



Operation & Maintenance Plan Waste Storage Facility (Code 313)

Landowner/Operator: _____ Date: _____

NRCS Service Center: _____ Land Conservation Department: _____

Practice Location: _____ Tract/Field ID: _____
(Lat/Long or UTM Coord, or Sec/TS/R)

Must be adopted to the Landowner's construction site.

Expected Lifespan

The minimum expected lifespan of this practice is at least 15 years.

I agree to the following for the lifespan of the practice:

The facility is sized for:

Storage Duration: _____ Days

Animals:

Lactating Cows: _____

Dry Cows: _____

Young Stock: _____

Total Animal Units: _____ A.U.s

Milkhouse Wastewater: _____ Gallons/Day

Barnyard/Feedlot: _____ Square Feet

1. Manure Handling Safety

Do not allow human entry into any enclosed structure without safety equipment including ladders and breathing apparatus. The American Society Agricultural and Biological Engineers (ASABE) standard EP-470 states:

"Do not enter an under-floor (underground) covered storage or pumping station without using the proper respirator equipment. In addition, these safety practices are needed: (a) Shut off any manure pumps, (b) ventilate storage or pumping station at the maximum rate, (c) test the storage or station air for O₂ level and toxic gas levels, (d) attach a safety harness and rope to the working person with at least one person standing by to help with a mechanical retrieval device, and (e) have on hand an extra set of proper respirator equipment for the person standing by."

Fatal or serious **inhalation hazards** of gases including hydrogen sulfide (H₂S), carbon dioxide (CO₂), methane (CH₄), and ammonia (NH₃) may exist where manure gases are generated through the handling of liquid or semi-solid manure through activities such as pumping, mixing, agitating, spreading, or cleaning-out.

Agitating open air manure storage facilities can be especially hazardous when high humidity and low winds may cause hydrogen sulfide gas to reside near the storage.

Use gas detection monitors to provide warnings of unsafe conditions.

2. Inspect the facility periodically.

A thorough inspection of concrete, clay or geosynthetic liners, and concrete sumps, pits, walls, ramps, slats, and floors often for separations and/or cracks which would indicate potential failure should be made each time the pond is emptied. Repairs should be made immediately.

3. Inspect the outlet of any artificial drainage system installed to lower a perched seasonal high water table adjacent to the waste storage facility. Monitor outlet for flow volume, odor, and color at least monthly, and 5 days after wet weather events. If flow is persistent after wet significant rainfall events, or flow has odor and color indicative of liquid manure or feed leachate, block the gravity outlet and utilize a pump to remove the polluted liquids. Pump pollutants to an appropriate location (e.g. pumped back to the structure or spread per a nutrient management plan). Collect a grab sample and test for water quality parameters such as ammonia, nitrogen, and chlorides to help identify the source. After the repairs are completed and sample return negative results the blockage may be removed.

4. Pipes, pumps, manure pumps, valves, gates, etc., should be inspected periodically (minimum of twice a year) to make sure they are functional, structurally sound, and not cracked, broken, and/or a safety hazard to the operator or livestock. Repair as needed.

5. Cut and remove weeds, shrubs, and trees from earthen structures. Control rodents. Mow the embankments a minimum of twice a year. Good vegetative cover should be maintained on earth embankments. If the vegetative cover is damaged, embankments should be re-vegetated as soon as possible. Keep machinery away from steep side slopes. Keep equipment operators informed of all potential hazards.

6. Maintain necessary safety features including proper fencing, warning signs, stop blocks, guard rails, covers, and similar items to provide warning and/or prevent unauthorized human or livestock entry.

7. Additional Recommendations:

A. Hopper/Tank

- 1) Avoid scraping dry or frozen manure into hopper.
- 2) Use only minimal amounts of bedding when pumps are used.
- 3) Maintain all lids, grates, and shields on openings to underground structures.

B. Storage

- 1) Begin filling facility early enough in fall to cover inlet pipe opening to avoid freezing.
- 2) Maintain the depth gauge that visually shows the following elevations
 - a. Temporary Benchmark description (TBM) _____
 - b. TBM elevation _____
 - c. Maximum operating level (MOL) _____
 - d. Top of freeboard volume _____
- 3) Begin emptying or drawdown according to the schedule in the CNMP or sooner if the contents of the storage facility reach the maximum operating level (MOL)
MOL description: _____.

C. Emptying

- 1) Immediately remove all foreign debris within the structure that may cause damage to pumps or agitators.
- 2) Agitate properly according to pump manufacturer's instructions.
- 3) Minimize odors by not mixing and spreading on humid days or upwind from nearby neighbors.
- 4) Periodically remove solid accumulation on bottom of pit.

D. Waste Utilization

- 1) Manure application must comply with state laws or local ordinances, and the nutrient management plan.

Cooperator's signature: _____ Date: _____

I have discussed the maintenance guidelines with the above cooperator.

Conservationist's signature: _____ Date: _____

Specific Site Requirements