

# Comprehensive Nutrient Management Plan

The Comprehensive Nutrient Management Plan (CNMP) is an important part of the conservation management system (CMS) for your Animal Feeding Operation (AFO). This CNMP documents the planning decisions and operation and maintenance for the animal feeding operation. It includes background information and provides guidance, reference information and Web-based sites where up-to-date information can be obtained. This document shall remain in the possession of the producer/landowner.

**Operation Identification:** Farm Inc c/o  
Address  
City, State, Zipcode  
Telephone: (307)

**Plan Period:** January 7, 2007 – December 31, 2007

## Approved Conservation Planner and Certified CNMP Specialist

As an Approved Conservation Planner, I certify that I have reviewed the *Nutrient Management Plan* documents for technical adequacy and that the elements of the documents are technically compatible, reasonable and can be implemented.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name and Title:  
Address: Telephone: (307)

## Owner/Operator

As the owner/operator of this CNMP, I, as the decision maker, have been involved in the planning process and agree that the items/practices listed in each element of the CNMP are needed. I understand that I am responsible for keeping all the necessary records associated with the implementation of this CNMP.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## FARM SUMMARY

Farms, Inc. is located approximately 12 miles southwest of Town, Wyoming. The Feedlot is approximately 2 miles west of Town, WY and 1/8 of a mile from the River. The annual rainfall is between 5-9 inches.

The Feedlot has the capacity of 7000 beef cattle. The feedlot has never reached capacity and for several years has averaged the numbers of 2006. Cattle Inventory for 2006 was 945 weaned calves averaging 600 pounds, 235 beef cows averaging 1200 pounds, and 50 beef bulls averaging 1400 pounds for 210 days (7 months) mid October to mid May. At this time there are no plans to expand the numbers.

The mortality rate varies as at times animals arrive in ill health. All dead animals are removed from the lot with 48 hours and taken to the local landfill.

Soils on the irrigated cropland and hayland consist primarily of sandy loams , 0-8% slopes, and loam, 0-6 % slope. Both soils are well drained and have an available water capacity in the top five feet of 6.9". First is 35% of this complex and has the limitations of bedrock at 20-40 inches (available water holding capacity of 4.5") and a salinity factor of 2-4 mmhos. Soil complex, 1-15% slopes runs randomly through the area. Third soil is 40% of the complex and has an abrupt textural change of gravelly coarse sand at 27-40 inches in the soil profile. This limits the available water holding capacity to 5". The nearest surface water is River located to the south approximately 1/8 of a mile (660 feet). Elevation at the farmstead is 5000 ft.

Manure from the feeding operation is cleaned and stored next to the pens each spring. The Manure was spread and incorporated within 3 days in 2005 and the same in 2006. Manure storage has built up from several years of previous production and no utilization. The storage is not posing "an unacceptable condition" but the potential is there. Farm Inc. will actively pursue getting rid of the storage in the next few years so the operation is able to utilize most of the storage each year. Two retention ponds were installed to collect the 25 years, 24 hour event. There is an 8 feet berm to the south of the operation on the down gradient side of the pens and above the River. There is a 4 feet berm on the north side of the Feedlot also to divert clean water. As of now, there is nothing in the retention ponds. Liquid wastes will be manure tested. Liquid wastes will be pumped out within a short period of time and applied uniformly to fields north of the Feedlot. An estimated nutrient management plan was developed to show the correct utilization of the liquid waste.

Manure tests are done annually and within 60 days of an application. One soil test had an excessive level of salts 2.6 mmhos—this wasn't representative but from a localized problem area. Soil test (less than one foot) should be done on every 40 acres on similar soils, crop rotations, and nutrient applications. A separate soil test is necessary for the fields that have had a manure application within the last two years. Soil tests are taken from representative sites, ignoring poor spots, high spots and low spots in the field. A separate soil sample is taken when areas of concern are noted. The availability of nutrients in manure varies with climate conditions. An environmental assessment, the Phosphorus Index, is completed prior to any manure applications to calculate whether the application will be Nitrogen-based or Phosphorus-based. In most cases, the application rate has been a Nitrogen-based rate.

Much of the Farm Inc crop acres are leased land. The fields farmed each year vary when leases are terminated and others are started. Cropped acres exceed 800 acres and the crop rotation is generally 5-7 years of alfalfa with corn silage, sugarbeets and barley annually planted 3-4 years in the rotation. Sugar beets and malt barley are contracted and those numbers vary each year. Sugarbeets and barley quality is an important concern. Sugar beet petiole samples are taken mid season and a commercial fertilizer is applied to meet the crop needs. Farm Inc crop acres average -- 400 acres of Sugar beets, 200 acres of Corn silage, 20 acres of Barley, 200 acres of alfalfa hay, and 35 acres of grass hay.

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## Emergency Response Plan

### In Case of an Emergency Storage Facility Spill, Leak or Failure

#### Implement the following first containment steps:

- Stop all other activities to address the spill.
- Use skid loader or tractor with blade to contain or divert spill or leak, if possible.
- Call for help and excavator if needed.
- Complete the clean-up and repair the necessary components.
- Assess the extent of the emergency and request additional help if needed.

### In Case of an Emergency Spill, Leak or Failure During Transport or Land Application

#### Implement the following first containment steps:

- Stop all other activities to address the spill.
- Call for help if needed.
- If the spill posed a hazard to local traffic, call for local traffic control assistance and clear the road and roadside of spilled material.
- Contain the spill or runoff from entering surface waters using straw bales, saw dust, soil or other appropriate materials.
- If flow is coming from a tile, plug the tile with a tile plug immediately.
- Assess the extent of the emergency and request additional help if needed.

#### Emergency Contacts

Department / Agency	Phone Number
County Fire Dept	(307)
Rescue Services	911
County Sheriff Dept	(307)

#### Available equipment/supplies for responding to emergency

Equipment Type	Contact Person	Phone Number
Tractor with Loader		(307)

#### Contacts to be made by the owner or operator within 24 hours

Organization	Phone Number
EPA Emergency Spill Hotline	(800) 424-8802 EPA Region 8 (303) 293-1788
WY DEQ	(307) 777-7781
County Health Department	(307)
Wind River Environmental Quality Commission	(307) 332-3164

**Plan for Catastrophic Death Animal Disposal**

The following table describes how you plan to handle and dispose of catastrophic loss of animals in a manner that protects surface and ground water quality. You must follow all national, state and local laws, regulations and guidelines that protect soil, water, air, plants, animals and human health. Contact telephone numbers above immediately.


**Section 1. Background and Site Information**

**1.1. Resource Concerns**

The CNMP is designed to address, at a minimum, the soil erosion and water quality concerns on your operation. The following soil and water quality concerns have been identified on your farm.

Soil Quality Concerns		Water Quality Concerns		Other Concerns	
	Ephemeral Gully Erosion		Nutrients in Groundwater		Regulations
	Gully Erosion	x	Facility Wastewater Runoff	x	Air Quality; Odors, Ozone
	Sheet and Rill Erosion	x	Manure Runoff (Field Application)	x	Energy Reduction; Minimize Nutrient Costs using manure to replace commercial fertilizer.
	Stream/Ditchbank Erosion	x	Manure Runoff (From Facilities)		Neighbor Relations, Aesthetics
		x	Nutrients in Surface Water		Maximize Nutrient Utilization, Profitability
			Pesticides in Groundwater		Time and Acres Available for Manure Application
			Pesticides in Surface Water		Soil Compaction
		x	Silage Leachate		

**1.2. Aerial photo or map(s) with legal descriptions, field (name or number), acres**

- Identify surface waters (irrigation canals/ditches, riparian areas, wetlands, ponds, rivers, domestic well)

- **Production Areas – Animal confinement area – open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milk rooms, milk centers, cow yards, barn yards, medication pens, walkers, animal walkways, and stables. Manure Storage areas – lagoons, runoff ponds, storage sheds, stockpiles, pit storages, liquid impoundments, static piles, and composting piles. Raw materials storage area – feed silos, silage bunkers, bedding materials. Waste containment area- settling basins, any area used in the storage, handling, treatment or disposal of mortalities.**
- **Land application area (acres) all areas that may receive manure, litter and waste water during this year**
- **Identify filter strips or setback areas**
- **Identify land you lease and life of lease – you operate but owned by another**
- **Identify other land that you apply manure to but owned / operated by others**

## **Section 2. NRCS Conservation Plan (Land Treatment and Farm Headquarters)** **(Optional) NRCS Conservation Plan of Planned Conservation Practices & Alternatives**

## **Section 3. Manure and Wastewater Handling and Storage** **(See Engineering Design(s))**

### **3.1. Manure Storage**

\_\_\_\_\_ Year

Storage	Year	Type of Storage	Pumpable or Spreadable Capacity	Annual Manure Produced* in a Year Cu ft/33 = Tons	Maximum Days Of Storage Not to exceed 356 days
Open Lot	2006	Stockpile + Bedding	3992 Tons*	3992Tons	210 days
West Pond	2006	25 yr 24 hour storm Retention Pond	2.12 acre feet	Zero-No surface run off	
East Pond	2006	25 yr 24 hour storm Retention Pond	1.31 acre feet	Zero-No surface run off	

\* Attach WY-ECS=45A, WY-ECS-45B, and Manure production computer worksheet 2.51 if needed

### 3.2. Animal Inventory

\_\_\_\_\_ Year

Animal Group	Type or Production Phase	Number of Animals	Average Weight (Lbs)	Confinement Period	Storage Where Manure Will Be Stored
Beef Feeder Calves	Beef feeder calves	945	600	Mid October-Mid May	Lot
Beef feedlot	Fatten bulls	50	1400		Lot
Beef feedlot	Fatten cows	234	1200		Lot

- (1) Number of Animals is the average number of animals that are present in the facility at any one time.
- (2) Manure production computer 2.51 should be completed for each multiple age groups.

### 3.3. Mortality Management

To decrease non-point source pollution of surface and ground water resources, reduce the impact of odors that result from improperly handled animal mortality, and decrease the likelihood of the spread of disease or other pathogens, approved disposal methods should be implemented in the handling of normal mortality losses.

**COUNTY or TRIBAL**

Follow County or Wind River Environmental Quality Commission rules/regulations for animal disposal.

Example: Do not dispose of the animal in water drainages, and if an animal is disposed in a way that others may deem unacceptable, the animal disposal method could result in a nuisance violation.

**STATE**

Wyoming Department of Environmental Quality (DEQ) rules & regulations for animal disposal within 48 hours. (Wyoming Statute 35-10-104)

1. Operator may bury the animal on their property provided the following criteria are met: a minimum of two feet of cover and cannot be in contact with groundwater.
2. Operator may haul the animal to a disposal area on their property provided it is at least ½ mile from human habitation, and cannot be in contact with surface water.
3. Dead animals from animal operations are considered “trade wastes”. Trade wastes from any industry may not be burned as a method of removal or disposal unless the operator has an air quality permit allowing them to burn trade wastes as a disposal method and the operator has a licensed incinerator in which to burn the trade waste.

**CITY**

Animals may be taken to city landfills.

### Planned Method of Disposal

Type of Livestock	Weight of Livestock	Number of Mortalities	Disposal Method

## Section 4. Soil and Environmental Risk Assessment

Complete these tables for all fields nutrients are applied to:

### 4.1. General Soil Information Soil Report: Non-Technical Soil Description Soils Report

Field	Map Unit old –new symbol	Soil Component Name	Surface Texture	Slope Range (%)	Water Table* (in.)	Drainage Class	Available Water Holding Capacity Top 5 feet (in)	Permeability	Salinity mmhos/cm
	218-003	Griffy-Saddle-Wallson	Sandy loam	0-8%	NA-none	Well drained	6.9	Moderate	Wallson 2.0-4.0
4	e11-097	Ethete	Loam	0-6%	NA-none	Very deep	7.0	Moderate	
	3ell - 086	Ethete-Emblem	Loam	1-15%	NA-none	Well drained	9.2	Moderate	
	205-006	Youngston-Lostwells	Loam	1-3%	NA-none	Well drained	12.0	Moderate	Youngston 2.0-8.0
	301-005	Binton	Silt Loam	1-3%	NA-none	Well drained	11.7	Moderate	

\* **NA=No water table** Coarse textured soils are sands, loamy sands, sandy loams. **Medium-textured soils** are silts, silt loams, loams, sandy clay loams. **Fine textured** are sandy clays, clay loams, silty clay loams, silty clays, and clays.

### 4.2. Environmental Risk Assessment

\_\_\_\_\_ Year

#### Nitrogen Leaching Index – Agronomy Note 25 (> 50# N of agronomic rate is applied and/or Soil test N >25 ppm)

Field	Soil Test N (ppm)	Nitrogen Application Rate	Net Score	Risk	Pounds of Nitrogen applied over agronomic rate.

### 4.3 Environmental Risk Assessment

\_\_\_\_\_ Year

#### Wyoming Phosphorus Index – Agronomy Note 15 (Mandatory if manure is applied and/or soil test P >50 ppm.)

Field	Soil Test P (ppm)	P <sub>2</sub> O <sub>5</sub> Application Rate	Net Score	Risk	Nitrogen or Phosphorus-Based Application Rate
4	22	12Ton x 17# = #204	34	Medium	Nitrogen - Based application rate



## Section 5. Nutrient Management

### 5.1. Annual Soil Test Data

\_\_\_\_\_ Year

Field	Test Year	NO <sub>3</sub> -N (ppm)	P	K	Mg	Ca	Na	Units	Soil pH	OM (%)	CEC (meq/100g)	P Test Used	EC (mmhos/cm)
4 --20ac	3/2006	10	39	225				ppm	7.7	1.6	18.1	Olsen	1.7

### 5.2. Annual Manure Nutrient Analysis

\_\_\_\_\_ Year

Manure Source	Dry Matter (%)	Total N	Organic N	NH <sub>4</sub> -N	NO <sub>3</sub> -N	Total P <sub>2</sub> O <sub>5</sub>	Total K <sub>2</sub> O	Max. Avail. N	Avail. P <sub>2</sub> O <sub>5</sub>	Avail. K <sub>2</sub> O	Units	Analysis Source	Date of Most Recent Analysis
Lot	69.7	28.0	22.23	1.5	4.39	16.45	45.17	8.8	9.87	36	Lb/Ton	University's Lab	11/2006

(1) (NO<sub>3</sub>-N avg 1.5) + (Ammonia N is 1.5 avg) + Organic N = Total N

(2) Wyoming assumes that 40% of the organic manure nitrogen, 60% of manure phosphorus and 80% of manure potassium is crop available.

**Suggestions for manure testing:** Annually manure sample as close to the time of application as practical and at least 60 days before application. For each manure pile or lagoon, get 6 to 20 subsamples and mix them together. If you cannot get the sample to the lab immediately, store it in a freezer until you can deliver it. The analysis should include moisture content, total nitrogen (TKN, NH<sub>3</sub>-N, Organic N, NO<sub>3</sub>-N), phosphorus, and potassium, and organic matter. Ammonia should also be included for liquid manures, but is usually not necessary for solid manures.

Manure and process wastewater shall not be applied to frozen, snow-covered, or saturated soil.

**Suggestions for soil testing:** Soil sample annually on every 20 acres for each different soil type, or crop. Avoid the field edges, low or high areas of a field. Use an accredited laboratory, soil test P with the (bicarbonate) Olsen method if soil pH is > 7.3. Air-dry the soil sample prior to sending it. Get a separate sample for fields that have had manure applied in the last two years.

**5.3A. Whole Farm Nutrient Use Summary Manure Applications Records are in Section 6.6 and 6.7**

**Planned Crops and Recommendations based on Land Grant University references**

\_\_\_\_\_ Crop Year:

Field	Acres	Crop	Avg Yield	Recommended N & P & K -----lb/acre-----			Manure Application Rate tons/acre or -1000 gal/acre- 20 Ton (12-15-39) <sup>2</sup>	Manure Applied Per Field <sup>1</sup> -- tons/gal— 20 Ton x 40 ac	COMMERICAL FERTILIZER 100# (11-52-0) MAP 200# (46-0-0) Urea	DATE
				N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O				
4 West	28.0	Sugar beets	22 Ton	123	26 <sup>3</sup>	0	12T(11-22-39) August 2005	336 Ton	102#(46-0-0)=47#N 54# (46-0-0) =23#N	3/06 6/06
<b>Whole Farm Totals</b>										

<sup>1</sup>Manure utilization is calculated by multiplying field size (acres) by manure application rate.

<sup>2</sup>WY-ECS-45a, b Step 6,8 (12-22-39) First year availability for Nitrogen is 45%, Phosphorus is 90%, Potassium is 95% (AWMFH Table 11-9) & CSU Data.

12 Ton x 11# N = 132# N x .45 = 59# N, 12 Ton x 22# P = 264# P x .90 = 238# P<sub>2</sub>O<sub>5</sub>, and 12 Ton x 39# K = 468# K x .95 = 444 # K<sub>2</sub>O available.

Potassium is naturally high in western soils but most is not readily available to the plant. Manure applications will add high levels of potassium so a buildup of nutrients and salt could be noted as plants uptake high amounts of potassium and could possibly causing a toxicity in cattle. Since manure application may not cover nutrients, a commercial fertilizer application would be necessary to meet crop needs. If 54# of Nitrogen is still needed and you plan to apply urea (46-0-0), 118# of urea would need to be applied to meet crop needs. 54#/.46=118#

<sup>3</sup>A manure application of 12 Ton (11-22-39) will provide Phosphorus as 12 Ton has 22# =264 # x .60% availability = 158# of P<sub>2</sub>O<sub>5</sub>. This excess of P is acceptable if the Phosphorus Index is Nitrogen-based; a Medium or Low Index. WY-ECS-44 shows the nutrient balance with commercial fertilizer too.

**5.3B FARM INC -- CROP SUMMARY 853 acres**

**2006 Crop Year** – 400 acres Sugarbeets, 200 acres Alfalfa Hay, 200 acres Corn silage, 20 acres Wheat, 35 acres Grass Hay (75% grass, 25% alfalfa)

Field Name Number	Acres	Crop	Crop Yield	Field Name Number	Acres	Crop	Crop Yield
1	19.4	Alfalfa	4.5 Ton	14	68.	Alfalfa	4.5 Ton
2	35.0	Beets	4.5 Ton	15	65.	Beets	22 Ton
3	32.4	Corn silage	50 bu	16	34.7	Alfalfa	4.5 Ton

**2007 Crop Year** - acres Sugarbeets, acres Alfalfa Hay, acres Corn silage, acres Wheat, acres Grass Hay (75% grass, 25% alfalfa)

Field Name Number	Acres	Crop	Crop Yield	Field Name Number	Acres	Crop	Crop Yield
1	19.4			14	68.		
2	35.0			15	65.		
3	32.4			16	34.7		

### 5.4 Manure Application Setback Distances

Feature	Distance (feet)
<b>Down-gradient surface waters of State (non-vegetative buffer—bare ground) Including irrigation ditches</b>	<b>100</b>
<b>Down-gradient surface waters of State (vegetative buffer) Including irrigation ditches</b>	<b>35</b>
Drinking water well or intake (non-vegetative buffer—bare ground)	100
Drinking water well or intake (vegetative buffer)	35
Stream (non-vegetative buffer—bare ground)	100
Stream (vegetative buffer)	35
Property boundary	0
Lake (non-vegetative buffer—bare ground)	100
Lake (vegetative buffer)	35
<b>Conduits to surface waters of State (non-vegetative buffer—bare ground) Including irrigation ditches</b>	<b>100</b>
<b>Conduits to surface waters of State (vegetative buffer) Including irrigation ditches</b>	<b>35</b>
Sinkhole (non-vegetative buffer—bare ground)	100
Sinkhole (vegetative buffer)	35

Source: Code of Federal Regulations (40 CFR 412.4)

### 5.5 Field Information and Setbacks

Field ID	Total Acres	Spread-able Acres	FSA Farm	FSA Tract	Predominant Soil Type	Slope (%)	Manure Application Setback(s) (ft)
all	169.6	169.6			097 Ethete		Manure will not be spread within 35 ft from irrigation canals

**5.6. On-site Land Application Recordkeeping**      **ATTACH** annual Soil and Manure Analysis Reports      \_\_\_\_\_ Year

Date	Field	Crop	Applied Acres	Manure Source	Litter Ver. 2.51	Process Waste water	Method of Application	Rate/Acre	Equipment	Days to Incorporate	Loads, Speed or Time
Aug-23 2006	4 East	Sugar beets	28.0	Lot	In Manure	n/a	Broadcast	12.0 Tons	Solid spreader	7	132 Lds

**5.7. Manure Application Climate Record Recordkeeping**      \_\_\_\_\_ Year

App. #	Hauler's Name (1)	Ground Cover % (2)	Soil Condition (3)	Air Temp. (4)	Wind Speed (5)	Wind Dir. (6)	Weather (7)	Rain Before (8)	Rain After (9)	Notes/Comments Do not apply to frozen or snow covered land. Do not apply While it is raining or snowing.
1	Driver name	30%	Dry	40	10	N	P Cloudy	.20"	.55"	small storm events 3/8/05-3/23/05 132 loads
2										
3										
4										
5										

- 1) Name or initials of the person who applied the manure. (2) Percent residue or ground cover at time of application.
- (3) Soil condition at time of application: Dry, Firm, Wet, Muddy (4) Air temperature at time of application.
- (5) Wind speed at time of application: Calm (0-2 mph), Light (2-5 mph), Breezy (5-15 mph), Windy (>15 mph).
- (6) Wind direction at time of application: N, NE, E, SE, S, SW, W, NW.
- (7) Weather condition at time of application: Sunny, Partly Cloudy, Cloudy
- (8) Amount of rainfall during the 24 hours prior to application. (9) Amount of rainfall during the 24 hours after application.

**5.8. Commercial Fertilizer and Irrigation Water Nitrate Applications**      \_\_\_\_\_ Crop Year

Month-Year	Field	Crop	Fertilizer Analysis	Irrigation Water Analysis	Application Method	Material Rate/Acre	Acres Covered.	Area of Field	Total Material Applied	N (Lbs/A)	P <sub>2</sub> O <sub>5</sub> (Lbs/A)	K <sub>2</sub> O (Lbs/A)
Apr. 2006	4East	Sugar beets	11-52-0 46-0-0	none	Surface broadcast/incorp <2 days; Fertigation side dress mid season		48.0	Entire	100# (11-52-) 250# (46-0-0)	126	52	0

- (1) With commercial fertilizers, enter the analysis in the form of N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O (examples: Urea 46-0-0, Monoammonium phosphate is 11-52-0).
- (2) With irrigation water, enter the nitrate concentration in ppm.

## Section 6. Feed Management

Dairy nutrition self-assessment: Circle appropriate answer or delete incorrect one.

Feeding Practices	Reduces N Excretion	Reduces P Excretion	Reduces Purchased Feed Used	Is this option currently used on your operation?	Is this a viable option for future adoption?
· Group cattle by milk production or lactation stage and formulate multiple rations	*	*		Yes No	Yes No
· Feed ration with % P of 0.49% for fresh cows (first 3 weeks)		*		Yes No	Yes No
· Feed ration with % P of 0.28%-0.41% for early to mid-lactation cows		*		Yes No	Yes No
· Feed ration with 17% CP and 40% RUP for fresh cows	*			Yes No	Yes No
· Feed ration with 16%-18% CP and 36%-38% RUP for early to mid-lactation cows	*			Yes No	Yes No
· Feed ration with 14% CP and 30% RUP for late lactation cows	*			Yes No	Yes No
· Improve quality of home-grown feeds			*	Yes No	Yes No
· Increase dry matter intake	*		*	Yes No	Yes No
· Monitor MUN (should be between 12 and 18 mg/dl)	*			Yes No	Yes No
· Blend legume and corn silage in ration to meet protein requirements	*			Yes No	Yes No
· Test all forages and feed ingredients and adjust rations accordingly	*	*	*	Yes No	Yes No

CP=crude protein; RUP=rumen undegradable protein (given as % of total CP); MUN=milk urea nitrogen.

**Beef nutrition self-assessment: Circle appropriate answer or delete incorrect one.**

<b>Feeding Practices</b>	<b>Reduces N Excretion</b>	<b>Reduces P Excretion</b>	<b>Reduces Purchased Feed Used</b>	<b>Is this option currently used on your operation?</b>	<b>Is this a viable option for future adoption?</b>
· Group cattle by weight and class and formulate multiple rations	<b>*</b>	<b>*</b>		<b>Yes No</b>	<b>Yes No</b>
· Feed ration 11-12% CP, 29% RUP for growing/finishing	<b>*</b>			<b>Yes No</b>	<b>Yes No</b>
· Feed phosphorus according to Average Daily Gain: .5 lb = .12%; .75 lb = .14%; 1.0 lb = .16%; 1.5 lb = .17%; 2.0 lb = .18%; 2.5 lb = .21%; 3.0 lb = .24%; 3.5 lb = .28%; 4.0 lb = .34%		<b>*</b>		<b>Yes No</b>	<b>Yes No</b>
· Feed ration with 9% CP and 30% RUP for late lactation cows and phosphorus content = .12 - .21% depending on stage of life	<b>*</b>			<b>Yes No</b>	<b>Yes No</b>
· Improve quality of home-grown feeds	<b>*</b>	<b>*</b>	<b>*</b>	<b>Yes No</b>	<b>Yes No</b>
· Increase dry matter intake	<b>*</b>		<b>*</b>	<b>Yes No</b>	<b>Yes No</b>
· Blend legume and corn silage in ration to meet protein requirements	<b>*</b>			<b>Yes No</b>	<b>Yes No</b>
· Test all forages and feed ingredients and adjust rations accordingly	<b>*</b>	<b>*</b>	<b>*</b>	<b>Yes No</b>	<b>Yes No</b>

CP=crude protein; RUP=rumen undegradable protein (given as % of total CP).

Information in this section was modified from Livestock and Poultry Environmental Stewardship Program, Lesson 12, Feeding Dairy Cows to Reduce Nitrogen, Phosphorus, and Potassium Excretion into the Environment, by Rick Grant of University of Nebraska.

## Section 7. Other Utilization Options Composting

## Section 8. Recordkeeping Forms

### 8.1. Manure Exports off the Farm *Manure test was given to Receiver* \_\_\_\_\_ Year

Manure Source	Date	Amount Gal or Ton	Receiving Operation	Address	Contact	Phone
Lot	Planned for April 07	12 Ton /ac 40 acres	Jim Smith	3856 Salisbury Road	Jim Smith	(xxx) 333-3333

### 8.2. Discharge(s) Summary CNMP 8.2 \_\_\_\_\_ Year

Manure Source	Date	Amount Gal or Ton	Manure Destination
		00	

### 8.3. Manure Imports onto the Farm \_\_\_\_\_ Year

Manure's Animal Type and Form	Date	Amount Gal or Ton	Originating Operation	Address	Contact	Phone
		00				

### 8.4. Inspection of Equipment/Monitoring Records \_\_\_\_\_ Year

Date and Time	Activity Description	Operator/ Inspector	Deficiencies Noted Documented in Diary	Corrective Actions Take and Date
2006,7	Daily	Operator	No Precip, Pond Height, Discharge	None needed
2006,7	BiMonthly	Operator	After rainfall events	None needed

\*\*If yes, you need to notify the DEQ and anyone downstream that may have been affected by the discharge. Wyoming DEQ Water Quality Rules: Inspections -- Chapter 2 Appendix G (m) (ii) (C) (I)



**8.5. Operational Changes Due to Soil Tests, Land Leases, Monitoring Records ... for 2007 Year**

Due to drought, irrigation water delivery uncertain, manure applications will be limited to cropped areas.

**RECORDKEEPING AND TESTING**

***Maintain records on-site for five years  
Annual soil and manure analysis are***

***required.***

Is a written Operation and Maintenance (O & M) plan maintained and available to key employees on the following:

- Manure storage, operation, and maintenance?  Yes  No
- How to inspect storage facilities?  Yes  No
- There is an emergency response plan?  Yes  No
- Manure equipment is calibration prior to application?  Yes  No

**8.6 ANNUAL REPORT**

Submit to: **Wyoming Department of Environmental Quality  
WYPDES Program, Water Quality Division @ Roland Peterson (307) 777-7090  
Herschler Building, 4 West 122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002**

- a.  Number and type of animals: monthly average, total processed
- b.  Estimated amount of total manure, litter and process wastewater generated by the CAFO in the previous 12 months (tons/gallons)
- c.  Estimated amount of total manure, litter, and process waste water transferred to other person(s) by the CAFO in the previous 12 months (tons/gallons)
- d.  On-site land application records: Date, Total acres receiving each application; Location of application site(s), Crop in production, Method Application, Manure & Process wastewater applied at each site (gal/ac or tons/ac)
- e.  Manure tests results ( Attach lab report);
- f.  Soil test results (Attach lab report);
- g.  Operational changes for coming year based on test results;
- h.  Summary of any discharges that occurred with in the last 12 months

No discharge of wastewater to a surface water of the state except during a storm event which exceeds the 25 year/ 24 hour storm.

## 8.7 FARM Crop Nutrient Recommendations Planned for Crop Year 2007

### FARM Crop Nutrient Recommendations

#### SOLID WASTE

Crop Year 2007

The solid manure analysis from the feedlot was taken on 11/17/06

NO<sub>3</sub>-N – 4.39 lbs/ton Nitrate Nitrogen

NH<sub>3</sub>-N – 1.40 lbs/ton Ammonia Nitrogen - estimated

N --23.03 lbs/ton Organic Nitrogen

P<sub>2</sub>O<sub>5</sub> –16.45 lbs/ton Oxidized Phosphorus

K<sub>2</sub>O – 45.17 lbs/ton Oxidized Potassium

Soil test was taken November 16, 2006 to a depth less than one foot

Organic Matter was 1.48%

Nitrate N 7 ppm

Phosphorus 22 ppm

Potassium 145 ppm

Manure application was being applied on the loam, a medium textured soil.

Using the University of Wyoming's "Guide to Wyoming Fertilizer Recommendations" B-1045, the following crop nutrient needs were determined.

#### Farm Inc Crop Inventory

**Corn silage yield 22 Ton, Alfalfa 4.5 ton, Barley Hay 120 bu, Sugar beets 22Ton**

The University's Guide gave recommendations for a 30 Ton yield of corn, since Farm's yield is less, nitrogen, phosphorus and potassium required will also be less. University's Guide 100 bu yield of barley, since Farms's yield is more, nitrogen, phosphorus and potassium required will also be more.

\*\*\*\*Input these recommendations in Step 10 of WY-ECS-45A,B or Section 1 of WY-ECS-44.

\*\*\*\*\*

**Corn silage** Table B page 21, Organic Matter 1.48%, Nitrate N 7 ppm,

Table 9, page 22 Phosphorus is 22 ppm, and majority of farm is medium textured.

Table 10, page 22 Potassium is 145 ppm

Nitrogen 30 tons-22 tons = 8 tons less      Phosphorus 30 tons – 22 tons = 8 tons less

9# x 8 tons = 72 # less Nitrogen

3# x 8 tons = 24 # less P<sub>2</sub>O<sub>5</sub>

205# - 72# = 133 # N/acre recommended

30-24# = 6 # P<sub>2</sub>O<sub>5</sub> recommended

Potassium >100 = 0

\*\*\*\*\*

**Alfalfa** 80% legume Table 5 page 17, Organic Matter 1.48%, Nitrate N 7 ppm,

Table 6, page 18 Phosphorus is 22 ppm, and majority of farm is medium textured.

Table 7, page 18 Potassium is 145 ppm

Nitrogen 6 tons-4.5 tons = 1.5 tons less

Phosphorus 6 tons – 4.5 tons = 1.5 tons less

40# x 1.5 tons = 60 # less Nitrogen

15# x 1.5 tons = 22.5 # less P<sub>2</sub>O<sub>5</sub>

30# - 60# = (30) # N/acre surplus

25# -22.5# = 2.5 # P<sub>2</sub>O<sub>5</sub> recommended

Potassium >100 = 0

No recommendation of nutrients to be applied.



## Section 9. Online References

### Wyoming Nutrient Management Plan Technical Standards

[http://deq.state.wy.us/wqd/WYPDES\\_Permitting/WYPDES\\_CAFO/Nutrients/4-0944.pdf](http://deq.state.wy.us/wqd/WYPDES_Permitting/WYPDES_CAFO/Nutrients/4-0944.pdf)

### WYDEQ Water Quality Rules and Regulations, Chapter 2, Appendix G Concentrated Animal Feeding Operations (CAFO)

[http://deq.state.wy.us/wqd/WQDrules/Chapter\\_02.pdf](http://deq.state.wy.us/wqd/WQDrules/Chapter_02.pdf)

### Crop Fertilizer Recommendations <http://www.ext.colostate.edu/pubs/crops/>

*CSU Bulletin No. 0.537 Alfalfa & Grass, 0.538 Corn, 0.539 Dry Beans, 0.540 Sorghums, 0.541 Potatoes, 0.534 Spring-Seeded Small Grains, 0.542 Sugar Beets, 0.543 Sunflowers, 0.544 W Wheat*

*University of WY Fertilizer Guide B-1045*

### Manure Equipment Calibration

<http://www.ext.colostate.edu/pubs/livestk/01223.html> for Liquid Manure Application

<http://www.ext.colostate.edu/pubs/crops/00561.html> for Solid Manure Application

### Manure Nutrient Availability

WY USDA-NRCS <http://www.wy.nrcs.usda.gov/> eFOTG (electronic Field Office Technical Guide)  
Section 1, Table of Contents/Agronomy Technical Notice No.10 Univ. of WY Fertilizer Guide B-1045  
Agronomy Tech Note 13 Soil and Manure testing procedures  
Agronomy Tech Note 11 Nutrient Management Balance Jobsheet & Instructions  
Agronomy Tech Note 12 Organic Manure (Solid-A, Liquid-B) Jobsheet & Instructions  
Agronomy Tech Note 19 Nutrient Management Plan, CNMP Components  
Agronomy Tech Note 20, 24 Liquid Manure Application  
Agronomy Tech Note 15 Phosphorus Index  
Agronomy Tech Note 25 Nitrogen Index

Section IV, 590 Nutrient Management Standard, Specification, Job Sheets WY-ECS-44, 45a, 45b  
633 Waste Utilization Standard, Specification

### Best Management Practices for Nitrogen Fertilizer

<http://www.ext.colostate.edu/pubs/crops/xcm172.pdf>

### AWMFH Agricultural Waste Management Field Handbook

<http://www.info.usda.gov/CED/Default.cfm?xSbj=51&xAud=24>