



## GUIDELINE 14 – EMERGENCY WASTE DISPOSAL VARIANCE NOTIFICATION: DEAD OR DISEASED LIVESTOCK

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### I. Introduction

In the event of emergency livestock infestation with foot and mouth disease, mad cow disease, or other livestock illnesses or in the event of a disaster affecting large numbers of livestock, the North Dakota Department of Environmental Quality, in consultation with the North Dakota Division of Emergency Management (NDDEM) and other agencies, prepared this guideline to ensure efficiency in the rapid management of livestock mortality or diseased animals. The North Dakota Department of Environmental Quality (Department) regulates solid waste issues through the North Dakota Solid Waste Management Rules (NDAC 33.1-20). Under normal situations the Department prefers dead animals be managed by renderers or disposed at permitted landfills. A list of these companies or facilities is available at the Department's website or upon request. Even under emergency conditions, permitted landfills may provide the most cost effective and efficient disposal alternative; however, in some circumstances, transportation to a permitted landfill may not be feasible, practicable, or may pose a threat of spreading disease.

This guideline is for emergency conditions only and is intended to help avoid problems and maximize cooperation between landowners and involved governmental agencies. This guideline does not apply to normal farming or ranching operations and routine management of dead animals by livestock operators, who are normally allowed to manage dead animals on their property as long as no adverse health impacts or nuisances are created.

The Department may issue variances for one-time disposal events based on various practical factors, including: (1) emergency conditions, (2) waste characteristics, (3) waste volume, and (4) characteristics of proposed waste disposal sites. During an emergency, potentially large numbers of livestock throughout the state may need to be managed as rapidly and as efficiently as possible. The Department, the NDDEM, North Dakota Department of Agriculture (NDDA), the North Dakota National Guard, the North Dakota Extension Service, the State Historical Preservation Office (SHPO), local health districts, and other local, state and federal agencies will work together with livestock owners to accomplish the efficient and environmentally sound disposal of animal carcasses and related materials so as to minimize impacts to human and animal health and to water sources.

Disposal under variances must be restricted to dead animals and associated, generally inert waste, unless otherwise authorized. As necessary, the Department will provide additional guidance. Disposal variance procedures are not intended to supersede any landowner or local land use concerns; rather, it is to coordinate efforts to see that the job gets done. Should technical questions regarding site suitability or disposal techniques arise, please contact the Division of Waste Management at 701-328-5166. At a minimum, the "**Waste Disposal Variance Notification - Dead or Diseased Livestock**" form must be completed and forwarded to the Department (available on the Department's website). Nothing in this process is intended to hold up the environmentally suitable management of material. All parties, including individual

landowners and livestock operators, are encouraged to work together to help mitigate the emergency conditions. Limiting the disposal to the waste specified in this variance guideline, maintaining an orderly operation, and careful site selection and closure will help minimize future landowner concerns.

## II. Open Burning

Prior to disposal, on a case-by-case basis, open burning of dead animals may be necessary to reduce volume and prevent the spread of disease. Some sources indicate burning may spread certain diseases. Open burning is regulated by the Department under Chapter 33.1-15-04 NDAC. If burning of livestock is necessary, care must be exercised to minimize impacts to air quality and to control emissions. Fuels or accelerants must be clean burning. **Use of treated wood (such as railroad ties), tires, rubber, asphalt, oil, etc., is not allowed.** Use of clean wood, coal, and clean burning accelerants can be considered. A variance to open burn must be approved by the Department prior to the burn. The conditions for open burning are outlined on the variance application form (see SFN 3473 Application for Open Burning Variance at Landfills, on the Department's website).

## III. Allowed Waste or Materials for Disposal

A disposal variance is granted only for disposal of dead livestock. Incidental inert materials such as wood, rock, metal, ash, and contaminated materials may also be allowed. All waste should be inspected. Limiting disposal to these materials will help alleviate public health concerns and long-term liability.

The following wastes **are prohibited** from disposal under a waste variance:

1. Solvents, paint, and other liquids (other than spent decontaminating solutions);
2. Insecticides, herbicides, or fungicides and their containers;
3. Oil and oil containers, lead-acid batteries, all appliances; and
4. Any other waste that may cause significant water degradation.

## IV. Disposal Site Selection

The waste disposal site must be carefully selected. Avoid environmentally sensitive or unstable areas that will not provide safe, long-term waste disposal. For example, wetlands, gravel pits, flood plains, and shallow water table areas are environmentally sensitive to surface water and groundwater pollution. Ravines, woody draws, and steeply sloping terrains are unstable areas subject to accelerated erosion which may expose the waste. Also, avoid utility lines and historical sites. Sites should meet the following criteria:

1. Nearly level to a moderately sloping site (15 percent slope or less);
2. Minimum distance of two hundred (200) feet to the nearest surface water;
3. Bottom of disposal trench should be at least four (4) feet above the water table (waste disposal in the water table is generally prohibited);
4. Underlain by loam, silty, or clayey soils (sandy or gravelly soils are unacceptable);
5. Do not locate the disposal site near any residence, drinking water well, over any shallow aquifers or areas that may be flooded;

6. Avoid pipelines, utility easements, etc.; and
7. Avoid historically significant properties (Native American or architectural sites, etc.).

Soil survey maps, typically available in a published (or unpublished) soil survey from a local Natural Resources Conservation Service (NRCS) office, provide good information for disposal site selection. These maps depict soil types, slopes, drainage features (streams, drainage ways, wetlands, etc.), and cultural features (roads, field boundaries, building sites, etc.) on an aerial photo base. The survey report includes soil descriptions and tables which describe soil slope, texture, depth to seasonal high-water table, and other soil properties, as well as suitability ratings for landfills. The soil staff can help provide assistance for soil map interpretation. U.S. Geological Survey 7.5" quadrangle maps and county groundwater and geological reports also contain good information. Please contact the Department's Solid Waste Program at 701-328-5166 for additional assistance in disposal site selection.

Some areas of the state have a high-water table, permeable soils, and/or other undesirable characteristics. If such sites must be considered, the Department's staff is available to assist in disposal selection, construction, design, and closure. Above-grade filling, where waste is placed in mounds and covered with soil, may be considered. Other variations, such as the use of liners and other covers may be considered on a case-by-case basis.

## **V. Land Use and Zoning Concerns**

This guideline is written to help facilitate approval by the landowner and local zoning and health officials. The variance notification form requires information from the landowner and local officials. Careful planning and compliance with state rules helps to assure local authorities and citizens that the waste will be properly managed. Coordination with local emergency managers, county agents, and/or local health districts may suffice for local zoning approval under emergency conditions, contingent upon concurrence by local (county) planning personnel.

## **VI. Cultural Resource Review**

Direct governmental involvement in rededication of a disaster normally requires coordination and review by the SHPO officer to avoid impact to historical sites. In the event of a Non-Urgent or Urgent Emergency Response, the site location information and maps showing the proposed disposal boundaries and any off-site disturbances (borrow areas, etc.) should be coordinated with the SHPO. Geographic Positioning System (GPS) information may also help. In the event of a significant immediate threat and if time permits, instantaneous consultation by telephone can be afforded. Questions on Cultural Resources can be directed to:

State Historical Society of North Dakota  
North Dakota Heritage Center  
612 E. Boulevard Ave.  
Bismarck, ND 58505-0830  
Telephone No.: 701-328-3574 or 328-3576  
Fax No.: 701-328-3710 or 701-328-3576 or 701-328-3574.

## **VII. Site Control**

Disposal operations must be controlled and completed as soon as possible to avoid potential problems. Access control or supervision, as necessary, will help avoid open dumping, prohibited waste disposal, and possible injury. Waste disposal should be completed within ninety (90) days. Extensions can be considered in cases of emergency or significant extenuating circumstances.

## VIII. Disposal Site Preparation and Operation

- A. **Storm Water Control:** Precipitation or snow melt may carry soil or other pollutants off the disposal site into drainage ways or surface water. Methods and materials for storm water control include: (1) Careful site selection, development, and diversion of up-slope surface water run-on, (2) Minimizing the area disturbed for waste disposal, especially if the disposal area has existing vegetative cover, (3) Maintaining a "buffer" of undisturbed vegetative cover around the disposal area to trap soil before it leaves the site, and (4) Placing straw bales, silt fences, or similar material where concentrated surface water runs off the disposal site.
- B. **Stripping topsoil and upper subsoil:** To successfully reclaim and revegetate the closed site, it is critically important to save the topsoil and the upper portion of the subsoil from the disposal area before excavating the disposal trench. This soil may be stockpiled in a berm, up-slope of the disposal trench to deflect any rainwater around the fill while in operation. Upon site closure, the topsoil and upper subsoil should be spread evenly over the top of the fill for reclamation.
- C. **Trench Excavation and Waste Compaction:** The disposal trench may be excavated after stripping and stockpiling topsoil. Depending on the site selected, disposal trench depth may be limited by soil conditions or by a high water table. Disposal beneath the water table must be avoided, and the bottom of any disposal trench should be at least four (4) feet above any permanent water table. The water table in glaciated portions of North Dakota is usually indicated by a change in subsoil color from brown or tan to gray with increasing depth.

The waste should be covered and compacted with equipment as practicable in 3-foot to 4-foot layers as it is placed in the disposal trench. Waste compaction serves two purposes: (1) it reduces the size of excavation required for waste disposal and (2) it reduces potential problems of soil settling (subsidence) after the disposal area is reclaimed. A layer of 6 to 12 inches of dirt can be compacted over layers of waste.

## IX. Disposal Site Closure

Normally, disposal trenches should not be filled to excavation capacity. Instead, maintain the disposal trenches at least four (4) feet between the waste and designed closure grades. The entire site should be cleaned and all waste, including burned debris and ash, must be consolidated in the trench. The disposed carcasses must be covered with a total depth of at least four (4) feet of soil as specified in Section 33.1-20-06.1-02 NDAC. The lower 12 inches should be compacted. The top six (6) inches or more should include the reapplied topsoil and subsoil. The soil cover should be carefully graded to form a slightly convex or domed surface that will promote surface water run-off. Erosion control measures, such as incorporating straw and planting a cover crop, are recommended. Final vegetation should be climatically adapted native grasses. Watch erosion control measures for several years after the site is closed.

## **X. Worker Health and Safety and Humane Treatment of Animals**

Everyone participating in the cleanup effort is encouraged to conduct activities in a safe and healthful manner. Workers should wear water resistant clothing and waterproof gloves that can be cleaned at the end of each day. Workers should wash hands with an antibacterial soap before eating and at the end of each day. As per label instructions, bleach solutions can be used for clothing and equipment disinfection. Work crews should have cleanup provisions at the work site. Caution should be exercised when working around heavy equipment and when removing dead animals from difficult areas. Appropriate measures for the humane treatment of animals is strongly encouraged.

As appropriate or expedient, please attach a copy of a U.S. Geological Survey 7.5" quadrangle map and/or a soil survey map with the boundary of the disposal site and any associated areas to be disturbed drawn in, along with a copy of the notification form, to the SHPO. Forward the completed information to the North Dakota Department of Environmental Quality.