

Groundwater Protection Plan for Poultry Facilities on Less Than Ten Acres

Introduction

Administrative regulation 401 KAR 5:037 established the requirement to develop and implement groundwater protection plans (GPP) for activities that have the potential to pollute groundwater. The purpose of a groundwater protection plan is to ensure protection for all current and future uses of groundwater and to prevent groundwater pollution. A groundwater protection plan consists of best management practices designed to protect groundwater.

This generic groundwater protection plan applies to activities dealing with poultry production at all poultry producing facilities producing 5,000 or more birds per year on less than ten acres of land.

Provide the requested information to execute this generic groundwater protection plan.

I. General Information

A. Name of Facility: _____

Address: _____

County: _____

B. Name of Contact Person: _____

Address: _____

Phone: _____

C. Name of Person Responsible for Implementation of Plan: _____

Address: _____

Phone: _____

- D. Include the following two maps in the plan:
1. Location of your facility on a 7.5 minute topographic map.
 2. Provide a facility layout map that shows the location of the following features:
 - Poultry Houses
 - Litter Storage Area
 - Composting Facility
 - Property Lines
 - Surface Water Bodies
 - Wells
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II. Activities that Have the Potential to Pollute Groundwater

The following activities that occur at poultry operations have the potential to pollute groundwater and are addressed in this generic groundwater protection plan.

- A. Poultry House
- B. Handling and Storage of Litter
- C. Litter Disposal and/or Reuse
- D. Dead Animal Disposal

If other activities occur at your facility that are regulated by 401 KAR 5:037 and are not related to poultry production (e.g., on-site sewage disposal systems or wells), then a separate GPP is necessary in order to address those activities. Generic GPP's for domestic water wells and on-site septic systems are available for your use through the Groundwater Branch of the Division of Water. The Ky-A-Syst program may help in identifying other sources of groundwater pollution and provide other BMPs for these sources.

III. Practices Selected to Protect Groundwater

By executing this generic groundwater protection plan the poultry operator agrees to implement the following groundwater protective practices at their facility.

A. Practices for Poultry Houses

1. Siting Requirements:

Poultry houses, litter storage facilities, and composting sites at the poultry operation must maintain a minimum distance from the following environmentally sensitive features as indicated below:

	Minimum Distance
• lake, river or blue line stream	150 ft.
• karst feature (a karst feature is a naturally occurring feature formed by the dissolution of carbonate rock including but not limited to a sinkhole drain, karst window, swallet, spring, sinking stream or cave)	150 ft.
• public water supply wells and springs	400 ft.
• water well	300 ft.

2. Preventing Wet Litter:

Good in-house management of litter keeps litter dry extending the time between litter clean-out and reducing the volume of wet manure cake to manage. Keeping litter dry not only reduces the environmental impact of litter management but also saves water, improves bird quality, and reduces ammonia release that causes odor problems. The following are best management practices to be implemented in the poultry house:

- Use a water system that minimizes spillage on litter.
- Keep water systems in good working order.
- Keep roofs leak free.
- Maintain ventilation system so it moves an adequate amount of air to keep litter moisture levels within the appropriate range.

B. Practices for Handling and Storage of Litter

Poultry litter is a mixture of raw poultry manure and bedding material such as sawdust, wood shavings or rice hulls. Litter saturated with water is called “cake” and is usually removed between flocks, or more frequently. Dry litter is usually allowed to accumulate between flocks, with an annual total poultry house clean-out. Litter management practices include handling, storage, and land application. Proper management of litter results in maximum benefits of nutrients for reuse and minimal environmental impact.

Litter must be stored in a way that prevents nitrogen and phosphorous leaching and bacterial contamination of surface and groundwater. The following are acceptable best management practices for the handling and storage of poultry litter. Please note that facilities with greater than 100,000 birds are required to have a KPDES permit.

1. When possible, make use of the direct movement from the poultry house to the off-site application field.
2. Contract with potential users who can use litter directly when houses are cleaned.
3. Storage of litter must be provided when cleaning of poultry houses does not coincide with available open cropland or with proper field conditions for off-site application.
 - Storage facilities must be located on well-drained sites that allow all weather access for loading and unloading. Also see siting requirements in Section A of this plan.
 - Storage facilities may not be located within a hundred year flood plain.
 - Divert uncontaminated surface water and water from roof gutters away from poultry houses and storage areas. Avoid locating storage facilities near natural runoff channels and intermittent streams.
4. Storage structures must be constructed to prevent leakage to groundwater and surface water.

- Structures should have a roof supported by outside walls or perimeter posts and a concrete floor. Permanent covers constructed over concrete bunkers such as those used for silage storage can be used. High roofs may require wall panels and/or a long overhang to protect stored litter from excessive blowing rain or snow if washout or leaching from the stored litter occurs.
 - The size of the storage structure must be capable of containing the maximum amount of litter collected during a “whole house” clean-out.
5. Transfer from poultry house to storage facility:
- Utilize good housekeeping practices to minimize spillage of litter during transport to storage facility. Promptly clean up any litter that is spilled during transport
 - Prevent contact with precipitation during transport.

C. Practices for Litter Disposal and/or Reuse

1. Land Application On Site

This generic groundwater protection plan **does not** provide for on-site land application of poultry litter. *If a facility chooses to apply litter on site, the facility is required to develop and implement a site specific groundwater protection plan which is subject to approval by the Division of Water.* In such cases, the groundwater protection plan must include a Comprehensive Nutrient Management Plan that meets the minimum requirements of NRCS CODE 590.

2. Disposal of Litter Off Site

Many poultry producers operating on small acreage sell or give away litter to other farmers for use as a fertilizer/soil amendment or to be used in livestock feed. The producer should receive assurance that the litter sold or given away will be used or disposed of in an environmentally sound fashion. The record keeping section of the generic gpp should indicate how the litter is to be used off site.

Accurate record keeping is an essential element of the groundwater protection plan because it is evidence that the plan is indeed being implemented. The following information concerning litter sales or give away must be maintained on file in the record keeping section of the facility's groundwater protection plan:

- Specific information regarding the entity receiving the litter including name, address, phone, and the general location of the off-site disposal area;
- Signed statement by recipient of litter that land application of the litter will be conducted following the requirements of a site specific groundwater protection plan that contains a Comprehensive Nutrient Management Plan meeting the minimum requirements of NRCS CODE 590 or in accordance with the AWQA Plan;
- Quantity of litter sold/given away for off-site utilization and the date litter was removed from the poultry facility; and
- [Detailed] description of how the litter is proposed to be utilized off site nutrient source for row crops or forage production vs. hay land/pasture application).

D. Practices for Dead Animal Disposal

“Diligent and conscientious management of dead animals is a safeguard to prevent groundwater or surface water pollution and odor nuisances.” Kentucky Agricultural Water Quality plan, p. 181.

Management of dead animals at poultry facilities should be conducted in accordance with KRS 257.160. Based on the level of production at facilities using this plan and the limited acreage available on site, burial as a means of dead animal disposal is not an environmentally feasible alternative and is not included as an option for disposal in this plan. This section of the plan lists the approved methods for dead animal disposal and the specific requirements for those disposal options.

1. Composting

Storage Facility Design and Construction Requirements:

- Must be properly designed and sized for the appropriate storage period.
- Must protect the composting material from water.
- Storage structure must be constructed according to the NRCS Conservation Practice Standard Composting Facility, Code 317.

Siting Requirements:

- The composting facility must not be located within the 100 year flood plain.
- The composting facility must be located no less than 300 feet from water wells.
- Runoff from outside drainage areas must be diverted away from the compost facility.
- For setback distance from karst features, see the siting requirements in Section III, A.1.

The compost storage facility must be inspected yearly when the facility is empty. Maintenance of the storage facility is also required. The following maintenance practices must be observed:

- The compost storage facility must have a roof and concrete floors and curbs under the primary and secondary composting bins.
- Deteriorated wooden materials or hardware must be replaced.
- Concrete floors and curbs must be patched as necessary to maintain water-tightness.
- Roof structures must be checked to assure structural soundness and repaired if needed.
- Exposed metal must be inspected for corrosion and wire brushed and painted as needed.

The composting process must be conducted in accordance with NRCS Conservation Practice Standard Code 317 and including the following criteria:

- The composting facility must include a primary composting unit into which alternate layers of low moisture content manure, carbon source material (straw is common), and dead animal carcasses are placed.
- A minimum temperature of 130° F must be reached during the composting process (temperatures of 140° to 160° F are ideal). If this temperature is not reached, the resulting compost must be re-composted by turning and adding moisture as needed.
- Moisture must be controlled. Initially, follow the parts by volume recipe of 1 part dead birds, 1.5 parts litter, 0.5 parts water, and 0.5 - 0.75 parts straw. An alternate recipe is 1 part dead birds and 2 to 3 parts litter where the litter has a high moisture content. Further addition of water following initial loading almost never needed.

2. Incineration

Incineration is an acceptable and biologically safe method of disposing of dead poultry. It may be the method of choice in areas having poor drainage and rocky soils. It does not have the potential to pollute groundwater and surface water. The ashes are easy to dispose of and not likely to attract rodents or insect pests.

3. Rendering

Rendering as a management technique removes dead poultry from the farm and relieves the grower of environmental concerns related to other methods of disposal. The following are Best Management Practices to be implemented for storing poultry destined for a rendering plant.

- Dead poultry must be held in a leak-proof container.
- Dead poultry not to be treated by refrigeration, fermentation, or acid preservation, must be delivered to, or be picked up by, a rendering company within 24 hours of death.

IV. Implementation Schedule

The Best Management Practices (BMPs) in this generic groundwater protection plan should be implemented when this plan is adopted for use at a site. However BMPs and other groundwater protection practices that require significant construction such as a permanent litter storage structure can be implemented on a delayed schedule. Other protective measures for these activities must be used until the proposed BMPs are in place.

Indicate those protective practices that require implementation on a delayed schedule. Provide a brief description of why a delayed scheduled is necessary. Propose a specific implementation date. List this information in the space provided.

Selected Practices

Implementation Date

Selected Practices

Implementation Date

V. Employee Training and Training Schedule

You must provide training to employees concerning implementation of this plan.

Examples of training include things such as how to check the integrity of litter storage structures; spill response and cleanup; proper handling of materials; proper disposal of dead birds, etc.

A. Provide description of training below:

B. Training Schedule:

Type of Training

Frequency (yearly, etc.)

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VI. Inspections and Inspection Schedule

Poultry producers must conduct regular inspections at the poultry facility in order to ensure that the proposed protective practices are in place and functioning properly. Inspection records must be kept on file as part of the record keeping section of this plan.

A. Poultry House	Inspection Frequency
1. Watering System	Weekly
2. Ventilation System	Weekly
3. Integrity (roof leaks, etc.)	Monthly
4. Other	
_____	_____
_____	_____
_____	_____
_____	_____

B. Litter Storage	Inspection Frequency
1. Storage Structure Integrity	Prior to any storage event
2. Runoff or Leaching from the Storage Structure	Weekly
3. Other	
_____	_____
_____	_____
_____	_____
_____	_____

C. Dead Bird Disposal	Inspection Frequency
1. Compost Storage Facility	Yearly
2. Other	

_____	_____
_____	_____
_____	_____
_____	_____

VII. Record Keeping

Records of implementation of this plan shall be maintained for six years as part of the plan. This generic GPP must be kept at the facility and be available for review.

VIII. Certification Statement

I certify that this plan has been read and the provisions of this plan will be implemented.

(Signature)

(Date)