Flooded Livestock Waste Ponds

Flood conditions in the Missouri and Platte rivers have flooded parts of eastern Nebraska. As people brace for the high water and evacuate, those with livestock waste control facilities, should add one last item to their list to ensure they will be able to recover when they return.

Earthen manure storage structures typically used for livestock confinements such as holding ponds, lagoons, and manure storages are constructed with a compacted clay liner to minimize seepage. This system functions well, however when the entire berm becomes saturated during flooding conditions, the outside of the berm can loosen and give way to floodwaters trying to equilibrate with the inside of the structure. This was observed during flooding condition in North Carolina in the early 1990's from hurricanes, but is preventable. Flood waters will push in earthen berms from the outside of the structure during flooding conditions and erode the berm as the flood waters equilibrate with the manure level on the inside of the structure. **To counter this effect, ponds should be pumped full of water just before floods arrive. When the flood waters reach the pond, they will not compromise the integrity of the berm as the levels equilibrate.**

Key points:

If floodwaters are predicted to be OVER the top of a livestock waste control facility or pond (runoff retention pond for a feedlot, lagoon, or manure storage) these instructions apply. Underbarn concrete pits, tanks and steel tanks do not need to be filled to the top, they should be able to withstand the equilibrium process. If some level of confidence exists that the flood stage will be below the top of berm, ponds should be filled to just above (1-2 feet) the expected flood stage elevation.

Fill to the top, even a couple of inches to the top of berm could lead to a small channel turning into a bigger channel as floodwater rush in. If this condition develops, when floodwaters recede, the entire contents of the manure storage will continue to cut a larger and deeper channel until the entire contents are discharged.

If a structure will be flooded, fill the pond to the top. Even if this requires pumping flood water into the pond. Flood erosion from equalization will compromise the berm and then when the water recedes the structure will be compromised and empty out. Missouri DNR did this in 1991 during the flood and all flooded lagoon berms were kept intact. **Get professional help to keep your structure intact, experts will know how best to address your specific situation.**

Call NDEQ immediately if you MAY have a structure that will be impacted by floodwaters and let them know about your situation. The main NDEQ switchboard operator is 402-471-2186. If NDEQ cannot be reached, call the state patrol, 402-471-4545, the state patrol will then call the NDEQ inspector and report the information. NDEQ staff will follow-up at a later date.

If your berms fails and a discharge does occur, it must be reported verbally within 24 hours, and in writing within 5 days. It may be difficult to know exactly when the structure failed, but as soon as you are aware upon return to the location, the discharge should be reported. Forms are available from NDEQ and are posted on their website. Failure to report a discharge is a serious offense (up to $10,000/day). Since climatic conditions were the cause of the discharge, and the discharge was properly reported, there will not be any consequence.

1. When discharge occurs, call immediately, do not wait. Leave a message on the inspector's voicemail.
2. Keep records and document what happened and what was done.
3. If a discharge ends, and another begins, it is considered a separate discharge, each must be reported as independent events.
4. Follow-up with a written report within 5 days. NDEQ will not remind dischargers, use NDEQ form for reporting discharges. http://www.deq.state.ne.us

Repairing compromised earthen berms is an expensive proposition. It is best to take some time to protect your investment before evacuation. A couple of hours of pumping water into a pond could save thousands of dollars in repairs after the flood waters recede.

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