may result in a civil penalty (fine). Additional conditions may be included in the letter, with a schedule for implementation.

Figure 8-1. Rainfall during a 25-year, 24-hour storm event.

Another course of action may be used if a waste system has the potential to cause an imminent health hazard. If such an occurrence is determined to have occurred, the county health director may issue an order to stop the pollution. This action would take the form of a court order, and in an extreme case may require the removal of animals from an operation.
WILLFUL DISCHARGE

Additional legislation allows for an immediate civil penalty of up to $10,000 per day per violation for persons who have a man-made “conveyance” structure for the purpose of discharging animal waste. A conveyance may be a pipe or ditch used to route waste away from an animal operation or to discharge wastes from a holding pit or lagoon. The penalty may be assessed regardless of whether there is an actual discharge of wastes. In other words the presence of such a structure constitutes a violation. However, it is important to realize that man-made conveyances are different than engineered spillways considered in new designs for waste storage ponds and lagoons.

WATER QUALITY STANDARDS

DWQ maintains water quality standards for many pollutants, including oxygen levels, bacteria, pH, nitrogen, phosphorus, and a variety of metals and chemicals. It is against the law for anyone, including farmers, to cause a water quality standard violation. For example, if waste from an animal operation lowers the dissolved oxygen level in a stream below the standard, then the owner is subject to civil/criminal penalties.

PERMIT STATUS

Another regulatory approach to deal with an animal operation with verified waste discharges is to require an individual nondischarge permit from DWQ. Such an approach is used where repeated violations or willful violations are recognized. Existing DWQ regulations allow animal operations to be “deemed permitted” until such time as a general permit is issued, if the operation meets the requirements of the regulations and operates under the guidance of an approved animal waste management plan. You may also lose your eligibility to be covered by the general permit described in the next section.

All new and expanding animal operations involving 250 or more swine, 100 or more confined cattle, 75 or more horses, 1,000 or more sheep, or 30,000 or more confined poultry using a liquid animal waste management system are required to have such a waste management plan and operate according to that plan before animals are stocked on the facility, and all existing facilities must have a certified plan by December 31, 1997. A
consequence of missing this deadline is that the “deemed permitted” status may be lost and fines may be assessed. Loss of this status puts an operation in a situation where an individual DWQ permit may be required in order to keep operating.

Individual permits are typically issued to industries and municipalities. They require extensive waste and site evaluations, engineering design of system components, detailed monitoring of operations with laboratory analyses of effluent, additional buffers for waste application, and regularly scheduled compliance visits by DWQ. Such permits are still enforceable by civil penalties up to $10,000 per day per violation. Loss of “deemed permitted” status is a situation that you should make every effort to avoid.

If violations are determined to be “malicious” or “willful intent,” the violator is also subject to criminal charges for pollution caused by the activity. If repeat violations occur at a facility because no action has been taken by the facility owners to correct pollution problems, criminal penalties can also be charged.

**General Permits**

Senate Bill 1217 requires that every animal operation involving 250 or more swine, 100 or more confined cattle, 75 or more horses, 1,000 or more sheep, or 30,000 or more confined poultry using a liquid animal waste management system obtain a general permit from the Environmental Management Commission. The Division of Water Quality will begin notifying existing facilities of the requirements to apply for a general permit after January 1, 1997. Priority is to be given to animal operations with the largest number of animals. Any animal waste management system that is deemed permitted on January 1, 1997, under the 15A NCAC 2H.0217 Animal Waste Management Rules, may continue to operate on that basis until a permit is required by the North Carolina Division of Water Quality. New and expanding operations must apply for a general permit before beginning construction. The general permitting program is currently implemented by the Division of Water Quality. Each deemed permitted animal operation will be notified of the date by which it must file an application.

The operator in charge of an animal operation should obtain a copy of the permit when issued and be familiar with its conditions. The operator in
charge should periodically meet with the owner to discuss compliance with the permit conditions.

Permit Applications and Permits

The Environmental Management Commission (EMC) will approve the form for permit applications and the duration of permits issued. All permit applications will contain an animal waste management system plan approved by a technical specialist. The animal waste management plans required by Senate Bill 1217 must include all of the following eight elements, along with the waste utilization plan items that were discussed in Chapter 3:

1. Odor Control—a checklist of potential odor sources and a choice of site-specific, cost-effective best management practices to minimize those sources.

2. Insect Control—a checklist of potential insect sources and a choice of site-specific, cost-effective best management practices to minimize insect problems.


4. Riparian Buffers—best management practices for riparian buffers or equivalent controls, particularly along perennial streams.

5. Emergency Management Plans—provisions for the use of emergency spillways and site-specific emergency management plans that set forth operating procedures to follow during emergencies in order to minimize the risk of environmental damage.
6. **Waste and Soil Testing**—plans must include provisions for periodic waste and soil testing:

- testing of waste products used as nutrient sources as close to the time of application as practical and within at least 60 days of the date of application;

- annual testing of soils at the application sites with nitrogen used as the rate-determining element; and

- monitoring of zinc and copper levels, with plans for alternative sites when zinc and copper levels approach excessive levels.

7. **Application Rates**—the plan must balance nitrogen application with nitrogen utilization. Lime will be applied to maintain an optimum pH for crop production. Corrective actions must be identified if soil testing reveals an imbalance.

8. **Record Keeping**—the plan must address the completion and maintenance of records on forms approved by DEHNR. Included must be the information developed for elements 6 and 7 above together with application dates and rates for each application site. Records, except those required of dry litter systems, must be maintained for five years in accordance with the Natural Resources Conservation Service standard for Waste Utilization Plans (Standard #633).

### Inspections and Reviews

Animal operations will be visited a minimum of twice each year. One will be an operations review conducted by the Division of Soil and Water Conservation. The other will be a compliance inspection conducted by the Division of Water Quality.

### Operations Reviews

Each facility will have an annual operations review by the Division of Soil and Water Conservation as required by Senate Bill 1217. A report prepared by the technical specialist, in a manner consistent to meet the needs of the Division of Water Quality (DWQ), will be submitted to DWQ.
within 10 days following the operations review. Additionally, violations described later require an immediate report to DWQ.

Operations reviews may only be conducted by technical specialists who are:

1. employees of the Division of Soil and Water Conservation,
2. employees of a local Soil and Water Conservation District, or
3. employees of the federal Natural Resources Conservation Service who are working under the direction of the Division of Soil and Water Conservation.

Technical specialists who are employed by the North Carolina Cooperative Extension Service or work in the private sector may not perform operations reviews.

**Annual Farm Inspections**

Section 143-215.10F of the N.C. General Statutes requires that DWQ inspect each animal operation at least once per year for:

1. violations of water quality standards,
2. animal waste management plan compliance, and
3. compliance with all other permit conditions.

This requirement is in addition to the annual operations review that is to be conducted by the Division of Soil and Water Conservation. The effective date for this provision is January 1, 1997.

**Mandatory Reporting**

Senate Bill 1217 states that certain violations are immediately reportable to the Division of Water Quality. The reporting requirement applies to any employee of a state agency or a unit of local government and is not limited to technical specialists who perform operations reviews. The bill requires any state or local government employee who is “lawfully on the premises and engaged in activities relating to the animal operation” to immediately report the following violations:
1. Any direct discharge of animal waste into waters of the state.

2. Any deterioration or leak in a lagoon system that poses an immediate threat to the environment.

3. Failure to maintain adequate storage capacity in a lagoon that poses an immediate threat to public health or the environment.

4. Overspraying animal waste either in excess of the limits set out in the animal waste management plan or where runoff enters waters of the state.

5. Any discharge that bypasses a treatment or collection system.

Reports of the violations are to be made to the owner or operator of the animal operation and the DWQ regional office. Employees of federal agencies are encouraged, but not required, to make immediate reports of violations.

**Annual Permit Fees**

Senate Bill 1217 requires animal operations to pay an appropriate annual fee. The new fee schedule becomes effective on January 1, 1997, and operations must pay the fee upon notification by DWQ and only after receiving their general permit.

**Animal Waste Management Plans**

The components of these plans are mentioned elsewhere in the manual. DWQ regulations (2H .0200) require all operations serving above the threshold number of animals mentioned in Chapter 1 to obtain and follow this plan by December 31, 1997. The goal of the rule is to minimize impacts to surface waters from animal operations. Consequences of failure to follow this requirement include loss of deemed permitted status (discussed above), and potential enforcement actions as allowed by NCGS 143B-282.1. Further, if other water quality violations or discharges are noted, additional fines may be assessed as previously described under NCGS 143-215.6A.
Water Pollution Control System Operators Certification Commission

As discussed in Chapter 1, the operator in charge of an animal waste management system must be certified. The commission responsible for the certification of animal waste management system operators is the Water Pollution Control System Operators Certification Commission (WPCSOCC). The Certification Commission is also responsible for the certification of other water pollution control system operators, such as wastewater treatment plant operators, collection system operators, spray irrigation system operators, land application of residuals system operators, and subsurface system operators. In addition to certification of operators, the Certification Commission is responsible for the classification of water pollution control systems and the development and implementation of training programs for the certification of operators.

The Certification Commission has 11 members. Two members represent the animal agriculture industry and are appointed by the Commissioner of Agriculture. The remaining nine members are appointed by the Secretary of Environment, Health, and Natural Resources and represent other areas of the water pollution control system industry. The Commission is located in the Department of Environment, Health, and Natural Resources and is assisted by the staff of DWQ’s Technical Assistance and Certification Group.

Classification of Animal Waste Management Systems

The Certification Commission has established two types of animal waste management systems: Type A Animal Waste Management Systems and Type B Animal Waste Management Systems.

The Type A systems primarily rely on an anaerobic lagoon and soil/plant systems for the treatment of animal waste. These systems are generally used to treat animal waste generated by animals that produce a low-fiber waste, such as swine and poultry. These systems generally include the following components: anaerobic lagoon; pumps; pipes and other structures that carry waste from the point of generation to the final treatment/disposal site; flushing systems; solids separation equipment; irrigation equipment; and land application site and crops.
Type B systems primarily rely on soil/plant systems for the treatment of animal waste. These systems are generally used to treat animal waste generated by animals that produce a high-fiber waste, such as cattle, horses, and sheep. These systems generally include the following components: dry stacks; solids and slurry collection equipment; storage ponds for the collection of solids and runoff; pumps, pipes and other structures that carry waste from the point of generation to the final treatment/disposal site; flushing systems; solids separation equipment; irrigation equipment; and land application site and crops.

Certification of Animal Waste Management System Operators

Separate training and certification programs have been developed for each type of animal waste management system.

To become certified as a Type A or Type B Animal Waste Management System Operator, you must complete the appropriate training program and pass the appropriate examination. To maintain your certification, you must pay an annual renewal fee and complete 6 hours of additional training every 3 years. If you fail to pay the annual renewal fee within 30 days of the due date, or if you fail to complete the approved additional training within 30 days of the end of the 3-year period, you must take and pass another examination in order to renew your certificate.

Enforcement Actions

Under certain circumstances, the Certification Commission may take enforcement actions against a certified operator. The Certification Commission may suspend or revoke your certificate, or may issue you a written reprimand. The Certification Commission may take these actions if it finds that you have practiced fraud or deceit, have not exercised reasonable care, judgment, or the use of your knowledge and ability in the performance of your duties as an operator, or you are incompetent or unable to perform your duties. In addition, civil penalties may be assessed against an owner, or operator in charge, for willful violations of the requirements of NCGS 90A-47.
Duties and Requirements of Owners

Owners of animal waste management systems were required to designate an operator in charge by January 1, 1997, if their animal waste management systems were in operation on that date. Owners of new animal operations having animal waste management systems must designate an operator in charge before these systems are placed into operation. Owners must also designate a new operator in charge within 30 days of a change in operators. Designation forms must be submitted to the Certification Commission. Failure to designate an operator in charge may result in the assessment of civil penalties of up to $1,000 according to NCGS 90A-47.

Duties and Requirements of Certified Operators

All certified operators, regardless of whether or not you are a designated operator in charge of an animal waste management system, must notify the Certification Commission within 30 days of a change in address. As mentioned earlier, you must also pay an annual renewal fee and complete 6 hours of approved training every 3 years following certification.

Duties and Requirements of an Operator in Charge

As an operator in charge of any type of animal waste management system, you must:

1. possess a currently valid animal waste management system operators certificate of the appropriate type;

2. visit and inspect each animal waste management system at a frequency to ensure proper operation of the system;

3. inspect, or a person under the supervision of the operator in charge, shall inspect the land application site at least every four hours during the application of the waste;

4. properly manage, supervise, and document daily operation and maintenance of the system;

5. certify monitoring and reporting information as required in the permit; and
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6. be available for consultation, emergencies, and inspections.

As an operator in charge, or a designated back-up operator, of a Type A system you must:

1. ensure that animal waste is being applied in accordance with the animal waste management plan and the permit;

2. inspect, or have a person under the direct supervision of the operator in charge inspect, the land application site at least every 4 hours during the application of animal waste; and

3. inspect the land application site within 24 hours of the application of animal waste if the operator in charge was not present during the application of animal waste.

As an operator in charge, or a designated back-up operator, of a Type B system you must:

1. ensure that animal waste is being applied in accordance with the animal waste management plan and the permit;

2. inspect, or have a person under the direct supervision of the operator in charge inspect, the land application site during the application of animal waste; and

3. inspect the land application site within 48 hours of the application of animal waste if the operator in charge was not present during the application of animal waste.

Contract Operators (certified operators that contract with owners of animal waste management systems to serve as an operator in charge) are required to submit annual reports to the Certification Commission by January 15 of each year, beginning January 15, 1998. The annual report must include the name of the certified operator, mailing address, phone number, and certificate number. It must also include the name, mailing address, county, facility identification number, and type of each animal waste management system for which the certified operator has been designated as operator in charge.
**OTHER REGULATIONS**

In addition to the above, there may be local regulations that apply to animal operations. Generally, local regulations deal with the zoning or location of animal operations as opposed to the actual operation of the facility. However, in 1991 the North Carolina General Assembly explicitly defined bona fide farms to include the production of livestock and poultry. These as defined are exempted from county zoning ordinances but not from city or town ordinances. It is beyond the scope of this manual to review pertinent local regulations and the legal issues surrounding them. The owner and operator of an animal operation should research the pertinent local regulations to make sure they are in compliance with these, if any. Information on such regulations should be available from the county planning and zoning office, the county manager’s office, or the county health department.

Proper management and ensuring that you and your operation are in total compliance with all local, state, and federal regulations not only makes good sense, but could have a bearing on your bottom line. It may also have a great deal to do with the attitude that your neighbors and the people in your community have towards you, your animal operation, and other animal or commodity producers as well.

Let’s take a look at what could happen to you if for some reason you are not using proper management and are not implementing BMPs in your operation:

- You could be liable for fines from DWQ for causing a water quality violation or for failing to follow your waste management plan and/or general permit.

- The Attorney General of North Carolina has the authority to ask the courts to close your operation if you fail to adequately address any problems that you have caused.

- You could be liable to legal action against you in the form of nuisance lawsuits which may cost thousands of dollars to defend.
• You could be required to make major changes in your operation and the way that you do things if the county health director or board of health determine that your operation is a threat to the public health or to you and your employees.

• If you are labeled a “bad actor,” you could jeopardize your reputation and integrity in the community which would also be a negative reflection on the animal industry.

Of a more general nature, improper management by just a few individuals can have major effects on all of North Carolina’s animal producers.

For example:

• Negative media coverage of just a few individuals that are not doing a good job causes all producers to look bad, regardless of how well maintained their operation may be. Media coverage has been extensive in response to several large discharges of animal waste.

• Mismanagement has caused legislation to be passed on a statewide basis that has changed the way that animal producers conduct business and use their property.

• Mismanagement could cause your property and the property of your neighbors to decline in value.

A third-party lawsuit is a lawsuit brought against an animal operation by a person who is not responsible for enforcing a regulation. An example could be a lawsuit brought by a neighbor, as opposed to a lawsuit brought by a local, state, or federal government agency. Third-party lawsuits are becoming more and more commonplace as confined animal operations expand and as subdivisions move into more rural settings.

It is not the goal of this manual to give legal advice. Each situation involving a lawsuit involves a specific set of circumstances unique to that situation. It is simply mentioned here because it is a consequence of improper management at a facility. The regulations that apply to the operation and maintenance of animal waste management systems are not solely enforceable by state environmental inspectors. A local citizen has
the right to bring legal action against you if you are not applying waste in the proper manner with the proper buffers. In fact, there may be much more scrutiny on some operations locally. *The primary actions a producer can use to avoid lawsuits are to have good records, operate properly, have an approved waste utilization plan, and follow other guidelines offered in this program.*

For more information concerning these issues, you can consult with your attorney or contact some of the references listed in Appendix A.

Animal waste should be treated as a resource with fertilizer value. If waste is improperly applied on your cropland, it can harm your soils or farm in the following ways:

1. **Excessive nitrogen**
   - leaches into groundwater, contaminates streams, rivers, and drinking water

2. **Excessive buildup of micronutrients (for example, copper and zinc)**
   - toxicity levels that may injure or kill crops

3. **Loss of potential dollars**
   - due to loss of fertilizer value of animal waste
   - due to loss of timely irrigation of wastewaters which can also provide crop benefits
Other negative impacts from improperly managed waste application systems are:

1. **Herd health**
   - spread of disease from contamination (for example, birds, other animals, and people)
   - excessive ammonia in the pits in the buildings, which reduces animal performance
   - excessive fly problems from buildup of solids in pits and lagoons

2. **Worker safety**
   - buildup of gases in lagoons (increases odor problems)
   - buildup of gases in pits in buildings (for example, ammonia, hydrogen sulfide, and others) that could affect worker health and increase odor problems

Forages that contain excessively high concentrations of nutrients (especially nitrogen) can cause health problems in grazing animals or animals fed hay rations with high nitrogen levels. Grass tetany, fescue toxicity, agalactia, and fat necrosis may be associated with high rates of fertilization from animal wastes. For further details about these diseases or symptoms, you should contact your veterinarian.

A good common-sense rule is that it is far easier to prevent problems than it is to correct them. This old saying is certainly true of animal waste management. We hope that you have learned or have been reminded through this course of many things to help you prevent problems with your animal waste management system and to avoid having to correct a bad situation. Making amends for problems is almost always more costly than proper preventive maintenance. This is especially true when there is the potential of environmental fines on top of it all. By far the most costly impact would be for a facility to be required to cease production, thereby rendering the capital investment useless. If problems seem to occur regardless of how intensively you manage your operation, there may be
the need for upgrades in one or more of the system components. There is technical assistance available to help you with these determinations. These resources are listed in Appendix A.

A lot of this comes down to attitude. Careful management and land application of waste is a serious responsibility and must be viewed as such. It is an important part of your total farm management.

Proper application of your wastes will help you protect your farmland’s productive capacity for future use. Considering the waste as a resource, and using those nutrients properly, could save you fertilizer costs and improve your soil. Managing your wastes correctly will protect water supplies, which may include the ones you use on your farm for the animals and your family. Essentially you are recycling valuable nutrients, and only applying the nutrients based on crop needs after you have thoroughly evaluated the cropping system using your waste analyses and soil samples.

As you operate your facility, think of the following:

- How does the rest of the public view your environmental actions?
- What are the political implications of your facility management?
- How would an inspector, state legislator, or member of Congress view your farm?

With correct management you will be operating within the regulations so that regulatory inspectors do not find violations when they visit the farm. As mentioned before, regulatory activity against your operation can carry long-range implications. It may be harder for you to sell your product, your input on local agricultural issues may be viewed less seriously, and all future local water quality problems may be assumed to be caused by your operation.
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**Explain why it is important to maintain a “good neighbor policy.”**

The following techniques for improving management and appearance of facilities are a summation of other topics discussed in this manual. For review, here are some considerations that will aid you in your quest to be a “good manager:”

- **Appearance of the Operation**—how a facility looks has a large impact on what people think and their perceptions of odor.

- **Cleanliness of the Operation**—having a clean facility improves herd health, reduces odors, and makes management easier.

- **Maintenance**—having a routine maintenance program for building, equipment, and grounds reduces environmental mishaps.

- **Record Keeping**—having a waste management record keeping system lets you monitor waste analysis, fertility levels, historical yields, dates of application, location of application, and overall profitability.

- **Water Use and Drainage**—knowing the location of wells, surface waters, drainage patterns, and drainage tile lines reduces the chances of environmental contamination.

- **Community Relations**—being a good manager is critical to successful facility management. Because much of the population does not understand what you do in your farm operation, it will be important to have good lines of communication to prevent problems from arising. An important consideration before you land apply your waste or perform other activities such as removing sludge from your lagoon should be the affect it might have on the surrounding community.

**Review Questions**

1. What changes might you make on your farm to prevent animal waste problems? ............................................. see pages 8-1 to 8-18

2. What are the regulatory consequences of animal facility mismanagement? Of a waste spill? ................................... see page 8-1

3. Which agencies perform operations reviews and annual inspections?
4. What are the 2 classifications of animal waste management systems? 

5. List possible actions that can be taken against an operator by the Certification Commission.

6. List the duties and requirements of an operator in charge.

7. Animal waste should be treated as a _________________.

8. Name three negative consequences of over application of animal waste on your cropland.

9. Why is it harder to correct animal waste management problems than it is to prevent them beforehand? Think of several examples.

10. Name several reasons why animal waste management is an important component of total farm management.

11. Describe some actions that show an animal or commodity producer is thinking as a “good manager,” with consideration for others, as he makes animal waste management decisions.