

# **Appendix F**

## Operation & Maintenance Plan

# Operation and Maintenance Plan

## Cumberland LLC - Hog Farm & Waste Storage Facility

¼	¼	Section	Township	Range	Project Name	Project No.
	NW	7	T37N	R18W	Hog Farm & WSF	SUIDA-01-19
Town/Village/City			County		Contact Name	
Trade Lake			Burnett		Jeff Sauer	
Site Address (if available)			Contact Address			
12884 State Highway 48 Grantsburg, WI 54840			N13126 Bruce Mound Road Thorp, WI 54771			
Engineer Name			Address		Phone	
Erik Lietz, P.E. Oakridge Engineering, Inc.			877 Gaylord Avenue Mondovi, WI 54755		715-926-1110	

This plan states the procedures for operation and maintenance of the waste storage facilities (WSF). The components are each designed to meet the minimum requirements of the respective Natural Resources Conservation Service (NRCS) design standards. The estimated lifespan of this installation is 20 years. The life of this installations can be preserved and usually increased by carrying out a good operation and maintenance program.

### 1.0 GENERAL SYSTEM OPERATION

Animals will be rotated throughout the facility throughout their gestation cycle. Pregnant sows and gilts are kept in the gestation barn throughout the approximate 114 day gestation cycle. Just before farrowing, sows and gilts will be moved to the Farrowing Barn to have their litter. The sow and piglets will remain in the farrowing barn until the piglets are weaned. Most of the weaned piglets and all replaced sows will be sold and moved from the farrowing barn. Replacement pigs will be moved to the nursery and gilt development unit (GDU). Mature gilts will be moved to the breeding and gestation barn as replacements.

Feed for the swine will be delivered by truck to the bulk bins located around the perimeter of the barns. Automated systems will distribute stored feed to feeders within the barns. Automated mechanical feeding systems will assist with animal feeding operations. All feed is stored in bins that are sealed from contact with precipitation. Therefore, no leachate or contaminated runoff from feed storage will be present.

Potable water will be pumped from the well(s) and stored in a proposed water storage tower on site. The tower will be a 17-foot diameter Harvestore type structure that will be 45 feet tall. The water tower on site will help to moderate demand on the well pumps and aquifer.

Animal manure and waste water used to clean the facility will fall through the slotted floors of the barns and be stored in the deep pits beneath each barn. Human wastes and municipal wastewater will be stored in separate septic tanks and will utilize leach fields (by others under separate contract and permits).

## 2.0 OPERATION PROCEDURES

### 2.1 Waste Storage Handling Safety

Waste storage facility's (WSF) are confined spaces. Do not allow human entry into any "confined space" without safety equipment and without at least one person standing by to help if needed. Safety equipment such as harnesses, ropes, respirators, ladders and block and tackle should be located near the manure storage area. The American Society of 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 O<sub>2</sub> 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 (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and ammonia (NH<sub>3</sub>) 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.

Use gas detection monitors to provide warnings of unsafe conditions. Gas detection equipment should be designed to detect combustible gases and hydrogen sulfide. Keep detector in a warm, dry area when not in use. Be aware of the detector expiration date and replace when needed.

### 2.2 Storage

- Monitor the waste level at least monthly. More frequent monitoring is needed as the storage facility approaches the MOL level. Manage the stored waste such that it remains below the MOL during normal operating conditions. Note that the margin of safety (MOS) level is the same as the MOL due to no precipitation entering the waste storage. Inspect tile outlets for signs of odor, turbidity, or other changes in flow characteristics
- Markers showing 180-days of waste storage remaining will/are not installed due to not being able to observe the markers in the tank system. Therefore, 180-day remaining volumes shall be observed by measuring the depth of waste in each respective tank. Note that 180-days left of storage is completed dependent upon the population of each barn and cannot be determined until the barns are populated to normal operating amounts.
- Contact the appropriate regulatory authority for approval prior to storing any off-farm waste material in the waste storage facility not specifically approved in the facility's NMP.

- Maintain the depth gauge that visually shows the following elevations:

**WSF #1 – Farrowing Barn**

Maximum operating level (MOL) = 985.6

MOL description \_\_\_\_\_

180-day storage remaining = 984.0

**WSF #2 – Gestation Barn**

Maximum operating level (MOL) = 983.6

MOL description \_\_\_\_\_

180-day storage remaining = 979.9

**WSF #3 – GDU Barn**

Maximum operating level (MOL) = 983.6

MOL description \_\_\_\_\_

180-day storage remaining = 980.9

**2.4 Emptying**

- Begin emptying or drawdown according to the schedule in the NMP or sooner if the contents of the storage facility reach the maximum operating level.
- Immediately remove all foreign debris within the structure that may cause damage to pump or agitation equipment.
- Agitate properly according to pump manufacturer’s instructions.
- Minimize odors by not mixing and spreading on humid days or upwind from nearby neighbors.

**2.5 Emergency Emptying**

- If waste reaches MOL, facility must be emptied and land applied in accordance with the approved NMP or transferred to additional storage on the site.
- If unable to transfer waste or transfer to additional storage, contact your WDNR agricultural runoff specialist.

### 3.0 MAINTENANCE SCHEDULE

#### 3.1 Waste Storage Facility

- A thorough inspection of the concrete liners and pump-out ports for separations and/or cracks which would indicate potential failure should be made each time the WSF is emptied. Repairs should be made immediately. **Note:** Severe structural damage impacting the integrity of the liner requires that Oakridge Engineering, Inc. and WDNR be notified.
- Immediately repair any vandalism, vehicular or livestock damage to the system.
- Make certain that all electrical equipment is properly grounded and wiring is in good working condition.
- Inspect the tile system outlets (2) after snow melt, significant precipitation events (>2.0 inches in 24 hours), and after manure removal activities
  - observe tile outlets for changes in flow rate, turbidity (solids), color, or odor in the tile water

#### 3.2 System Safety Features

- Warning signs must be posted at all open liquid waste storage facilities indicating a drowning hazard.
- Post signs at minimum at each gate and/or access point.
- Maintain necessary safety features including proper covers, warning signs, stop blocks, guard rails, covers, and similar items to provide warning and/or prevent unauthorized human or livestock entry.
- Maintain all safety shields on pumps, motors, electrical or mechanical equipment.

### 4.0 EMERGENCY ACTION PLAN

If the waste storage system were to overflow or leak:

1. Stop the source by removing waste from the system until the overflow or the leak is stopped.
2. Assess the situation and make the appropriate calls for people, equipment, and materials.
  - a. Notify the Wisconsin Department of Natural Resources 24-Hour spill emergency hotline at 1-800-943-0003
3. Contain the overflow or leak and prevent waste from entering surface waters or waterways
  - a. Install a temporary dam to contain the waste
  - b. Use tillage implements to work up the ground ahead of the overflow or leak
4. Begin cleanup by pumping to recover liquids and land applying at rates in accordance with an approved nutrient management plan.
5. Document actions

## **AUTHORIZATION**

*I (or we) have read and reviewed the above Operation and Maintenance Plan. I (or we) agree to follow this Operation and Maintenance Plan for the useful life of this system.*

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Cumberland, LLC

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Date