Emergency Disposal of Swine Carcasses in the Event of an African Swine Fever Outbreak

A foreign animal disease outbreak such as African Swine Fever (ASF) may result in numerous animal deaths in a short period of time and across much of the state. In addition, it will be necessary to destroy diseased or potentially diseased animals and properly dispose of the carcasses to prevent the spread of the disease. This guidance is designed to help Nebraska swine farmers plan in advance to deal with catastrophic swine mortality in the event ASF reaches the United States.

In order to protect other livestock operations from the spread of ASF, on-site disposal is required unless site conditions are not suitable. If an outbreak of African Swine Fever occurs in Nebraska, the Nebraska Department of Environmental Quality (NDEQ) will advise the Nebraska Department of Agriculture about the suitability for any affected site. However, a rapid response during an emergency to control the disease will be most successful if disposal sites are pre-selected. Livestock producers are encouraged to develop their own emergency disposal plans in advance of any outbreak.

On-site burial of diseased carcasses is the recommended method of disposal during an outbreak of African Swine Fever. The NDEQ can assist producers determine locations of wells, depth to water, and the sizing of trenches for planning purposes.

For detailed information on African Swine Fever visit the Nebraska Department of Agriculture website: http://nda.nebraska.gov

Disposal Methods:

**On-Site Burial** – When done in compliance with state and local regulations, burial is an accepted method of disposing of animals and is often the disposal method of choice for catastrophic livestock losses. Burying the animals on-site within 36 hours after knowledge of death and at least four feet below the surface of the ground dramatically lowers the possibility of spreading a disease.

A state permit to bury on-site or on an adjacent contiguous property is not required; however, there are obligations under Nebraska rule and statute to protect ground water resources. With this in mind, it is recommended that a disposal site be selected with knowledge of the environmental conditions, including: land topography, depth to groundwater, surface water drainage, as well as soil type and depth. Also, separation distances to neighbors, surface water bodies, wells, roads and rights of way should be considered.
**Recommended Separation Distances for Burial Sites**

- At least 5 feet separation from the bottom of the burial pit to ground water (required);
- 4 feet of compacted cover soil (required);
- 1000 feet from public water supply wells, 500 feet from domestic wells and outside of any well-head protection areas (guideline);
- 300 feet from domestic water intakes, streams, creeks, ponds, springs and lakes and at least 100 feet from the edge of a major cut or embankment (guideline);
- 500 feet from residences (required), livestock facilities and adjacent pastures owned or leased by another person (guideline);
- 300 feet from a road (guideline);
- 500 feet from a secondary highway (guideline);
- 1000 feet from a primary highway (guideline); and
- Avoid above and below ground utilities when selecting an appropriate site.

It is useful to consider the depth, width and length of any burial trenches before site planning or excavation begins. See Attachment 1 – Trench Size Worksheet, and Attachment 2 – Disposal Checklist, for guidance on trench planning for your site (in this case swine).

**On-Site Incineration** – Disposal by burning requires the use of an incinerator permitted by the NDEQ. In most circumstances, incineration is a difficult disposal method to employ quickly with large numbers of livestock carcasses. Other methods, such as open burning with an air curtain incinerator, would normally not be allowed. The cost of fuel for either of these methods may also limit them as viable options for disposal. However, during an emergency, such methods may be approved by the NDEQ on a case-by-case basis. The NDEQ Air Quality Division must be contacted if any incineration or burning is under consideration.

**On-Site Composting** – Composting of livestock mortalities is an approved method of disposal and was successful in the Avian Influenza outbreak in Nebraska in 2015. However, the African Swine Fever virus is very hardy and composting may not achieve the required temperatures for the proper amount of time to kill the virus. This disposal option does not appear to be a viable disposal method at this time. However, the NDEQ will continue to evaluate this method of disposal for possible use in the future.

**NOTE:** Nebraska Statue §54-744 limits disposal to burial, incineration, composting, rendering or landfilling.* Burial, incineration and composting must be performed on-site or on an adjacent property. Restrictions apply. Questions concerning these statutory requirements should be directed to the Nebraska Department of Agriculture. If alternate disposal methods are necessary due to an emergency, contact the Nebraska Department of Agriculture or the Nebraska Department of Environmental Quality for more information.

*Veterinary clinics and laboratories have other options.

**RESOURCES**


**Contacts**

- NDEQ Waste Management Section (planning assistance)  
  (402) 471-4210
- NDEQ Toll Free Number: (877) 253-2603
- Email questions to: [NDEQ.moreinfo@nebraska.gov](mailto:NDEQ.moreinfo@nebraska.gov)
External Links and Resources

- Nebraska Department of Agriculture-detailed information on African Swine Fever: http://nda.nebraska.gov
- Secure Pork Supply biosecurity website: http://www.securepork.org/
- Nebraska One Call – Utility location: https://www.ne1call.com/ or call 811 or (800) 331-5666
Attachment 1 – Trench Size Worksheet for Pre-selecting Swine Disposal Sites

This worksheet intends to give a quick calculation of the size of trench necessary for mass mortality disposal based on number and size of pigs on-site.

For reference, the Standard Animal Unit (SAU) is equivalent to one 1,000 lb steer, which in turn has a volume of approximately 42 cubic feet. The number of SAUs standing on site will dictate the size of the trench needed. For this worksheet pigs average 250 lbs, or 0.25 SAU, piglets average less than 50 lbs or 0.05 SAU. If your pigs are bigger, or your piglets smaller, you can adjust the calculation below accordingly. The SAU value of any animal is the average weight divided by 1000.

Total Cubic Feet of Material Calculation:

A. Number of Pigs ________ x 0.25 = ________ SAU

Number of Piglets ________ x 0.05 = ________ SAU (add pig + piglet SAUs)

Total ________ SAU

B. Standing SAU on site ________ x 42 cu ft = ____________ cu ft

Other contaminated materials such as bedding, manure, decontamination waste, etc. is about 20% of above: ________ x 1.20 = __________ total ft³ of material

Trenches should be 10 feet deep and 10 feet wide. The bottom of your trench must be at least 5 feet above groundwater depth. Therefore, you must have minimum depth to groundwater of 15 feet at the burial site. You must also allow for the minimum of 4 feet of burial below ground surface.

Trench Cross Section:

Cover

4 ft

Soil

10 ft total depth

minimum

15 ft to groundwater

Swine

6 ft

10 ft wide

Minimum 5 ft, bottom of trench to Groundwater

C. Total volume of trench filled with carcasses is 10 feet wide by 6 feet deep (see above). Or 60 square feet in cross section. Therefore, the total length of your trench is the total cu ft of material divided by 60.

(from B above) Total cu ft of material __________ / 60 = ____________ Total length of trench

Example: 1,000 pigs = 250 SAU = 10,500 cu ft x 1.20 = 12,600 total cu ft / 60 = 210 foot long trench

If space is short, multiple trenches may be dug side by side; allow at least 18 feet between trenches.
### Attachment 2 – Disposal Checklist: Onsite Burial

#### Site Selection of the Burial Area

- **Is the burial area close to the mortality site to avoid unnecessary transport of carcasses that may spread disease?**
  - □ Yes  □ No

- **Is the area at a location accessible by large trucks if cover materials will be transported to the site from off-farm sources?**
  - □ Yes  □ No

- **Has an adequately sized area(s) been identified?**
  - □ Yes  □ No

- **Is the disposal site located on a relatively flat area (less than 2% slope) with low permeability soils?**
  - □ Yes  □ No

- **Has the location of all buried utilities been mapped for the proposed burial area(s)?**
  - □ Yes  □ No

- **Is the area(s) on a well-drained location that is not subject to run-off or ponded water, and is outside of the 100-year floodplain and wetlands?**
  - □ Yes  □ No

- **Is the area at least 500 feet from homes, 1,000 feet from primary highways, 500 feet from a secondary highway, and 300 feet from any other road?**
  - □ Yes  □ No

- **Is the area within a designated wellhead protection area for a public water supply well, within 1,000 feet of a public water supply well or within 500 feet of a private drinking water well?**
  - □ Yes  □ No

- **Is the seasonal high groundwater static water table at least 15 feet below ground surface?**
  - □ Yes  □ No