

# **CNMP ENGINEERING EVALUATION**

## **MANURE AND WASTEWATER HANDLING AND STORAGE**

(REVISED 1/2010)

This element addresses the components and activities associated with the livestock production facility. Format of this evaluation can be a combination of paragraphs, sketches, charts, diagrams, photos, etc. as appropriate. Assure that photocopies are readable and scaled.

### **A. Inventory Worksheets (Optional)**

1. CNMP Engineering Inventory Worksheet(s) (one for each facility). Use is optional.

### **B. Maps or Sketches**

1. Show locations of identified resource concerns and proposed conservation practices
2. Suggest including digital photos and aerial imaging to support findings, as necessary.

### **C. CNMP Resource Concerns**

1. Document CNMP resource concerns. Include short discussions describing owner's input and resource concerns.

### **D. Animal Units, Generated Manure Volume, and Storage Volume**

1. Document each animal type, average weights, & period of confinement. Calculate the number of Animal Units (AU) at each management unit.
2. Calculate the Manure and Wastewater Production Volumes both current & planned expansion.
3. Document the fate of manure and wastewater including animal concentration areas (ACA) within pastures.

### **E. Siting and Operation of Existing Facilities**

1. Document all areas of livestock concentration (barnyards, feed lots, dry lots, exercise lots, ACA areas within pastures, etc.) and feed storage (vertical, bunk, or bag) and mortality areas for contaminated runoff leaving the area.
2. Document all existing manure and wastewater waste facilities and stack areas including design storage volumes, duration of storages, operating levels, existence of a stage gauge, etc.
3. Document transfer systems (Hoppers, drop boxes, under and over ground transfer piping).
4. Document Safety issues relating to existing waste storage facilities, barnyards, confined spaces, and feed storage areas. (Status of fencing, gates, access lids, warning signs)
5. Document O&M plans of existing BMPs for manure and wastewater handling and storage, stacking areas, ACA areas, silage feed storage areas and mortality processing areas.
6. Document siting effect of main livestock production site on neighbor's property (odor, dust, and gaseous emissions). A qualitative odor assessment on neighboring residents may be used if applicable or required by state regulations.
7. Document the response strategies for manure spills and catastrophic failure of existing manure storage and transfer systems.

## **F. Siting and Sizing of Proposed Waste Storage Facilities**

1. Provide for adequate collection, storage and/or treatment of all resource concerns. Evaluate the siting and sizing of **proposed** waste storage facilities, concentrated live stock areas, and feed storage, etc.

## **G. Surface Water Runoff**

1. Evaluate the effects of surface water runoff at the production facility and other concentrated flow areas (transport of manure, leachate, erosion, ponding, flooding, etc).

## **H. Alternative Manure and Wastewater Utilization Activities (Optional)**

1. Evaluate the potential for alternative technologies to address identified resource concerns such as value added, separation, composting, anaerobic digestion, recycling/reuse, energy production, credit trading, odor reduction, treatment, etc. Discuss possibilities with the owner and document only as appropriate (optional).

## **I. Planned Conservation Practices**

1. Develop conservation practices to address identified resource. Multiple alternatives may be needed to address any one resource concern concerns to assist the client with the decision making process.
2. Provide a specific pre-design feasibility analysis with a pre-design cost estimate for all alternatives. Some survey and/or soils investigation may be necessary at this stage to determine specific site feasibility of suggested practices.
3. Match the client's goals and fit the specific site conditions.
4. Comply with specific NRCS practice standards and applicable regulations.
5. Conservation practices shall be part of a conservation system written to address all identified risks associated with the livestock production operation.
6. Operation and Maintenance plans for proposed conservation practices would be added when those practices are implemented.

## **J. Farmstead Safety and Security**

1. Develop Operation and Maintenance plans for existing conservation practices that were not found under Section E and include these with submitted CNMP.
2. Document or develop protocol for disposal of Veterinary Services Waste.
3. Document or develop Chemical Handling and disposal procedures for operations requiring an NPDES permit.
4. Include plan and practices to address any safety issues found under Section E.

1/2010