



# Dodge County Feedlot Flyer

## SAFETY MEASURES TO PREVENT BARN EXPLOSIONS DURING PIT PUMPING

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During pit pumping, there have been several incidents in Minnesota and Iowa where explosions or flash fires have occurred in livestock buildings with manure pits. Dr. Larry Jacobson of the University of Minnesota Extension suggests the following to help address this problem:

- Provide continuous ventilation to prevent a gas build-up and increased ventilation during agitation to quickly dissipate released gases.
- To prevent igniting an explosive concentration of methane, turn off heater pilot lights and

other non-ventilation electrical system (such as the feeding system) that might produce an ignition spark.

- When pumping pits that are close to being full, pump without agitation until manure is about two (2) feet below the slats.

Foaming of manure pits is a growing and significant concern that may be related to the explosion incidents. Currently there is no consistent solution to controlling this foaming in livestock manure pits and the factors that contribute to the foaming problem are not understood.

*Additional information on this issue can be found at the following websites:*

*University of Minnesota Extension*

<http://www.extension.umn.edu/swine/porkcast/barnventilation.html>

*Iowa State University*

<http://www.extension.iastate.edu/news/2009/oct/060901.htm>

*Minnesota Pork Board website:* <http://www.mnpork.com/producers/index.php>

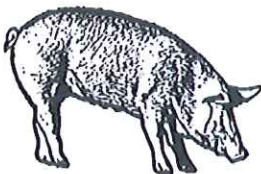
### Points of interest:

- Solid Waste Disposal Rules
- New legislation affecting Feedlots

### *Don't Forget to Claim the Air Quality Exemption*

The owner of an animal feedlot is exempt from the state ambient air quality standards during the removal of manure from barns or manure storage area. However, in order to receive this exemption, the feedlot owner/operator must claim the exemption by providing proper notification to the County Feedlot Officer. Notification must include:

- A. The names of the owners of legal name of the facility
- B. The location of the facility by county, township, section and quarter section;
- C. The facility's permit number, if applicable; and
- D. The anticipated start date and the anticipated number of days of removal of manure from barns or manure storage facilities;
- E. In Dodge County, the location (township, section, quarter-section) the manure is being spread.



## *Pit Gases: Hydrogen Sulfide*

Hydrogen sulfide is considered the most dangerous gas in manure pits because it is highly toxic and is rapidly released from decomposing manure during agitation and pumping. Concentrations of hydrogen sulfide can rise from 5 parts per million (ppm) to more than 500 ppm within seconds after agitation begins.

Concentrations of hydrogen sulfide above 600 ppm can be fatal for a person or animal after taking only one or two breaths. The person falls immediately, apparently unconscious and dies without moving again. A safe evacuation of the individual can be made only if the rescuer is wearing a self-contained breathing apparatus (SCBA). Generally, a rescuer has about six minutes to begin cardiopulmonary resuscitation (CPR) before brain damage/death occurs. Unless the rescuer is wearing SCBA protective equipment, there is a strong likelihood that the rescuer will also succumb to the toxic gases or lack of oxygen. There have been numerous instances where several farmers have been killed while attempting to remove someone from a pit or facility.

At lower concentrations, hydrogen sulfide can cause severe illness and irritate the entire respiratory track and eyes. Symptoms may include nausea, stomach distress, belching, coughing, headache, dizziness, irritation of the eyes and blistering of the lips.

It is a common belief among farmers that it is safe to enter a facility or pit if they cannot smell the putrid, rotten egg odor associated with hydrogen sulfide. This is not necessarily true because high concentrations of hydrogen sulfide paralyzes the nerve cells of the nose to the point where the person can no longer smell the gas.

Hydrogen sulfide, because it is heavier than air, accumulates above the liquid level of the pit. Individuals may be quickly overcome with hydrogen sulfide when working around a pit, whether it be climbing down a ladder to make repairs or when leaning down to take a manure sample.

Pits are unpredictable. They may have been safe to work around for years, but suddenly, factors such as the stage of the manure decomposition, wind conditions, or other components can create the conditions for the pit to release deadly concentrations of toxic gases. Always treat a pit as if it is a death trap and take necessary precautions to protect yourself and others if entry is necessary.

*(Source: National Ag Safety Database—Beware of Manure Pit Hazards)*

## *New Minnesota Law-Livestock Mortalities*

Recently, the legislature has passed new laws designating the Board of Animal Health as the sole agency responsible for the regulation and oversight of livestock mortalities. See the new language below:

Minnesota Statutes 38.815, Section 13 (Livestock Mortalities)

- (a) Notwithstanding any other law, the executive director of the Board of Animal Health is responsible for the regulation and oversight of the disposal of livestock mortalities due to animal disease.
- (b) Notwithstanding any other law, the executive director of the Board of Animal Health is responsible for the regulation and oversight of livestock mortality disposal due to nondisease causes to protect animal health and the environment. The board shall, in cases where disposal may adversely affect ground or surface water, seek the input of the Pollution Control Agency.



## *Burning Buildings or Waste from Demolished Buildings— What you should know*

The Minnesota Pollution Control Agency (MPCA) often receives inquiries about burning buildings or waste from demolished buildings as a method of disposal. Burning of a structure is only allowed in a legitimate fire training burn. In order to qualify for this type of burn, you must follow the requirements described in the fact sheet located at:

[http://files.dnr.state.mn.us/assistance/grants/ruralfire/fd\\_training\\_burn\\_app.pdf](http://files.dnr.state.mn.us/assistance/grants/ruralfire/fd_training_burn_app.pdf)

Burning waste to avoid disposal costs can be a costly choice. If you are caught, you will be required to dispose of the unburned waste and ash at a facility that is lined, and which will likely charge more. You may also be required to pay a fine.

*(Source: MPCA's Solid Waste Disposal Factsheet)*

## *Solid Waste Disposal*

### *Burning and Burn Permits*

Burn permits are issued by the Minnesota Department of Natural Resources (DNR) or someone designated by the DNR such as fire warden. In southern Minnesota counties lacking DNR forestry offices, county sheriff's often serve as fire wardens.

Regardless of whether you have a burn permit, Minnesota law prohibits you from burning certain "prohibited materials." Prohibited materials include: rubber, plastics, chemically treated materials, or other materials which produce excessive or noxious smoke including, but not limited to, tires, railroad ties, chemically treated lumber, composite shingles, tar paper, insulation, composition board, sheet-rock, wiring, paint, or paint filters. Other items explicitly prohibited from burning by Minnesota Statutes 88.171 include: Hazardous Waste, Demolition Debris (from commercial or institutional structures), motor vehicles, and garbage. In general only the following materials can be burned with a DNR burn permit: vegetative debris (brush, logs, stumps, grass, leaves) and clean wood (never treated, painted, or stained) that is from a non-commercial, non-institutional structure. Burnable building material (i.e., clean wood) from a farm building or residence can be burned under an open burning permit unless prohibited by local ordinance. *(Source: MPCCA's Solid Waste Disposal Factsheet)*



*For additional information about burning permits, please contact your local DNR forester or Fire Warden.*

### *Demolition Debris Disposal*

Demolition debris is the kind of waste generated when a building is demolished. As defined in state law, it includes: concrete, brick, bituminous concrete, untreated wood, masonry, glass, trees, rock and plastic building parts. It does not include garbage (called "household waste" or "municipal solid waste) that you generate at home or asbestos waste.

Demolition debris must be managed by one of the following methods:

1. Disposal of demolition debris at a permitted solid waste management facility. Permitted facilities are engineered and professionally operated to ensure that the waste does not pollute groundwater or cause other issues such as odor or litter.
2. Disposal of demolition debris at a "Permit by Rules" or PBR disposal facility. PBRs allow for up to one year to dispose of a limited volume of demolition debris (15,000 cubic yard). To develop a PBR, the following criteria must be met at the site:
  - A. The disposal area cannot be on a site with karst features;
  - B. The disposal area cannot be located within a wetland or floodplain
  - C. The disposal area cannot be located within 300 feet of a stream or river or within 1,000 feet of a lake or pond
  - D. The disposal area must be at least 50 feet from the property boundary line
  - E. The bottom of the disposal cell/area must be at least 5 feet above the seasonal high ground water table
  - F. The facility cannot be adjacent to another demolition debris disposal PBR

To operate a PBR, the following requirements must be met:

- A. The facility must be operated by a class II or class III certified landfill operator
- B. Only demolition debris may be accepted for disposal—*asbestos or household waste may not be accepted in any form*
- C. Solid waste taxes must be paid
- D. After one year or 15,000 cubic yards has been placed at the site, the facility must be close by covering the waste with a minimum of 2 feet of cover, the cover must be sloped between 2% and 20%, and the cover must be vegetated to prevent erosion
- E. A description of the types and quantities of wastes buried must be recorded on or as an attachment to the property deed
- F. Finally, the land owner must inspect the site annually for 20 years and provide landfill maintenance as required.

*If you would like to develop a PBR facility, or for additional information in regards to PBRs, please contact your regional MPCCA Solid Waste staff.  
(Source: MPCCA's Solid Waste Disposal Factsheet)*

## *Solid Waste Disposal and the Farm Exemption*

The MPCA is often questioned about what is allowed or is not allowed under Minnesota Statutes 17.135 (commonly referred to as the "farm exemption").

The farm exemption states that "A permit is not required...for a person who owns or operates land used for farming that buries, or burns and buries: (1) solid waste generated from the person's household or as part of the person's farming operation; or (2) concrete or reinforcing bar from a building or structure located on the land used for farming. Items in clauses (1) and (2) must be buried in a nuisance-free pollution-free, and aesthetic manner **on the land used for farming.**" The exemption goes on to say that it does not apply if the county board passes a resolution that "regularly scheduled pickup of solid waste is reasonable available at the person's farm." The farm exemption excludes certain wastes from unpermitted disposal on farmland: "This exemption does not apply to burning tires or plastics, except plastic baling twine, or to burning and burial of the following materials " (1) household hazardous wastes as defined in section 115A.96, subdivision 1; (2) appliances, including but not limited to, major appliances as defined in section 115A.03, subdivision 17a; (3) household batteries; (4) used motor oil; and (5) lead acid batteries from motor vehicles."

For concrete or reinforcing bar buried under this exemption, the owner must record within 90 days after completion of the burial, an affidavit containing a legal description of the property and a map showing the boundary of the property and the location of concrete or reinforcing bar buried on the property on the property deed/title. If the concrete or reinforcing bar was part of a closed manure storage pit, additional requirements under Minnesota Rules Chapter 7020 (Feedlot Rules) may apply.

The farm exemption does not allow burning of prohibited material, and it does not allow uncontrolled disposal of large quantities of waste from a commercial farming business that could not be considered a "person" and which does not operate as a "household". The farm exemption also does not allow the unpermitted disposal of demolition debris because demolition debris is not normally generated by the household or farming operation. For more information on solid waste disposal, please contact Dodge County Environmental Services.

*(Source: MPCA's Solid Waste Disposal Factsheet)*

### Dodge County Feedlot Flyer

Dodge County Environmental Services  
22 6th St. East, Dept. 391  
Mantorville, MN 55955

Phone: 507-635-6272  
Fax: 507-635-6193

**We're on the web!**

<http://www.co.dodge.mn.us>



### **Dodge County**

If you have suggestions for informational articles you would like to see in the next newsletter, please contact Environmental Services at (507) 635-6272.

*The Dodge County Environmental Services Department provides services for the protection of public health and the Environment. The Department is also responsible for regulating land use to promote sustainable and compatible development while protecting the general health, safety and welfare of the citizens of Dodge County.*

*Please call (507) 635-6273 for information regarding:*

*Sewage Treatment Systems, Wetlands, Waste Disposal, Recycling  
Water Testing and Water Monitoring.*

*Please call (507) 635-6272 for information regarding:*

*Zoning, Permits, Feedlots, Grading/Excavations, Shoreland,  
Floodplain, or other land use questions/concerns.*

*For the Transfer Station, Landfill & Recycling Center, please call  
(507) 634-7875.*