Emergency Action Planning to Avoid or Minimize Manure Discharges from Pork Operations

Introduction

This publication is intended to assist pork producers in developing an effective emergency action plan that will minimize the environmental and financial impacts to your operation which can result in the case of a manure release (Figure 1). While there will always be acts of nature, such as floods, hurricanes and tornadoes which cannot be anticipated or adequately planned for, it is possible to plan for other situations, such as a tanker spill, storage overflow, subsurface tile drainage, or runoff from a land application area. Good planning before any manure is applied and identification of potential weaknesses in the way manure is handled, stored or applied allows producers to correct deficiencies before catastrophic situations occur.

Objectives

The objectives of developing a manure discharge emergency action plan are:

- To ensure that those working at the farm can quickly react to a manure discharge or a situation where a discharge is imminent
- To ensure that those working at the farm have ready access to the tools, equipment and help needed to minimize the impact of a discharge
- To aid in recognizing and correcting potential situations or critical control points in manure management that could lead to a discharge

Developing an manure discharge emergency action plan

To develop an effective emergency action plan, critically think about how manure on your operation is collected, stored, transported and land applied or otherwise utilized.

Break those activities down into discrete steps and try to anticipate what could happen anywhere along the system or operation in a worse case scenario – pipe breaks, lagoon overflows, pipe or tanker valve sticks, pump malfunction, applied manure reaches a field tile or waterway, irrigation system malfunction, etc. For each of these situations,

Figure 1. Fish kill due to manure overflow. Source: unknown
determine which of the following common sense actions fit into your plan:

1. Control the source of the spill:
   - Plug holes where leaks are occurring.
   - Stop manure application or pumps.
   - Close valves.
   - Separate pipe connections to create an air gap and stop any siphoned flow.
   - Transfer spilled manure to another basin, lagoon or tank.
   - Shut off the water in the case of a waterline break.

2. Control the spill impact:
   - Limit the area impacted.
   - Build a containment dam in the field, ditch or stream.
   - Cap tile lines and remove excess manure.
   - Construct a temporary holding basin to hold the manure down slope from the release.
   - If accessible, place soil over the point of seepage to absorb the manure and prevent flow away from the site.

3. Comply with reporting requirements:
   - Did the release reach any surface water, streams, well casings, or other sensitive areas?
   - You must immediately report manure spills on public roads (County Sheriff) and those that reach surface waters (State environmental agency.)
   - Prepare a summary report for your files to document your actions and report to your state environmental management agency as required.

4. Clean up the affected area:
   - Collect spilled manure.
   - Land-apply collected manure at agronomic rates or return to storage.
   - Restore the damaged area.
   - Document Clean-up procedures (some states require that a clean-up plan to be filed with the appropriate agency.

As you think of responses for each potential situation, add that procedure to your spill response plan. On an aerial map, mark the areas on the farm that may be highly sensitive or have the greatest risk of environmental impact if a spill should occur (see the list on the sample form). Make sure each employee is acquainted with map. Develop a list of the equipment the operation has available or can borrow quickly to respond in the event of a spill. Suggested equipment on the list would include a back hoe, tractor and bucket loader, bulldozer, dump truck, liquid tanker wagon, portable pumps and hose, etc. List on the sample form.

Once you have a draft of the plan, which would be made up of all of the possible situations that you can come up with, discuss it with those who work on the operation. Usually, those who are most involved with the operation on a day to day basis will have ideas that can improve the original proposed actions. In addition, this is a good way for everyone to fully understand how to react to a manure spill. One of the questions that should always be addressed in such a session with farm employees is “What can we do differently to decrease the chances of a discharge occurring?” Additionally, the plan should be reviewed annually to make sure it is still current and as effective as possible. Several sample spill response and spill reporting forms are attached for your use. Keep these forms in appropriate locations and make sure that all personnel know where they are located.

What would I do if a manure spill occurs at my operation?

The answer to that question must be answered well before a manure spill occurs. While injuries to humans and animals always take precedence, a manure spill must be dealt with quickly to limit its environmental impact. To be effective, the emergency action plan must be readily available to and thoroughly understood by all farm employees, especially those that transport or apply manure. All individuals that work at the operation, regardless of whether they apply manure or not, should know how to react to a manure spill. The plan should be posted near all permanent telephones on the operation, be available at all remote locations and placed in vehicles used for land application of manure (see
sample form). The plan should be discussed on a regular basis at employee meetings and understood by everyone. The time for planning is past when a manure spill occurs. Following a well-thought-out plan will have positive social, economic, and environmental ramifications, and will impact the public's goodwill and your relationship with regulators. Lastly, in the event of a manure spill, follow the plan!

**Summary**

It is important that those who work at the pork operation have the knowledge and the tools to quickly react in the event of a manure spill or to a situation where a spill is imminent. The plan should help personnel recognize when action must be taken and ensure that they are able to control and minimize the impact of a spill. Like any good planning process, the development of a response plan should make for faster and better decisions when and if a spill should occur.

**Emergency Action Plan for Manure Discharges**

<table>
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<tr>
<th>Farm name: ___________________</th>
<th>Date: ______________________</th>
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1. Emergency Telephone Numbers

<table>
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<tr>
<th>Facility owner:</th>
<th>Alternate farm contact:</th>
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Responsible environmental management agencies:

<table>
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<tr>
<th>State Environmental Agency:</th>
<th>Drainage Commissioner:</th>
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<tr>
<th>Fire Department/Paramedics:</th>
<th>Ambulance:</th>
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<th>Road Commissioner:</th>
<th>State Police:</th>
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<tr>
<th>County Health Dept.:</th>
<th>County Sheriff:</th>
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2. Develop a Map

   Items to include on map:
   - Anticipated flow path of contaminants in the event of a spill
   - Well heads, public and private wells
   - Streams, wetlands and lakes
   - Tile flow directions and destination
   - Schools, churches, daycare centers and other public buildings and activities.
   - Road ditches
   - Drainage ditches
   - Other sensitive areas

3. Earth-moving equipment available for dealing with manure spills. Include owned and other nearby equipment and necessary contact information. You should have a pre-arranged agreement with neighboring producers. Include excavation equipment as well as additional pumping equipment and storage.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Location</th>
<th>Owner</th>
<th>Phone</th>
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Response Actions for Environmental Problems at your Operation

**Manure Storage or Lagoon Overflow:**

General action steps: Stop the flow into the storage, check for waterline leaks; build containment
dams and add and compact soil on the berm, remove manure from storage and land apply or transfer to another storage facility. It may be possible to pre-arrange the sharing of available storage capacity with neighbor for use during inclement weather. Notify appropriate authorities of spill and prepare summary report of incident.

Your Plan:

Manure Spill on Road
General action steps: First, identify and deal with any human injuries. Then, prevent any additional spill, build contaminant dams, and remove manure, contact Road Commissioners and Drain Commissioner, remove manure from road under advisement. Prepare summary report. Contact the police if manure is spilled on a roadway.

Your plan:

Manure Irrigation Spill (figure 3)
General action steps: Stop pumps, close valves, separate pipes to stop siphoning, build contaminant dams, and remove manure from discharge area. Repair any malfunctioning equipment. Prepare summary report.

Your plan:

Manure Spill in Field
General action steps: Stop manure application, build contaminant dams and remove manure from discharge area. Prepare summary report.

Your plan:

Manure Field Runoff
General action steps: Stop manure application, plow a diversion trench to keep manure flow out of waterways and remove manure as needed. If manure in tile drainage outflow, cap the tile line and remove excess manure. Reapply to land or return to storage. Prepare summary report.

Your plan:

High Animal Mortality Event (disease outbreak, ventilation failure, fire, catastrophic weather, etc.)
General action steps: Burying, incinerating, composting or rendering of mortalities may be options, depending on state regulations. Check with your state Veterinarian's Office to determine what is allowed in your area.

Your plan:
Confined Spaces Entrance (figure 4)

General action steps: Never enter a confined space without self-contained breathing apparatus. If animals or other workers are already down, the situation may be especially dangerous. Summon emergency professional help. Do not enter without self-contained breathing equipment.

Your plan:

Potential Spill Situation:

Your plan:

Potential Spill Situation:

Your plan:

Other Tools and Resources

Emergency planning:
Livestock and Poultry Environmental Stewardship
Distributed by MidWest Plan Service
1-800-562-3618, www.MWPSHQ.org

Animal Mortality Management:
• Livestock and Poultry Environmental Stewardship
  Distributed by MidWest Plan Service,
  1-800-562-3618, www.MWPSHQ.org
• Individual State Regulations

Figure 4. This confined space is a poorly vented manhole where sewers from liquid swine manure building pits merge, on their way to a lagoon. Deadly manure gases can collect in such areas. While not discharge-related, such situations must be recognized and avoided for your sake and for the safety of your employees.
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