Operation & Maintenance Plan
Waste Transfer (Code 634)

Landowner/Operator: Date:

NRCS Service Center: Conservation District:

Practice Location: Tract/Field ID:

(Lat/Long or UTM Coord, or Sec/TS/R)

Expected Lifespan

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

A properly operated and maintained **Waste Transfer System** is an asset to your property. The purpose of this practice is move manure and wastewater from the collection area to a waste storage facility or treatment area. The estimated life span of this practice is 15 years. The life of the practice can be assured and usually extended by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. The following are some requirements to help you develop a good operation and maintenance program.

Safety

1. When necessary to exclude livestock and human access, provide fencing, gates and other barriers. Inspect fence and other barriers on a regular basis. Repair and/or replace damaged fences and gates as soon as possible. Keep gates closed at all times.
2. Inspect all warning signs to see that they are legible and properly mounted. Repair or replace as needed
3. All hoppers and reception pits must be considered “High Hazard Areas”. The anaerobic biodegradation of waste forms noxious gases such as:
   - Methane (CH)
   - Hydrogen sulfide (H2S)
   - Ammonia (NH3)
   - Carbon dioxide (CO2)

   These gases can be fatal to both animals and human beings. Especially “Hydrogen Sulfide” which can paralyze the diaphragm and the victim will not be able to breath without the assistance of an Artificial Respirator, even after being removed from the location of the noxious gas. Thoroughly familiarize yourself with all potential gas problems, special wiring needs and ventilation needs.
4. In many cases, noxious gases displaces oxygen and people entering the reception pit succumb to the lack of oxygen as opposed to direct harmful effects of noxious gases.
5. Some gases (i.e. methane) can be explosive with the proper gas to air ratio. Use caution with open flames, welding equipment, electrical motors with brushes that spark (skill saws, electric drills, shop vacuums, etc.) when working near the waste transfer system. Never smoke near a hopper or reception pit. Post “No Smoking” signs to warn others. Be sure the work area is well ventilated.
6. Agitation and pumping of liquid manure can release large volumes of these noxious gases. Special care must be taken to provide adequate ventilation of hopper and pump buildings.
7. DO NOT enter any hopper, reception pit, tank or other confined spaced used for the storage or transfer of manure because of the potential of harmful gases. When it is necessary for someone to enter a confined structure for repairs, hire a consultant who has the proper equipment, training and knowledge to work in confined spaces, especially when working around deadly gases. Take the

following precautions anytime someone must enter a confined structure:

a. Adequately ventilate the reception pit by the use of fans, blowers, etc.
b. A minimum of two people should be present; one to remain on the outside and one to enter the facility.
c. Persons entering the reception pit shall wear a proper harness and be properly tethered so persons outside the reception pit can pull them out.
d. Persons entering the reception pit shall wear a self-contained breathing apparatus. Gas masks cannot adequately remove harmful gases and should NOT be used.
e. Follow all OSHA rules and guidelines when working around a confined structure.

8. Keep all lids, gates, hatch covers, shields and safety grates in place to prevent any unauthorized entry of people and livestock. If necessary, provide a lock. Inspect and repair on a regular basis.
9. All confined spaces, hoppers, reception pits, manholes, etc., must be posted with signs with the following or similar warning:

"DANGER – DEADLY MANURE GASES POSSIBLE, DEATH MAY BE IMMEDIATE"

10. When installing new wells, springs or other potable water sources, due consideration must be given to the distance, grade and location of the waste transfer system to the new water source. Consult Vermont DEC Environmental Protection Rules, Chapter 21 – Water Supply Rules for guidance regarding set back distances of newly drilled wells to existing waste transfer systems. Also consult the Vermont Department of Health and the Vermont Agency of Agriculture.

Inspection and Maintenance

Inspections and maintenance is required to achieve the intended function, benefits, and life of the practice. The landowner/operator is responsible to establish and implement an inspection and maintenance program. Inspect the facility after each significant storm events and at least annually. Items to inspect and maintain include, but are not limited to, the following:

1. Inspect push-off ramps, headwalls, retaining walls and other concrete appurtenances regularly for cracks, separations and other major damage. Make repairs as necessary.
2. If applicable, inspect foundation drains outlets every six months. Keep outlets open and inspect for signs of leakage such as excessively high flow rate, turbidity, discoloration, odors or other unusual characteristics of the flow. Excessive growth and accumulation of algae at the drain outlet could be another sign that nutrients are leaking from the system. If a blockage is discovered, make provisions to remove blockage as soon as possible.
3. Regularly inspect all fencing, gates, grates, and other barriers. Ensure that they are in good repair. Make repairs or replaced as necessary. Keep gates and grates closed at all times.
4. Ensure that all safety shields on pumps, motors, electrical or mechanical equipment are in place. Do not operate equipment without replacing shields. Consult owner's manuals.
5. Regularly inspect hoppers, reception pits and all appurtenances for any damage caused by equipment, livestock or vandalism. Make repairs as necessary.
6. Do not operate loaded feed wagon, trucks, manure spreaders, or other heavy equipment within five feet of the reception pit, hopper or other appurtenances.
7. Inspect all pumps, agitators, pipes, valves, electrical and mechanical equipment on a regular basis. Ensure all equipment and appurtenances are in good operating condition. Make repairs as needed. Consult the manufacturer's recommendations and owner's manuals.
8. Lubricate pumps in accordance to the specifications in the owner's manual.
9. Inspect all electrical equipment on a regular basis. Insure that equipment is well grounded and ground rods are not compromised. Make repairs as necessary.
10. Repair or replace rusted or damaged metal components. Protect with paint.
11. Remove woody vegetation that grows within 10 feet of the hopper, reception pit, transfer pipes and all other appurtenances.

12. Exercise all manual valves at least once a year.
13. Feed Storage Areas:
    a. Keep feed storage area as clean as possible to minimize solid material from washing into the transfer system. Do not pile or store spoiled or waste feed near the “flow splitter” device.
    b. Screens are to be installed as designed and are only to be removed for cleaning. Removal of screens can lead to plugging and/or overall failure of the waste transfer system.
    c. Remove and clean screens when solid material has built up on the screen. Repair broken screens right away.
    d. “Flow splitter” shall be kept clean of solids and other debris.
    e. Routinely inspect the outflow from the “flow splitter” to determine if the “low-flows” and “high-flows” are properly diverted.
    f. Routinely inspect concrete curbs and other ancillary components for cracks and damage caused by equipment. Repair as necessary.

Operation, Maintenance and Inspection Costs

1. It is estimated that the annual time to routinely inspect and make minor repairs to your Waste Transfer System will be:
    a. Inspection = 1 hours/week
    b. Minor Repairs = 1 hours/week
    c. Major repairs will require extra time and materials.
2. Most minor repairs can be made by the operator using basic hand tools. However, major repairs to damaged concrete, pump, pipe, barriers, etc. may require hiring a professional experienced in these repairs and improvements.

Specific Requirements for Your Practice

1. _____
2. _____
3. _____
4. _____
5. _____

Specific Site Requirements

Clear Form