STEP 5

E3A: Anaerobic Digester Applications for the Farm or Ranch

Steps in the Anaerobic Digester Series

1. Understanding and Technical Feasibility
2. Estimate Potential
3. Economics
4. Selection
5. **Maintenance**

Maintaining Your Anaerobic Digester

Courtesy of the Northern Rocky Mountain RC&D.

Operation of an anaerobic digester will require more maintenance than other manure management practices, such as composting or waste lagoon management. Installation of an anaerobic digester may require hiring 1 to 2 additional employees for routine maintenance, depending on the size of the operation. Be prepared to meet additional maintenance requirements if you are considering anaerobic digester installation. Some of the common maintenance activities are listed below with the frequency requirement in parenthesis.

- **Sludge Removal (every 1-2 years)** – An anaerobic digester system must be cleaned and removed of excess sludge. In well-designed systems, this is performed automatically with very little downtime. Other designs require manual removal of waste.
- **Pump Clearing (every 3-6 months)** – When pumping high solids content waste, it is important to ensure that pumps are cleared of debris regularly. Items such as cow tails (when removed for ease of milking), sand, work tools and other inorganic substances can clog pumps hindering operation of the digester.
- **Iron Packing Replacement (every 6-12 months)** – It is important to remove the corrosive hydrogen sulfide compounds to avoid engine replacement if biogas collected from the digesters is being refined and used for electricity generation. This can be done by passing the biogas through iron packing material. The iron packing should be replaced at least every 12 months.
- **General Engine Maintenance (every week)** – Just as in your car, the generator producing electricity from the anaerobic digester must be inspected for proper fluid levels.
- **Preventative Engine Maintenance (every month)** – The electrical, fuel and air intake systems must also be inspected for each of the gen sets.
- **Valve Leak Checks (every 6-12 months)** – To avoid safety hazards, it is recommended that the valves on the digestion system be checked for leaks one to two times a year. Improperly working valves should be replaced as soon as possible.
- **Pipe Leak Checks (every 6-12 months)** – Pipes must be checked for leaks at least once per year. It is also important that no open flames are anywhere near inflow or outflow pipe lines.
- **Fittings Leak Checks (every 6-12 months)** – Any nonmetal fitting (i.e. ducted vents, plastic valves, rubber fittings) located on the gas or waste pipeline must be inspected.

Courtesy of the Northern Rocky Mountain RC&D.

Other maintenance activities may be required specific to the system in place. Make sure to discuss maintenance requirements with your technology provider to ensure that an adequate maintenance plan is put in place. Proper maintenance of your anaerobic digester and related components will both extend the lifetime of the system as well as save money over the long term. Successful anaerobic digester operation depends on routine maintenance activities.

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Notes