

Comprehensive Nutrient Management Plan

For

Joe Producer

(Producer)

Mystic Place

(County)

EXAMPLE

EXAMPLE

Prepared in Cooperation with the
USDA-Natural Resources Conservation Service

Comprehensive Nutrient Management Plan (CNMP)

Your (CNMP) is a **system approach** to help ensure that both agricultural production goals and natural resource concerns are achieved. The ten elements of a CNMP considered include:

1. Background & Site Information
2. Manure and Wastewater Handling and Storage
3. Farmstead Safety & Security
4. Land Treatment Practices
5. Soil & Risk Assessment Analysis
6. Nutrient Management
7. Feed Management
8. Other Manure and Wastewater Utilization Options
9. Recordkeeping Forms
10. References

Each of these elements are addressed in separate sections in this workbook.

This plan has been developed to assist operators in meeting all applicable local, State and Federal water quality goals and regulations.

**Manure and Nutrient Management Information
is Available Online at**

**[www.sd.nrcs.usda.gov/technical/Nutrient
Management.html](http://www.sd.nrcs.usda.gov/technical/NutrientManagement.html)**



1. Background & Site Information

2. Manure and Wastewater Handling and Storage

3. Farmstead Safety & Security

4. Land Treatment Practices

5. Soil & Risk Assessment Analysis

6. Nutrient Management

7. Feed Management

8. Other Manure and Wastewater Utilization Options

9. Recordkeeping Forms

10. References

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. Refer to the Producer Activity document for information about day-to-day management activities and recordkeeping. Both this document and the Producer Activity document shall remain in the possession of the producer/landowner.

Farm contact information: Joe Producer, 38483 485th Street, Calamityville, SD 48938

Latitude/Longitude: 44 28' 51.4 N; 98 01' 44.5'W

Plan Period: 2012-2016

Animal Type: Beef

Animal Units: 999

Conservation Planner

As a Conservation Planner, I certify that I have reviewed both the Comprehensive Nutrient Management Plan and Producer Nutrient Management Activities documents for technical adequacy and that the elements of the documents are technically compatible, reasonable and can be implemented.

Signature: 
Name: Dan Cleaves
Title:

Date: 6/8/12
Certification Credentials:

Conservation District

The Conservation District has reviewed the CNMP documents and concurs that the plan meets the District's goals.

Signature: 
Name: Betty Smith
Title:

Date: 6/9/12

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. It is my intention to implement/accomplish this CNMP in a timely manner as described in the plan.

Signature: 
Name: Joe Producer
Title:

Date: 6/5/12

Section 2. Manure and Wastewater Handling and Storage

All components and conservation practices designed for manure/wastewater handling and storage meet current NRCS SD practice standards.

Signature: [Signature]
Name: Justin Milson
Title: Civil Engineer

Date: 6/11/12
Certification Credentials: PE SD

Section 4. Land Treatment

All conservation practices scheduled for implementation are designed according to current NRCS SD practice standards.

Signature: [Signature]
Name: Suzie Lampe
Title: Soil Conservationist

Date: 6/10/12
Certification Credentials:

Section 6. Nutrient Management

The Nutrient Management component of this plan meets the SD Nutrient Management 590 Practice Standard.

Signature: [Signature]
Name: John Lentz
Title: Resource Conservationist

Date: 6/10/12
Certification Credentials:

Section 7. Feed Management (if applicable)

Signature: N/A
Name:
Title:

Date:
Certification Credentials:

Section 8. Other Utilization Options (if applicable)

Signature: N/A
Name:
Title:

Date:
Certification Credentials:

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Section 1

Background & Site Information

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
1.1 General Description of Operation -----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Sampling, Calibration, & Other Statements -----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 Resource Concerns -----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact Information-----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Background and Site Information

1.1 General Description of Operation:

SUMMARY AND DESCRIPTION OF JOB

This design is prepared for an agricultural waste management in Mystic Place County, SD. The system is a confinement building for beef cattle that will replace open lots. The capacity of the barn will be 999 head of cattle with average weights of 900 lbs each. The waste from the cattle and the bedding used in the barn will be stored within the bed pack of the barn and on an outdoor concrete stacking pad. The runoff from the stacking pad will be directed to a vegetative treatment area. The NRCS Job Class for this project was determined as Class IV, based on the number of animals to be housed by the system.

The producer has a 1,105.4 acre cropland base of which 643.8 have been analyzed and fall within current risk assessment thresholds. These fields will receive applications of manure generated from this operation. Using calculations assuming static yields and maximum manure production from the facility it is estimated that the producer will be able to apply manure on these acres for 8 years before reaching the current P threshold of 50 ppm (Olsen). Each fields nutrient status will be monitored via soil testing and application rates will be adjusted accordingly.

DESIGN OBJECTIVE

The design objective is follow NRCS criteria in designing a waste management system for the feeding operation.

BASIS FOR DESIGN

This system was designed to meet the criteria of South Dakota Conservation Practice Standards 313 and the applicable South Dakota Department of Environment and Natural Resources criteria with some exceptions. Reference documents used to design various aspects of the system include the following NRCS material:

- National Engineering Handbook, various parts
- Engineering Field Handbook, various parts
- Animal Waste Management Field Handbook, various parts
- Field Office Technical Guide, various parts
- South Dakota NRCS Conservation Practice Standard 313: Waste Storage Facility
- South Dakota NRCS Conservation Practice Standard 635: Vegetative Treatment Area
- Computer Programs
 - Bedded Pack Barn Spreadsheet
 - Vegetative Treatment Area Spreadsheet

LOCATION AND LAYOUT

This system is located in the NW1/4 of Section 13, T102N R55W in McCook County, South Dakota. This location has longitude and latitude coordinates of 43.64094N and 97.38700 W.

GENERAL BASIC DATA

The existing lots are located on the west side of the farmstead. Runoff from the existing lots trends to the west and enters the West Fork of the Vermillion River. The building that will be constructed will be located on the south side of the farmstead and will require shaping and grading to build up a pad for the building to be constructed on.

HYDROLOGY/HYDRAULICS

The vegetative treatment area was sized using a spreadsheet that considers both a water balance and a nutrient balanced based on the contributing drainage area. For the stacking pad and portion of the feed road that contribute to the runoff that will enter the VTA for this site, the minimum VTA size was determined to be 0.3 acres. The approximate area that is designated as a VTA for this site is 0.43 acres. This VTA will not be shaped or graded but will have a rock spreader installed to facilitate even application of water to the VTA. The sites selected for the building and vegetative treatment area are above the 100 year flood plain, therefore no site specific floodplain determination is required for this site.

FOUNDATION AND EMBANKMENT DESIGN

A soils investigation by Thomas Schumacher, NRCS Soil Scientist, Jason Gilb, NRCS Agronomist, and Justin Bonnema, Agricultural Engineer, on 5/17/2011 indicated that the soils underlying the area of the building and VTA are sandy/gravelly in composition. It was also determined that the soils had a water table at 5' to 7' from the surface. While having a water table this near to the surface is not the preferred condition, it is projected that the water table will be low enough that significant groundwater contamination will not occur. Further, some minor mingling of water with groundwater was determined to be a significantly lower concern than the runoff that currently enters the Vermillion River.

No soil permeability testing was performed as the sand and gravel would not have low enough permeability to facilitate construction of a clay liner. The landowners intend to install a reinforced concrete floor under the building that will be made watertight through the use of manufactured waterstops.

STRUCTURAL DESIGN

In general, the flatwork will be 6" thick slab work with steel reinforcement provided as #4 bars on 18" centers. This steel is based on the temperature and shrinkage requirements as outlined in ACI-318. Waterstops will be installed at all joints in the floor to ensure water tightness is maintained. No walls will be installed on the stacking pad. The structural design of the building, including all supports, footings, and other elements, will be the responsibility of the design engineer that will certify the design adequacy of the building.

ENVIRONMENTAL CONSIDERATIONS

Soil erosion and water pollution will be minimized during construction as mandated in the construction specifications. A stormwater discharge permit for construction will be obtained from the SD DENR prior to construction.

SPECIFICATIONS

Standard South Dakota Construction Specifications will be used.

CONSTRUCTION SCHEDULE

No special problems are foreseen with the construction schedule. Typical time period for construction of a system of this nature is from June through October, based on common weather patterns in South Dakota. The landowner will likely complete this project during the construction season of 2012.

OPERATION AND MAINTENANCE

No special problems are anticipated for O&M. Operation will include cleaning the waste solids out of the building and stacking building as needed. The waste will be applied as specified in the landowner's Nutrient Management Plan.

Maintenance will be performed by the landowner. This maintenance will include checking the structures after major storm events, repair of erosion, periodic maintenance and any other repairs that are needed to ensure proper operation of the system.

CONSTRUCTION REVIEW

The Engineer or an experienced Construction Inspector shall be present during the clay liner installation, prior to and during concrete installation, and during other portions of the work as needed to ensure the work is according to NRCS specifications.

1.2 Sampling, Calibration and Other Statements

Soil Sampling

Soil sampling requires time, effort and a need to follow proper procedures. Fields selected for manure, or any Nitrogen application must be sampled and tested. The basic guidelines are described in the **SD NRCS Nutrient Management (590) Standard** and the **SD-NRCS Fact Sheet 50, "Sampling Soils for Nutrient Management"**.

Manure Sampling

Sampling and laboratory tests are the only means of determining the actual amount of nutrients available in manure. Recommended manure sampling procedures are described in **SD NRCS Nutrient Management (590) Standard and SD-NRCS Fact Sheet 36, "Sampling Manure for Nutrient Management"**. For information on how to interpret lab reports, refer to **SD-NRCS Fact Sheet 38, "Using Manure Analysis Results"**.

Calibrating Manure Spreader Equipment

Equipment calibration is key to knowing the estimated amount of nutrients actually applied. Simple, easy methods are available to calibrate both liquid and solid manure hauling equipment. These methods are described in **SD-NRCS Fact Sheet 43, “Calibrating Manure Spreader Application Rates”**. Manure spreader calibration worksheets are available to record and calculate measurements.

The publications and forms described above are available online at:
http://www.sd.nrcs.usda.gov/technical/Nutrient_Management.html.
Go to the Recordkeeping element on this website.

1.3 Resource Concerns

- 1 Soil Quality Concerns: **The producers wish to improve soil quality by using animal manure to improve both nutrients and organic matter within their crop fields.**

- 2 Water Quality Concerns: **Current feedlot is adjacent to the Muddy River and is currently in a position to cause surface water quality degradation.**

- 3 Other Concerns Addressed: **Economic viability is a concern.**

Contact Information

Producer Name: <u>Joe Producer</u>	Phone: <u>(593) 993-3843</u>
Email: <u>jp@starfire.com</u>	Cell Phone: <u>(593) 333-3920</u>
Address: <u>19238 349 Ave</u>	County: <u>Mystic Place</u>
City: <u>Rockerville</u> State: <u>SD</u>	Zip Code: <u>94039</u>
NMP developed by: <u>John Lentz</u> Date: <u>4/3/12</u>	
Conservation Planner's Name: <u>Jason Gilb</u> Phone: <u>(605) 996-1564 Ext 5</u>	
Field Office/City: <u>Rockerville</u> State: <u>SD</u>	
Engineer's Name: <u>Sammy Sliderule</u> Phone: <u>(589) 949-3393</u>	
Email: <u>sammy.sliderule@sd.usda.gov</u>	Cell Phone: <u>(494) 993-9985</u>
Address: <u>129 East Blackstone Drive</u>	Fax: <u>(589) 949-4449</u>
City: <u>Rocerville</u> State: <u>SD</u>	Zip Code: <u>94039</u>

NUTRIENT MANAGEMENT PLAN INFORMATION

- | | | |
|--|-----------------|-------|
| 1. Type of Livestock | <u>Beef</u> | |
| Animal Units | <u>999</u> | AU's |
| Average Weight | <u>800</u> | lbs |
| 2. Total Number of Acres Included in NMP | <u>1,394.50</u> | acres |
| 3. Will this be a DENR State Permitted Facility? | <u>No</u> | |
| 4. Is there any anticipated funding? (EQIP, 319, none) | <u>EQIP</u> | |

This nutrient management plan was developed based on criteria from the following documents:

- SD DENR General Water Pollution Control Permit for Concentrated Animal Feeding Operations
Sep-03

(Date)
- USDA, Natural Resources Conservation Service (NRCS) Nutrient Management Standard (590)
May-12

(Date)
- County Zoning Ordinance for Animal Feeding Operations As Amended
Mystic Place
4/6/2009

(County)
(Date)

Additional notes:

Best option for contacting producer is via cell phone.

Section 2

Manure and Wastewater Handling and Storage

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
2.1 Map of Headquarters with Proposed System -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.2 Production Area Conservation Practices -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.3 Manure Storage -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.4 Animal Inventory (Use SD-CPA-63) -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.5 Normal Mortality Management -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.6, 2.7, 2.8 Planned Manure Exports, Imports, Transfers -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

2.2 Production Area Conservation Practices

Conservation Practice: 342 - Critical Area Planting

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
		3.8 acres	2012		

Conservation Practice: 313 - Waste Storage Facility (Livestock Confinement, Concrete Floor)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
		999 animal units	2012		

Conservation Practice: 360 - Closure of Waste Impoundment (partial feedlot abandonment)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
		3 acres	2012		

Conservation Practice: 367 - Roofs and Covers (Livestock Roofed Structure)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
		999 animal units	2012		



NO.	ELEV.	BENCH MARK DESCRIPTION
Base 1	1354.17	Top of a steel rebar located approximately 6 feet west and 3 feet north of the end of the existing fence on the west side of the south lot.
CP 1	1365.37	Top of a steel rebar located south of the existing barn apron on the east side of the south feed lot.

PLAN VIEW



File No. 174/12-425-FW
Drawing No. 3 of 5

Designed Justin Bonnema Date 5/11
 Drawn Justin Bonnema 5/11
 Checked _____
 Approved _____

DRAWING INDEX

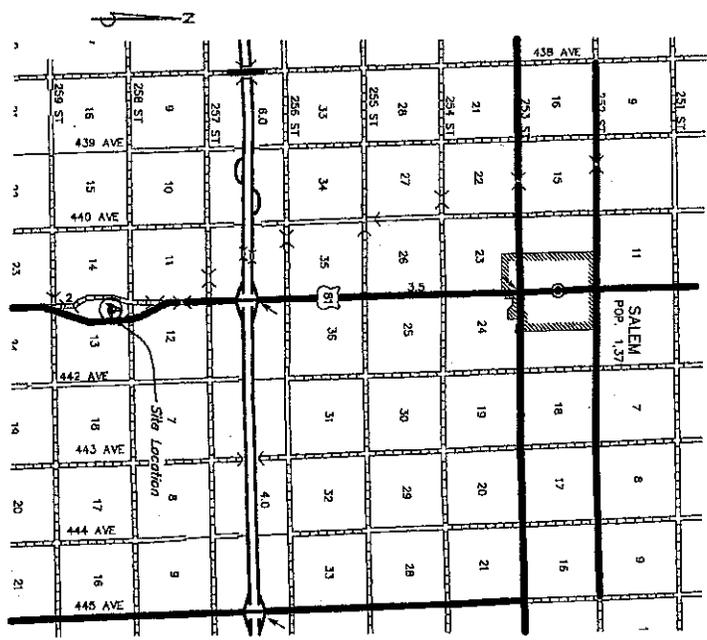
1	Cover Sheet
2	Notes and Information
3	Plan View
4	Details of Vegetated Treatment Area
5	Details of Concrete

NRCS JOB CLASS IV

Designed	Justin Bonnama	Date	12/11
Drawn	Justin Bonnama		12/11
Checked	Joy Cordier-Jensen		1/12
Approved:	<i>[Signature]</i>		1/12

TABLE OF QUANTITIES

Item	Unit	Estimated Quantity	As-Built Quantity
Excavation	cubic yard	1,445	
Earthfill - Class 5	cubic yard	4,269	
Seeding	acre	3.6	
Rocked Structure	each	1	
Reinforced Concrete - Framework w/Understops	cubic yard	922.3	
Fine Gravel or Drainfill	cubic yard	614.8	
Rock Riprap for Level Spreader	cubic yard	11.9	
Geotextile - 8 oz non-woven	sq yd	44.5	
Obstruction Removal - lot abandonment	acre	2.4	



STATEMENT OF COMPLIANCE
 Construction (was) (was not) completed in accordance with approved construction plans and specifications.
 JAA Date



- SD CONSTRUCTION AND MATERIAL SPECIFICATIONS
 SD-1
 SD-2
 SD-3
 SD-4
 SD-5
 SD-6
 SD-7
 SD-8
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 SD-99
 SD-100

NOTE: No excavator may begin any excavation without first notifying the ONE-CALL Notification center at 1-800-781-7474

COVER SHEET



File No. 12-112-552
 Drawing No. 1
 Sheet 1 of 5

GENERAL NOTES

1. If cultural resources are discovered during construction, discontinuous construction and notify the local Natural Resources Conservation Office.
2. Landowner is responsible for complying with all federal, state, and local laws.
3. The contractor and landowner are responsible for locating buried utilities and for obtaining all assessments and permits required to work near them.
4. The approval and seal of these plans by NRCS does not indicate responsibility for the design of the roofed structure. The roofed structure has been designed by other engineers and separate plans for the roofed structure can be referenced for further details.

OPERATION AND MAINTENANCE NOTES

1. This system is designed to manage waste from 999 head of cattle with 900 lb average weights kept in a confinement barn 355 days per year. The system capacity is designed to hold the manure, bedding, and wastes produced during a 270 day period.
2. The vegetated treatment area system is designed to manage the runoff from the stocking pad and contributing area. It is not designed to be a total containment system and is not projected to meet SD DENR General Permit criteria for CAFO operations at the time of these plans being prepared.
3. The banking and stocking pad shall be emptied or manure, bedding, and waste materials at least once per 270 day period. The solid material shall be applied to cropland in accordance with the nutrient management plan prepared for this system.
4. The waste management system shall be operated in accordance with operation and maintenance plan 313 guidelines.

CONSTRUCTION NOTES

1. In areas where earthfill will be placed the ground shall be stripped to a depth of 8" or as needed to remove topsoil and all undesirable materials (including manure). Placement on earth fills, diversions, auxiliary borrow areas, and other areas as specified in the plans or by the inspector. All fills and cuts inside the construction area shall be top-dressed except inside the holding pond below the high water line and on the bottom of sediment basins. Topsoil for earthfill is included in the fill quantity.
2. All fill and cast-in-place concrete shall be resampled in accordance with SD Construction Specification SD-28.
3. All fill and coarse material may be used for fill material if mixed with better material or in locations as approved by the inspector.
4. The concrete floor of the barn and the concrete for the stocking pad shall be made watertight. This shall include installation of waterproofers at all construction joints, construction joints, and in other locations as shown in these plans.
5. This project shall be constructed in conformance with the General Permit for Storm Water Discharges Associated with Construction Activities. Best management practices shall be used to prevent or reduce the amount of sediment and other pollutants that reach waters of the State. The permittee of this project shall be monitored to ensure that sediment does not leave the project area. Upon completion of the project, disturbed areas shall be revegetated. The contractor shall be responsible for operating in a manner that complies with the General Permit for Storm Water Discharges Associated with Construction Activities.
6. The existing open lots are to be abandoned and not used in feeding cattle in a confined situation. This abandonment shall include removing fences, removing manure, and reseeding the lots.
7. The source of borrow for construction of the building pad shall be determined by the landowner.

LOG OF SOIL BORINGS

	TH 1	TH 2	TH 3
1368			
1366			
1364	ML-CL		ML-CL
	CL		
1362			CL
1360	SW		SM
1358	GP	ML-CL	
1356		CL	SM
1354		SM	
1352			
1350			
1348			
1346			
1344			

--- REPRESENTS WATER TABLE
TH 1, 2, and 3 investigated on May 17, 2011



NOTES AND INFORMATION

Designed	Justin Bonnama	Date	12/11
Drawn	Justin Bonnama		12/11
Checked	Joy Cordier-Jensen		1/12
SD Approved			



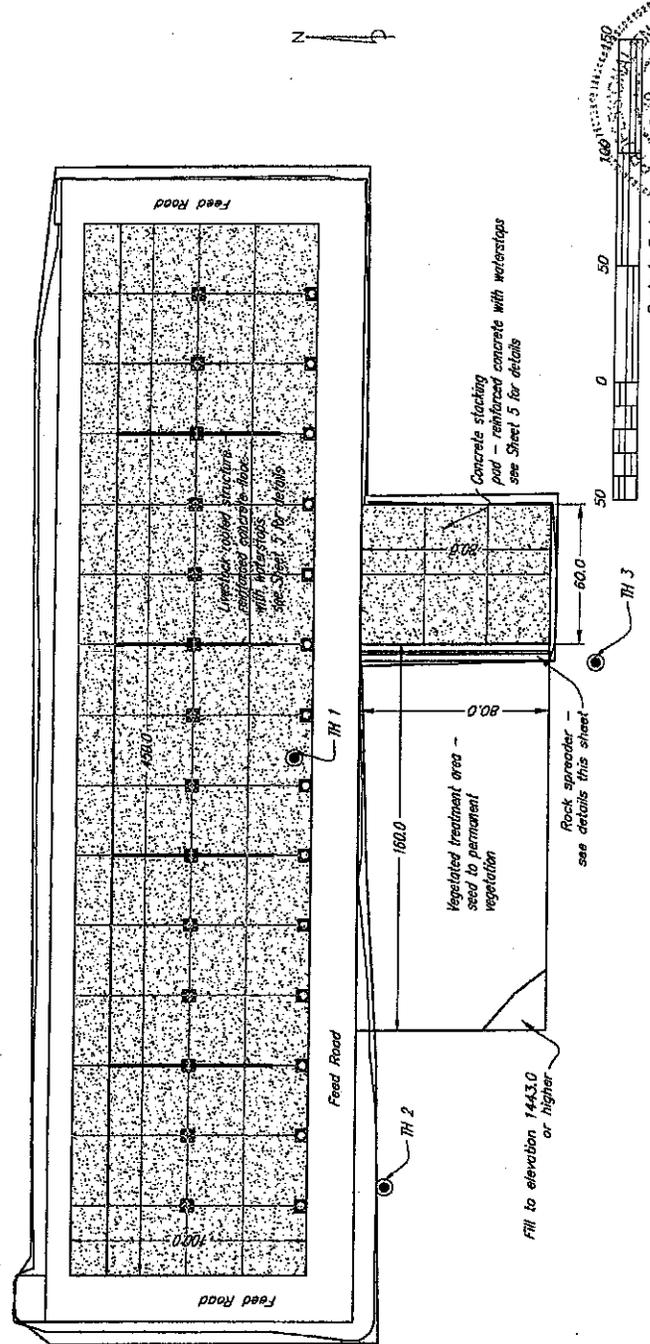
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Sheet 2 of 5

Date: 12/11
 Designed: Justin Bonema
 Drawn: Justin Bonema
 12/11
 Checked: Roy Cordier-Jensen
 1/12
 Approved:

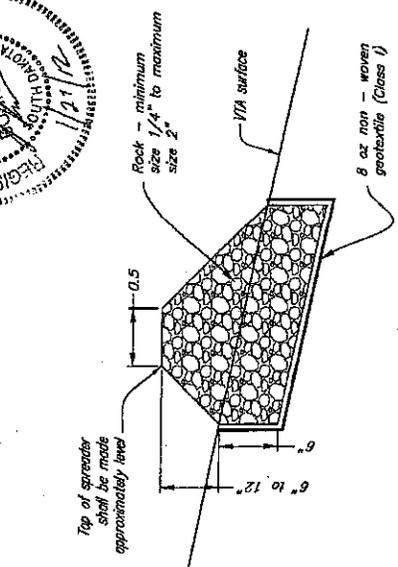
DETAILS OF VEGETATED TREATMENT AREA



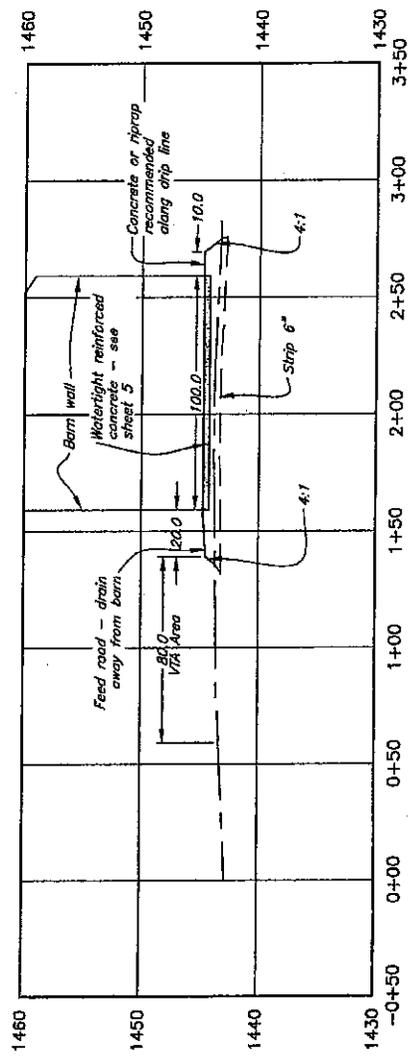
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 Sheet 4 of 5



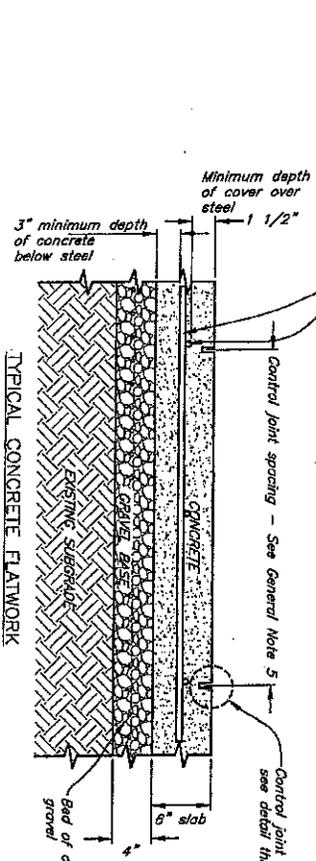
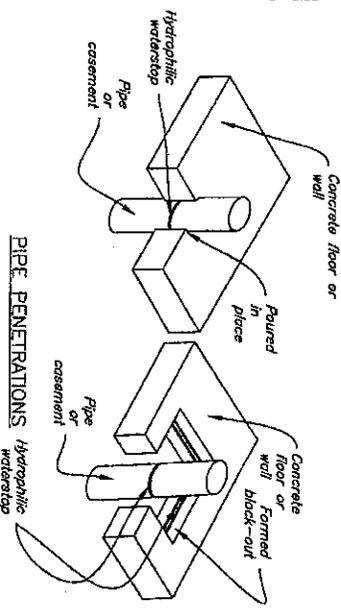
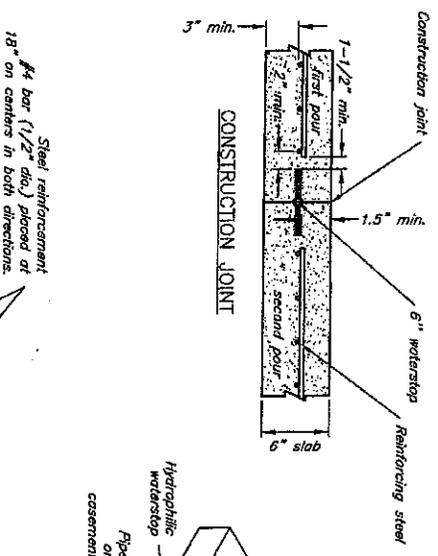
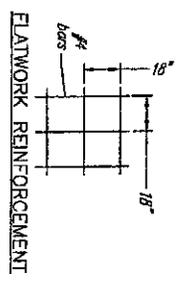
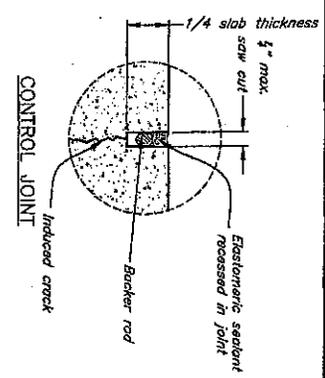
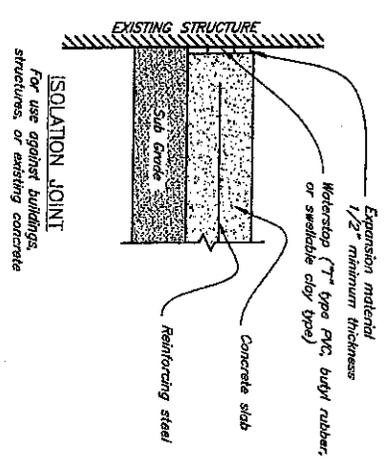
PLAN VIEW



TYPICAL PROFILE ROCK SPREADER



PROFILE OF BARN AND VTA



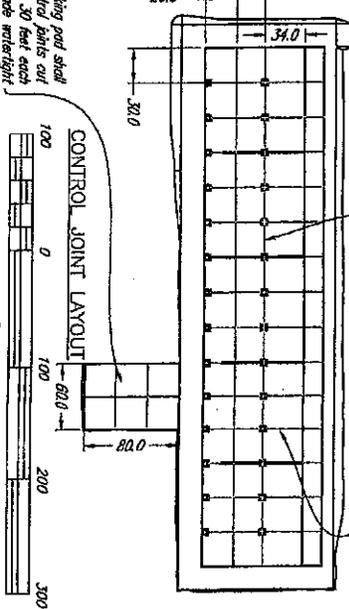
- WATERSTOP NOTES**
1. Waterstops must provide a continuous seal throughout all concrete slabs, pads, and walls.
 2. Waterstops shall be manufactured PVC, thermoplastic elastomer rubber, polyethylene, or other product as approved prior to concrete installation.
 3. Waterstop installation must strictly follow manufacturer's installation instructions.
 4. All water line or other pipe penetrations shall be made watertight with waterstops as shown on this sheet.
 5. Waterstop material and installation shall be approved by the engineer prior to concrete being poured.
- GENERAL CONCRETE NOTES**
1. Cuts may be added to flatwork to allow easier manure handling.
 2. All concrete must meet requirements of construction specification SD-12A - Concrete. The concrete mix shall be a 4,000 psi mix. Concrete mix design shall be submitted to NRCS for approval prior to calculate installation.
 3. Concrete reinforcement shall be inspected by an NRCS representative prior to being covered by all concrete pour.
 4. All concrete shall have a 4" thick subgrade placed directly below the concrete. The concrete subgrade shall consist of sand or grooved material.
 5. Control joints shall be cut or formed in flatwork as shown on this sheet.
 6. All interior concrete shall have reinforcement steel (#4 bars) placed at 18" on center spacing. See details this sheet.
 7. A grooved concrete surface is recommended in areas of high cattle traffic to provide traction. See details this sheet.
 8. Construction joints shall be made watertight. They shall be constructed with continuous reinforcement, keyways or dowels as indicated on the sheet, and the reinforcement bars shall be greater than 1/2" in diameter.
 9. Spacing of reinforcement bars shall be greater than 15" in 16sqft.
 10. Tack welding of reinforcement is not permitted.

Estimated Concrete Quantities

Item	Concrete Quantity (cu yd)	Subgrade Quantity (cu yd)
Flatwork - Stacking Pad	88.9	59.3
Flatwork - Building Floor	811.4	555.6

This table assumes 6" thick concrete slab and 4" thick subgrade layer. No quantities included for walls, columns, footings or other concrete items.

East-West control joints shall be cut on a line with center columns and midway between columns and south side of barn. North-South control joints shall be cut on column alignments (30' intervals). All control joints must be made watertight as shown on this sheet.



Stacking pad shall have control joints cut at maximum spacing 50 feet each way and shall be made watertight.

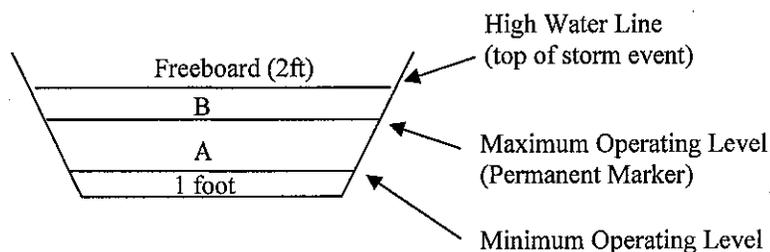
CONCRETE SLAB FOR SOLID MANURE STORAGE

	Date
Designed <i>Justin Bonnema</i>	12/11
Drawn <i>Justin Bonnema</i>	12/11
Checked <i>Joy Cordier-Jensen</i>	1/12
Approved _____	

2.3 Manure Storage

Storage ID	Type of Storage	Capacity	Days of Storage
Monoslope Barn	Manure Pack	137,700 cu ft (8,014,140 lb)	220
Stacking Pad	Manure Stack	31,141 cu ft (1,961,883 lb)	50

N/A	= Gallons	A.	(Holding Capacity of Pond)
N/A	= Gallons	B.	(Emergency Pump Amount)



1. Method Selected For Land Application of Wastewater

- _____ Pipeline/Pivot System (Permanent)
- _____ Big Gun Sprinkler (Temporary)
- _____ Drag Hose System
- _____ Tank Wagon
- Other (Explain) Vegetated Treatment Area (for stacking pad runoff)

2. Pre-Arranged Source of Application Equipment (List all necessary equipment and access to it)

<u>Type Equip.</u>	<u>Obtain Where</u>
_____	_____
_____	_____
_____	_____
_____	_____

Section 2.5 Disposal of Livestock Mortality

Selected
Method
of
Disposal

State Laws and Regulations are stated:

Chapter 12:68:03:05 **Procedures for disposal of animal carcasses.**

Carcasses of animals which have died from non-communicable causes shall be burned, buried to a depth of four feet, or disposed of by a licensed rendering plant within 36 hours.

COMPOSTING

- Facilities that plan to compost animal mortalities must obtain approval of the South Dakota Animal Industry Board.
South Dakota Animal Industry Board
State Veterinarian, Pierre, SD (605) 773-3321
- Composting operations must also obtain approval of the SD DENR Waste Management Program.

For more information regarding an Animal Mortality Facility or a Composting Facility refer to Natural Resources Conservation Service **Conservation Practice Standards Code 316 and 317.**

The South Dakota Animal Industry Board recommends the following guidelines for proper carcass disposal:

BURNING – INCINERATION

- Fuels such as tires, railroad ties, or treated wood are not allowed to fuel an open fire in South Dakota.
- The burn should be conducted at a minimum of 1,000 feet from an occupied dwelling, propane tank, fuel tank, or other tank or container storing flammable substances.
- Burning of carcasses should take place only during appropriate weather conditions.
- The smoke plume should be monitored not to impact neighbors, or highway and airport traffic.
- Local fire departments should be notified before carcass burning commences.

RENDERING

- If rendering plant service is available in your area, schedule carcass removal within 36 hours of animal death.

BURIAL

- Call before you dig – SD One Call 1-800-781-7474 or Dial 811
- Burial should not take place:
 - Within 1,000 feet of surface water or within the boundaries of a floodplain or a river.
 - Within a wetland.
 - Within 1,000 feet of an occupied dwelling (without permission of the owner).
 - Within 1,000 feet of any private or public drinking water well.
 - Within 200 feet of a road right-of-way or property boundary (without permission of adjacent property owner).
 - Where the primary subsurface material 20 feet below the bottom of the burial trench is primarily sand or gravel.
 - Where the depth to an aquifer is less than 20 feet from the bottom of the burial trench.
- The burial site should be covered with at least four feet of soil to allow for compaction of soil to occur.
- Maintenance of the burial site will be necessary to ensure water does not collect over the burial site. Additional soil cover will be necessary as compaction and subsidence occurs with carcass decay.

SITE SELECTION

- Access to site in varying climate conditions.
- Site should be aesthetically acceptable and not in close proximity to public roadways or viewing public.
- SEE ATTACHED WEB SOIL SURVEY REPORT "AWM-Large Animal Disposal, Pit"



DOC031912.pdf

Manure Transfers

2.6 Planned Manure Exports off the Farm

<i>Month-Yr.</i>	<i>Manure Source</i>	<i>Amount</i>	<i>Receiving Operation</i>	<i>Location</i>
None				

2.7 Planned Manure Imports onto the Farm

<i>Month-Yr.</i>	<i>Manure Source</i>	<i>Amount</i>	<i>Receiving Operation</i>	<i>Location</i>
None				

2.8 Planned Internal Transfers of Manure

<i>Month-Yr.</i>	<i>Manure Source</i>	<i>Amount</i>	<i>Receiving Operation</i>	<i>Location</i>
None				

Section 2.5 Disposal of Livestock Mortality

Selected
Method
of
Disposal

State Laws and Regulations are stated:

Chapter 12:68:03:05 **Procedures for disposal of animal carcasses.**

Carcasses of animals which have died from non-communicable causes shall be burned, buried to a depth of four feet, or disposed of by a licensed rendering plant within 36 hours.

COMPOSTING

- Facilities that plan to compost animal mortalities must obtain approval of the South Dakota Animal Industry Board.
South Dakota Animal Industry Board
State Veterinarian, Pierre, SD (605) 773-3321
- Composting operations must also obtain approval of the SD DENR Waste Management Program.

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- Burning of carcasses should take place only during appropriate weather conditions.
- The smoke plume should be monitored not to impact neighbors, or highway and airport traffic.
- Local fire departments should be notified before carcass burning commences.

RENDERING

- If rendering plant service is available in your area, schedule carcass removal within 36 hours of animal death.

BURIAL

- Call before you dig – SD One Call 1-800-781-7474 or Dial 811
- Burial should not take place:
 - Within 1,000 feet of surface water or within the boundaries of a floodplain or a river.
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 - Within 1,000 feet of any private or public drinking water well.
 - Within 200 feet of a road right-of-way or property boundary (without permission of adjacent property owner).
 - Where the primary subsurface material 20 feet below the bottom of the burial trench is primarily sand or gravel.
 - Where the depth to an aquifer is less than 20 feet from the bottom of the burial trench.
- The burial site should be covered with at least four feet of soil to allow for compaction of soil to occur.
- Maintenance of the burial site will be necessary to ensure water does not collect over the burial site. Additional soil cover will be necessary as compaction and subsidence occurs with carcass decay.

SITE SELECTION

- Access to site in varying climate conditions.
- Site should be aesthetically acceptable and not in close proximity to public roadways or viewing public.
- Refer to Web Soil Survey report in section 3 titled: *"Catastrophic Mortality, Large Animal Disposal, Pit (Soil Suitability for Mortality Disposal)"*

Section 3

Farmstead Safety and Security

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
3.1 Emergency Response Plan -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.2 Bio-Security Measures -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.3 Catastrophic Mortality Management -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.4 Chemical Handling -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Section 3 Farmstead Safety & Security

3.1 EMERGENCY RESPONSE PLAN

In Case of an Emergency Storage Facility Spill, Leak, or Failure; or Land Application or Transport of Manure/Wastewater Discharge

Implement The Following Containment Steps:

- Stop all other activities to deal with the emergency
- Use skid loader or tractor with loader to contain or divert spill or leak, if possible
- Call for help or equipment if needed
- Locate and use containment material (i.e. straw bales), if necessary
- If flow is coming from a tile, plug the tile with a tile plug immediately
- Call sheriff's office if spill is on a road for traffic control
- Contain the spill or discharge from entering a waterway stream, or other water body
- Notify anyone downstream that may be impacted by the discharge
- Complete the cleanup and repair the necessary components

Report Any Discharge As Soon As Possible, But No Later Than Twenty-Four (24) Hours From The Time First Being Aware Of The Incident To:

Department/Agency	Phone
County Sheriff	911
Fire Dept.	911
State Veterinarian	605-773-3321

Department/Agency	Phone
State of South Dakota	(605) 773-3351 After normal business hours: (605) 773-3231

Be prepared to provide the following information:

- Your name & contact information
- Farm location (driving directions) & other pertinent information
- Description of emergency
- Estimate the amount, area covered, & distance traveled

- Whether manure has reached surface waters or major field drains
- Whether there is any obvious damage: employee injury, fish kill, or property damage
- Current status of containment efforts

3.2 Biosecurity Measures

Biosecurity is critical to protect livestock and poultry operations. As a minimum these biosecurity measures should be adhered to - farm specific measures should also be added to this list:

1. Limit the number of visitors to the facility and minimize their contact with the animals.
2. Require visitors to register (name, address and phone) and report in detail any recent contact with animals, and the time gap between animal or farm visits.
3. Supply outer clothing (e.g., coveralls, plastic boots) to all visitors.
4. Require workers and visitors to at least wash their hands, if not shower, before entry to animal areas. (Some facilities also require visitors/employees to shower upon leaving their operation.)
5. Prohibit livestock truck drivers from entering animal areas, as they are likely to have been on other farms or agriculture operations.
6. Require trucks to be cleaned on arrival at a farm and/or require all visitors' vehicles to be parked at a designated location away from where animals are located.
7. Take great care in introducing any new animals to a facility by conducting an extensive veterinary evaluation and/or placing the new animals in temporary isolation to ensure that no diseases can be spread.

3.3 Catastrophic Mortality Management

Refer to NRCS standards or state guidance, regarding appropriate catastrophic animal mortality handling methods. Also refer to attached report from Web Soil Survey titled "*Catastrophic Animal Mortality (AWM – Large Animal Disposal, Pit)*"

Important: Contact the following authority before beginning carcass disposal:

SD Animal Industry Board at 605-773-3321.

3.4 Chemical Handling

Check all that apply:

- All chemicals are stored in proper containers. Expired chemicals and empty containers are properly disposed of in accordance with state and federal regulations. Pesticides and associated refuse are disposed of in accordance with the FIFRA label.
- Chemical storage areas are self-contained with no drains or other pathways that will allow spilled chemicals to exit the storage area.
- Chemical storage areas are covered to prevent chemical contact with rain or snow.
- Emergency procedures and equipment are in place to contain and clean up chemical spills.
- All chemicals are custom applied and no chemicals are stored at the operation. Equipment wash areas are designed and constructed to prevent contamination of surface waters, and waste water and storm water storage and treatment systems.



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for McCook County, South Dakota



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://soils.usda.gov/sqi/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

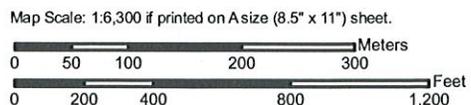
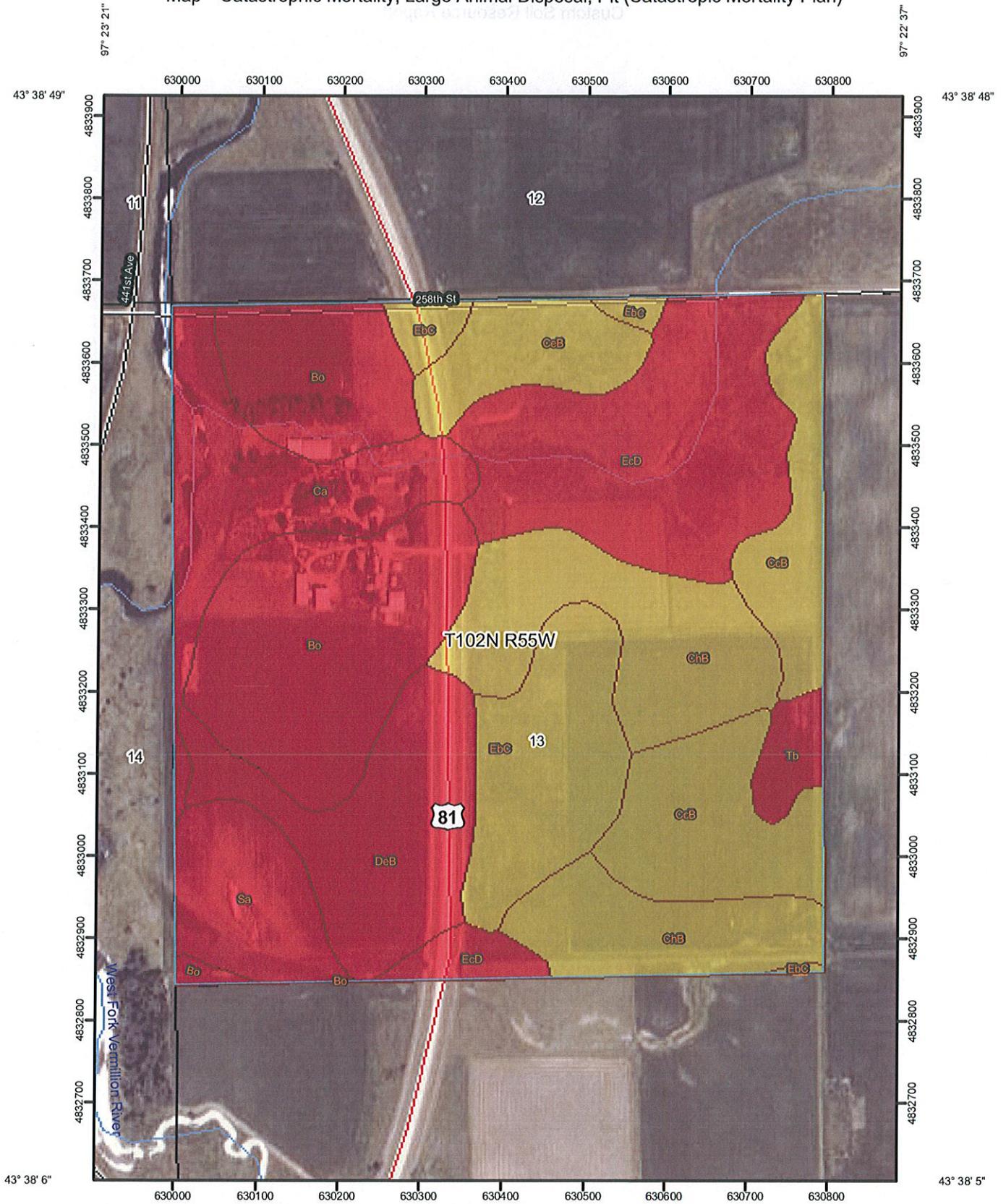
Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

Custom Soil Resource Report
Map—Catastrophic Mortality, Large Animal Disposal, Pit (Catastrophic Mortality Plan)



97° 22' 38"

Custom Soil Resource Report

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Disaster Recovery Planning

Disaster recovery planning interpretations are tools for evaluating the suitability of soil for various aspects of recovery operations in response to catastrophic events such as hurricanes, earthquakes, large fires, or terrorist attacks. Example interpretations include burial of large numbers of dead cattle, disposal of large amounts of debris, and composting of vegetative materials.

Catastrophic Mortality, Large Animal Disposal, Pit (Catastrophic Mortality Plan)

"Catastrophic mortality, large animal disposal, pit," is a method of disposing of dead animals by placing the carcasses in successive layers in an excavated pit. The carcasses are spread, compacted, and covered daily with a thin layer of soil that is excavated from the pit. When the pit is full, a final cover of soil material at least 2 feet thick is placed over the burial pit.

The interpretation is applicable to both heavily populated and sparsely populated areas. While some general observations may be made, onsite evaluation is required before the final site is selected. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater. The risk of contamination can be reduced or eliminated by installing systems designed to eliminate or reduce the adverse effects of limiting soil properties. Ratings are for soils in their present condition. The present land use is not considered in the ratings.

Ratings are based on properties and qualities to the depth normally observed during soil mapping (approximately 6 or 7 feet). However, because pits may be as deep as

Custom Soil Resource Report

15 feet or more, geologic investigations are needed to determine the potential for pollution of ground water and to determine the design needed. These investigations, which are generally arranged by the pit developer, include examination of stratification, rock formations, and geologic conditions that might lead to the conducting of leachates to aquifers, wells, watercourses, and other water sources. The presence of hard, nonrippable bedrock, bedrock crevices, or highly permeable strata at or directly below the proposed pit bottom is undesirable because of the difficulty in excavation and the potential pollution of underground water.

Properties that influence the risk of pollution, ease of excavation, trafficability, and revegetation are major considerations. Soils that are flooded or have a water table within the depth of excavation present a potential pollution hazard and are difficult to excavate. Slope is an important consideration because it affects the work involved in road construction, the performance of the roads, and the control of surface water around the pit. It may also cause difficulty in constructing pits in which the pit bottom must be kept level and oriented to follow the contour of the land.

The ease with which the pit is dug and with which a soil can be used as daily and final cover is based largely on soil texture and consistence, which determine workability when the soil is dry and when it is wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and difficult to place as a uniformly thick cover over a layer of carcasses. The uppermost part of the final cover should be soil material that favors the growth of plants. It should not contain excess sodium or salts and should not be too acid. In comparison with other horizons, the surface layer in most soils has the best workability and the highest content of organic matter. Thus, it may be desirable to stockpile the surface layer for use in the final blanketing of the filled pit area.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected of a properly designed and installed system. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Custom Soil Resource Report

Catastrophic Mortality, Large Animal Disposal, Pit— Summary by Map Unit — McCook County, South Dakota (SD087)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
CcB	Clarno loam, 3 to 6 percent slopes	Somewhat limited	Clarno (85%)	Water gathering surface (0.17)	18.5	11.4%
			Bonilla (5%)	Wetness (0.50)		
				Water gathering surface (0.33)		
Davison (4%)	Wetness (0.94)					
CeB	Clarno-Davison loams, 2 to 5 percent slopes	Somewhat limited	Clarno (50%)	Water gathering surface (0.17)	6.9	4.3%
			Davison (30%)	Wetness (0.94)		
ChB	Clarno-Ethan loams, 3 to 6 percent slopes	Somewhat limited	Clarno (50%)	Water gathering surface (0.17)	24.5	15.1%
			Bonilla (5%)	Wetness (0.50)		
				Water gathering surface (0.33)		
DeB	Delmont loam, 3 to 6 percent slopes	Very limited	Delmont (85%)	Seepage (1.00)	15.6	9.6%
				Too sandy (1.00)		
				Unstable excavation walls (0.50)		
				Water gathering surface (0.17)		
			Enet (5%)	Seepage (1.00)		
				Too sandy (1.00)		
				Water gathering surface (0.33)		
				Unstable excavation walls (0.02)		
			Arlo, undrained (1%)	Flooding (1.00)		
				Wetness (1.00)		
				Seepage (1.00)		
				Sand content (0.54)		
Water gathering surface (0.17)						
EbC	Ethan loam, 6 to 9 percent slopes	Somewhat limited	Ethan (85%)	Slope (0.37)	15.2	9.4%
			Clarno (5%)	Slope (0.37)		
				Water gathering surface (0.17)		
			Bonilla (4%)	Wetness (0.50)		
				Water gathering surface (0.33)		

Custom Soil Resource Report

Catastrophic Mortality, Large Animal Disposal, Pit— Summary by Map Unit — McCook County, South Dakota (SD087)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
EcD	Ethan-Betts loams, 9 to 15 percent slopes	Very limited	Ethan (60%)	Slope (1.00)	25.7	15.8%
			Betts (30%)	Slope (1.00)		
			Worthing (2%)	Ponding (1.00)		
				Wetness (1.00)		
				Water gathering surface (0.50)		
				Unstable excavation walls (0.25)		
			Tetonka (2%)	Ponding (1.00)		
				Wetness (1.00)		
				Water gathering surface (0.50)		
				Unstable excavation walls (0.15)		
Sa	Salmo silty clay loam	Very limited	Salmo (85%)	Flooding (1.00)	8.4	5.2%
				Wetness (1.00)		
				Water gathering surface (0.17)		
			Lamo (7%)	Flooding (1.00)		
				Wetness (1.00)		
				Water gathering surface (0.17)		
			Chaska (5%)	Flooding (1.00)		
				Wetness (1.00)		
				Seepage (0.50)		
				Water gathering surface (0.17)		
			Bon (3%)	Flooding (1.00)		
				Wetness (1.00)		
				Seepage (0.21)		
Water gathering surface (0.17)						
Tb	Tetonka silt loam	Very limited	Tetonka (85%)	Ponding (1.00)	2.5	1.6%
				Wetness (1.00)		
				Water gathering surface (0.50)		
				Unstable excavation walls (0.15)		
			Canisteo (8%)	Wetness (1.00)		
Totals for Area of Interest					162.2	100.0%

Custom Soil Resource Report

Catastrophic Mortality, Large Animal Disposal, Pit— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	97.0	59.8%
Somewhat limited	65.2	40.2%
Totals for Area of Interest	162.2	100.0%

Rating Options—Catastrophic Mortality, Large Animal Disposal, Pit (Catastrophic Mortality Plan)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

Custom Soil Resource Report

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Section 4

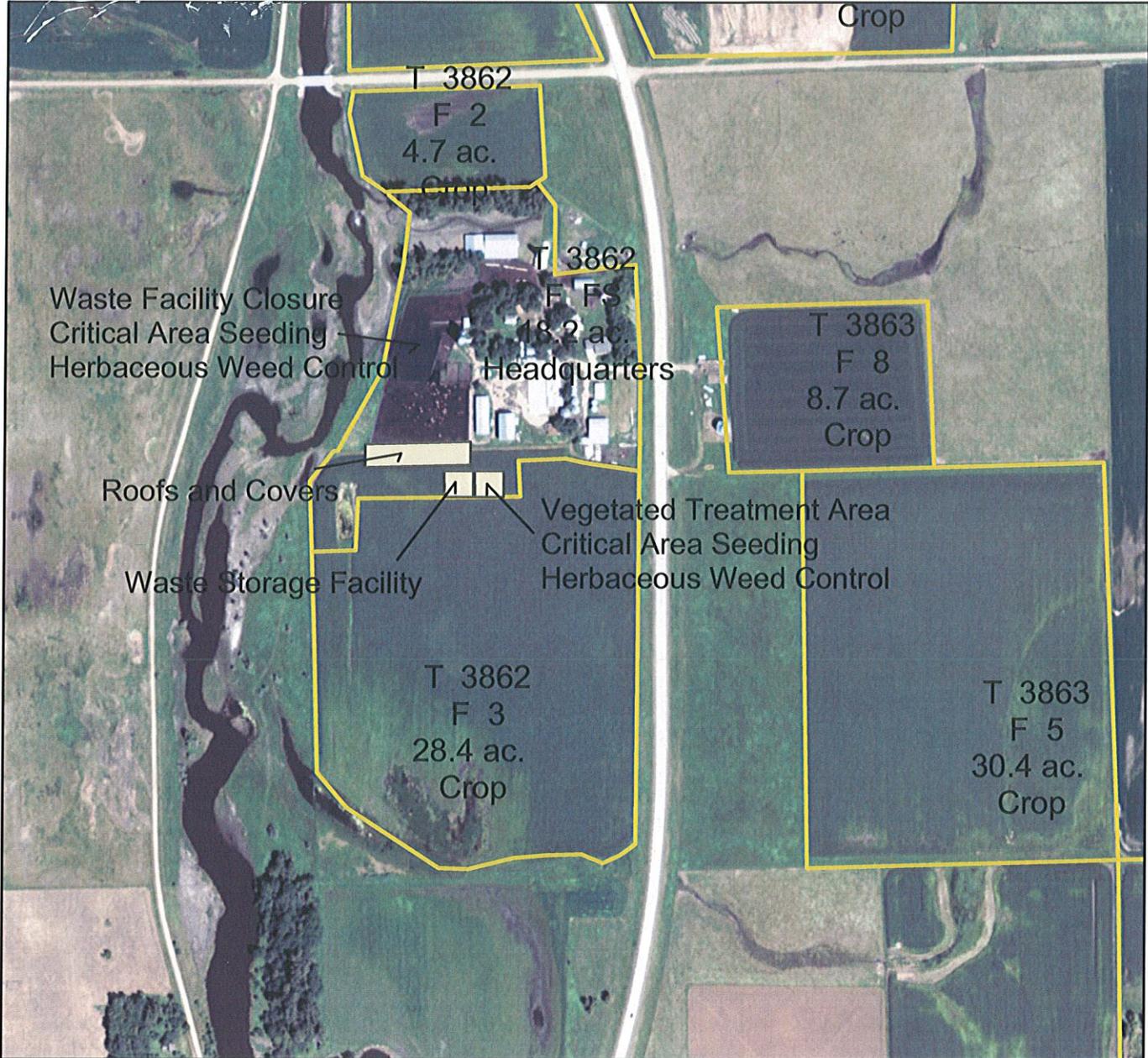
Land Treatment

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
4.1 Maps of Fields and Conservation Practices -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.2 Land Treatment Conservation Practices -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

CONSERVATION PLAN MAP

Date: 1/18/2012

Field Office:
Agency: Natural Resources Conservation Service
Assisted By:



Legend

EQIP_FY12



Conservation Plan

Joe Producer

Conservation Crop Rotation (328)

CONSERVATION CROP ROTATION (328) – Grow crops in a planned sequence to reduce erosion, improve soil organic matter and manage plant pests. The crop sequence will consist of a 2 year rotation. One year of warm season grasses, one year of warm season broadleaves, will be grown. Alfalfa, smallgrain or permanent vegetative cover (grasses), may be included in the rotation at any time. Warm Season Grasses include: corn, sorghum, sudangrass, millet, and perennial warm season native grasses. Cool Season Grasses include: winter wheat, spring wheat, barley, winter rye, oats, durum wheat, and cool season perennial grasses. Warm Season Broadleaves include: soybean, sunflower, safflower, chickpea, buckwheat and dry edible beans. Cool Season Broadleaves include: alfalfa, hairy vetch, field pea, flax, canola, mustard, crambe, lentil, sugar beet, turnips and potatoes. Occasionally, (no more than 1 out of 4 years), corn silage may be substituted for corn in this rotation. This crop rotation will produce a positive Soil Conditioning Index (SCI) value and will reduce erosion to acceptable levels. Refer to the 328 Job Sheet, SD-CPA-29, WEPS worksheets and SD-JS-328 for the corn bean rotation and silage rotation for additional information. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
388	1	166.2 ac	8	2012		
406	1	67.3 ac	8	2012		
406	2	75.6 ac	8	2012		
3237	5	108.8 ac	8	2012		
3238	5	13.5 ac	8	2012		
3238	6	85.1 ac	8	2012		
3296	8	87 ac	8	2012		
3860	1	8.6 ac	8	2012		
3861	6	36.2 ac	8	2012		
3861	7	14.3 ac	8	2012		
3862	2	4.7 ac	8	2012		
3862	3	28.4 ac	8	2012		
3863	5	30.4 ac	8	2012		
3863	8	8.7 ac	8	2012		
4004	6	142.5 ac	8	2012		
4371	3	66.2 ac	8	2012		
4372	4	83.5 ac	8	2012		
4504	1	38.4 ac	8	2012		
4504	2	40.4 ac	8	2012		
Total:		1105.8 ac				

Critical Area Planting (342)

CRITICAL AREA SEEDING (342) - Seeding Required for Vegetated Treatment Area. Establish permanent vegetation to stabilize the soil and reduce damage from sediment and/or runoff. Refer to worksheets SD-CPA-4 and "Critical Area Planting Special Considerations" for specifications. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1.4 ac	8	2013		
	Total:	1.4 ac				

Critical Area Planting (342)

CRITICAL AREA SEEDING (342) - Seeding Required for Waste Facility Closure. Establish permanent vegetation to stabilize the soil and reduce damage from sediment and/or runoff. Refer to worksheets SD-CPA-4 and "Critical Area Planting Special Considerations" for specifications. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1.4 ac	5	2014		
	Total:	1.4 ac				

Herbaceous Weed Control (315)

Herbaceous Weed Control - 315 Required for Vegetated Treatment Area. Control weeds by mowing during the establishment of the permanent vegetative cover. Pesticides will not be applied. Mow weeds when they reach a height of six to eight inches and they have the potential to compete with the seedlings. Control noxious weeds in accordance with state laws. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications. For specifics refer to Job Sheet SD-JS-315.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1.4 ac	9	2013		
	Total:	1.4 ac				

Herbaceous Weed Control (315)

Herbaceous Weed Control - 315 Required for Waste Facility Closure. Control weeds by mowing during the establishment of the permanent vegetative cover. Pesticides will not be applied. Mow weeds when they reach a height of six to eight inches and they have the potential to compete with the seedlings. Control noxious weeds in accordance with state laws. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications. For specifics refer to Job Sheet SD-JS-315.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	2.4 ac	7	2014		
	Total:	2.4 ac				

Integrated Pest Management (595)

PEST MANAGEMENT (595) – Develop an annual pest management plan to improve crop production and minimize negative impacts to people and the environment. Fields highly vulnerable for pesticides to leach into an aquifer are labeled with an "L" on the Water Quality Risk Assessment (WQRA) Map. Those highly vulnerable for pesticide loss to surface waters are labeled with an "R" on the WQRA map. ALL FIELDS: The annual plan will include scouting and proper identification of pest problems. FIELDS LABELED "L" AND/OR "R": Pesticides with an intermediate, high, or very high potential to leach into ground water, or to runoff into surface waters can be used IF an appropriate set of control measures are implemented. See Pesticide Screening Spreadsheet for pesticide ratings. Selection of control measures will reduce the risk of pesticides moving below the root zone and/or moving into surface water. When control measures are required see SD-CPA-9. Apply all pesticides in accordance with label requirements. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
388	1	166.2 ac	7	2013		
406	1	67.3 ac	7	2013		
406	2	75.6 ac	7	2013		
3237	5	108.8 ac	7	2013		
3238	5	13.5 ac	7	2013		
3238	6	85.1 ac	7	2013		
3296	8	87 ac	7	2013		
3860	1	8.6 ac	7	2013		
3861	6	36.2 ac	7	2013		
3861	7	14.3 ac	7	2013		
3862	2	4.7 ac	7	2013		
3862	3	28.4 ac	7	2013		
3863	5	30.4 ac	7	2013		
3863	8	8.7 ac	7	2013		
4004	6	142.5 ac	7	2013		
4371	3	66.2 ac	7	2013		
4372	4	83.5 ac	7	2013		
4504	1	38.4 ac	7	2013		
4504	2	40.4 ac	7	2013		
	Total:	1105.8 ac				

Nutrient Management (590)

NUTRIENT MANAGEMENT (590) – Annually plan nutrient applications according to South Dakota State University (SDSU) guidelines in order to obtain optimum nutrient utilization by crops and minimize leaching and runoff of nutrients and/or to properly utilize manure or organic byproducts as a plant nutrient source. Fields highly vulnerable for nitrates to leach into an aquifer are labeled with an "L" on the Water Quality Risk Assessment (WQRA) Map. Those highly vulnerable for phosphorus loss to surface waters are labeled with an "R" on the WQRA map.

ALL FIELDS: Nutrient applications will be based on realistic yield goals. Take soil samples as recommended on the back of the SDSU Soil Sampling Information Sheet. If organic waste will be applied as fertilizer, sample and analyze the waste to determine the amount of N, P2O5 and K2O. FIELDS LABELED "L": A soil test must include a 0-4 ft. nitrate N sample prior to the application of nitrogen above starter application rates, OR take an annual 0-2 ft. sample within 4 weeks after crop harvest. Apply no nitrogen in the fall with the exception of starter applications, incidental N in commercial phosphorus applications or organic waste. FIELDS LABELED "R": Soil samples will be taken and analyzed for phosphorus at least every two years at a depth of 0-6 inches. Place P2O5 below the soil surface. Do not apply nutrients to frozen, snow-covered, or saturated soil if the potential exists for runoff. Control soil erosion below the soil loss tolerance. Do not apply manure or organic by-products within 100 feet of a surface water or conveyance; 35 feet if a perennial grass filter strip is established and maintained. Maintain filter strips at least 35 feet wide bordering a lake, river or stream. These areas are indicated with cross-hatching on the WQRA maps. See SD CPA-8 job sheet for details of the annual nutrient management plan. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
388	1	166.2 ac	11	2013		
406	1	67.3 ac	11	2013		
406	2	75.6 ac	11	2013		
3237	5	108.8 ac	11	2013		
3238	5	13.5 ac	11	2013		
3238	6	85.1 ac	11	2013		
3296	8	87 ac	11	2013		
3860	1	8.6 ac	11	2013		
3861	6	36.2 ac	11	2013		
3861	7	14.3 ac	11	2013		
3862	2	4.7 ac	11	2013		
3862	3	28.4 ac	11	2013		
3863	5	30.4 ac	11	2013		
3863	8	8.7 ac	11	2013		
4004	6	142.5 ac	11	2013		
4371	3	66.2 ac	11	2013		
4372	4	83.5 ac	11	2013		
4504	1	38.4 ac	11	2013		
4504	2	40.4 ac	11	2013		
	Total:	1105.8 ac				

Residue Mgmt, Mulch Till (345)

RESIDUE AND TILLAGE MANAGEMENT; MULCH TILL (345) - Manage crop residues year round to reduce erosion, maintain or improve soil condition, and increase plant-available moisture. Mulch tillage techniques and implements such as chisels, sweeps, and harrows will be used to distribute and orient the residue. Maintain a minimum amount of residue on the soil surface after planting as follows: 30% after planting corn; 30% after planting soybeans. If corn silage is grown in the rotation, maintain as much residue as possible while still achieving a positive Soil Condition Index. Refer to the 345 Job Sheet, WEPS worksheets SD-JS-345 for additional information. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
388	1	166.2 ac	8	2013		
406	1	67.3 ac	8	2013		
406	2	75.6 ac	8	2013		
3237	5	108.8 ac	8	2013		
3238	5	13.5 ac	8	2013		
3238	6	85.1 ac	8	2013		
3296	8	87 ac	8	2013		
3860	1	8.6 ac	8	2013		
3861	6	36.2 ac	8	2013		
3861	7	14.3 ac	8	2013		
3862	2	4.7 ac	8	2013		
3862	3	28.4 ac	8	2013		
3863	5	30.4 ac	8	2013		
3863	8	8.7 ac	8	2013		
4004	6	142.5 ac	8	2013		
4371	3	66.2 ac	8	2013		
4372	4	83.5 ac	8	2013		
4504	1	38.4 ac	8	2013		
4504	2	40.4 ac	8	2013		
	Total:	1105.8 ac				

Roofs and Covers (367)

Roofs and Covers – (367) Construct a roof or cover on a suitable site to improve water quality and divert clean water from the waste water treatment area. For construction and operation and maintenance details refer to waste storage facility design, NRCS Job Sheets and the conservation plan map. Participant Responsibilities are outlined on the SD-ENG-11. Also follow all other federal, state, or local regulations. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1 no	9	2013		
	Total:	1 no				

Vegetated Treatment Area (635)

Vegetated Treatment Area – (635) Construct a level or sloped area on suitable soils to treat runoff from an animal feeding operation. For construction and operation and maintenance details refer to waste storage facility design, NRCS Job Sheets and the conservation plan map. Participant Responsibilities are outlined on the SD-ENG-11. Also follow all other federal, state, or local regulations. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1.4 ac	9	2013		
	Total:	1.4 ac				

Waste Facility Closure (360)

Waste Facility Closure – (360) Existing animal waste facility or livestock production sites are to be permanently closed or converted to another use. Fences, bunks and watering facilities will be removed. Soils within the old feedlot will be reclaimed and seeded to suitable vegetation. For construction and operation and maintenance details refer to the engineering design, NRCS Job Sheets and the conservation plan map. Participant Responsibilities are outlined on the SD-ENG-11. Also follow all other federal, state, or local regulations. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

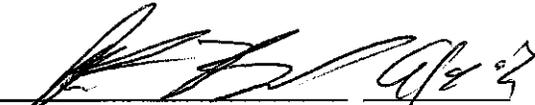
Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1 no	9	2013		
	Total:	1 no				

Waste Storage Facility (313)

WASTE STORAGE FACILITY – (313) Construct a waste storage facility to temporarily store manure, wastewater, and contaminated runoff from an animal feeding operation. For construction and operation and maintenance details refer to waste storage facility design, NRCS Job Sheets, the conservation plan map, and the SD-O&M-313. Participant Responsibilities are outlined on the SD-ENG-11. Also follow all other federal, state, or local regulations. See <http://www.nrcs.gov/technical/efotg/> or contact the local USDA-NRCS office for complete standards and specifications.

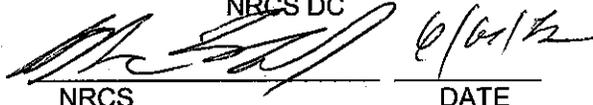
Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
3862	FS	1 no	9	2013		
	Total:	1 no				

CERTIFICATION OF PARTICIPANTS

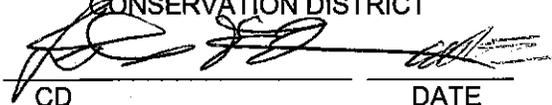


Joe Producer DATE

CERTIFICATION OF:



NRCS DC DATE



CONSERVATION DISTRICT
CD DATE

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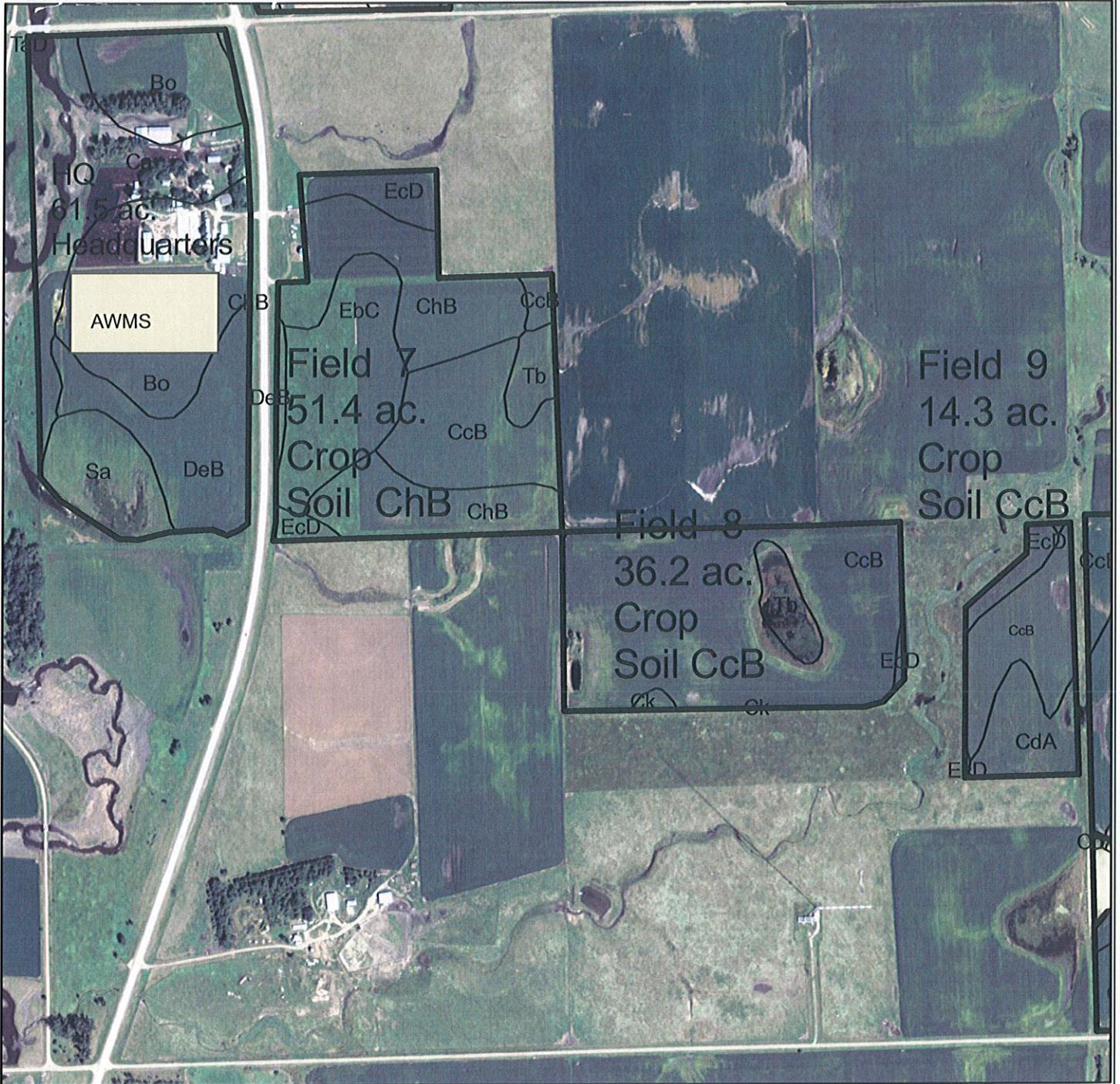
Section 5

Soil & Risk Assessment Analyses

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
5.1 Soil Information -----	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.2 Predicted Soil Loss -----	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.3 Nitrogen and Phosphorus Risk Analysis ----- <ul style="list-style-type: none"> • SD N&P Manure Application – Table 1 • KSAT Leaching Map or DENR Leaching Determination 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.4 Additional Field Data If Required by Risk Assessment Procedures ----- <ul style="list-style-type: none"> • Water Well Inventory 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SOILS MAP

13-102-55



Legend

-  Soils Map
-  CNMP 2011



Soils Inventory Report

Tue Jul 17 09:50:33 CDT 2012

Tract	Land Unit	Map Unit Symbol	Acres	Percent
0		Ck	0.1	1%
0		CcB	0.4	3%
0		Co	11.6	96%
Total:			12.1	100%

0	1	CdA	1.6	10%
0	1	Wo	1.7	11%
0	1	CcC	4.9	32%
0	1	CcB	7.1	46%
Total:			15.3	100%

0	2	BdB	0	0%
0	2	Wo	0	0%
0	2	Ck	1.1	1%
0	2	CeB	2.3	3%
0	2	Tb	3	3%
0	2	CcC	3.5	4%
0	2	HcB	19.2	22%
0	2	CcB	27	31%
0	2	HbA	29.9	35%
Total:			86	100%

0	3	CdA	0	0%
0	3	CcB	1.5	1%
0	3	EcD	2.2	2%
0	3	Ck	2.3	2%
0	3	EbC	36.1	34%
0	3	CeB	64.6	61%
Total:			106.7	100%

0	4	EcD	0.6	1%
0	4	Tb	1.7	2%
0	4	Co	3.2	4%
0	4	Ck	4.7	6%
0	4	CeB	9.1	12%

0	4	CcB	55.2	74%
		Total:	74.5	100%
0	5	EcD	0.5	1%
0	5	Ck	7	14%
0	5	ChB	8.4	17%
0	5	Co	10.8	22%
0	5	CcB	22.3	46%
		Total:	49	100%
0	6	EcD	0.8	1%
0	6	Ck	1.6	3%
0	6	CcB	14.6	27%
0	6	CdA	36.9	68%
		Total:	53.9	100%
0	HQ	EcD	0	0%
0	HQ	TaD	0	0%
0	HQ	ChB	0	0%
0	HQ	EbC	0.1	0%
0	HQ	CeB	0.1	0%
0	HQ	Sa	6.7	11%
0	HQ	DeB	11	18%
0	HQ	Ca	16.4	27%
0	HQ	Bo	27.2	44%
		Total:	61.5	100%
388		ChB	0.1	1%
388		CdA	0.4	5%
388		CcB	0.6	7%
388		Ck	0.7	8%
388		Co	1.7	20%
388		Wo	5.2	60%
		Total:	8.7	100%
388	10	Wo	1.7	1%
388	10	ChB	8.2	5%
388	10	Ck	8.3	5%
388	10	CcB	23.1	14%
388	10	Co	33.8	20%
388	10	CdA	90.3	55%

Total: 165.4 100%

388	11	EbC	1.4	1%
388	11	CeB	2.2	1%
388	11	Ck	2.3	1%
388	11	Wo	11.5	7%
388	11	CdA	13	8%
388	11	Co	25.3	16%
388	11	ChB	34.5	22%
388	11	CcB	68	43%
Total:			158.2	100%

388	12	CfA	0.2	0%
388	12	Tb	1.7	1%
388	12	CdA	4.7	4%
388	12	Ck	5.9	5%
388	12	CcB	30.9	26%
388	12	Co	75.5	63%
Total:			118.9	100%

3861	8	EbC	0	0%
3861	8	ChB	0	0%
3861	8	EcD	0.3	1%
3861	8	Ck	0.4	1%
3861	8	Tb	2.6	7%
3861	8	CcB	32.9	91%
Total:			36.2	100%

3861	9	EbC	0	0%
3861	9	EcD	1.7	12%
3861	9	CdA	5	35%
3861	9	CcB	7.5	53%
Total:			14.2	100%

3863	7	DeB	0.7	1%
3863	7	Tb	2.2	4%
3863	7	EcD	3.9	8%
3863	7	CcB	11.7	23%
3863	7	EbC	12.9	25%
3863	7	ChB	19.9	39%
Total:			51.3	100%

4372	13	CfA	0.1	0%
4372	13	Tb	0.6	2%
4372	13	Ck	2.2	7%
4372	13	CdA	8.1	26%
4372	13	Co	19.8	64%
Total:			30.8	100%

4372	14	CcB	11.9	8%
4372	14	Ck	15.6	11%
4372	14	Co	117.3	81%
Total:			144.8	100%

Total: 1187.5 100%

RUSLE2 Profile Erosion Calculation Record

Info: Field 13 (Kostboth) Alfalfa/Corn/SB Rotation

Inputs:

Location: South Dakota\McCook County
 Soil: McCook, SD soils\Co CROSSPLAIN-CLARNO COMPLEX\CROSSPLAIN clay loam 45%
 T value: 5.0 t/ac/yr
 Slope length (horiz): 150 ft
 Avg. slope steepness: 3.0 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Alfalfa, spring seed	Tons	1.5000
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Alfalfa, spring seed regrowth after cutting	tons	2.0000
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Alfalfa, spring seed senses to yr2 regrowth	tons	3.0000
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Alfalfa, yr2 regrowth after cutting	tons	3.0000
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Alfalfa, yr2 regrowth after cutting	tons	3.0000
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Alfalfa, yr2 senses to yr3 regrowth	tons	3.0000
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Corn, grain	bushels	140.00
CMZ 04c: Other Local Mgt Records\Alf, Alf, Corn, Beans, FC sweeps, fc Z4	Soybean, mw 15 - 20 in rows	bu	35.000

Contouring: a. rows up-and-down hill
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss for cons. plan: 1.2 t/ac/yr Sediment delivery: 1.2 t/ac/yr
 Net C factor: 0.11
 Net K factor: 0.26

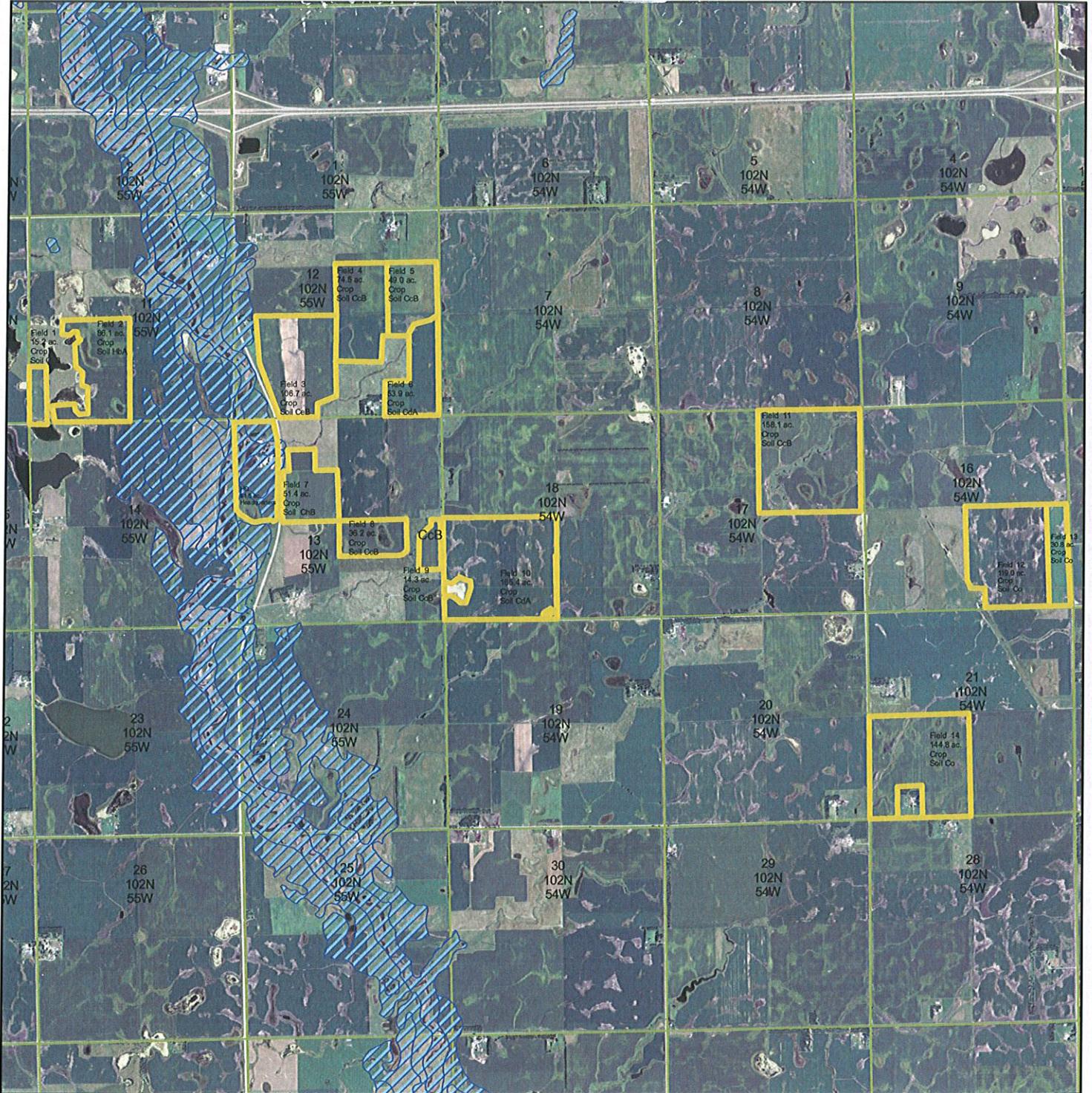
Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Chisel, sweep shovel		39
4/15/1	Cultivator, field 6-12 in sweeps		25
4/15/1	Drill or airseeder, double disk	Alfalfa, spring seed	25
7/15/1	Harvest, hay, legume	Alfalfa, spring seed regrowth after cutting	26
9/1/1	Harvest, hay, legume	Alfalfa, spring seed series to Y2 regrowth	38
6/1/2	Harvest, hay, legume	Alfalfa, Yr2 regrowth after cutting	63
7/15/2	Harvest, hay, legume	Alfalfa, Yr2 regrowth after cutting	63
9/1/2	Harvest, hay, legume	Alfalfa, Yr2 regrowth after cutting	65
11/1/2	Chisel, sweep shovel	Alfalfa, Yr2 series to Yr3 regrowth	52
5/5/3	Cultivator, field 6-12 in sweeps		39
5/5/3	planter, double disk oprn	Corn, grain	39
9/15/3	Harvest, silage		24
11/1/3	Chisel, sweep shovel		15
5/5/4	Cultivator, field 6-12 in sweeps		11
5/5/4	Drill or airseeder, double disk operator, w/ fert operators		11
10/20/4	Harvest, killing crop 50pct standing stubble	Soybean, mw 15 - 20 in rows	68

Soil conditioning index (SCI): 0.5
 Wind & irrigation-induced erosion for SCI: 0 t/acyr
 SCl+GM subfactor: 0.49
 SCl FO subfactor: 0.43
 SCl ER subfactor: 0.55
 Avg. annual slope STIR: 57.6

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

Leaching Risk Assessment Map KSAT Method



Legend

-  CNMP 2011
-  Leaching - High Risk



Nitrogen need/Phosphorus Crop Removal Manure Application Determination

Three factors are considered when recommending a nitrogen based or phosphorus based manure application:

- (1) Current level of phosphorus in the soil,
- (2) Potential soil loss
- (3) Presence or absence of a 100 foot vegetated buffer in fields having certain soil phosphorus test levels. See Table 1 below.

Table 1

Soil Test Phosphorus ppm	Potential Soil Loss – Sheet and Rill Erosion (Tons per Acre per Year) ^{1/}					
	Less than 4		4 to 6		Greater than 6	
	Min. 100 Foot Vegetated Buffer ^{2/4/}	Yes	Min. 100 Foot Vegetated Buffer ^{2/4/}	Yes		
Olsen	Bray-1	Yes	No	Yes	No	No application
0-25	0-35	Nitrogen based	Nitrogen based	Nitrogen based	Nitrogen based	No application
26-50	36-75	Nitrogen based	Nitrogen based	Nitrogen based	Phosphorus based (crop removal ^{3/})	No application
51-75	76-110	Nitrogen based	Phosphorus based (crop removal)	Nitrogen based	Phosphorus based (crop removal)	No application
76-100	111-150	Phosphorus based (crop removal)	Phosphorus based (crop removal)	Phosphorus based (crop removal)	Phosphorus based (crop removal)	No application
Greater than 100	Greater than 150	No application	No application	No application	No application	No application

^{1/} Refers to a calculated soil loss estimate using the Revised Universal Soil Loss Equation (RUSLE).

^{2/} Refers to the vegetated area width between manure or wastewater land application and a natural/manmade drainage, tile inlet or other conduit.

^{3/} Crop removal is the amount of phosphorus a planned crop removes in one crop year.

^{4/} If no conveyances, lakes, rivers, streams, etc... exist in application field then 100 foot vegetated buffer is not applicable.

Note: A single application of phosphorus applied as manure may be made at a rate equal to the recommended phosphorus application for the entire crop rotation or multiple years in the crop sequence. When such applications are made, however, the application rate should not exceed the recommended nitrogen application rate for the planned crop.

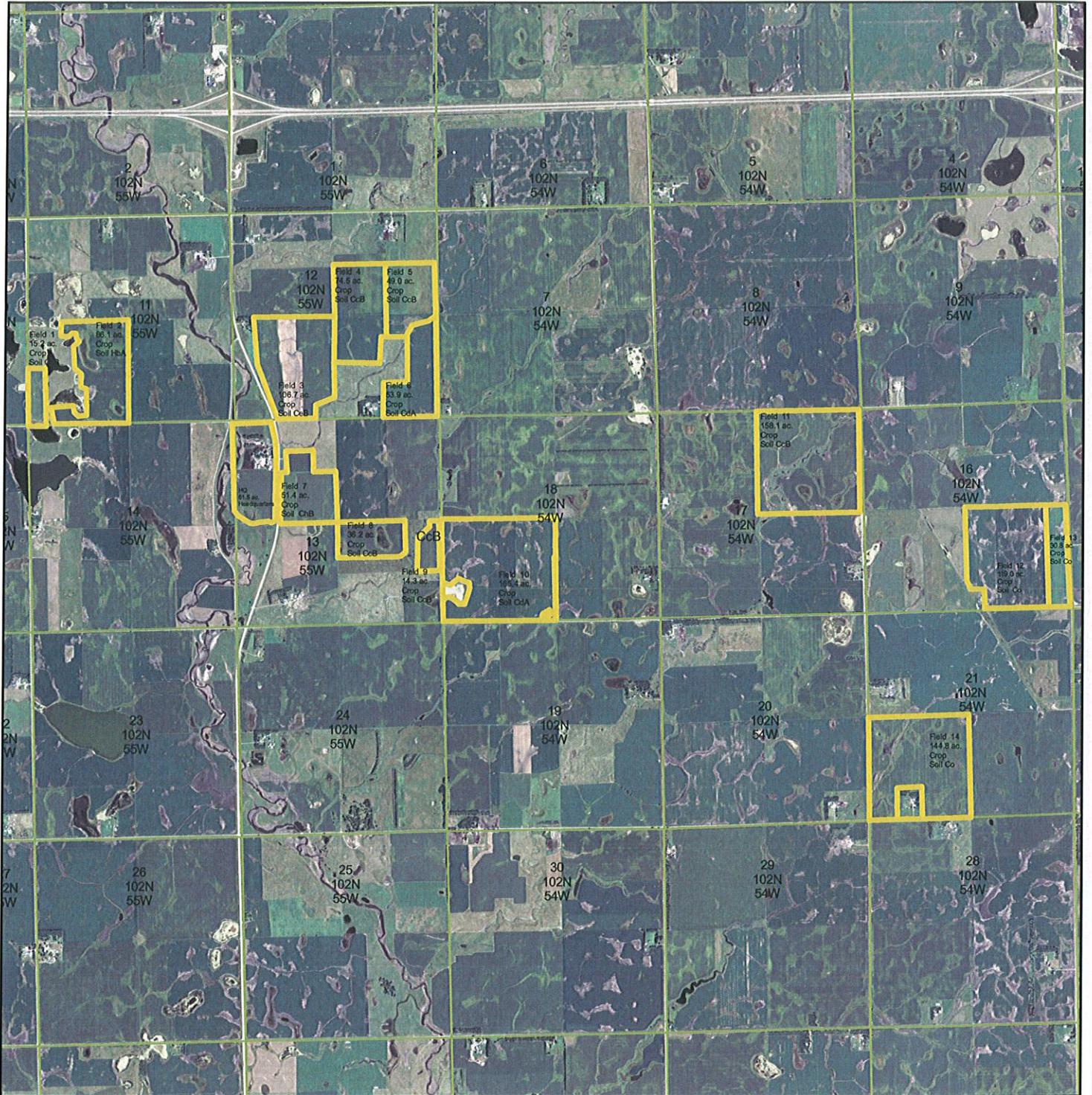
Section 6

Nutrient Management

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
6.1 Field Information -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • CNMP Plat Map • "Fields Targeted for Phosphorus Based Manure Management Spreadsheet" • Water Quality Risk Assessment Maps • Manure Application Lease Agreements (if DENR permitted) • Management Considerations for Nitrogen • Management Considerations for Phosphorus • Manure Application of Frozen Ground SD Guidelines 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.2 Manure Application Setback Distances -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • Buffer and Setback Requirement Worksheet • Special Application Setback Maps (if applicable) 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.3 Soil Test Data -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • Soil Test Summary • Soil Test Reports 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.4 Manure Nutrient Analysis -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • Manure Sample Test Reports 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.5 Planned Crops & Fertilizer Recommendations -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.6 Manure Application Planning Calendar -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.7 Planned Nutrient Applications -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.8 Field Nutrient Balance -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.9 Manure Inventory Annual Summary -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.10 Fertilizer Material Annual Summary -----			
6.11 Whole Farm Nutrient Balance -----			
(6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11 Refer to SD-CPA-63)			

Plat Map

CNMP



Legend

 CNMP 2011



N

WATER QUALITY RISK ASSESSMENT MAP

13-102-55



Legend

-  CNMP 2011
-  Setback Exclusion Area
- L** Leaching - High Risk
-  Manure Application Fields
- R** Runoff - High Risk



MANURE APPLICATION LEASE AGREEMENT

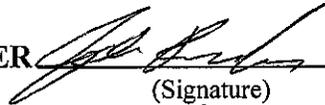
This Lease Agreement, made and entered into this 4th day of June, 2012 between Joe Producers hereinafter described as Landowner, and Bill Smith hereinafter described as Tenant, agree as follows:

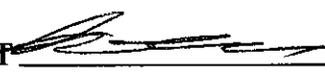
1. Landowner leases to the Tenant the following described real property situated in Myrtle Place County, South Dakota for the sole purpose of spreading solid and/or liquid animal manure on the said premises.

Field Location (1/4 Section, Township, Range)	Acres Available	Landuse
NE 1/4 of 8-112-53	160	Cropland

Total Acres (more or less) 160

- 2. Tenant shall be allowed to spread manure on the property owned by the Landowner described above at such regular intervals as are mutually agreeable by both parties. The spreading of manure, however, shall not interfere with the productivity, planting, growing and harvesting of crops on the above described premises.
- 3. Tenant and Landowner jointly agree to apply manure and/or commercial fertilizer at rates not to exceed crop nutrient needs using current soil and manure test results.
- 4. Tenant further agrees to comply with all local ordinances and state and federal environmental laws in the hauling and spreading of said animal manure.
- 5. This lease shall commence July 1st, 2012 and terminate in 5 years on July 1st, 2016. Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before September 30th of any given year of an election not to renew this Lease.
- 6. It is agreed that the Tenant listed above has sole authorization of spreading manure on the above described premises.
- 7. Other Conditions (Describe): _____

LANDOWNER 
 (Signature)
 Address: 39498 483rd Ave
 City State Zip: Retired Village, AZ 39495
 Phone: 394-994-9458

TENANT 
 (Signature)
 Address: PO Box 393
 City State Zip: Clearville, SD 49494
 Phone: 605-484-7784

Management Considerations For Nitrogen

Groundwater Concerns

The groundwater concern comes primarily from nitrogen. If not captured by plant roots, it can move down below the root zone and may enter the groundwater. The speed at which nitrate moves depends on the amount of precipitation and soil texture. Water moves through sandy soil much more rapidly than a clay soil.

Because nitrate moves through soil with water, it is extremely important that the rate applied, either as manure or fertilizer, does not exceed that which can be used by crops. Any nitrate remaining in the soil profile at the end of the season is subject to leaching.

Water Quality Risk Assessment Maps will be labeled with the symbol "L" on fields that are Vulnerable to N leaching.

If a field is determined highly vulnerable for nitrate leaching to an aquifer, all of the following management activities will be implemented.

1. Prior to the application of nitrogen above starter application rates, a nitrate nitrogen test (**zero to two foot and two to four foot sample**) will be taken and analyzed. Or An acceptable alternative to the zero to four feet sampling method would be to take a **zero to two foot sample every year within four weeks after crop harvest** prior to nitrogen applications above starter rates as recommended by SDSU.
2. Soil samples (zero to six inches) should also be included and analyzed for P and K. Soil samples will be taken as per land grant university recommendations found on the back of the SDSU Soil Testing Laboratory Soil Sample Information Sheet, or SDSU-FS935, "Recommended Soil Sampling Methods for South Dakota."

Nitrogen Best Management Practices

- Match manure nutrient applications to crop needs.
- Apply manure as close to the time of crop utilization as possible. Apply commercial fertilizer nitrogen in a sidedress or split application when fields are located over shallow aquifers or on soils that have a high leaching potential.
- Delay fall manure applications until soil temperatures drop below 50°F to minimize nitrate leaching and ammonia volatilization.
- Avoid applying manure on wet soils to minimize soil compaction, runoff, nitrate leaching and denitrification.
- Inject or incorporate the manure into the soil preferably within 24 hours for maximum nutrient-use efficiency and to reduce odor and runoff problems. Significant volatilization losses will occur when manure is left on the surface for several days.

Nitrogen Recommendations Using Manure

Crops can contain large amounts of nitrogen (Table 4-1). In most cases only the grain is removed and the straw is returned to the soil, supplying nitrogen through mineralization in subsequent years. Because of this and the other sources of N such as nitrate N already in soil, soil organic matter, precipitation and legumes, crop removal alone is not a good estimate of the amount of N to apply.

Table 4-1 Nitrogen Contained in Crops

Crop	Plant Part		
	Grain	Straw	Total
	-----pounds N-----		
Corn (bu)	0.9	0.5	1.4
Soybeans (bu)	3.7	0.8	4.5
Wheat (bu)	1.6	0.8	2.6
Oats (bu)	0.9	0.4	1.3
Barley (bu)	1.1	0.4	1.5
Sunflowers (cwt)	2.8	2.4	5.2
Alfalfa (ton)	----	----	55
Grass (ton)	----	----	30

Table 4-2 Nitrogen Requirements of Crops

Crop	Unit	Nitrogen Required ^{1/}
Wheat	bu	2.5 x yield ^{2/}
Oats	bu	1.3 x yield
Barley		
malting	bu	1.5 x yield
feed	bu	1.7 x yield
Rye	bu	2.5 x yield
Flax	bu	3.0 x yield
Corn (grain)	bu	1.2 x yield
Corn (silage)	ton	10.4 x yield
Sorghum (grain)	bu	1.1 x yield
Sorghum, sudan (hay)	ton	25 x yield
Grass hay	ton	25 x yield
Sunflowers	lb	0.05 x yield
Edible beans	lb	0.05 x yield
Millet	lb	0.035 x yield
Rape	cwt	6.5 x yield
Mustard	cwt	6.5 x yield
Safflower	lb	0.05 x yield
Buckwheat	bu	2.2 x yield
Potatoes	cwt	0.4 x yield

^{1/} Available manure nitrogen or fertilizer nitrogen to apply is equal to the nitrogen requirement minus soil NO₃ - N to a 2-ft depth minus any legume credits.

^{2/} Yield goal

Management Considerations For Phosphorus

Surface Water Concerns

Surface water concerns focus primarily on Phosphorus. Phosphorus acts very differently in soils than nitrogen. It attaches tightly to soils and does not generally move down through the soil profile. This lack of movement through soils results in accumulations of phosphorus in soil if phosphorus rates, either from manure or fertilizer, are greater than crop removal.

Increases in phosphorus concentrations in soil can result in more phosphorus moving off the field either attached to soil particles lost by erosion or dissolved in the runoff water. In some situations phosphorus could move into surface waters with manure itself if the manure is applied in such a manner that it moves directly into waterways.

Water Quality Risk Assessment Maps will be labeled with the symbol "R" on fields that are Vulnerable to Phosphorus runoff.

1. In no case shall manure or organic by product applications (broadcast or incorporated/injected) be made within 100 feet of a surface water or conveyance; 35 feet if a perennial grass filter strip is established and maintained.
2. A minimum of a 35-foot wide perennial grass filter strip is required in all cases on the edges of fields that border a lake, river, or intermittent/perennial stream.
3. In selected cases based on Table 1, depending on soil test phosphorus and estimated soil loss in a field, a perennial grass filter strip maybe required within 100 feet of a surface water or conveyance if manure is applied based on nitrogen needs of a crop and not crop removal of phosphorus (see Table 1).

Phosphorus Based Manure Application

If the manure application is required to be based on phosphorus crop removal, the application rate shall be based on phosphorus removed in the harvested portion of the crop.

Application can be based on multi-year phosphorus crop removal but cannot exceed the one year nitrogen crop need, and no manure may be applied to that field again until the applied phosphorus has been removed from the field via harvest and crop removal.

(See Table 1 for additional information)

Usually fields with High soil test P and/or high runoff potential.

Phosphorus Best Management Practices

- Establish and maintain grass filter strips at the point where water leaves the field to trap sediment and nutrients
- Control sheet and rill erosion by installing conservation practices including conservation tillage, contour farming, strip cropping, terraces and cover crops
- Control ephemeral erosion by installing grassed waterways, diversions and sediment retention structures.
- Incorporate or inject manure and commercial fertilizer where possible while maintaining sufficient crop residue levels for erosion control
- Grow high yielding, high phosphorus removing crops on fields with already high soil test phosphorus to reduce test levels

How Phosphorus affects Soils Tests

Phosphorus rate recommendations are based on the phosphorus soil test. This test is an index of availability of phosphorus to plants. It is not a measure of total available phosphorus or total phosphorus in soil. However, as total phosphorus levels increase in soils, the soil test index usually increases also.

These categories represent a decreasing probability of a yield response to broadcast fertilizer or manure. The probability of response is from about 80 percent at the very low soil test level to less than a 20 percent chance when soil tests are in the very high range.

Table 4-3 Soil Test Calibration Levels Used for Phosphorus and Potassium in SD

Nutrient	Name of Soil Test	Categories				
		Very Low	Low	Medium	High	Very High
-----ppm extractable (0-6 inch sample)-----						
Phosphorus	Bray P-1	0 - 5	6 - 10	11 - 15	16 - 20	21+
Phosphorus	Olsen	0 - 3	4 - 7	8 - 11	12 - 15	16+
Potassium	NH ₄ Ac	0 - 40	41 - 80	81 - 120	121 - 160	161+

If phosphorus is applied at rates greater than crop removal (Table 4-4), phosphorus soil test levels will increase. As a very general rule of thumb, for every 20 pounds of phosphorus (P₂O₅) applied and not removed by crops, the soil test index will increase by 1 part per million (ppm).

Following a good nitrogen application plan with manure in South Dakota can often result in a one to three ppm increase per year in the phosphorus soil test.

Table 4-4 Phosphorus Content of the Harvested Portion of Crops

Crop	P ₂ O ₅ (lbs)
Alfalfa (per ton)	12
Buckwheat (per bu)	0.53
Canola (per cwt)	1.5
Corn Grain (per bu)	0.35
Corn Silage (per ton)	4.3
Edible Beans (per cwt)	1.25
Feed Barley (per bu)	0.41
Flax (per bu)	0.7
Forage Sorghum (per ton)	5.8
Grass (per ton)	10
Malting Barley (per bu)	0.41
Millet (per cwt)	0.83
Mustard (per cwt)	1.5
Oats (per bu)	0.25
Potatoes (per cwt)	0.09
Rapeseed (per cwt)	1.5
Rye (per bu)	0.48
Safflower (per cwt)	1.14
Sorghum (per bu)	0.27
Soybean (per bu)	0.77
Sudan Grass (per ton)	5.8
Sunflowers (per cwt)	1.14
Wheat (per bu)	0.56

As the phosphorus soil test index increases, the possibility of moving significant amounts of phosphorus off the field to surface water usually increases. The movement is both phosphorus attached to soil particles lost with erosion and phosphorus dissolved in the runoff water.

From 60 to 80 percent of the phosphorus in most manure is available to plants within the first year of application. After several years of

application, the amount of phosphorus available to plants from manure is equal to that applied with the manure each year.

1/ Source:

Jim Gerwing, Extension Soil Specialist
Ron Gelderman, Director, Soil Testing Lab
South Dakota State University

Manure Application On Frozen Ground

Manure shall not be applied to frozen, snow covered, or saturated soil if the potential risk for runoff exists. In South Dakota (SD), this is interpreted to mean no manure application during periods when the soil surface is frozen (approximately November 15 to March 30). However, care and common sense must always be used to make sure manure applications and potential runoff will not cause environmental degradation to surface water regardless of what time of year it is.

Liquid manure applications to frozen or snow-covered (winter) soil will not be allowed. In situations where a catastrophic system failure is imminent; manure may be applied to soils with slopes less than 4 percent provided that a 1,000-foot setback is maintained to a lakes, rivers, streams and a 300-foot setback to non-cropped wetland or conveyances to lakes, rivers, or streams.

Incidental winter application of solid manure, waste feed materials, snow, and ice will be allowed to facilitate the proper operation of open feedlots by allowing producers to clean along feed bunks, watering areas, and allow removal of snow and ice from open lots.

- 1. Frozen ground manure applications will not exceed the rate calculated in the nutrient budget for the application field based on the current fall soil test results and applications will be no more than 10 percent of the annual manure production, as calculated on the SD-CPA-63 or SD-CPA-7.**
- 2. Frozen ground applications will only be allowed on slopes that are four percent or less and will be prioritized using current soil loss calculations based on the water erosion prediction technology as listed in the SD Technical Guide. Fields with the lowest predicted soil loss will have the highest priority for winter applications.**
- 3. No manure application on floodplains (as defined by the Natural Resources Conservation Service (NRCS) in the soil survey as frequently or occasionally flooded).**
- 4. No manure application within a 300-foot setback from conveyances or non-cropped wetlands.**
- 5. No manure application within 1,000 feet of lakes, rivers, and named perennial streams.**

Review and comply with other specific winter application requirements in the current SD General Livestock Permit regulations or your local county zoning ordinance when dealing with state and locally permitted facilities.

Failure to follow this guidelines could lead to United States Department of Agriculture contract violations and may result in monetary penalties due to breach of contract (see your contract appendix or contact your local NRCS office for further clarification).

Section 6.2 Buffer and Setback Requirements

Specific buffer zone and/or setback distances applicable to land application of manure are as follows:

Alternative
Chosen by
Producer

Option 1



- Do not apply manure (broadcast or incorporated) within **100-feet** of surface water or on either side of a conveyance.

-Or-

Option 2



- Establish and maintain a minimum **35-foot wide (quality) perennial grass filter strip** next to surface water or on either side of a conveyance; an area within which manure will not be applied.

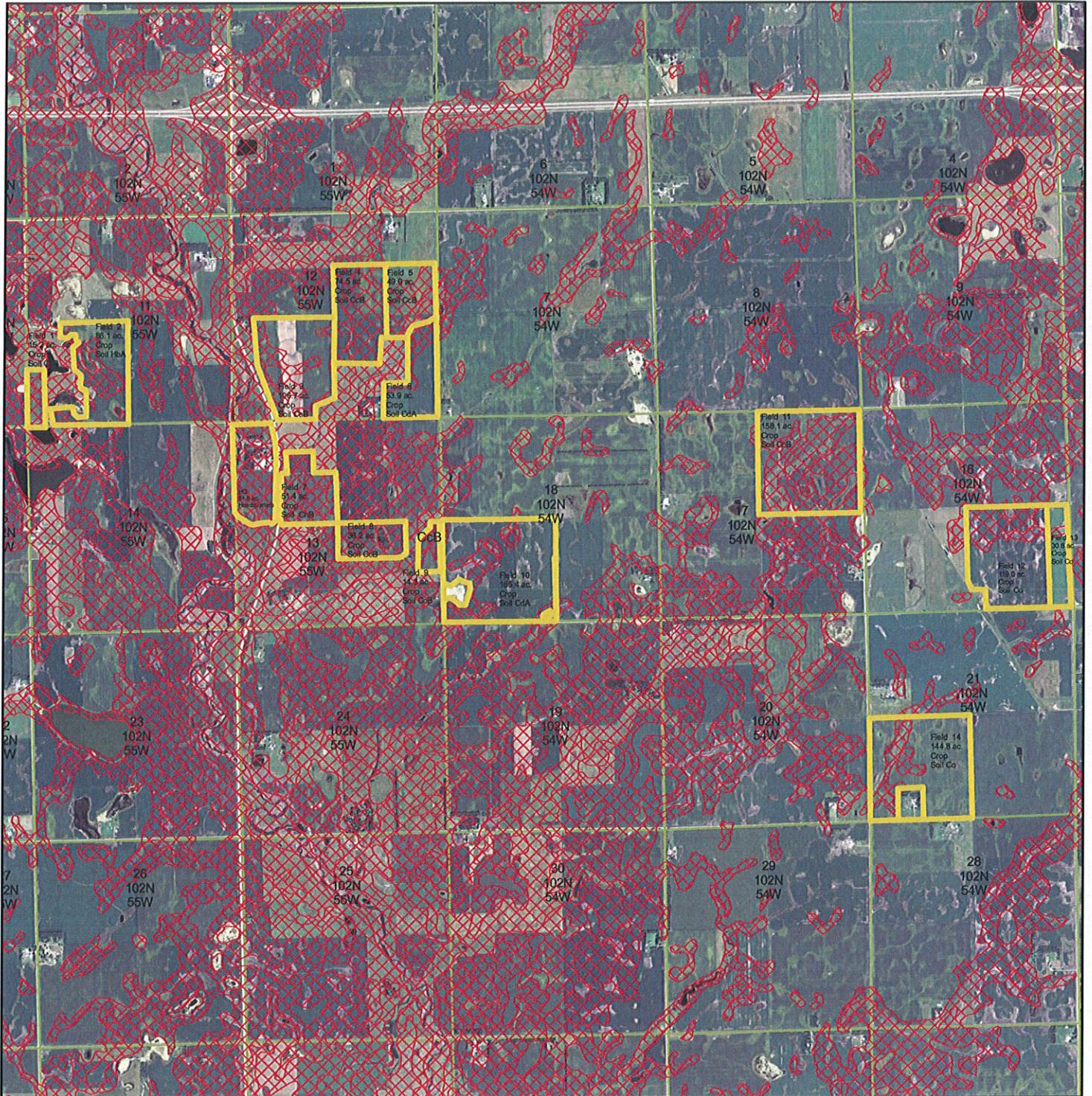
Option 3



- The livestock operator may choose to maintain or establish a minimum **100-foot wide perennial grass filter strip** in select cases where the soil test phosphorus and potential soil erosion in the field are such as to allow application of manure based on multiple years of phosphorus crop removal (not to exceed N needs of crop). See Table I in the Manure Application Planning section of this plan.

Review and comply with other specific setback requirements in the current South Dakota **General Livestock Permit** regulations or your **local county zoning ordinance** when dealing with state and locally permitted facilities.

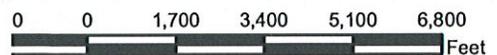
Winter Manure Application High Risk Areas Triple L. Farms CNMP



Legend

 CNMP 2011

 Winter Manure Application High Risk Areas



N



REPORT NUMBER 11-339-0723
 ANALYSIS DATE DEC 7, 2011
 ACCOUNT NO. 10109

13611 18th Street • Omaha, Nebraska 68144-3693
 (402) 334-7770 • FAX (402) 334-9121 • www.midwestlabs.com

Midwest Laboratories

GROWER

PAGE 1/2
 REPORT DATE DEC 13, 2011
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**SOIL ANALYSIS REPORT
 VIEW YOUR SUBMITTAL FORM**

LAB NUMBER	SAMPLE IDENTIFICATION	ORGANIC MATTER	PHOSPHORUS			POTASSIUM	MAGNESIUM	CALCIUM	SODIUM	pH	CATION EXCHANGE CAPACITY	PERCENT BASE SATURATION (COMPUTED)									
			LOI	P ₁ WEAK BRAY 1/7	P ₂ STRONG BRAY 1/7							BICARBONATE P OLSEN	K	Mg	Ca	Na	SOIL BUFFER INDEX	meq/100g	% K	% Mg	% Ca
23542662	1 THE 80	3.3	M	199	VH	200	VH	43	VH	374	VH	700	VH	2835	M	6.2	23.9	4.0	24.4	59.3	12.3
23542663	2 UP EAST	1.9	L	9	L	39	M	52	VH	183	M	756	VH	3683	H	7.2	25.2	1.9	25.0	73.1	
23542664	3 MERRITTS	3.2	M	63	VH	112	VH	44	VH	218	H	468	VH	3776	H	7.6	23.3	2.4	16.7	80.9	
23542665	4 WHITES	2.4	L	14	L	60	VH	44	VH	176	M	464	VH	3956	H	7.8	24.1	1.9	16.0	82.1	
23542667	5 JACKS	3.1	M	26	H	47	H	17	VH	276	VH	716	VH	2441	M	6.8	18.9	3.7	31.6	64.7	
23542668		2.6	M	6	VL	14	L	18	M	186	M	924	VH	3076	M	7.6	23.6	2.0	32.6	65.4	
23542670		3.0	M	18	M	39	M	18	H	144	M	864	VH	2832	M	7.2	21.7	1.7	38.2	65.1	
23542671		1.9	L	7	VL	18	L	15	H	206	H	994	VH	2569	M	6.8	21.7	2.4	38.2	59.4	
23542672		3.7	L	31	VH	43	H	15	H	282	H	1213	VH	2309	M	6.1	29.4	2.5	34.4	39.3	
		2.3	L	14	L	52	H	15	M	154	L	2112	VH	2400	L	7.2	34.5	1.1	51.0	13.9	13.0

Sample ID	NITRATE-N (PA)				SULFUR S _{cap}				ZINC Zn				MANGANESE Mn				IRON Fe				COPPER Cu				BORON B				EXCESS LIME RATE		SOLUBLE SALTS RATE	
	ppm	lbs/A	depth IN	depth IN	ppm	lbs/A	depth IN	depth IN	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppm	rate	ppmhos/ cm	rate		
1 THE 80	10	18	0-6	10	54	6-24		18	17	M	1.5	M																				
2 UP EAST	11	20	0-6	10	59	6-24		20	12	L	0.9	M																				
3 MERRITTS	7	13	0-6	11	59	6-24		22	12	L	1.2	M																				
4 WHITES	6	11	0-6	10	54	6-24		18	11	L	1.4	M																				
5 JACKS	2	4	0-6	6	32	6-24		11	17	M	1.6	M																				
	13	23	0-6	13	70	6-24		36	36	VH	0.5	VH																				
	5	9	0-6	13	79	6-24		23	999	VH	4.6	H																				

6.4

STEARNS DHIA Laboratories
825 12th Street South
P.O. Box 227
Sauk Centre, MN 56378

(320)352-2028 Fax(320)352-6163

03LOWERJ

Sample Date 12/15/09
SOLID MANURE-PLUS
PEN #6
Inv #: 1200425
Smp #: 40819

WET CHEMISTRY ANALYSIS:

MOISTURE, % 69.30
DRY MATTER (SOLIDS), % 30.70

REPORTED ON AS RECEIVED BASIS:

NITROGEN, % 0.75
ORGANIC N., % 0.60
AMMONIUM N., % 0.15
P2O5, % 0.37
K2O, % 0.81

NUTRIENT POUNDS PER TON

NITROGEN 15.00
ORGANIC N. 12.00
AMMONIUM N. 3.00
P2O5 7.00
K2O 16.00

	ESTIMATED 1ST YEAR AVAILABLE NUTRIENTS		\$ VALUE OF EQUIVALENT COMMERCIAL FERTILIZER	
	INJECTED OR INCORPORATED	SURFACE APPLIED	INJECTED OR INCORPORATED	SURFACE APPLIED
NITROGEN	9	4	3.63	1.51
P2O5	6	6	2.20	2.20
K2O	15	15	6.47	6.47
TOTAL VALUE, \$			12.31	10.19

VALUE BASED ON COMMERCIAL FERTILIZER COSTS AS OF 09/23/09
NITROGEN \$0.41/LB P2O5 \$0.37/LB K2O \$0.45/LB
Sample Price \$32.00

This analysis is based solely on the sample provided.

NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

Part 1: Field Information

Operator: _____

County: McCook

Date: 12/22/11

Field #	Field ID (Include maps to illustrate location) Name or Tract	Date added to Plan	Beginning acres in field	County	Soil map unit symbol	Field Location: (1/4 Section, Township, Range)	Predicted soil loss - RUSLE2 (T/acre/yr)	Control of Land	100' Vegetated Buffer	Excluded acres	Irrigated	No-Till	Current Soil Test Levels				
													N lb/ac	Phosphorus (ppm)	P Test	K (ppm)	Soil Sample Date
1	Jacks	12/28/11	15.2	McCook	CGB	SW 1/4 Sec. 11 T. 102 R. 55	2.1	Owned		5.2			59	31	Bray1	282	12/07/11
2	Jacks	12/28/11	86.1	McCook	CGB	SW 1/4 Sec. 11 T. 102 R. 55	2.2	Owned		15.4			65	26	Bray1	276	12/07/11
3	Merritts	12/28/11	106.7	McCook	CGB	SW 1/4 Sec. 12 T. 102 R. 55	1.5	Owned		12.6			47	14	Bray1	429	04/15/11
4	Mayrose West	12/28/11	74.5	McCook	CGB	E 1/2 Sec. 12 T. 102 R. 55	2.2	Owned		9.0			54	8	Olsen	326	04/15/11
5	Mayrose East	12/28/11	49.0	McCook	CGB	E 1/2 Sec. 12 T. 102 R. 55	2.2	Owned		4.3			49	7	Olsen	155	12/07/11
6	East of Tins	12/28/11	53.9	McCook	CDA	E 1/2 Sec. 12 T. 102 R. 55	0.8	Owned		2.9			92	52	Olsen	218	12/07/11
7	Up East	12/28/11	51.4	McCook	CHB	NW 1/4 Sec. 13 T. 102 R. 55	1.9	Owned		7.3			77	199	Bray1	374	12/07/11
8	The 80	12/28/11	36.2	McCook	CGB	SE 1/4 Sec. 13 T. 102 R. 55	2.2	Owned		7.2			55	8	Bray1	322	12/11/11
9	The 80	12/28/11	14.3	McCook	CGB	SE 1/4 Sec. 13 T. 102 R. 55	2.2	Owned		1.3			47	18	Olsen	144	12/07/11
10	Whites	12/28/11	165.4	McCook	CDA	SW 1/4 Sec. 18 T. 102 R. 54	0.8	Owned		44.7			16	5	Olsen	121	12/07/11
11	Peterson's	12/28/11	158.1	McCook	CGB	NE 1/4 Sec. 17 T. 102 R. 54	2.2	Owned		49.4			32	17	Olsen	116	12/07/11
12	Kostboth	12/28/11	119.0	McCook	Co	SE 1/4 Sec. 16 T. 102 R. 54	1.0	Owned		30.6			55	16	Olsen	234	12/07/11
13	Kostboth	12/28/11	30.8	McCook	Co	SE 1/4 Sec. 16 T. 102 R. 54	1.2	Owned		8.4			261	59	Olsen	261	12/07/11
14	Klockman's	12/28/11	144.8	McCook	Co	SW 1/4 Sec. 21 T. 102 R. 54	1.0	Owned		26.3							
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	

Total: 1,105.4
Comments:

NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

Part 2: Estimated Nutrient Requirement

Operator: McCook

County: McCook

Date: 12/22/11

Part 3: Plant

Operator: 32.

Field ID (Include maps to illustrate location) Actual or Yield Goal
 Yields indexed by soil productivity (Productivity Index)
 County Average Yields (SP Agricultural Statistics Service)

Crops in Rotation and Average Yield:
 Additional 10% is added to yields for nutrient management purposes.

Field # Name or Tract

Field #	Crop	Previous Year		Year 1		Year 2		Initial Nutrient Mgt. Plan - N based (acres)	Nutrient Recommendation - SDSU Extension Service EC-750			Manure application based on:
		Pl Yield	Actual Yield	Pl Yield	Yield Goal	Pl Yield	Yield Goal		N	P ₂ O ₅	K ₂ O	

1	Jack's	1	Alfalfa (ton) <1 plant/sq.ft.	4	4	Alfalfa (ton) <1 plant/sq.ft.	4	Alfalfa (ton) <1 plant/sq.ft.	4	70.7	85	0	0	0	Nitrogen need
2	Jack's	2	Soybean (bu)	47	47	Corn (bu)	153	Soybean (bu)	47	94.1	55	0	0	0	Nitrogen need
3	Merritt's	3	Soybean (bu)	41	41	Corn (bu)	133	Soybean (bu)	41	65.5	0	7	0	0	Nitrogen need
4	Mayrose West	4	Corn (bu)	153	153	Soybean (bu)	47	Corn (bu)	153	44.7	0	0	20	0	Nitrogen need
5	Mayrose East	5	Corn (bu)	153	153	Soybean (bu)	47	Corn (bu)	153	51.0	0	0	28	0	Nitrogen need
6	East of Tim's	6	Corn (bu)	159	159	Soybean (bu)	49	Corn (bu)	159	0.0	0	34	0	0	P crop removal
7	Up East	7	Soybean (bu)	42	42	Corn (bu)	138	Soybean (bu)	42	0.0	67	0	0	0	No Application
8	The 80	8	Soybean (bu)	47	47	Corn (bu)	153	Soybean (bu)	47	13.0	89	0	0	0	Nitrogen need
9	The 80	9	Soybean (bu)	47	47	Corn (bu)	153	Soybean (bu)	47	120.7	104	0	0	60	Nitrogen need
10	Whites	10	Soybean (bu)	49	49	Corn (bu)	159	Soybean (bu)	49	108.7	0	0	40	0	Nitrogen need
11	Peterson's	11	Corn (bu)	153	153	Soybean (bu)	47	Corn (bu)	153	88.4	0	0	0	5	Nitrogen need
12	Kosbooh	12	Corn (bu)	148	148	Soybean (bu)	45	Corn (bu)	148	22.4	0	0	0	0	Nitrogen need
13	Kosbooh	13	Alfalfa (ton) >1 plant/sq.ft.	4	4	Alfalfa (ton) >1 plant/sq.ft.	4	Alfalfa (ton) >1 plant/sq.ft.	4	0.0	0	0	0	0	P crop removal
14	Klockman's	14	Soybean (bu)	45	45	Corn (bu)	148	Soybean (bu)	45						
15															
16															
17															
18															
19															
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27															

Total Acres: 679.2

Total lbs of N and P₂O₅ available for crops: 25,637 82,043

Total lbs of N and P₂O₅ required by fields: 96,070 30,198

Adequate acres are available based on Nitrogen analysis

However, P₂O₅ is in excess of removal. At this rate, it will take approximately 9 year(s) to build all listed fields up to 50 ppm P (Olsen).

Comments:

NUTRIENT MANAGEMENT PLAN
 FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

Field Nutrient Application

17.

33.

County: **McCook**

34.

Date: **12/22/11**

36.

Line #	Field ID (Include maps to illustrate location) Name or Tract	Field #	Manure Application and Incorporation		Manure Test				Available N (First crop year) lbs/Ton or lbs/1,000 gal	Maximum Manure Application Rate	
			Type of Manure (Year of Application)	Type of Application (Time of Incorporation)	Total N	Inorganic N	Total P2O5	Total K2O		Date Tested	To meet N needs
1	Jack's	1									
2	Jack's	2									
3	Merritt's	3									
4	Mayrose West	4									
5	Mayrose East	5									
6	East of Tim's	6									
7	Up East	7									
8	The 80	8									
9	The 80	9									
10	Whites	10									
11	Peterson's	11									
12	Kosboth	12									
13	Kosboth	13									
14	Klockman's	14									
15											
16											
17											
18											
19											
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21											
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25											
26											
27											

NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

Part 4: Nutrient Application

Operator: 17. 37.

County: 38. McCook

Date: 39. 12/22/11

40.

Field #	Field ID (Include maps to illustrate location)	Field #	Acres of Actual Nutrient Application	Manure Application			Nutrients Applied						Estimated years to reapplication based on P ₂ O ₅ rate			
				Actual Manure Rate Applied	Date Manure Applied	Time Period When Manure Applied	Commercial lbs/acre	Manure lbs/acre	Total lbs/acre	N	P ₂ O ₅	K ₂ O				
1	Jack's	1														N/A
2	Jack's	2														N/A
3	Merritt's	3														N/A
4	Mayrose West	4														N/A
5	Mayrose East	5														N/A
6	East of Tim's	6														N/A
7	Up East	7														N/A
8	The 80	8														N/A
9	The 80	9														N/A
10	Whites	10														N/A
11	Peterson's	11														N/A
12	Kosboth	12														N/A
13	Kosboth	13														N/A
14	Klockman's	14														N/A
15																N/A
16																N/A
17																N/A
18																N/A
19																N/A
20																N/A
21																N/A
22																N/A
23																N/A
24																N/A
25																N/A
26																N/A
27																N/A

Comments:

Section 7

Feed Management (Optional)

Add Operation Specific Documents As Applicable	Electronic CNMP	Hardcopy CNMP	PAD
Feed Management Plan (Optional) -----	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Section 8

Other Utilization Options (Optional)

Add Operation Specific Documents As Applicable	Electronic CNMP	Hardcopy CNMP	PAD
Other Utilization Options-----	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Section 9

Record Keeping Forms

Required Documents	Electronic CNMP	Hardcopy CNMP	PAD
9.1 Producer Activity Checklist ----- <ul style="list-style-type: none"> • Required Documentation Checklist 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.2 Inspection/Monitoring Records----- <ul style="list-style-type: none"> • Operation and Maintenance Guide • Weekly Pond Inspection Record (If DENR Permitted) • Daily Precipitation Log (If DENR Permitted) 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.3 Annual Crop Records-----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.4 Manure Application Records -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.5 Other Nutrient Application Records -----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.6 Manure Exports-----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.7 Manure Imports-----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.8 Internal Transfers-----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.9 Other Records-----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Section 9 Required Documentation - Annual Record Keeping

1. Manure application should be documented each year with the following information.

- Soil Test Results** and recommendations for all fields receiving manure (prior to manure application)
 - Nitrate Nitrogen (2 ft. or 4 ft. depth) refer to "Management Considerations for Nitrogen"
 - Phosphorus (0-6")
 - Potassium (0-6")

- Manure Test Results** (lbs/ton or lbs/1,000 gal)
 - **Also test holding / evaporation ponds** (if applicable)
 - Total Nitrogen Content of Manure
 - Inorganic Nitrogen (Ammonium N)
 - Phosphorus (P₂O₅)
 - Potassium (K₂O)

- A Field Map** to identify the fields hauled to, including acres spread on and location within the field (*Water Quality Risk Assessment Map*)

- 9.1 "Producer Activity Checklist"**

- 9.2 Inspection/Monitoring Records**
 - Operation and Maintenance Guide
 - Weekly Pond Inspection Record (If DENR Permitted)
 - Daily Precipitation Log (If DENR Permitted)
 - Land Application Inspection Records (If DENR Permitted)

- Section 9.3 "Crop Records"**

- Section 9.4 "Manure Application Records"**

- Section 9.5 "Commercial Fertilizer & Irrigation Water Application Records"**

- Section 9.6, 9.7, & 9.8 "Manure Imports, Exports, Transfers"**

- Complete **Nutrient Management Tool** (form SD-CPA-63) or **Annual Nutrient Management Plan Worksheet** (form SD-CPA-8) for fields receiving manure application

- Manure Equipment Calibration Records** (May be Used for Multi-year Applications)

2. DENR General Permitted Facilities (include items listed above in 9.2)

- Land Application Inspections Record**
- Daily Record of Precipitation (at site)**
- Weekly Containment Inspection**

3. If a whole farm nutrient budget program is intended:

- Soil test results and recommendations for the remaining fields receiving nutrients from other sources (i.e. commercial fertilizer) include form and rate applied per field
- Crop planting and harvest dates and yields per field

**Section 9.6 , 9.7, & 9.8
Manure Tracking**

9.6 Planned Manure Expots off the Farm

<i>Month-Yr.</i>	<i>Manure Source</i>	<i>Amount</i>	<i>Receiving Operation</i>	<i>Location</i>

9.7 Planned Manure Imports onto the Farm

<i>Month-Yr.</i>	<i>Manure Source</i>	<i>Amount</i>	<i>Receiving Operation</i>	<i>Location</i>

9.8 Planned Internal Transfers of Manure

<i>Month-Yr.</i>	<i>Manure Source</i>	<i>Amount</i>	<i>Receiving Operation</i>	<i>Location</i>

Section 10.1 & 10.2 References

South Dakota Department of Environment and Natural Resources. *General Water Pollution Control Permit for Concentrated Animal Feeding Operations*, October 20, 2003

<http://denr.sd.gov/des/sw/Permits/E0447V3-AllAnimalGPermit.pdf>

South Dakota State University, Cooperative Extension Service, United States Department of Agriculture. *Fertilizer Recommendations Guide*, EC750, September 2005

http://pubstorage.sdstate.edu/AgBio_Publications/articles/EC750.pdf

South Dakota State University, College of Agriculture and Biological Sciences, South Dakota Cooperative Extension Service, SD Department of Agriculture. *Recommended Soil Sampling Methods for South Dakota*, FS935, May 2006

http://pubstorage.sdstate.edu/AgBio_Publications/articles/FS935.pdf

South Dakota State University, Cooperative Extension Service, *Quantities of Plant Nutrients Contained in Crops*, ExEx 8009, January 1985

ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man_Nut_Mgmt/Nov_Update/ExEx8009.pdf

United States Department Of Agriculture – NRCS. *Calibrating Manure Spreader Application Rates*, SD-NRCS-FS-43, June 2002

ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man_Nut_Mgmt/CalbrateSpdr.pdf

United States Department Of Agriculture – NRCS. *Nutrient Management*, Code 590, SDTG Notice 264, December 2007

http://efotg.sc.egov.usda.gov//references/public/SD/590_Notice264.pdf

United States Department Of Agriculture – NRCS. *Sampling Manure for Nutrient Management*, SD-NRCS-FS-36, November 2002

[ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man Nut Mgmt/sampling.pdf](ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man_Nut_Mgmt/sampling.pdf)

United States Department Of Agriculture – NRCS. *Sampling Soils for Nutrient Management*,
SD-NRCS-FS-50, October 2005

[ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man Nut Mgmt/SamplingSoilforNutrientManagement.pdf](ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man_Nut_Mgmt/SamplingSoilforNutrientManagement.pdf)

United States Department Of Agriculture – NRCS. *Using Manure Analysis Results*, SD-
NRCS-FS-38, March 2003

[ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man Nut Mgmt/SDNRCSFS38_analysis.pdf](ftp://ftp-fc.sc.egov.usda.gov/SD/www/Technical/Man_Nut_Mgmt/SDNRCSFS38_analysis.pdf)

United States Department of Agriculture – NRCS – SD – Comprehensive Nutrient Management
Planning Website: www.sd.nrcs.usda.gov/technical/Nutrient_Management.html