Comprehensive Nutrient Management Plan Example
As generated by the Michigan CNMP Template

For

Training Dairy
123 Road
Somewhere, MI

County:

Driving directions to the farm from nearest town.

NOTE TO USER: This is not a mandatory document. This is the type of information that is needed in a CNMP and using MMP software can help you achieve this information. You may also generate similar information by other methods if you choose
The tables in this document have been generated from the Purdue MMP software, via the Michigan CNMP Template, both available free, at www.maeap.org

Date Printed: January 2005

PLAN PROVIDER
Name:
Address:
Phone:
Email:

Page numbers and a table of contents improve the usefulness of a CNMP

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Tables

Signature Page

I understand that this Comprehensive Nutrient Management Plan (CNMP) was developed and approved on the basis that I have disclosed to the CNMP Provider to the best of my knowledge all information pertaining to my livestock operation for each component of my CNMP. The CNMP Provider is not responsible for data / information that I have knowingly denied or restricted information for any resource problem(s) that I have not disclosed. It is my responsibility to implement and manage my CNMP. If I do not follow my schedule of implementation listed in my CNMP, the CNMP Provider is not responsible for any damages, losses or liability.

I understand it is my responsibility to obtain any and all permits that may be required to implement my CNMP and to keep all of the necessary records associated with the implementation of my CNMP. I understand that my CNMP was developed based on the requirements of the current Michigan Right to Farm (RTF) Generally Accepted Agricultural and Management Practices (GAAMPs) and the "Comprehensive Nutrient Management Plan (CNMP) - A Component of the Michigan Agricultural Environmental Assurance Program" dated August 10, 2000. I understand that it is my responsibility to review my CNMP at least annually and update it as necessary as conditions change on my farm.

_____ _____

Producer Signature Date

_____ _____

Producer Signature Date

This CNMP includes:

- ❑ Overview
- ❑ Farm Headquarters Map
- ❑ Animal Outputs
- ❑ Conservation Practices on Fields Used for Land Application
- ❑ Land Application Management
- ❑ Record of CNMP Implementation
- ❑ Inputs to Animals – Feed Management
- ❑ Alternative Utilization Activities
- ❑ Inspections, Operation and Maintenance, Training
- ❑ Schedule of Implementation
- ❑ Emergency Action Plan
- ❑ References
- ❑ Appendices
- ❑ Conforms to NRCS technical standards for structural conservation practices proposed and CNMP management activities.

Prepared by: _____ _____

Date

Checked by: _____ _____

Date

Approved by: _____ _____

Certified CNMP Provider Date

Purpose

A Comprehensive Nutrient Management Plan (CNMP) describes the production practices, equipment, and structure(s) that the owner/operator of an agricultural operation now uses and/or will implement to sustain livestock and/or crop production in a manner that is both environmentally and economically sound. It combines conservation practices and management activities into a system that addresses animal production operations from feed inputs through the use of animal manure and other organic by-products. The CNMP is a planning tool as well as a record of decisions in that it details the activities that the landowner/operator implements. It also documents all the land (cropland, facilities, etc.), which the landowner/operator owns or has decision-making authority over, on which manure or organic by-products will be generated, handled or applied.

The CNMP will help the operator in complying with the Generally Accepted Agricultural and Management Practices (GAAMPs) developed and adopted under the Michigan Right to Farm Act, including the GAAMPs for Manure Management and Utilization, and Site Selection and Odor Control for New and Expanding Livestock Production Facilities. In addition, the CNMP conforms to USDA Natural Resources Conservation Service (NRCS) Technical Guidance for developing CNMPs which includes meeting NRCS technical standards for structural conservation practices proposed and all management activities in the CNMP.

Conditions

State if this CNMP is meeting a Permit requirement, MDA complaint, under DEQ order, seeking MAEAP verification and or NRCS EQIP financial assistance funds.

This CNMP will need to be recertified by a Certified CNMP Provider at least once every three years, for MAEAP re-verification by the Michigan Dept. of Agriculture.

This CNMP needs to be updated annually.

This CNMP needs to be updated and recertified by a Certified CNMP Provider prior to any of the following circumstances occurring:

1. An increase in the number of animal units that is greater than or equal to 10% of the number identified in the CNMP
2. An increase in the number of animal units that results in a decrease of manure storage capacity time by one month or more.
3. An increase in the number of animal units where the manure generated by the livestock requires more land for its application than is available at the time of the increase
4. A decrease in the number of acres available for land application, where the manure/wastewater generated requires more land for its application than will be available after the decrease.

Overview (Executive Summary needed for Permit)

Pertinent points to list in the Overview (just list briefly, discuss items later in plan).

- *County, township and section number of farm, if not on the front page*
- *Briefly describe the farming operation, including enterprises, type of operation, number of livestock, animal units.*
- *Total acres and acres available for manure application, amount owned or rented*
- *Unique points that are highly relevant to the manure management of the farm such as no-till, inject or surface spread, winter spreading needed, irrigation of manure or just water, prevalence of tile drains etc. Sometimes it is important to list what they don't have (no outdoor lots, no outdoor storage, no surface waters on farm, etc.)*
- *Indicate if it is a new, existing or expanding production facility.*
- *The type, size and general construction of the facility and of manure storage system(s), examples: total confinement, outdoor storage, earthen or prefab storages, general length of storage.*
- *Identify water quality or resource concerns specific to this farm (runoff to surface waters, groundwater, odor).*
- *If plan is needed to satisfy a Right to Farm, DEQ issue, or is seeking EQIP funds through NRCS, please state how the plan addresses these concerns.*

Map of the Farm Headquarters

Buildings and other structural features should be labeled and those names used consistently throughout the CNMP. Often, several maps are useful, such as a larger map showing the relationship of fields and farmsteads to each other and a close up map showing the following items:

- *North arrow and prevailing wind direction*
- *Location of all buildings including livestock, machine storage, feed, fuel, chemical, fertilizer storage, etc.*
- *Roads and other location references*
- *Farm house(s) and other pertinent physical features*
- *Animal housing, outdoor lots, livestock travel lanes*
- *Manure storage structures*
- *Other sources of manure and wastewater such as silage bunkers, etc.*
- *Map all wells and give the distance, in feet, to all manure storage systems within 800' of well*
- *Surface waters*
- *Direction of slope around farmstead indicating direction of runoff*
- *County, township and section numbers.*

Evaluation of Existing Components Letter

Existing components may be included as part of a CNMP only if all of the following conditions are met:

1. *The existing component is consistent with the safety guidance of the CNMP.*
2. *An investigation of the existing component indicates it is consistent with sound engineering practices.*
3. *The failure of the existing component will not impair the structural integrity or operation of new components.*
4. *The existing component is in good operating condition.*
5. *The existing component can be managed as part of the CNMP.*

Refer to the MAEAP website for "CNMP Answers to Frequently Asked Questions" for more information on what is needed to document and evaluate existing components of a livestock facility. This should be signed by the person who conducted the evaluation.

Table 1: Annual Available Farm Nutrient Balance Summary

	N	P205	K20
Annual Animal Output, as excreted manure	52,565	25,118	30,685

	Avail. N	P2O5	K2O
Annual Animal Output, based on manure tests and calculated volume	53,252	24,670	67,279

Based on feed ration, mass balance (P only)			

	N	P2O5	K2O
Crop Removal for whole farm	123,152	39,138	95,848

	N	P2O5	K2O
Crop Removal for spreadable acres	122,393	38,924	95,269

	Acres
Average acres needed for one year of P2O5 crop removal (based on manure tests, if available)	413.7

N = Total Nitrogen, no storage or hauling losses estimated
Crop Removal N = Average values of all plan years entered. Nitrogen crop removal is based on crop needs of non-legumes and removal for legumes. P_2O_5 and K_2O removal also based on total plan years and removal values for all crops.

***Feed Rations can be calculated by using the table in the back of MMPS-18-2000 or using the Excel spreadsheet found at www.maeap.org under resources.*

Table 2: Animal Output Details

Animal ID	Type or Phase	Head	Weight	Confinement Period	Days Confined	% Coll.	Storage ID
				-			Wash Water
Calves	Calf (dairy)	8	250	Jan Early - Dec Late	365	100	Compost
Day old 4wk old	Calf (dairy)	15	100	Jan Early - Dec Late	365	100	Compost
Dry Cows & Springers	Dry cow (dairy)	18	1400	Jan Early - Dec Late	365	100	Dry Cow Barn
Dry Cows in barn	Dry cow (dairy)	20	1400	Oct Early - Apr Late	212	60	Old Dry Cow Barn
Dry Cows in Lot	Dry cow (dairy)	20	1400	Oct Early - Apr Late	212	40	Dry Cow Lot
Milking Dairy	Milk cow (dairy)	146	1400	Jan Early - Dec Late	365	100	Underground Storage
Yearlings	Growing heifer/steer (dairy)	15	750	Jan Early - Dec Late	365	100	Hip Roof Barn
Young Calves	Calf (dairy)	23	250	Jan Early - Dec Late	365	100	Dry Cow Barn

When % collected does not equal 100% and/or days confined are less than 365, please explain.

Table 3: Annual Animal Output (Production) - As Excreted

Based on MWPS-18 Sec. 1-2000

						Annual Nutrients lbs./yr.		
Animal ID	Ave Wt (lbs)	Ave Head	A.U.	Volume or Wt.	Units	N	P2O5	K2O
Calves	250	8	2	31	Ton/Year	234	58	204
Day old 4wk old	100	15	2	31	Ton/Year	234	58	204
Dry Cows & Springers	1,400	18	25	374	Ton/Year	3,285	1,004	2,555
Dry Cows in barn	1,400	20	28	146	Ton/Year	1,282	392	997
Dry Cows in Lot	1,400	20	28	23,032	Gal/Year	855	261	665
Dry Cows on Pasture	1,400	20	28	176	Ton/Year	1,542	471	1,200
Milking Dairy	1,400	146	204	945,642	Gal/Year	43,187	22,338	23,083
Yearlings	750	15	11	174	Ton/Year	1,245	361	1,164
Young Calves	250	23	6	92	Ton/Year	701	175	613

						N	P205	K20
Totals						52,565	25,118	30,685

A.U. = animal units, calculated by average weight times the number of average head divided by 1000.
No nitrogen losses have been estimated.
The above table ignores all manual input of manure analysis or volumes.
The above table calculates nutrients based on data in the Initialization Files, under animal types.

Collection and Transfer

Describe the manure and wastewater collection method(s), the location of collection points, frequency of collection (daily, weekly, monthly, etc.), and the equipment and/or structural facilities needed for transfer and/or collection.

Table 4: Collection and Transfer

Animal ID	Head	Wt (lbs)	Storage	Bedding, Water, Transfer, Hauling Schedule
			Wash Water	
Calves	8	250	Compost	
Day old 4wk old	15	100	Compost	
Dry Cows & Springers	18	1,400	Dry Cow Barn	
Dry Cows in barn	20	1,400	Old Dry Cow Barn	5 bales straw bedding 3x/wk., manure hauled to field M,W,F
Dry Cows in Lot	20	1,400	Dry Cow Lot	No bedding, manure hauled to field M,W,F
Dry Cows on Pasture	20	1,400	Dry Cow Pasture	
Milking Dairy	146	1,400	Underground Storage	
Yearlings	15	750	Hip Roof Barn	
Young Calves	23	250	Dry Cow Barn	

Under the Animals Tab, fill in the Notes column and that information will be displayed under collection and transfer above.

Table 5: Annual Animal Outputs (Production cont'd.)

Based on manure tests and calculated volumes, when entered

Storage ID	Annual Volume	Units	Avail. N	P2O5	K2O5	Source
Compost	297	Ton	3,119	2,792	6,890	Analysis
Dry Cow Barn	399	Ton	3,112	3,870	11,731	Analysis
Dry Cow Lot	24,000	Gal	259	262	667	Book
Dry Cow Pasture	182	Ton	364	473	1,201	Book
Hip Roof Barn	187	Ton	1,029	1,459	4,376	Analysis
Old Dry Cow Barn	154	Ton	385	400	1,001	Book
Underground Storage	1,422,000	Gal	44,935	15,358	41,238	Analysis
Wash Water	70,000	Gal	49	56	175	Analysis

	Avail. N	Avail P2O5	Avail K2O5
Total for all Storage ID's	53,252	24,670	67,279

Available N = Nitrogen adjusted for storage losses but not for application losses.

When an actual (measured) manure sample is typed into the Analysis Tab of MMP, it is important to also type a value into the "Measured Manure Production". This value will over ride the values listed in "Estimated Manure Production" under the Analysis Tab and any values entered under the "Added Water" and "Bedding" columns under the Animals tab. The Measured Manure Production should be calculated to include rain, evaporation, runoff, bedding, washwater, etc. If there is not a better estimate of the measured value, you may type in the same value as the estimated. When a measured manure volume is entered without a measured analysis, MMP dilutes or concentrates the estimated analysis based on the new volume and lists these as Book source, leaving the total nutrients unchanged.

Other Animal Outputs (Production)

Describe additional output information (not included in tables) and/or management activities pertaining to: milk house and parlor wastewater, plate cooler/supplemental cooling, runoff from feedlot/barnyard, stored livestock feed areas, silage leachate, spoiled feed, water control devices (i.e., roof gutters, diversions), animal mortality management, and veterinary waste management.

Manure and Wastewater Testing/Analysis Plan

Describe the manure test method, including the method of collection, when collected, etc. For more information on proper manure sampling techniques, refer to the MAEAP Q and A document. A manure and wastewater testing plan should then be developed and listed in the Schedule of Implementation.

Table 6: Manure Nutrient Analysis

Storage ID	Avail. N	P2O5	K2O	Units	Source
Underground Storage	31.6	10.8	29.0	Lb/1000 Gal	Analysis
Hip Roof Barn	5.5	7.8	23.4	Lb/Ton	Analysis
Dry Cow Barn	7.8	9.7	29.4	Lb/Ton	Analysis
Compost	10.5	9.4	23.2	Lb/Ton	Analysis
Old Dry Cow Barn	2.5	2.6	6.5	Lb/Ton	Book
Dry Cow Lot	10.8	10.9	27.8	Lb/1000 Gal	Book

Dry Cow Pasture	2.0	2.6	6.6	Lb/Ton	Book
Wash Water	0.7	0.8	2.5	Lb/1000 Gal	Analysis

Available N = Estimated available N based on manure analysis or book values, but prior to application method.
Under the Analysis Tab, if manure analysis values are entered under the measured columns, be sure to also enter a measured manure production value. The source of these will be listed as analysis. If no value is entered, the book value in MMP will be used. If a measured manure volume is entered, but no measured manure analysis, then the source is also listed as analysis

Manure Storage

State where the Evaluation of Existing Component Letter(s) can be found. It should be signed by the preparer. State any additional descriptions necessary to understand the storage structures. Safety precautions specific to the type of structure should be included in the emergency plan.

Table 7: Storage Details

Storage ID	Storage Type	Dimensions, Capacity, Freeboard
Underground Storage	Underfloor liquid storage	Dimensions: 171 ft. x 90 ft. x 8 ft. (7.5 useable). Sand bedding. Pumped 2x/yr (spring and fall)
Hip Roof Barn	Manure pack	
Dry Cow Barn	Manure pack	
Compost	Daily scrape & haul (solid)	
Old Dry Cow Barn	Daily scrape & haul (solid)	
Dry Cow Lot	Daily scrape & haul (liquid)	
Dry Cow Pasture	Open lot	
Wash Water	Earthen storage	100 ft. (l) x 80 ft. (w) x 9 ft. (d) slope of 3:1 Freeboard 1.5'

Data entered in the Storage Tab, under Notes, will appear as typed, in the above Dimensions column.
Plus 25 yr., 24 hr. storm = total unused portion of storage to be maintained at all times. For outdoor storages, this includes the 25/24 storm event into the storage, plus any runoff from a 25/24 event that enters the storage, plus the freeboard. For covered storages, freeboard is six inches plus runoff, if any.

The 24 hour, 25 year storm event for _____ County is _____ inches.

Table 8: Estimated Days of Storage

Storage ID	Storage Type	Capacity	Units	Annual Collected	Days Storage
Compost	Daily scrape & haul (solid)	50	Ton	297	61
Dry Cow Barn	Manure pack	100	Ton	399	91
Dry Cow Lot	Daily scrape & haul (liquid)	50	Gal	24,000	1
Hip Roof Barn	Manure pack	100	Ton	187	195
Old Dry Cow Barn	Daily scrape & haul (solid)	75	Ton	154	178
Underground Storage	Underfloor liquid storage	863,379	Gal	1,422,000	222
Wash Water	Earthen storage	195,845	Gal	70,000	1,021

Storage Totals	Capacity	Units	Annual Collected
Liquid Manure	1,059,274	Gal	1,516,000
Solid Manure	325	Ton	1,219

In MMP, storage capacity should deduct for freeboard (and 25 yr./24 hr. storm event for outdoor storage). The resulting capacity should be entered in the Pumpable or Spreadable Capacity column located under the Storage Tab. For assistance in calculating capacities of storage systems, highlight the area under Pumpable Capacity and select the F2 key.

Table 9: Application Equipment

Equipment ID	Spreader or Applicator Type	Capacity	Units	Min Rate	Units	App Width	Units
Husky	Liquid spreader, surface spray	5,000	Gal	2,000	Gal/A	61	Feet
Gehl Box Spreader	Solid spreader	11	Ton	5	Ton/A	15	Feet

Land Application Management

Table 10: Estimated Annual Crop Removal - Starting crop year: 2004
Number of plan years: 3

Crop	Yield Goal	Acres	Nitrogen	P2O5	K2O
Alfalfa	6.00	172.7	46,629	13,471	51,810
Corn	140.00	140.2	20,164	7,262	5,300
Corn silage	28.00	119.5	23,907	11,045	26,775
Oat	1.00	13.3	8	3	3
Oat	65.00	4.4	111	72	55
Pasture, ext. grazed	3.00	15.0	1,500	675	2,475
Soybean	45.00	121.7	20,816	4,382	7,669
Wheat	55.00	58.1	2,905	2,013	1,182

		Acres	Nitrogen	P2O5	K2O
Total All Crops		645.0	116,040	38,924	95,269

Per Acre	Nitrogen	P2O5	K2O
All Crops	180	60	148

Nitrogen is based on the recommended rate for non-legume crops and the removal rate for legumes.
P_2O_5 and K_2O are based on removal rates.

Table 11: Estimated Annual Acres Needed for Each Storage System

Storage ID	Annual Volume	Units	Annual P205	Acres
Compost	297	Ton	2,792	46.5
Dry Cow Barn	399	Ton	3,870	64.5
Dry Cow Lot	24,000	Gal	262	4.4
Dry Cow Pasture	182	Ton	473	7.9
Hip Roof Barn	187	Ton	1,459	24.3
Old Dry Cow Barn	154	Ton	400	6.7
Underground Storage	1,422,000	Gal	15,358	256.0
Wash Water	70,000	Gal	56	0.9

Estimated acres are based on the total annual P_2O_5 collected in each storage divided by the average P_2O_5 crop removal for one year.

Table 12: Summary of Acres Available for Spreading

Total tillable acres in plan	648.7

Total spreadable acres after setbacks	645.0

Acres that will not receive manure, including fields with soil tests over 150 ppm (300 lbs./A) Phosphorus	25.1

Total Acres available for manure	619.9

	P2O5
Total crop removal based on total acres available for manure (lbs.)	37,194

Total spreadable acres <150 lbs. Bray P1(75 ppm)	241.5

Total spreadable acres 150 lbs. Bray P1to 299 lbs. Bray P1(75 to 149 ppm)	382.1

Acres 300 lbs. P or more (150 ppm)	25.1

Untested Acres	0.0

Winter Spreading

The Manure Application Risk Index (MARI) should be used to sort fields by risk for winter spreading. Provide a written summary of MARI evaluations, if applicable. Identify which fields are and are not appropriate for winter spreading. The MARI tables should be included in the Appendix.

Manure Spreading Plan

The purpose of this section is to document that crop nutrient needs are being met by adequate and proper manure and fertilizer application. The CNMP should give information to the producer that will help him/her prepare detailed field by field spreading plans in the current and future years.

Determine how many acres are needed to apply manure nutrients (N or P, whichever is limiting, and generally it is P) annually. A field by field manure spreading plan should be prepared for a minimum of the next 12 months of the CNMP. This can be achieved by filling in the Nutrient Management Tab in MMP. All the phosphorus generated in one year needs to be shown that it can be spread over a 12 month period of time, taking into account the crop rotation (are there fields available for winter spreading and for summer spreading) and that no manure is applied on fields testing over 300 lbs. (150 ppm) Bray P1. Nutrient application rates will be based on MSU/Tri-State Fertilizer Recommendations.

In addition, the CNMP must address the following issues for each source of agricultural waste:

- *Land application of manure and nutrients cannot exceed nitrogen crop demand on fields less than 150 lb. (75 ppm) Bray P1, or exceed the phosphorus crop uptake on fields between 150 and 300 lb. Bray P1.*
- *Manure rates cannot exceed 2-year P removal. Where spreading is done at multiple year phosphorus rates, care must be taken to ensure that the field is not receiving P in the 'off' year.*
- *When fields test greater than 150 lb. (75 ppm) Bray P1 or the acres needed for spreading are close to the acres available, the CNMP provider should ensure that sufficient spreading area is available at the time it is needed throughout the typical rotation.*

Identifying spreading 'windows of opportunity' will help farmers to balance what manure is available to spread with what volume of manure is generated during the broad seasonal time periods. Appropriate manure applications should be determined by on-farm manure and soil test results and be supported by record keeping. In absence of manure analysis data, use MWPS-18 version 2000 Table 6. A CNMP can be approved if it documents that the nutrient amounts, measured by manure tests or book values, can be agronomically utilized over the years of the crop rotation.

Calibration of Manure Application Equipment

Discuss calibration of manure application equipment and how desired rates will be achieved.

Cropping Plan

Document the current or planned crop production sequence or crop rotation. Two years of crops is a minimum. If a producer has a typical three to five year crop rotation, this may be more representative to utilize for planning manure applications. Provide yield goals. Refer to the MAEAP Q and A document for information on choosing realistic yield goals.

Summarize crop removal rate of N, P and K by total acres and yield goal.

Soil Testing Plan

Describe the method used for taking soil samples. Note frequency of sampling and sampling procedure (i.e., sampling by soil type and cropping pattern according to MSU recommendations, or grid sampling.) Include information on PSNT sampling or plant tissue sampling, if applicable. See Answers to Frequently Asked Questions.

Fertilizer Timing, Analysis, and Application Method (see Appendix for a listing of fertilizer needs before and after manure applications)

Summarize the fertilizer program for each crop, describing the form, rate, placement and timing of nutrients used in addition to manure. If fields with different yield goals, irrigation, rented ground, etc., receive different fertilizer programs, then list them separately. If no other fertilizer is used, indicate that. Include all fertilizer sources for N, P, K and micronutrients.

Crop	Yield Goal	Analysis	Typical Rate	Timing	Application Method

Nitrogen Management

Fields identified as having a high Leaching Index should be listed. The CNMP provider should discuss nitrogen management practices with the producer which will reduce the risk of nitrate leaching to ground water. Such practices could include: use of cover crops, split application of nitrogen fertilizers, no fall N application/split application of nitrogen fertilizers in the spring, use of pre-sidedress nitrate testing to better manage nitrogen fertilizer use, etc.

Long-Term Sustainability

Make a summary observation regarding the short-term and long-term ability of this farm to deal with the nutrients generated and the land base available for application.

To determine long term sustainability, either a feed ration mass balance or "book values" (MWPS-18, 2000) of total estimated P generated per year is to be utilized. The total P in the first table of this plan is equivalent to the book value. The feed ration mass balance can be calculated using the table in the back of MWPS-18 (2000) or using the Excel spreadsheet found at http://www.maeap.org under Resources.

One purpose of this section is to document the long-term sustainability of the manure plan based on manure nutrients generated and total land base available. A CNMP must show that there is sufficient land base available for manure application, in order for the plan to be approved.
If the CNMP shows there is sufficient land base available, but the long-term sustainability is questionable, the plan can still be approved, but the situation needs to be documented in the CNMP and reviewed when the CNMP is updated. The plan writer should discuss with producers if the P soil test levels are expected to increase over time, such that it may eventually require more land base or other strategies for manure utilization.

Treatment (where applicable)

Describe any treatment systems. Examples of treatment systems include composting, chemical treatment of manure for odor, or use of a filter strip for polluted runoff. Explain any change in nutrient content or volume of the manure that the treatment system creates. Explain how manure/wastewater will be handled and applied after the treatment process.

Conservation Practices on Fields Used for Manure Application

The CNMP must document that manure and nutrients stay in the field and out of surface water and groundwater resources. Achievement of these goals will require that some fields or parts of fields be managed differently regarding manure application, because of risk factors inherent to the soil and site conditions.
Utilize the "notes" column under the Fields tab in MMP to include relevant information. This can be printed off in MMP by selecting:
Tools
Custom
Standard MMP Custom Reports
Generate Plan Data Report with Access
Include field maps in the appendix. Maps should indicate field identification (such as FSA field and tract numbers or producer's i.d. numbers), field and property boundaries, acres, land use, scale of map, general location (include state, county, township and section #'s), sensitive areas (such as streams, wetlands, drainage tile locations, risers, wells, water bodies – also note swales or direction of water movement through fields, where appropriate), conservation practices, setbacks, date prepared, and north arrow.*
- Identify both existing and needed conservation and management practices on maps, such as setbacks, buffers, etc.
- Provide NRCS soil maps w/legends (include field boundaries and numbers on maps).
- Summarize RUSLE/RUSLE 2 and Wind Erosion calculations. Include details in the appendix. Provide calculations or other documentation in the Appendix to show that soil erosion levels are within "T".
- Summarize MARI evaluations, if applicable. The MARI tables should be included in an appendix. Identify risks by field.
- Provide information on all fields that will receive manure.
- List irrigation water management strategy, if applicable.

**Refer to the MAEAP Question and Answer document for more information on CNMP requirements for tiled fields used for manure application.*

Record of CNMP Implementation

Specify what system is being used (computer program, spreadsheet, paper records, etc.)
Blank recordkeeping forms can be added here or in an appendix.
The following records will be kept on file at the farm by field (for 5 years):
- *Field maps (aerial photos, soil maps, or other)*
- *Current crops*
- *Realistic crop yield goals*
- *Soil test reports*
- *Total volume of manure produced (based on number of loads)*
- *Dates and rates of manure/wastewater applications (include source and form of manure)*
- *Dates, rates, and forms of other nutrient applications*
- *Dates of incorporation (where applicable)*
- *Method of application (e.g. surface applied, injected, irrigated)*
- *Acres and area of field where nutrients have been applied*
- *Weather conditions during application of manure*
- *Field conditions during application of manure*
- *Recommended nutrient application rates*
- *Previous crops grown and yields*
- *Plant tissue sampling and testing reports (where applicable)*
- *Pre-Sidedress Nitrate Test (PSNT) reports (where applicable)*
- *Complete N, P, K nutrient budget by field*

Other records that should be kept:
- *Manure/wastewater quantities produced and nutrient analysis reports*
- *Inspection and maintenance records*
- *Records related to any uncontrolled discharge of manure or wastewater that warranted emergency response notification to the Michigan Department of Agriculture and/or Michigan Department of Environmental Quality (if appropriate)*
- *Records of rental or other agreements for application of manure/wastewater on land not*

owned by the producer (if applicable)
- Records for manure that moves off site (include amount of manure, date of transfer, recipient name - provide recipient an analysis of the manure for their cropping plan, including fertilizer adjustments)

Table 12A: Feed Management
Feed Ration Information

Animal

If any rations are checked in MMP under the Rations tab, they will appear here.

Indicate any circumstances in feed rations that impact the quantity or concentration of manure nutrients (such as phytase or heavy metals in feed), or make suggestions to reduce P in rations to improve land base needs.

Alternative Utilization

If manure is sold or given away, keep records of amount, date, and who it went to. Mention other uses (e.g. power generation, value-added). If composting is used, document the composting system and how compost is used or leaves the farm (by sale or otherwise). See MAEAP Q & A document for more information.

Odor

Describe how odor is managed.

Inspection, Operations and Maintenance, Training

Provide the following: Schedule for inspection of structural and vegetative practices and equipment, operation and maintenance practices/activities, schedule for review of management practices/activities to ensure implementation of the plan, a plan for training employees on how to follow the CNMP, equipment calibration.

Schedule of Implementation

Identify proposed conservation and management practices.
Indicate that the CNMP will be reviewed annually.

Emergency Action Plan

Be sure Emergency Plan is specific to the farm.

References

As appropriate

Appendices

Detailed technical data and calculations should be placed in appendices. Examples of such information might include: Soil tests, manure tests, aerial photos, soil survey and topographic maps, RUSLE and wind erosion calculations, MARI worksheets, manure application records, feed ration mass balance calculations, etc.

Table 13: Field Summary

Field ID	Subfield	Size(Ac.)	SpreadSize	Predominant Soil Type	Irrigated	No Manure	Drained	Rented
1-A		10.0	10.0	Oshtemo SL (OsB 2-6%)			x	x
B-1		4.4	4.4	Parkhill L (Pr 0-2%)			x	
B-2		15.9	15.8	Capac L (CbB 1-6%)			x	
B-3A		9.2	9.2	Capac L (CaA 0-4%)			x	x
B-3B		9.1	9.1	Capac L (CbB 1-6%)		x	x	
B-3C		8.1	8.1	Capac L (CaA 0-4%)			x	
Dry Cow Pasture		15.0	15.0	Oshtemo SL (OsB 2-6%)			x	x

G-1		11.4	11.4	Washtenaw L (Wd 0-2%)			x	
G-2A		20.2	20.2	Owosso SL (OwB 2-6%)			x	
G-2B		17.0	17.0	Owosso SL (OwB 2-6%)			x	
G-3		11.5	11.5	Capac L (CbB 1-6%)			x	
G-4		15.0	15.0	Capac L (CaA 0-4%)			x	
G-5		10.9	10.9	Capac L (CbB 1-6%)			x	
G-6		10.9	10.9	Parkhill L (Pr 0-2%)			x	
G-7		17.1	17.1	Parkhill L (Pr 0-2%)			x	
G-8		13.4	13.4	Wasepi SL (WbA 0-3%)			x	
H-1		16.0	16.0	Owosso SL (OwB 2-6%)		x	x	
H-2		12.5	12.5	Owosso SL (OwB 2-6%)			x	
H-3		7.7	7.7	Owosso SL (OwB 2-6%)			x	
H-4		5.6	5.6	Owosso SL (OwC 6-12%)			x	
H-5		17.5	17.5	Matherton L (MdA 0-3%)			x	
H-6		9.3	9.3	Boyer SL (BnB 0-6%)			x	
HU-1		23.5	23.5	Metamora SL (MeA 0-4%)			x	x
HU-2		13.1	13.1	Capac L (CbB 1-6%)			x	x
HU-3		14.7	14.7	Capac L (CaA 0-4%)			x	x
HU-4		11.4	11.4	Marlette L (MaC 6-12%)			x	x
HU-5		10.2	9.2	Marlette L (MaC 6-12%)			x	x
HU-7		7.2	7.2	Capac L (CbB 1-6%)			x	x
K-1		12.1	12.1	Capac L (CbB 1-6%)			x	
K-2		5.2	4.8	Owosso SL (OwB 2-6%)			x	
M-1		31.2	31.2	Oshtemo SL (OsB 2-6%)			x	x
M-10A		20.6	20.6	Marlette L (MaB 2-6%)			x	x
M-10B		24.3	24.3	Oshtemo SL (OsB 2-6%)			x	x
M-4		8.1	8.1	Oshtemo SL (OsB 2-6%)			x	x
M-5		29.4	29.4	Marlette L (MaB 2-6%)			x	x
M-8		21.0	21.0	Sisson FSL (SnB 2-6%)			x	x
M-9A		11.9	11.9	Oshtemo SL (OsB 2-6%)			x	x
M-9B		16.1	16.1	Boyer LS (BoB 0-6%)			x	x
R-1		13.9	13.9	Capac L (CbB 1-6%)			x	
R-2		12.8	12.8	Capac L (CbB 1-6%)			x	
R-3		17.2	17.2	Capac L (CbB 1-6%)			x	
R-4		12.2	12.2	Capac L (CbB 1-6%)			x	
R-5		7.7	7.7	Capac L (CbB 1-6%)			x	
R-6		27.9	25.8	Capac L (CbB 1-6%)			x	
S-1		4.4	4.4	Owosso SL (OwB 2-6%)			x	
S-2		10.8	10.8	Owosso SL (OwB 2-6%)			x	
S-3		7.2	7.2	Owosso SL (OwB 2-6%)			x	
S-4		6.9	6.8	Boyer SL (BnC 6-12%)			x	

		Size(Ac.)	SpreadSize		Irrigated	No Manure	Drained	Rented
Total		648.7	645.0		0.0	25.1	648.7	276.9

If soil tests are greater than 300 lbs. or 150 ppm P, check the 'will not receive manure' column under the Field Tabs

Table 14: Soil Tests Values

Field	Subfield	Acres	Test Yr	OM%	P	K	Mg	Ca	Units	Soil pH	CEC
1-A		10	2003	1.2	35	250	200	1,500	Lb/A	6.5	13.3
B-1		4.4	2003	2.7	158	306	318	2,630	Lb/A	6.2	9.5
B-2		15.9	2003	2.4	123	310	434	3,202	Lb/A	6.8	10.2
B-3A		9.2	2003	2.3	128	344	368	2,044	Lb/A	6.1	8.3
B-3B		9.1	2003	1.8	330	408	238	1,254	Lb/A	6.2	4.6
B-3C		8.1	2003	2.3	178	394	252	1,724	Lb/A	5.8	8.3
Dry Cow Pasture		15	2003	1.2	125	350	200	1,500	Lb/A	6.5	13.4
G-1		11.4	2002	3.3	146	304	306	3,348	Lb/A	6.1	13.6
G-2A		20.2	2002	2.4	143	284	354	2,389	Lb/A	6.0	10.2
G-2B		17	2002	2.3	119	248	381	2,451	Lb/A	6.0	9.2
G-3		11.5	2002	2.1	128	300	380	1,879	Lb/A	6.4	6.7
G-4		15	2002	2.4	133	322	510	2,739	Lb/A	6.3	10.6
G-5		10.9	2002	2.2	180	350	450	2,760	Lb/A	6.3	10.4
G-6		10.9	2002	3.2	210	426	690	4,106	Lb/A	6.5	16.1
G-7		17.1	2002	3.5	167	384	588	3,689	Lb/A	6.0	17.0
G-8		13.4	2002	2.1	214	306	300	1,998	Lb/A	5.9	10.2
H-1		16	2003	3.0	376	364	373	275	Lb/A	6.8	5.1
H-2		12.5	2003	2.5	285	419	340	2,202	Lb/A	6.4	7.5
H-3		7.7	2003	1.7	266	270	552	1,716	Lb/A	6.9	6.9
H-4		5.6	2003	2.2	248	230	524	2,766	Lb/A	6.7	9.4
H-5		17.5	2003	2.4	222	284	290	1,846	Lb/A	6.5	6.2
H-6		9.3	2003	1.7	218	309	283	2,025	Lb/A	6.6	6.6
HU-1		23.5	2003	1.7	111	174	150	1,250	ppm	7.5	
HU-2		13.1	2003	1.8	258	420	190	1,870	Lb/A	5.6	7.2
HU-3		14.7	2003	2.2	272	500	284	1,968	Lb/A	6.1	6.7
HU-4		11.4	2003	1.4	84	109	75	900	ppm	7.3	
HU-5		10.2	2003	2.4	51	147	155	950	ppm	6.1	
HU-7		7.2	2003	2.1	79	291	210	1,050	ppm	7.0	
K-1		12.1	2002	2.5	249	535	251	1,502	Lb/A	5.4	7.9
K-2		5.2	2002	1.8	68	144	234	1,710	Lb/A	6.3	5.4
M-1		31.2	2002	1.8	217	271	236	2,744	Lb/A	6.7	15.4
M-10A		20.6	2002	1.2	167	392	201	1,350	Lb/A	6.3	21.5
M-10B		24.3	2002	1.3	176	400	212	1,614	Lb/A	6.5	13.8
M-4		8.1	2002	1.3	169	396	239	1,647	Lb/A	6.3	5.6
M-5		29.4	2002	1.1	53	106	203	1,702	Lb/A	6.8	5.2
M-8		21	2002	1.2	292	462	158	1,330	Lb/A	6.0	4.6
M-9A		11.9	2002	1.0	202	331	107	1,625	Lb/A	6.7	32.5
M-9B		16.1	2002	1.4	198	388	152	1,614	Lb/A	6.3	5.2
R-1		13.9	2002	2.2	77	161	434	2,979	Lb/A	7.0	9.5
R-2		12.8	2002	2.2	96	162	496	3,502	Lb/A	6.9	11.0
R-3		17.2	2002	2.0	168	420	445	2,291	Lb/A	6.8	8.1
R-4		12.2	2002	1.8	64	200	384	2,310	Lb/A	6.7	7.6
R-5		7.7	2002	1.9	52	192	464	2,368	Lb/A	6.5	8.1
R-6		27.9	2002	2.1	263	361	298	1,877	Lb/A	6.1	7.6

S-1		4.4	2001	2.0	164	274	336	3,310	Lb/A	6.1	10.0
S-2		10.8	2001	2.4	124	293	318	2,248	Lb/A	6.7	7.3
S-3		7.2	2001	2.3	74	190	202	1,592	Lb/A	5.8	6.3
S-4		6.9	2001	2.1	96	154	242	2,694	Lb/A	6.5	7.9

		Acres									
Total		648.7									

Table 15: MARI and Phosphorus Levels for Planning Manure Applications

Field	Subfield	Spreadsize	P Level	Units	MARI	Current Crop	Future Crop	Notes
1-A		10.0	35	lbs./acre	40	Corn	Soybean	150 ft. setback along ditch when surface spread
HU-5		9.2	51	ppm		Alfalfa	Alfalfa	
R-5		7.7	52	lbs./acre		Oat	Corn	
M-5		29.4	53	lbs./acre		Alfalfa	Alfalfa	
R-4		12.2	64	lbs./acre		Soybean	Corn	
K-2		4.8	68	lbs./acre		Alfalfa	Alfalfa	
S-3		7.2	74	lbs./acre		Corn silage	Corn silage	
R-1		13.9	77	lbs./acre		Soybean	Corn	
HU-7		7.2	79	ppm		Alfalfa	Alfalfa	
HU-4		11.4	84	ppm		Corn silage	Corn silage	
S-4		6.8	96	lbs./acre		Corn silage	Corn silage	
R-2		12.8	96	lbs./acre		Soybean	Corn	
HU-1		23.5	111	ppm		Corn silage	Corn silage	
G-2B		17.0	119	lbs./acre		Corn	Soybean	
B-2		15.8	123	lbs./acre		Corn silage	Corn silage	
S-2		10.8	124	lbs./acre		Corn silage	Corn silage	
Dry Cow Pasture		15.0	125	lbs./acre	36	Pasture, ext. grazed	Pasture, ext. grazed	20 dry cows in summer. No winter spreading
G-3		11.5	128	lbs./acre		Corn	Soybean	
B-3A		9.2	128	lbs./acre		Alfalfa	Alfalfa	
G-4		15.0	133	lbs./acre		Corn	Soybean	
G-2A		20.2	143	lbs./acre		Wheat	Soybean	
G-1		11.4	146	lbs./acre		Corn	Soybean	
B-1		4.4	158	lbs./acre		Corn silage	Corn silage	
S-1		4.4	164	lbs./acre		Alfalfa	Alfalfa	
G-7		17.1	167	lbs./acre		Corn	Soybean	
M-10A		20.6	167	lbs./acre		Corn	Wheat	
R-3		17.2	168	lbs./acre		Soybean	Corn	
M-4		8.1	169	lbs./acre		Corn	Wheat	
M-10B		24.3	176	lbs./acre		Alfalfa	Alfalfa	
B-3C		8.1	178	lbs./acre		Corn silage	Corn silage	

G-5		10.9	180	lbs./acre		Corn	Wheat	
M-9B		16.1	198	lbs./acre		Oat	Soybean	
M-9A		11.9	202	lbs./acre		Soybean	Oat	
G-6		10.9	210	lbs./acre		Corn	Wheat	
G-8		13.4	214	lbs./acre		Corn	Soybean	
M-1		31.2	217	lbs./acre		Wheat	Corn	
H-6		9.3	218	lbs./acre		Alfalfa	Alfalfa	
H-5		17.5	222	lbs./acre		Alfalfa	Alfalfa	
H-4		5.6	248	lbs./acre		Corn silage	Oat	
K-1		12.1	249	lbs./acre		Alfalfa	Alfalfa	
HU-2		13.1	258	lbs./acre		Corn silage	Corn silage	
R-6		25.8	263	lbs./acre		Soybean	Corn	
H-3		7.7	266	lbs./acre		Alfalfa	Alfalfa	
HU-3		14.7	272	lbs./acre		Corn silage	Corn silage	
H-2		12.5	285	lbs./acre		Alfalfa	Alfalfa	
M-8		21.0	292	lbs./acre		Soybean	Wheat	

Table 16: Manure Application Plan

Crop Yr	App Yr	Mon	Field	Subfield	Acres	For Crop	Storage Id	Equipment	P Test	Units	MARI	Rate/A	Unit	Amt Applied	Avail. N	P2O5	K2O
2004	2004	Apr	1-A		11/10	Corn	Compost	Gehl Box Spreader	35	lbs/a		5	Ton	55	616	517	1,276
2004	2004	Apr	G-1		11.5/11.4	Corn	Underground Storage	Husky	146	lbs/a		4800	Gal	55,000	851	598	1,599
2004	2004	Apr	G-2A		21.2/20.2	Wheat	Underground Storage	Husky	143	lbs/a		3300	Gal	70,000	1,081	763	2,035
2004	2004	Apr	G-2B		17.7/17	Corn	Underground Storage	Husky	119	lbs/a		4800	Gal	85,000	1,310	920	2,460
2004	2004	Apr	G-3		12.5/11.5	Corn	Underground Storage	Husky	128	lbs/a		4800	Gal	60,000	925	650	1,738
2004	2004	Apr	G-4		15.6/15	Corn	Underground Storage	Husky	133	lbs/a		4800	Gal	75,000	1,154	811	2,168
2004	2004	Apr	G-5		11.5/10.9	Corn	Underground Storage	Husky	180	lbs/a		4800	Gal	55,000	851	598	1,599
2004	2004	Apr	G-6		11.5/10.9	Corn	Underground Storage	Husky	210	lbs/a		4800	Gal	55,000	851	598	1,599
2004	2004	Apr	G-7		14.2/17.1	Corn	Underground Storage	Husky	167	lbs/a		4800	Gal	68,000	1,051	738	1,974
2004	2004	Apr	G-7		3.6/17.1	Corn	Hip Roof Barn	Gehl Box Spreader	167	lbs/a		7	Ton	25	137	198	590
2004	2004	Apr	H-2		12.9/12.5	Alfalfa	Dry Cow Barn	Gehl Box Spreader	285	lbs/a		8.5	Ton	110	839	1,058	3,225
2004	2004	Apr	H-3		7.8/7.7	Alfalfa	Dry Cow Barn	Gehl Box Spreader	266	lbs/a		8.5	Ton	66	507	640	1,950
2004	2004	Apr	H-4		6.6/5.6	Corn silage	Dry Cow Barn	Gehl Box Spreader	248	lbs/a		10	Ton	66	508	640	1,940

2004	2004	Apr	H-5		2.6/17.5	Alfalfa	Dry Cow Barn	Gehl Box Spreader	222	lbs/a		8.5	Ton	22	169	213	650
2004	2004	Apr	K-2		5.3/4.8	Alfalfa	Underground Storage	Husky	68	lbs/a		7500	Gal	40,000	615	429	1,150
2004	2004	Apr	M-5		30/29.4	Alfalfa	Underground Storage	Husky	53	lbs/a		7500	Gal	225,000	3,480	2,430	6,510
2004	2004	Apr	R-1		14.7/13.9	Soybean	Underground Storage	Husky	77	lbs/a		3400	Gal	50,000	1,161	544	1,455
2004	2004	Apr	R-4		13.2/12.2	Soybean	Underground Storage	Husky	64	lbs/a		3400	Gal	45,000	1,043	488	1,307
2004	2004	Apr	S-3		7.6/7.2	Corn silage	Underground Storage	Husky	74	lbs/a		8600	Gal	65,000	1,003	707	1,892
2004	2004	Sep	H-6		1.4/9.3	Alfalfa	Underground Storage	Husky	218	lbs/a		7300	Gal	10,000	157	111	297
2004	2004	Sep	HU-5		4.5/9.2	Alfalfa	Underground Storage	Husky	51	ppm		7300	Gal	32,500	504	356	954
2004	2004	Sep	HU-5		5.5/9.2	Alfalfa	Hip Roof Barn	Gehl Box Spreader	51	ppm		10	Ton	55	303	429	1,287
2004	2004	Sep	HU-7		5.2/7.2	Alfalfa	Dry Cow Barn	Gehl Box Spreader	79	ppm		8.5	Ton	44	338	426	1,300
2004	2004	Sep	HU-7		2.3/7.2	Alfalfa	Hip Roof Barn	Gehl Box Spreader	79	ppm		10	Ton	23	127	179	538
2004	2004	Sep	K-1		12.9/12.1	Alfalfa	Dry Cow Barn	Gehl Box Spreader	249	lbs/a		8.5	Ton	110	839	1,058	3,225
2004	2004	Sep	K-2		1.3/4.8	Alfalfa	Dry Cow Barn	Gehl Box Spreader	68	lbs/a		8.5	Ton	11	85	107	325
2004	2004	Sep	S-1		5.2/4.4	Alfalfa	Compost	Gehl Box Spreader	164	lbs/a		8.5	Ton	44	541	416	1,024
2005	2004	Sep	HU-1		23.8/23.5	Corn silage	Underground Storage	Husky	111	ppm		8600	Gal	205,000	3,142	2,213	5,926
2005	2004	Sep	HU-2		13.4/13.1	Corn silage	Underground Storage	Husky	258	lbs/a		8600	Gal	115,000	1,769	1,246	3,337
2005	2004	Sep	HU-3		15.1/14.7	Corn silage	Underground Storage	Husky	272	lbs/a		8600	Gal	130,000	1,993	1,404	3,760
2005	2004	Sep	HU-4		11.6/11.4	Corn silage	Underground Storage	Husky	84	ppm		8600	Gal	100,000	1,531	1,079	2,888
2005	2004	Sep	S-2		7.7/10.8	Corn silage	Compost	Gehl Box Spreader	124	lbs/a		10	Ton	77	862	724	1,786
2005	2005	Apr	B-1		4.7/4.4	Corn silage	Underground Storage	Husky	158	lbs/a		8600	Gal	40,000	620	437	1,170
2005	2005	Apr	B-2		16.3/15.8	Corn silage	Underground Storage	Husky	123	lbs/a		8600	Gal	140,000	2,152	1,516	4,059
2005	2005	Apr	B-3A		1.1/9.2	Alfalfa	Hip Roof Barn	Gehl Box Spreader	128	lbs/a		10	Ton	11	61	86	257
2005	2005	Apr	B-3A		8.2/9.2	Alfalfa	Underground Storage	Husky	128	lbs/a		7300	Gal	60,000	918	648	1,738
2005	2005	Apr	B-3C		8.1/8.1	Corn silage	Underground Storage	Husky	178	lbs/a		8600	Gal	70,000	1,069	753	2,017
2005	2005	Apr	M-1		13.9/31.2	Corn	Hip Roof Barn	Gehl Box Spreader	217	lbs/a		7	Ton	98	528	765	2,280
2005	2005	Apr	M-1		18/31.2	Corn	Dry Cow Barn	Gehl Box Spreader	217	lbs/a		5.5	Ton	99	756	954	2,916
2005	2005	Apr	M-5		10.4/29.4	Alfalfa	Dry Cow Barn	Gehl Box Spreader	53	lbs/a		8.5	Ton	88	676	853	2,600
2005	2005	Apr	R-1		14.6/13.9	Corn	Underground Storage	Husky	77	lbs/a		4800	Gal	70,000	1,080	759	2,029
2005	2005	Apr	R-2		13.5/12.8	Corn	Underground Storage	Husky	96	lbs/a		4800	Gal	65,000	999	702	1,877
2005	2005	Apr	R-3		17.7/17.2	Corn	Underground Storage	Husky	168	lbs/a		4800	Gal	85,000	1,310	920	2,460
2005	2005	Apr	R-4		12.5/12.2	Corn	Underground Storage	Husky	64	lbs/a		4800	Gal	60,000	925	650	1,738
2005	2005	Apr	R-5		8.3/7.7	Corn	Underground Storage	Husky	52	lbs/a		4800	Gal	40,000	614	432	1,154
2005	2005	Apr	R-6		26/25.8	Corn	Underground Storage	Husky	263	lbs/a		4800	Gal	125,000	1,924	1,352	3,614
2005	2005	Apr	S-1		5.2/4.4	Alfalfa	Compost	Gehl Box Spreader	164	lbs/a		8.5	Ton	44	541	416	1,024
2005	2005	Apr	S-2		3.3/10.8	Corn silage	Compost	Gehl Box Spreader	124	lbs/a		10	Ton	33	370	310	766
2005	2005	Apr	S-3		7.7/7.2	Corn silage	Compost	Gehl Box Spreader	74	lbs/a		10	Ton	77	862	724	1,786

2005	2005	Apr	S-4		2.5/6.8	Corn silage	Compost	Gehl Box Spreader	96	lbs/a		10	Ton	25	280	235	580
2005	2005	Apr	S-4		4.4/6.8	Corn silage	Dry Cow Barn	Gehl Box Spreader	96	lbs/a		10	Ton	44	339	427	1,294
2005	2005	Sep	M-10B		24.7/24.3	Alfalfa	Underground Storage	Husky	176	lbs/a		7300	Gal	180,000	2,766	1,951	5,236
2006	2005	Sep	G-1		11.5/11.4	Corn	Underground Storage	Husky	146	lbs/a		4800	Gal	55,000	851	598	1,599
2006	2005	Sep	G-2B		14/17	Corn	Dry Cow Barn	Gehl Box Spreader	119	lbs/a		5.5	Ton	77	588	742	2,268
2006	2005	Sep	G-2B		3.2/17	Corn	Hip Roof Barn	Gehl Box Spreader	119	lbs/a		7	Ton	23	122	176	525
2006	2005	Sep	G-3		12.5/11.5	Corn	Underground Storage	Husky	128	lbs/a		4800	Gal	60,000	925	650	1,738
2006	2005	Sep	G-4		16/15	Corn	Dry Cow Barn	Gehl Box Spreader	133	lbs/a		5.5	Ton	88	672	848	2,592
2006	2005	Sep	G-5		3.6/10.9	Corn	Underground Storage	Husky	180	lbs/a		4800	Gal	17,500	266	187	500
2006	2005	Sep	G-5		7.9/10.9	Corn	Hip Roof Barn	Gehl Box Spreader	180	lbs/a		7	Ton	55	300	435	1,296
2006	2005	Sep	G-6		11/10.9	Corn	Compost	Gehl Box Spreader	210	lbs/a		6	Ton	66	737	616	1,529
2006	2005	Sep	G-7		9.8/17.1	Corn	Compost	Gehl Box Spreader	167	lbs/a		6	Ton	59	657	549	1,362
2006	2005	Sep	M-10A		20.8/20.6	Corn	Underground Storage	Husky	167	lbs/a		4800	Gal	100,000	1,539	1,082	2,891
2006	2005	Sep	M-8		22.1/21	Soybean	Underground Storage	Husky	292	lbs/a		3400	Gal	75,000	1,149	818	2,188
2006	2005	Sep	M-9A		12.5/11.9	Oat	Underground Storage	Husky	202	lbs/a		2000	Gal	25,000	388	275	725
2006	2005	Sep	M-9B		16.7/16.1	Corn	Underground Storage	Husky	198	lbs/a		4800	Gal	80,000	1,236	868	2,321
2006	2006	Apr	G-8		13.5/13.4	Corn	Underground Storage	Husky	214	lbs/a		4800	Gal	65,000	999	702	1,877
2006	2006	Apr	H-2		13/12.5	Alfalfa	Underground Storage	Husky	285	lbs/a		7300	Gal	95,000	728	1,027	2,756
2006	2006	Apr	H-3		8.2/7.7	Alfalfa	Underground Storage	Husky	266	lbs/a		7300	Gal	60,000	918	648	1,738
2006	2006	Apr	H-4		5.8/5.6	Corn silage	Underground Storage	Husky	248	lbs/a		8600	Gal	50,000	766	539	1,444
2006	2006	Apr	H-5		17.8/17.5	Alfalfa	Underground Storage	Husky	222	lbs/a		7300	Gal	130,000	1,994	1,406	3,774
2006	2006	Apr	H-6		9.6/9.3	Alfalfa	Underground Storage	Husky	218	lbs/a		7300	Gal	70,000	1,075	758	2,035
2006	2006	Apr	HU-1		23.8/23.5	Corn silage	Underground Storage	Husky	111	ppm		8600	Gal	205,000	3,142	2,213	5,926
2006	2006	Apr	HU-2		4/13.1	Corn silage	Underground Storage	Husky	258	lbs/a		8600	Gal	34,500	528	372	996
2006	2006	Apr	HU-2		9/13.1	Corn silage	Hip Roof Barn	Gehl Box Spreader	258	lbs/a		12	Ton	109	594	846	2,529
2006	2006	Apr	HU-3		15.4/14.7	Corn silage	Dry Cow Barn	Gehl Box Spreader	272	lbs/a		10	Ton	154	1,186	1,494	4,528
2006	2006	Apr	HU-4		7.7/11.4	Corn silage	Dry Cow Barn	Gehl Box Spreader	84	ppm		10	Ton	77	593	747	2,264
2006	2006	Apr	HU-4		4.4/11.4	Corn silage	Compost	Gehl Box Spreader	84	ppm		10	Ton	44	493	414	1,021
2006	2006	Apr	HU-5		10.4/9.2	Alfalfa	Compost	Gehl Box Spreader	51	ppm		8.5	Ton	88	988	832	2,049
2006	2006	Apr	HU-7		5.1/7.2	Alfalfa	Compost	Gehl Box Spreader	79	ppm		8.5	Ton	43	485	408	1,005

Crop year = crop year that manure nutrients are credited to.
Available N includes storage and application losses.
Acres = acres applied/total acres in field
Available N, P_2O_5 and K_2O are pounds per acre

Table 17: Summary of Total Annual Acres and Nutrients Spread

Crop Yr	Acres Spread	Avail.N	P2O5	K2O
2004	269.3	21,043	16,623	46,067
2005	292.7	28,088	21,556	58,293
2006	309.3	23,917	20,250	55,474

Table 18: Summary of Manure Hauled for each storage system

Crop Yr	Storage	Annual Volume or Wt.	Amount Hauled	Units	Acres Spread	N	Annual P2O5	P2O5	K2O
2004	Compost	297	99	Ton	16.2	1,157	2,792	933	2,300
2004	Dry Cow Barn	399	429	Ton	49.3	3,284	3,870	4,142	12,615
2004	Hip Roof Barn	187	103	Ton	11.4	566	1,459	806	2,416
2004	Underground Storage	1,422,000	990,500	Gal	192.4	16,037	15,358	10,742	28,736
2005	Compost	297	256	Ton	26.4	2,915	2,792	2,409	5,943
2005	Dry Cow Barn	399	231	Ton	32.8	1,771	3,870	2,234	6,810
2005	Hip Roof Barn	187	109	Ton	15.0	589	1,459	850	2,537
2005	Underground Storage	1,422,000	1,485,000	Gal	218.5	22,813	15,358	16,063	43,003
2006	Compost	297	300	Ton	40.7	3,359	2,792	2,818	6,965
2006	Dry Cow Barn	399	396	Ton	53.1	3,039	3,870	3,831	11,651
2006	Hip Roof Barn	187	186	Ton	20.1	1,016	1,459	1,457	4,349
2006	Underground Storage	1,422,000	1,122,000	Gal	195.4	16,503	15,358	12,144	32,508

Annual volume and annual P_2O_5 are calculated values from this plan. Amount hauled is based on actual (from records) or projected values. N, P_2O_5 and K_2O are total pounds per year, per storage system.