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4-1-2004

Safety in Manure Storage Facilities

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Recommended Citation
Harrison, John D. and Smith, Dallen R., "Safety in Manure Storage Facilities" (2004). *All Archived Publications.* Paper 1169.
http://digitalcommons.usu.edu/extension_histall/1169

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COOPERATIVE EXTENSION

Safety in Manure Storage Facilities

AEMS
Agriculture Environmental Management Systems

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April 2004 AG-AWM-04-1

Introduction

As livestock operations become larger and numbers of employees more numerous, safety becomes a critical issue in manure storage.

Signage and fencing

Manure storage facilities should always be equipped with a fence or other barrier to prevent accidental animal or human entry. Earthen impoundments should be fenced to exclude animal traffic, but still permit entry with pumping equipment. Display signs to alert uninformed individuals that a potential hazard exists. Removable grills should be installed over pumping and agitation openings. Railings around pump docks and access points will provide protection during agitation and cleanout.

Toxic gases

Stored manure generates toxic gases such as hydrogen sulfide that can accumulate to hazardous levels under certain conditions. When stored manure is agitated, these gases are released at potentially toxic concentrations. Humans or animals should not be near a tank or in a structure where manure is being agitated. If removal of animals is not possible, provide maximum ventilation of the building either by operating all ventilating fans and/or opening all doors and ventilating curtains. ***No one should be allowed to enter a manure tank without a self-contained breathing apparatus and the "buddy system" should be in use.***

Secondary containment

Secondary containment structures can reduce the possibility of environmental impact due to a "spill" or malfunction of the manure collection transport system. Examples of possible malfunctions include plugged or broken sewer lines, discharge of manure through cleanouts, and broken recycle lines. A secondary containment system designed to catch runoff from the building and manure storage area offers increased protection in the event of a malfunction. Accumulated runoff in the secondary containment facility is tested for contaminant levels. If levels are below a certain threshold, the accumulated runoff may be discharged from the facility. If contaminant levels are above the threshold level, the effluent must be handled through the manure management system. Utah does not currently require secondary containment structures. Proactive operators consider secondary containment structures as an opportunity to improve the environmental impact of an operation's manure storage facilities.

Reference: Livestock and Poultry Environmental Stewardship curriculum, lesson authored by Charles Fulhage and John Hoehne, University of Missouri, courtesy of MidWest Plan Service, Iowa State University, Ames, Iowa 50011-3080.

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Agricultural Waste Management Fact Sheet
AG-AWM-04-01
7/14/2004
Revision: 1