

IDENTIFYING AND CONTROLLING DISCHARGES FROM POULTRY OPERATIONS

INCLUDES SOME
BEST MANAGEMENT PRACTICES



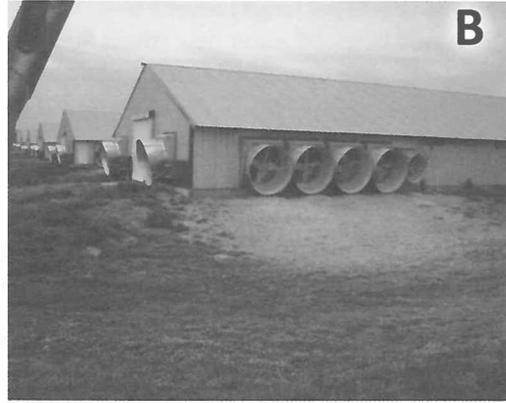
EPA Region 6 inspected and investigated poultry facilities throughout the region. The purpose was to identify evidence of discharges from poultry facilities to surface and ground water. This brochure includes suggested best management practices (BMPs) that can be implemented to control discharges from poultry operations to surface and ground water. Our goal is to provide compliance assistance to poultry operators, on the importance of properly managing poultry litter. The brochure highlights sources of discharges from production areas including exhaust fans, mortality management areas, litter management areas, and recommended or suggested BMPs that can be implemented to control these discharges.



Concentrated flow between poultry houses (barns) may result in discharges of pollutants into nearby streams and creeks as shown in the aerial photo above.

Exhaust Fans Management

Improperly managed areas around and below exhaust fans may result in unauthorized discharges of nutrients (N, P, K) and bacteria (e-coli) to nearby waterways. These discharges may also cause contamination of drinking water sources and recreational waters.



Large amounts of exhaust fan deposits that can be transported during rainfall events to offsite receiving waters.

(Photos A and B)



Exhaust fan deposits can be transported to offsite receiving waters via concentrated flow paths.

(Photos C and D)



Exhaust fan deposits can also be transported to offsite receiving waters by runoff from areas around and below exhaust fans.

(Photos E and F)

Mortality Management

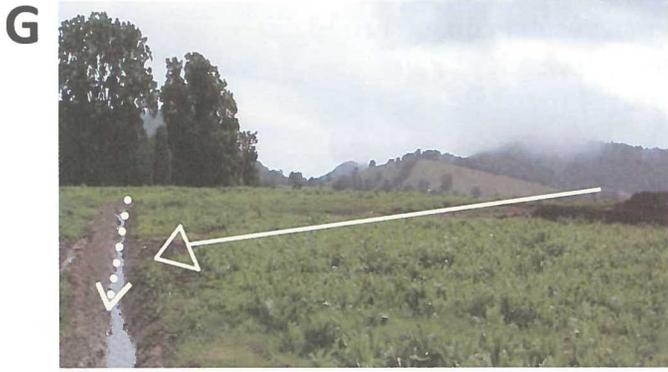


Photo G shows the flow path from a mortality/compost pile that was improperly stored on a land application field.

Photo H shows the discharge flowing along a man-made channel and discharging into a pond, then into a flowing creek (not shown).

Sampling results indicate very high concentrations of nutrients and bacteria in the runoff from this mortality/compost pile. The dense algal bloom is an indication that large quantities of nutrients have been discharged into this pond.

Sampling Results

NH₄-N 131 ppm
P 74 ppm
Arsenic 22 ppb
BOD, 5-Day 907 mg/L
Total Col. 62,500,000 CFU/100ml
Fecal Col. 1,800,000 CFU/100ml
E. Coli 1,700,000 CFU/100ml



Photos I and J show improper disposal of dead chickens that can discharge to receiving waters.

K



Photo K shows an improperly operated mortality management incinerator that can discharge to receiving waters.

Litter Management

If not properly managed, litter storage/management areas may result in unauthorized discharges of nutrients and bacteria to waters of the U.S. as illustrated in the photos below:



L



M

Photo L shows an improperly managed litter staging area which is not fully cleaned out. An appropriate BMP would be a storage shed; however, scraping and removing litter and contaminated soil will minimize unauthorized discharges to receiving waters.

Photo M shows an undersized litter barn with inadequate capacity to store all litter. The excess litter is exposed to rainfall and is a potential source of unauthorized discharges to receiving water.



N



O

Photo N shows an improperly managed litter staging area that was not fully cleaned up. An appropriate BMP would be a storage shed; however, scraping and removing litter and contaminated soil will control unauthorized discharges to receiving waters.

Photo O shows leachate being generated from an uncovered pile of litter/mortality compost temporarily stored on the land application field.

Recommended BMPs: for Controlling Discharges from Poultry Operations

BMPs for Controlling Run off from Production Areas

1. Maintain a good vegetative (grass) cover.
2. Promote dispersed overland water flow (sheet flow).
3. Inspect fans and remove debris build up regularly.



Photo P shows a well maintained, grassed area designed to minimize unauthorized discharge of nutrients from the poultry house confinement area to receiving waters.

Photo Q shows a well maintained litter barn. The grounds are free of any litter debris throughout the site, and well organized.

Q



BMPs for Mortality Composting

1. Maintain proper temperature control within the compost piles.
2. Maintain proper moisture content within compost piles.
3. Maintain proper C:N ratio.
4. Ensure adequate mixing and turning of compost piles.
5. Use proper equipment.

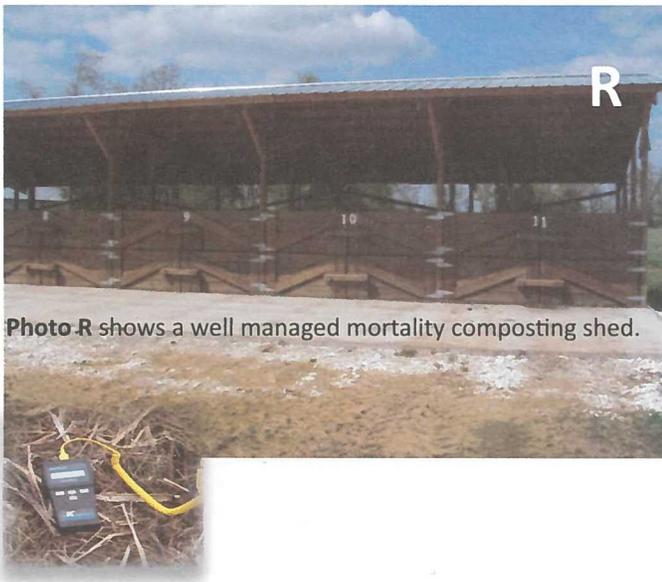
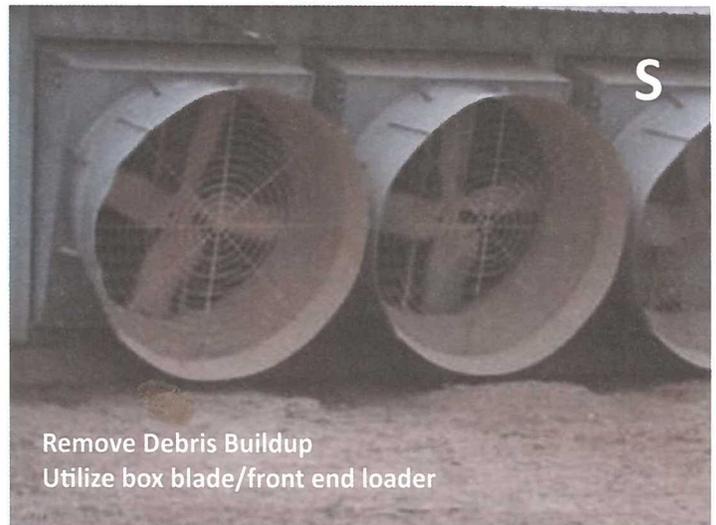


Photo R shows a well managed mortality composting shed.

Thermometer - monitors temperature within the compost pile.

BMPs for Exhaust Fans



Remove Debris Buildup
Utilize box blade/front end loader

Other Recommended BMPs

- Maintain onsite records including
- Litter management records
 - Land application records
- Have records available for review