EXTENSION

EC136

Nutrient Management

Recordkeeping Calendar

January 2021 - January 2022

Records for Nebraska Animal Feeding Operations

Operation ID: _____

General Directions

- Record the initials of the person performing the inspection each time (see table below for initial codes). Check marks will not satisfy the recordkeeping requirements.
- Record any maintenance and/or repairs.
- Correct all deficiencies within 30 days.

Daily Records and Inspections

- Inspect all waterlines (drinking and cooling) within the drainage area.
- Record any measurable rainfall that occurs at the facility and liquid storage levels following.
- Record wind speed and direction daily during manure pumping activities.
- Collect carcasses and properly dispose of them within 36 hours.

Weekly Records and Inspections

- Record the liquid depth of the manure storage structure as indicated on the depth marker. Be sure that the recommended pumping levels are indicated on the marker.
- Before use, inspect any equipment used for land application of manure and/or wastewater.
- Inspect all waste control facilities, including lagoons, holding ponds, concrete tanks, pits, and manure storage structures.
- Inspect all storm water and runoff diversion devices used to channel contaminated storm water to storage structures.

Monthly Records and Inspections

- Inspect facilities used for disposal of carcasses. Include composting facilities, containers, and recent burial sites in the inspection.
- Do NOT dispose of carcasses in any liquid manure or process wastewater system.

Yearly Records and Inspections

- Evaluate the depth of the sludge layer of the lagoon or holding pond.
- At least 1 representative from an operation must attend Land Application Training every 5 years. See **go.unl.edu/ManureEd** for more information.
- The Nebraska P-Index must be assessed for land application areas every 5 years, prior to land application. See **go.unl.edu/Pindex**

Yearly Sample Collection and Analysis

- Collect and analyze manure and/or wastewater samples at least annually. Recommended minimum analysis should include: total nitrogen (N), organic N, and phosphorus.
- Collect soil samples every year prior to site being used for N application.
- Analyze soil samples for phosphorus at least once in 5 years.
- Irrigation water must be sampled and analyzed for nitrates every 5 years.

Yearly Site Requirements

- Complete and submit an annual report for the previous year to NDEE by March 1 (NPDES permits only).
- Keep records on site for a minimum of 5 years.

Name	Initials

Name	Initials

Name	Initials

Name	Initials

Additional information and space for records is provided on the back page.

Disclaimer

The information in this calendar should assist producers to meet legal requirements and protect environmentally sensitive areas around their operations. The use of this calendar and accompanying information is intended to serve as a guide and does not guarantee compliance with the NDEE rules and regulations.

Manure / Wastewater Applied

Weather information for each date of application, the day prior to, and day after application should be recorded on the calendar or kept separately.

Field ID & Location _____ Acres Applied _____ Date _____
Manure Source _____ Application Method _____
Application Rate _____ Available N/acre*_____ Applied P _____
Start Pump Time _____ Stop Pump Time _____ Monitored While Pumping?___

Field ID & Location _____ Acres Applied _____ Date _____
Manure Source _____ Application Method _____
Application Rate _____ Available N/acre*_____ Applied P _____
Start Pump Time _____ Stop Pump Time _____ Monitored While Pumping?___

*Nitrogen availability calculation worksheet can be found at the end of this publication.

Why is Soil Organic Matter Important?

Soil organic matter (SOM) is material from plants or animals that is, or has finished, decomposing. SOM at various stages of decomposition benefits soil in multiple ways:

- Improves water infiltration and reduces runoff and erosion by stabilizing soil aggregates,
- Accelerates nutrient cycling and increases the ability of soil to supply nutrients over time,
- Feeds soil organisms that create pore spaces to increase infiltration and reduce runoff, and
- Supports diverse microbial populations that can help suppress diseases and pests.

Making manure part of crop fertility is one way to improve soil stability while slowly building SOM to promote long-term resilience & productivity of soil.

For information, see manure.unl.edu, search for "soil organic matter".

Employee Training

At least 1 representative must complete Land Application Training every 5 years.

Training Type _____ Date _____
Employees Trained _____
Trainer and Location _____

Training Type _____ Date _____
Employees Trained _____
Trainer and Location _____

Training Type _____ Date _____
Employees Trained _____
Trainer and Location _____

Training Type _____ Date _____
Employees Trained _____
Trainer and Location _____

Manure Sold or Given Away (Transferred)

An information sheet containing your operation name and address along with a written statement that manure / wastewater must not enter waters of the state and the nutrient analysis must be provided to the recipient.

Manure Volume/Weight _____ Date _____
Recipient Name and Address _____
Analysis Number _____

Manure Volume/Weight _____ Date _____
Recipient Name and Address _____
Analysis Number _____

Manure Volume/Weight _____ Date _____
Recipient Name and Address _____
Analysis Number _____

More manure information can be found at **manure.unl.edu** and **lpelc.org**

University of Nebraska–Lincoln
UNL does not discriminate based upon any protected status. Please see go.unl.edu/nondiscrimination

EXTENSION

NPDES Annual Report and Fees Due

March 2021

Monthly Inspections
Mortality Management System _____ Date _____
Notes_____

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Weekly Inspections
	1 Rainfall_____ Wind_____ Waterline Inspection _____	2 Rainfall_____ Wind_____ Waterline Inspection _____	3 Rainfall_____ Wind_____ Waterline Inspection _____	4 Rainfall_____ Wind_____ Waterline Inspection _____	5 Rainfall_____ Wind_____ Waterline Inspection _____	6 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
2 Rainfall_____ Wind_____ Waterline Inspection _____	3 Rainfall_____ Wind_____ Waterline Inspection _____	9 Rainfall_____ Wind_____ Waterline Inspection _____	10 Rainfall_____ Wind_____ Waterline Inspection _____	11 Rainfall_____ Wind_____ Waterline Inspection _____	12 Rainfall_____ Wind_____ Waterline Inspection _____	13 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
9 Rainfall_____ Wind_____ Waterline Inspection _____	10 Rainfall_____ Wind_____ Waterline Inspection _____	16 Rainfall_____ Wind_____ Waterline Inspection _____	17 Rainfall_____ Wind_____ Waterline Inspection _____	18 Rainfall_____ Wind_____ Waterline Inspection _____	19 Rainfall_____ Wind_____ Waterline Inspection _____	20 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
16 Rainfall_____ Wind_____ Waterline Inspection _____	17 Rainfall_____ Wind_____ Waterline Inspection _____	23 Rainfall_____ Wind_____ Waterline Inspection _____	24 Rainfall_____ Wind_____ Waterline Inspection _____	25 Rainfall_____ Wind_____ Waterline Inspection _____	26 Rainfall_____ Wind_____ Waterline Inspection _____	27 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
28 Rainfall_____ Wind_____ Waterline Inspection _____	29 Rainfall_____ Wind_____ Waterline Inspection _____	30 Rainfall_____ Wind_____ Waterline Inspection _____	31 Rainfall_____ Wind_____ Waterline Inspection _____	In case of a spill or discharge, take immediate measures to contain the spill and contact NDEE at 1-402-471-4239 within 24 hours. Written reports of a spill must be submitted within 5 days.			Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____

Place
Stamp
Here

Nutrient Management
Recordkeeping Calendar
57905 866 Road
Concord, NE 68728

Yes! Please send me the 2022 Nutrient Management Recordkeeping Calendar!

EXTENSION

Manure / Wastewater Applied

Weather information for each date of application, the day prior to, and day after application should be recorded on the calendar or kept separately.

Field ID & Location _____ Acres Applied _____ Date _____
Manure Source _____ Application Method _____
Application Rate _____ Available N/acre*_____ Applied P _____
Start Pump Time _____ Stop Pump Time _____ Monitored While Pumping?___

Field ID & Location _____ Acres Applied _____ Date _____
Manure Source _____ Application Method _____
Application Rate _____ Available N/acre*_____ Applied P _____
Start Pump Time _____ Stop Pump Time _____ Monitored While Pumping?___

*Nitrogen availability calculation worksheet can be found at the end of this publication.

Application Equipment Maintenance / Calibration

For calibration instructions, visit go.unl.edu/calibration

Date	Equipment	Maintenance Done / Calibration Type	Manure Source & Rate

Weeds in Manure

Small but mighty, weed seeds in manure can be problematic when they result in overgrown, weedy fields after manure application. Reduce weed seeds in feed and forage by ensliling. Minimize weed seeds in manure by composting. Fields that have received manure contaminated with weed seed should use integrated weed management tools such as timely scouting and herbicides with multiple modes of action.

For more information, see manure.unl.edu, search for "weeds in manure".

Notes

Additional information and space for records are provided on the back page.

Crops Harvested - Nutrients Removed

Date	Field ID and Location	Crop Type	Yield	Acreage	N Removed*	P Removed*

Crop Nutrient Needs - Estimates for Next Year

Date	Field ID and Location	Crop Type	Yield	Acreage	N Required	P Required

** Crop removal rates can be found at the back of this publication.*

Fields with Setbacks

Field ID and Location	Areas of Setback

More manure information can be found at **manure.unl.edu** and **lpelc.org**

University of Nebraska–Lincoln
UNL does not discriminate based upon any protected status. Please see go.unl.edu/nondiscrimination

EXTENSION

September 2021

Monthly Inspections
Mortality Management System _____ Date _____
Notes_____

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Weekly Inspections
In case of a spill or discharge, take immediate measures to contain the spill and contact NDEE at 1-402-471-4239 within 24 hours. Written reports of a spill must be submitted within 5 days.			1 Rainfall_____ Wind_____ Waterline Inspection _____	2 Rainfall_____ Wind_____ Waterline Inspection _____	3 Rainfall_____ Wind_____ Waterline Inspection _____	4 Rainfall_____ Wind_____ Waterline Inspection _____	**Remember to order your 2022 Nutrient Management Recordkeeping Calendar using the coupon found in August of this calendar!**
5 Rainfall_____ Wind_____ Waterline Inspection _____	6 Rainfall_____ Wind_____ Waterline Inspection _____	7 Rainfall_____ Wind_____ Waterline Inspection _____	8 Rainfall_____ Wind_____ Waterline Inspection _____	9 Rainfall_____ Wind_____ Waterline Inspection _____	10 Rainfall_____ Wind_____ Waterline Inspection _____	11 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
12 Rainfall_____ Wind_____ Waterline Inspection _____	13 Rainfall_____ Wind_____ Waterline Inspection _____	14 Rainfall_____ Wind_____ Waterline Inspection _____	15 Rainfall_____ Wind_____ Waterline Inspection _____	16 Rainfall_____ Wind_____ Waterline Inspection _____	17 Rainfall_____ Wind_____ Waterline Inspection _____	18 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
19 Rainfall_____ Wind_____ Waterline Inspection _____	20 Rainfall_____ Wind_____ Waterline Inspection _____	21 Rainfall_____ Wind_____ Waterline Inspection _____	22 Rainfall_____ Wind_____ Waterline Inspection _____	23 Rainfall_____ Wind_____ Waterline Inspection _____	24 Rainfall_____ Wind_____ Waterline Inspection _____	25 Rainfall_____ Wind_____ Waterline Inspection _____	Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____
26 Rainfall_____ Wind_____ Waterline Inspection _____	27 Rainfall_____ Wind_____ Waterline Inspection _____	28 Rainfall_____ Wind_____ Waterline Inspection _____	29 Rainfall_____ Wind_____ Waterline Inspection _____	30 Rainfall_____ Wind_____ Waterline Inspection _____			Lagoon Depth Marker (ft)_____ Date_____ Manure Storage & Equipment Inspection_____ Notes_____ Date_____ Water & Runoff Diversion or Containment Devices_____ Notes_____ Date_____ Maintenance or Repairs_____ Date_____ Notes_____

General Directions

- Record the initials of the person performing the inspection each time. Check marks will not satisfy the recordkeeping requirements.
- Record any maintenance and/or repairs.
- Correct all deficiencies within 30 days.
- More detailed instructions can be found on page 2.

Phosphorus Index

Must be completed every 5 years for all manured fields
More information at go.unl.edu/Pindex

Date Completed	Field ID and Location	Risk Rating	Management

Soil Sampling

For guidelines, see go.unl.edu/g1740

Field ID and Location	Sample Depth	Date of Collection

Manure / Wastewater Sampling

For guidelines, see go.unl.edu/g1450

Sampling Location	Sampling Details	Date of Collection

Application Equipment Maintenance / Calibration

For calibration instructions, visit go.unl.edu/calibration

Date	Equipment	Maintenance Done / Calibration Type	Manure Source & Rate

Groundwater / Irrigation Water Sampling

Sampling Location	Date of Collection	Results (ppm nitrate)

*Irrigation water samples must be taken and analyzed for nitrates every 5 years.

Disclaimer

The information in this calendar should assist producers to meet legal requirements and protect environmentally sensitive areas around their operations. The use of this calendar and accompanying information is intended to serve as a guide and does not guarantee compliance with the Nebraska Department of Environment and Energy rules and regulations.

Accidental Spill or Discharge

Date and time of spill or discharge _____

Length of time of spill or discharge _____

Location and source of spill or discharge ____

_____

Date and time of oral NDEE notification (must be within 24 hours) _____

Call NDEE at 1-402-471-4239.

Estimated discharge volume _____

Date of sample collection (must be analyzed by a laboratory) _____

Description of the cause of the discharge ____

_____

_____

_____

Precipitation amount (if cause of the discharge) _____ Date _____

Within 5 days, send written spill report to:

Nebraska Dept. of Environment and Energy

Attention: Ag Section

PO Box 98922

Lincoln, Nebraska 68509

Annual Report (for NPDES permits)

Date report submitted to NDEE _____

Reports are due March 1 of each year.

Location of files and records for inspections

_____

Dates of NDEE inspections

_____

NPDES ANNUAL REPORT to NDEE **Due March 1, 2021**

Name of Facility: _____ Facility ID Number: _____

Address: _____ City, State and Zipcode: _____ Section: _____ Township: _____ Range: _____

1. **Livestock -** Maximum number of livestock at the CAFO at any one time during the previous calendar year. _____ head of _____(species)
2. **Generated Manure -** Total amount of waste generated by the operation during the previous calendar year, including manure and process wastewater.
   Solid tons = _____ Liquid gallons = _____
3. **Transferred Manure -** The total amount of waste sold or given away by the operation in the previous calendar year, including manure and process wastewater.
   Solid tons = _____ Liquid gallons = _____
4. **Land Application Responsibility -**
   a. Person who has primary responsibility for the land application at the CAFO:
      Name: _____ Phone Number: _____
      Address: _____ City, State and Zipcode: _____
   b. Is the person an **authorized** representative, owner**,** or an employee? Circle one. yes / no
   c. Most recent date the person completed land application training? _____
5. **Land Application Area -**
   a. Total number of land application acres covered by CAFO's current Nutrient Management Plan. _____ acres.
   b. Total number of acres controlled by the CAFO and used for land application of livestock waste during the previous year - including manure and process wastewater. _____ acres.
6. **Discharges -** (*In case of spill or overflow incident. Otherwise not applicable*) Summary of all livestock waste discharges (including manure and process wastewater) from the production areas and the land application areas during the previous year. The summary must include the following information for **each** discharge
   a. Date discharge began _____ and ended _____
   b. Time of day/night discharge occurred _____ and the duration of discharge _____ hours.
   c. Approximate volume of waste discharged (provide supporting figures) = _____
7. **Nutrient Management Plan Information -** CAFO's current Nutrient Management Plan on file with the Department was developed and approved by a certified nutrient management planner? Circle one. yes / no
8. **Changes to Nutrient Management Plan -** Yes ( ) or No ( ) If the CAFO has made any changes to the nutrient management plan during the previous calendar year, the changes must be reported to the Department. Supporting documents must be included with the information submitted. The information submitted should include changes in:
   a. Any changes in land application areas: _____
   b. Methods of soil sampling or soil analysis: _____
   c. Means of determining land application rates: _____
9. **Individual field records** - For each field crop during the previous 12 months provide:
   a. Actual crop planted and yield: _____
   b. Actual N and P content of manure, litter, or wastewater applied (include analysis): _____
   c. Results of calculations made according to NMP: _____
   d. Amount or volume of manure, litter, and wastewater applied to each field during the past 12 months: _____
   e. Results of any soil testing for N and P during the preceding 12 months: _____
   f. Any conversion or availability factors used to determine nutrient availability: _____
   g. Amount of supplemental fertilizer used in previous 12 months: _____

NOTE: Changes in nutrient management plans or other major modifications may require the submission of the 1) application to NDEE, 2) the appropriate application fee, and **3) Departmental approval prior to any changes.**

Crop Available Nitrogen Calculations

N Budget Records

	a. Site, Crop and Yield Goal	b. Soil Test N, ppm	c. Proposed N-rate*	d. NH_4-N Content †		e. Availablity Factor (see I in figure below)	f. Available NH_4-N (d X e)	g. Organic-N Content †	h. Availablity Factor (see II in figure below)	i. Available Organic-N (g X h)	j. N Available from Manure (f + i)	k. Application rate needed to meet N need (c / j)		l. Actual Application Rate	m. Actual Manure N Applied (l X j)	n. Commercial N applied ‡	o. Irrigation N applied ‡	p. Other N applied ‡	q. Total N applied (m + n + o + p)	q. Actual Yield
Ex.	Home 1/4 Corn, 200 bu	15	100	4.8	lb/ton lb/1000 gal lb/ac-in	0.5	2.4	16.4	0.25	4.1	6.5	15	ton/ac 1000 gal/ac ac-in/ac	12	78	0	20	0	98	215
1					lb/ton lb/1000 gal lb/ac-in								ton/ac 1000 gal/ac ac-in/ac							
2					lb/ton lb/1000 gal lb/ac-in								ton/ac 1000 gal/ac ac-in/ac							
3					lb/ton lb/1000 gal lb/ac-in								ton/ac 1000 gal/ac ac-in/ac							
4					lb/ton lb/1000 gal lb/ac-in								ton/ac 1000 gal/ac ac-in/ac							
5					lb/ton lb/1000 gal lb/ac-in								ton/ac 1000 gal/ac ac-in/ac							

* This number should include all sources of N in lb/acre. Guidelines for fertilizer rates can be found in UNL publications listed on the manure resources page at go.unl.edu/manurepubs.
† Use "as is" basis from manure analysis. Units should be selected in NH_4-N column and used throughout the table.
‡ Actual manure application rates should be adjusted for these N applications.

Availability Factors for Manure Nitrogen

Total Manure Nitrogen

Urine

I. Ammonium-N (NH_4-N) Available this Year

Sidedress application[1]	
Incorporated	1.0
Sprinkler Irrigation	0.5

Preplant application &	
Not Incorporated	0.0

Preplant application & Incorporated[1]			
Immediately		0.95	
One day later	0.50*	0.70†	0.70‡
Two days later	0.25*	0.55†	0.45‡
Three days later	0.15*	0.45†	0.40‡
7 or more days later	0.00*	0.40†	0.00‡

** Solid Manure*
† Liquid Manure Applied when Air Temp is at or below 50° F
‡ Liquid Manure Applied when Air Temp is above 50° F

Feces

II. Organic-N Available this Year[2]

Beef/Dairy	
Solid (e.g. feedlot)	0.25
Stored Liquid	0.35
Compost	0.15

Swine	
Fresh	0.5
Stored Liquid	0.35

Poultry	
Deep Pit	0.45
Solid with litter	0.30
Solid without litter	0.35

Next year	0.15
2 years from now	0.07
3 years from now	0.04

[1] Incorporation can be accomplished by tillage or rainfall of one-half inch or greater.
[2] Organic-N availability assumes spring seeded crops such as corn and soybeans. For fall seeded crops such as wheat, multiply organic-N availability factor by 0.7.

Future N Available

	r. Next Year (l x g x 0.15)	s. 2 years from now (l x g x 0.07)	t. 3 years from now (l x g x 0.04)
Ex.	30	14	8
1			
2			
3			
4			
5			

Nebraska Extension

ANIMAL MANURE MANAGEMENT TEAM

Rick Koelsch
Livestock Environmental Engineer

402-472-3935
rkoelsch1@unl.edu

Rick Stowell
Extension Engineer – Animal Environment

402-472-3912
Rick.Stowell@unl.edu

Amy Schmidt
Livestock Bioenvironmental Engineer

402-472-0877
aschmidt@unl.edu

Javed Iqbal
Nutrient Management and Water Quality Specialist

402-472-2811
jiqbal2@unl.edu

Leslie Johnson
Animal Manure Management Project Coordinator

402-584-3818
Leslie.Johnson@unl.edu

Todd Whitney
Extension Educator

308-995-4222
twhitney3@unl.edu

Aaron Nygren
Extension Educator

402-352-3821
anygren2@unl.edu

Brad Schick
Extension Educator

308-536-2691
Brad.Schick@unl.edu

Michael Sindelar
Extension Educator

402-762-3644
msindelar2@unl.edu

Mara Zelt
Biological Systems Engineering

402-472-1413
mzelt2@unl.edu

Find us at: manure.unl.edu

Need help from the Nebraska Department of Environment and Energy (NDEE)? Contact them at:

Lincoln 402-471-2186 Holdrege 308-991-1780 North Platte 308-530-0874 Scottsbluff 308-765-9293

This publication was funded in part by the Alliiance for the Future of Agriculture in Nebraska, Nebraska Cattlemen, Nebraska Poultry Industries, Nebraska Pork Producers Association, Nebraska Corn Board, Nebraska State Dairy Association, and Nebraska Soybean Board.

EXTENSION

I AM A FAN www.a-fan.org The Alliance for the Future of Agriculture in Nebraska

NEBRASKA CATTLEMEN

Nebraska Poultry Industries

NEBRASKA PORK PRODUCERS ASSOCIATION NE Pork WWW.NEPORK.ORG

Nebraska Corn Board

NSDA NEBRASKA STATE DAIRY ASSOCIATION

NEBRASKA SOYBEAN BOARD