



PITTSBORO SERVICE CENTER
 45 SOUTH ST STE 1
 PITTSBORO, NC 27312-5684
 9195422244 ext. 3

Micheal W. Sturdivant
 District Consvt

Conservation Plan

L GILBERT CLARK
690 OAKLEY CHURCH RD
BEAR CREEK, NC 27207

Hay

Tract: 724

Comprehensive Nutrient Management Plan

A Comprehensive Nutrient Management Plan that addresses the handling, storage, and application of animal waste in an environmentally safe manner will be developed and implemented. The implementation of the CNMP is required to remain in compliance of this contract.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	1 no	7	2005		
2	1 no	7	2005		
3	1 no	7	2005		
4	1 no	7	2005		
5	1 no	7	2005		
6	1 no	7	2005		
7	1 no	7	2005		
8	1 no	7	2005		
Total:	8 no				

Filter Strip

Establish a strip of perennial vegetation for trapping sediment and other pollutants from runoff or waste water.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	2.02 ac	7	2005	2 ac	7/10/1998
5	1.3 ac	7	2005	1.3 ac	7/10/2005
6	16.3 ac	7	2005	16.3 ac	7/10/1998
7	13.4 ac	7	2005	13.4 ac	7/10/1998
8	7.5 ac	7	2005	7.5 ac	7/10/1998
Total:	40.52 ac			40.5 ac	

Forage Harvest Management

Cutting and removal of forages from the field as hay, greenchop, of ensilage.

Field	Planned Amount	Month	Year	Applied Amount	Date
2	5.4 ac	7	2005		
3	3.2 ac	7	2005		
5	1.3 ac	7	2005		

Pasture and hayland

Suitability: Well suited for pasture and moderately suited for hayland

Commonly grown crops: Tall fescue, orchardgrass and clover

Management concerns: Erodibility

Management measures and considerations:

Preparing seedbeds on the contour or across the slope helps to control soil erosion and increase germination.

Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.

Planting adapted species helps to ensure the production of high-quality forage and minimize soil erosion.

The timely removal of livestock from pastures so that forage plants can recover before winter dormancy helps to maintain pasture and increase productivity.

Rotational grazing and a well planned clipping and harvesting schedule help to maintain pasture and increase productivity.

When establishing, maintaining, or renovating hay and pasture, applying lime and fertilizer according to recommendations based on soil tests helps to increase the availability of plant nutrients and maximize productivity.

CERTIFICATION OF PARTICIPANTS

L. Gilbert Clark 11/8/07
L GILBERT CLARK Date

CERTIFICATION OF:

District Consvt
Michael W. Sturdivant 4/25/07
Micheal W. Sturdivant Date

CONSERVATION DISTRICT

CHATHAM SOIL & WATER CONS Date

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6	16.3 ac	7	2005		
7	13.4 ac	7	2005		
8	7.5 ac	7	2005		
Total:	47.1 ac				

Nutrient Management

Manage the amount, form, placement and timing of plant nutrient application.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	2.02 ac	7	2005	2 ac	7/18/2005
2	5.4 ac	7	2005	5.4 ac	7/18/2005
3	3.2 ac	7	2005	3.2 ac	7/18/2005
4	1.1 ac	7	2005	1.1 ac	7/18/2005
5	1.3 ac	7	2005	1.3 ac	7/18/2005
6	16.3 ac	7	2005	16.3 ac	7/18/2005
7	13.4 ac	7	2005	13.4 ac	7/18/2005
8	7.5 ac	7	2005	7.5 ac	7/18/2005
Total:	50.22 ac			50.2 ac	

Riparian Buffers - Vegetative

Vegetation will be maintained to reduce runoff from feedlots.

Field	Planned Amount	Month	Year	Applied Amount	Date
5	1.3 ac	7	2005	1.3 ac	7/10/1998
6	16.3 ac	7	2005	16.3 ac	7/18/1998
7	13.4 ac	7	2005	13.4 ac	7/10/1998
8	7.5 ac	7	2005	7.5 ac	7/10/1998
Total:	38.5 ac			38.5 ac	

Waste Utilization

Use organic waste material in an environmentally safe manner to enrich soil fertility.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	2.02 ac	7	2005	2 ac	7/18/2005
2	5.4 ac	7	2005	5.4 ac	7/18/2005
3	3.2 ac	7	2005	3.2 ac	7/18/2005
4	1.1 ac	7	2005	1.1 ac	7/18/2005
5	1.3 ac	7	2005	1.3 ac	7/18/2005
6	16.3 ac	7	2005	16.3 ac	7/18/2005
7	13.4 ac	7	2005	13.4 ac	7/18/2005
8	7.5 ac	7	2005	7.5 ac	7/18/2005
Total:	50.22 ac			50.2 ac	

Waste Water & Feedlot Runoff Control

Diversions and level spreaders will be installed to reduce runoff from feedlot areas.

Field	Planned Amount	Month	Year	Applied Amount	Date
4	1.1 ac	7	2005	1.1 ac	7/10/1998
6	16.3 ac	7	2005	16.3 ac	7/10/1998
7	13.4 ac	7	2005	13.4 ac	7/10/1998
8	7.5 ac	7	2005	7.5 ac	7/10/1998
Total:	38.3 ac			38.3 ac	

NEW

The table shown below provides a summary of the crops or rotations included in this plan for each field. Realistic Yield estimates are also provided for each crop, as well as the crop's P2O5 Removal Rate. The Leaching Index (LI) and the Phosphorous Loss Assessment Tool (PLAT) Rating are also provided for each field, where available.

If a field's PLAT Rating is High, any planned manure application is limited to the phosphorous removal rate of the harvested plant biomass for the crop rotation or multiple years in the crop sequence. Fields with a Very High PLAT Rating should receive no additional applications of manure. Regardless of the PLAT rating, starter fertilizers may be recommended in accordance with North Carolina State University guidelines or recommendations. The quantity of P2O5 applied to each crop is shown in the following table if the field's PLAT rating is High or Very High.

Planned Crops Summary

Tract	Field	Total Acres	Usable Acres	Plat Rating	LI	Soil Series	Crop Sequence	RYE	P2O5	
									Removal (lbs/acre)	Applied (lbs/acre)
30730	1	53.00	53.00	Medium	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
418	1	9.22	9.22	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
418	2	4.36	4.36	Medium	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
418	3	2.06	2.06	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
418	5	3.01	3.01	Low	15.0	Georgeville	Fescue Hay	4.6 Tons	72	N/A
418	6	0.66	0.66	Low	15.0	Georgeville	Fescue Hay	4.6 Tons	72	N/A
418	7	0.80	0.80	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
418	8	2.41	2.41	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
418	9	3.20	3.20	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	1	2.02	2.02	Medium	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	2	5.41	5.41	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	3	3.18	3.18	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	4	1.10	1.10	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	5	1.26	1.26	Medium	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	6	16.26	16.26	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	7	13.40	13.40	Medium	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
724	8	7.50	7.50	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
734	1	9.29	9.29	Low	15.0	Georgeville	Fescue Hay	4.9 Tons	77	N/A
99999	1	10.60	10.60	Low	15.0	Georgeville	Fescue Pasture	4.9 Tons	8	N/A
99999	2	8.40	8.40	Medium	15.0	Georgeville	Fescue Pasture	4.9 Tons	8	N/A

PLAN TOTALS: 157.14 157.14

NEW

<i>LI</i>	<i>Potential Leaching</i>	<i>Technical Guidance</i>
< 2	Low potential to contribute to soluble nutrient leaching below the root zone.	None
>= 2 & <= 10	Moderate potential to contribute to soluble nutrient leaching below the root zone.	Nutrient Management (590) should be planned.
> 10	High potential to contribute to soluble nutrient leaching below the root zone.	Nutrient Management (590) should be planned. Other conservation practices that improve the soils available water holding capacity and improve nutrient use efficiency should be considered. Examples are Cover Crops (340) to scavenge nutrients, Sod-Based Rotations (328), Long-Term No-Till (778), and edge-of-field practices such as Filter Strips (393) and Riparian Forest Buffers (391).

<i>PLAT Index</i>	<i>Rating</i>	<i>P Management Recommendation</i>
0 - 25	Low	No adjustment needed; N based application
25 - 50	Medium	No adjustment needed; N based application
51 - 100	High	Application limited to crop P removal
> 100	Very High	Starter P application only

NEW

The Waste Utilization table shown below summarizes the waste utilization plan for this operation. This plan provides an estimate of the number of acres of cropland needed to use the nutrients being produced. The plan requires consideration of the realistic yields of the crops to be grown, their nutrient requirements, and proper timing of applications to maximize nutrient uptake.

This table provides an estimate of the amount of nitrogen required by the crop being grown and an estimate of the nitrogen amount being supplied by manure or other by-products, commercial fertilizer and residual from previous crops. An estimate of the quantity of solid and liquid waste that will be applied on each field in order to supply the indicated quantity of nitrogen from each source is also included. A balance of the total manure produced and the total manure applied is included in the table to ensure that the plan adequately provides for the utilization of the manure generated by the operation.

Waste Utilization Table

Year 1

Tract	Field	Source ID	Soil Series	Total Acres	Use. Acres	Crop	Applic. Period	Nitrogen PA Nutrient Req'd (lbs/A)		Comm. Fert. Applied (lbs/A)		Res. (lbs/A)		Applic. Method	Manure PA Nutrient Applied (lbs/A)	Liquid Manure Applied (acre)	Solid Manure Applied (acre)	Liquid Manure Applied (Field)	Solid Manure Applied (Field)
								N	N	N	N	N	N						
30730	1	S55	Georgeville	53.00	53.00	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	886.28	
418	1	S55	Georgeville	9.22	9.22	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	154.18	
418	2	S55	Georgeville	4.36	4.36	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	72.91	
418	3	S55	Georgeville	2.06	2.06	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	34.45	
418	5	S55	Georgeville	3.01	3.01	Fescue Hay	8/1-7/31	199	9	0	0	0	Broad.	190	0.00	15.89	0.00	47.82	
418	6	S55	Georgeville	0.66	0.66	Fescue Hay	8/1-7/31	199	9	0	0	0	Broad.	190	0.00	15.89	0.00	10.48	
418	7	S55	Georgeville	0.80	0.80	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	13.38	
418	8	S55	Georgeville	2.41	2.41	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	40.30	
418	9	S55	Georgeville	3.20	3.20	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	53.51	
724	1	S55	Georgeville	2.02	2.02	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	33.78	
724	2	S55	Georgeville	5.41	5.41	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	90.47	
724	3	S55	Georgeville	3.18	3.18	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	53.18	
724	4	S55	Georgeville	1.10	1.10	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	18.39	
724	5	S55	Georgeville	1.26	1.26	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	21.07	
724	6	S55	Georgeville	16.26	16.26	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	271.90	
724	7	S55	Georgeville	13.40	13.40	Fescue Hay	8/1-7/31	212	12	0	0	0	Broad.	200	0.00	16.72	0.00	224.08	

NEW

Year 1

Waste Utilization Table

Tract	Field	Source ID	Soil Series	Total Acres	Use Acres	Crop	Applic. Period	Nitrogen PA Nutrient Req'd (lbs/A)	Comm. Fert. Nutrient Applied (lbs/A)	Res. (lbs/A)	Applic. Method	Manure PA Nutrient Applied (lbs/A)	Liquid Manure Applied (acre)	Solid Manure Applied (acre)	Liquid Manure Applied (Field) 1000 gals	Solid Manure Applied (Field) tons
724	8	S55	Georgeville	7.50	7.50	Fescue Hay	8/1-7/31	212	12	0	Broad.	200	0.00	16.72	0.00	125.42
734	1	S55	Georgeville	9.29	9.29	Fescue Hay	8/1-7/31	212	12	0	Broad.	200	0.00	16.72	0.00	155.35
99999	1	S55	Georgeville	10.60	10.60	Fescue Pasture	8/1-7/31	159	9	0	Broad.	150	0.00	12.54	0.00	132.94
99999	2	S55	Georgeville	8.40	8.40	Fescue Pasture	8/1-7/31	159	9	0	Broad.	150	0.00	12.54	0.00	105.35
Total Applied, 1000 gallons													0.00			
Total Produced, 1000 gallons													0.00			
Balance, 1000 gallons													0.00			
Total Applied, tons														2,545.24		
Total Produced, tons														2,512.50		
Balance, tons														-32.74		

Notes: 1. In the tract column, ~ symbol means leased, otherwise, owned. 2. Symbol * means user entered data.

The Nutrient Management Recommendations table shown below provides an annual summary of the nutrient management plan developed for this operation. This table provides a nutrient balance for the listed fields and crops for each year of the plan. Required nutrients are based on the realistic yields of the crops to be grown, their nutrient requirements and soil test results. The quantity of nutrient supplied by each source is also identified.

The total quantity of nitrogen applied to each crop should not exceed the required amount. However, the quantity of other nutrients applied may exceed their required amounts. This most commonly occurs when manure or other byproducts are utilized to meet the nitrogen needs of the crop. Nutrient management plans may require that the application of animal waste be limited so as to prevent over application of phosphorous when excessive levels of this nutrient are detected in a field. In such situations, additional nitrogen applications from nonorganic sources may be required to supply the recommended amounts of nitrogen.

Nutrient Management Recommendations Test

YEAR		1			N (lbs/A)	P2O5 (lbs/A)	K2O (lbs/A)	Mg (lbs/A)	Mn (lbs/A)	Zn (lbs/A)	Cu (lbs/A)	Lime (tons/A)
Tract	Field	30730	1	Req'd Nutrients	212	0	0	0	0	0	0	0
Acres	App. Period	53.00	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	0
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Medium	BALANCE	0	187	234	101	5	2	0	0
Tract	Field	418	1	Req'd Nutrients	212	0	70	0	0	0	0	1
Acres	App. Period	9.22	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	164	101	5	2	0	0
Tract	Field	418	2	Req'd Nutrients	212	0	10	0	0	0	0	1
Acres	App. Period	4.36	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Medium	BALANCE	0	187	224	101	5	2	0	0
Tract	Field	418	3	Req'd Nutrients	212	0	70	0	0	0	0	1
Acres	App. Period	2.06	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	164	101	5	2	0	0

NEW

Nutrient Management Recommendations Test

YEAR		1			N (lbs/A)	P2O5 (lbs/A)	K2O (lbs/A)	Mg (lbs/A)	Mn (lbs/A)	Zn (lbs/A)	Cu (lbs/A)	Lime (tons/A)
Tract	Field	418	5	Req'd Nutrients	199	0	0	0	0	0	0	1
Acres	App. Period	3.01	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	9	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.6 Tons	07-08-05	Manure	190	178	222	96	5	1	0	0
P Removal	Rating	72 lbs/ac.	Low	BALANCE	0	178	222	96	5	1	0	0
Tract	Field	418	6	Req'd Nutrients	199	0	0	0	0	0	0	1
Acres	App. Period	0.66	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	9	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.6 Tons	07-08-05	Manure	190	178	222	96	5	1	0	0
P Removal	Rating	72 lbs/ac.	Low	BALANCE	0	178	222	96	5	1	0	0
Tract	Field	418	7	Req'd Nutrients	212	0	0	0	0	0	0	1
Acres	App. Period	0.80	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	234	101	5	2	0	0
Tract	Field	418	8	Req'd Nutrients	212	0	0	0	0	0	0	1
Acres	App. Period	2.41	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	234	101	5	2	0	0
Tract	Field	418	9	Req'd Nutrients	212	0	0	0	0	0	0	1
Acres	App. Period	3.20	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	234	101	5	2	0	0

Nutrient Management Recommendations Test

YEAR		1			N (lbs/A)	P2O5 (lbs/A)	K2O (lbs/A)	Mg (lbs/A)	Mn (lbs/A)	Zn (lbs/A)	Cu (lbs/A)	Lime (tons/A)
Tract	Field	724	1	Req'd Nutrients	212	0	100	0	0	0	0	1
Acres	App. Period	2.02	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Medium	BALANCE	0	187	134	101	5	2	0	0
Tract	Field	724	2	Req'd Nutrients	212	0	20	0	0	0	0	1
Acres	App. Period	5.41	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	214	101	5	2	0	0
Tract	Field	724	3	Req'd Nutrients	212	0	0	0	0	0	0	1
Acres	App. Period	3.18	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	234	101	5	2	0	0
Tract	Field	724	4	Req'd Nutrients	212	0	20	0	0	0	0	1
Acres	App. Period	1.10	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	214	101	5	2	0	0
Tract	Field	724	5	Req'd Nutrients	212	0	0	0	0	0	0	1
Acres	App. Period	1.26	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Medium	BALANCE	0	187	234	101	5	2	0	0

Nutrient Management Recommendations Test

YEAR		1			N (lbs/A)	P2O5 (lbs/A)	K2O (lbs/A)	Mg (lbs/A)	Mn (lbs/A)	Zn (lbs/A)	Cu (lbs/A)	Lime (tons/A)
Tract	Field	724	6	Req'd Nutrients	212	0	50	0	0	0	0	2
Acres	App. Period	16.26	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	2
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	184	101	5	2	0	0
Tract	Field	724	7	Req'd Nutrients	212	0	0	0	0	0	0	0
Acres	App. Period	13.40	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	0
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Medium	BALANCE	0	187	234	101	5	2	0	0
Tract	Field	724	8	Req'd Nutrients	212	0	100	0	0	0	0	1
Acres	App. Period	7.50	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	1
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	134	101	5	2	0	0
Tract	Field	734	1	Req'd Nutrients	212	0	110	0	0	0	0	2
Acres	App. Period	9.29	8/1-7/31	Supplied By:								
CROP		Fescue Hay		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	12	0	0	0	0	0	0	2
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	200	187	234	101	5	2	0	0
P Removal	Rating	77 lbs/ac.	Low	BALANCE	0	187	124	101	5	2	0	0
Tract	Field	99999	1	Req'd Nutrients	159	140	110	0	0	0	0	2
Acres	App. Period	10.60	8/1-7/31	Supplied By:								
CROP		Fescue Pasture		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	9	0	0	0	0	0	0	2
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	150	140	176	75	4	1	0	0
P Removal	Rating	8 lbs/ac.	Low	BALANCE	0	0	66	75	4	1	0	0

NEW

Nutrient Management Recommendations Test

YEAR		1			N (lbs/A)	P2O5 (lbs/A)	K2O (lbs/A)	Mg (lbs/A)	Mn (lbs/A)	Zn (lbs/A)	Cu (lbs/A)	Lime (tons/A)
Tract	Field	99999	2	Req'd Nutrients	159	140	110	0	0	0	0	2
Acres	App. Period	8.40	8/1-7/31	Supplied By:								
CROP		Fescue Pasture		Starter	0	0	0	0	0	0	0	0
				Commercial Fert.	9	0	0	0	0	0	0	2
Soil Series		Georgeville		Residual	0	0	0	0	0	0	0	0
RYE	Sample Date	4.9 Tons	07-08-05	Manure	150	140	176	75	4	1	0	0
P Removal	Rating	8 lbs/ac.	Medium	BALANCE	0	0	66	75	4	1	0	0

NOTE: Symbol * means user entered data.

The Required Soil Test Values shown in the following table provide a summary of recommended actions that should be taken if soil tests indicate excessive levels of copper or zinc. Fields that receive manure must have an annual soil analysis for these elements. High levels of zinc and copper can adversely affect plant growth. Alternative crop sites must be used when the concentration of these metals approach excessive levels. Site life can be estimated by dividing the amount of copper and zinc to be applied in lbs/acre by 0.036 and 0.071, respectively and multiplying the result by 0.85. By adding this quantity to the current soil index for copper or zinc, we can predict life of the site for waste disposal.

In addition to copper and zinc indices, this table also provides a summary of lime recommendations for each crop based on the most recent soil sample. Application of lime at recommended rates is necessary to maintain soil pH in the optimum range for crop production.

Required Soil Test Values

Tract	Field	Crop	pH	Lime Reccom. (tons/acre)	Cu-I	Copper Recommendation	Zn-I	Zinc Recommendation
30730	1	Fescue Hay	6.0	0.0	205	None	238	None
418	1	Fescue Hay	5.2	0.9	85	None	51	None
418	2	Fescue Hay	5.4	0.7	192	None	171	None
418	3	Fescue Hay	5.2	0.9	85	None	51	None
418	5	Fescue Hay	5.1	1.1	161	None	92	None
418	6	Fescue Hay	5.1	1.1	161	None	92	None
418	7	Fescue Hay	5.1	1.1	161	None	92	None
418	8	Fescue Hay	5.1	1.1	161	None	92	None
418	9	Fescue Hay	5.1	1.1	161	None	92	None
724	1	Fescue Hay	5.6	0.5	125	None	122	None
724	2	Fescue Hay	5.7	0.5	334	None	722	None
724	3	Fescue Hay	5.5	0.8	451	None	377	None
724	4	Fescue Hay	5.7	0.5	334	None	722	None
724	5	Fescue Hay	5.5	0.8	451	None	377	None
724	6	Fescue Hay	4.3	1.9	23	None	32	None
724	7	Fescue Hay	6.1	0.0	186	None	315	None
724	8	Fescue Hay	5.6	0.5	125	None	122	None
734	1	Fescue Hay	4.5	1.8	76	None	28	None
99999	1	Fescue Pasture	4.5	1.8	76	None	28	None
99999	2	Fescue Pasture	4.5	1.8	76	None	28	None

Required Specifications For Animal Waste Management

- 1. Animal waste shall not reach surface waters of the state by runoff, drift, manmade conveyances, direct application, or direct discharge during operation or land application. Any discharge of waste that reaches surface water is prohibited.**
- 2. There must be documentation in the design folder that the producer either owns or has an agreement for use of adequate land on which to properly apply the waste. If the producer does not own adequate land to properly dispose of the waste, he/she shall provide evidence of an agreement with a landowner, who is within a reasonable proximity, allowing him/her the use of the land for waste application. It is the responsibility of the owner of the waste production facility to secure an update of the Nutrient Management Plan when there is a change in the operation, increase in the number of animals, method of application, receiving crop type, or available land.**
- 3. Animal waste shall be applied to meet, but not exceed, the nitrogen needs for realistic crop yields based upon soil type, available moisture, historical data, climatic conditions, and level of management, unless there are regulations that restrict the rate of applications for other nutrients.**
- 4. Animal waste shall be applied to land eroding less than 5 tons per acre per year. Waste may be applied to land eroding at more than 5 tons per acre per year but less than 10 tons per acre per year provided grass filter strips are installed where runoff leaves the field (see USDA, NRCS Field Office Technical Guide Standard 393 - Filter Strips).**
- 5. Odors can be reduced by injecting the waste or by disking after waste application. Waste should not be applied when there is danger of drift from the land application field.**
- 6. When animal waste is to be applied on acres subject to flooding, waste will be soil incorporated on conventionally tilled cropland. When waste is applied to conservation tilled crops or grassland, the waste may be broadcast provided the application does not occur during a season prone to flooding (see "Weather and Climate in North Carolina" for guidance).**
- 7. Liquid waste shall be applied at rates not to exceed the soil infiltration rate such that runoff does not occur offsite or to surface waters and in a method which does not cause drift from the site during application. No ponding should occur in order to control odor and flies.**

- 8. Animal waste shall not be applied to saturated soils, during rainfall events, or when the soil surface is frozen.**
- 9. Animal waste shall be applied on actively growing crops in such a manner that the crop is not covered with waste to a depth that would inhibit growth. The potential for salt damage from animal waste should also be considered.**
- 10. Nutrients from waste shall not be applied in fall or winter for spring planted crops on soils with a high potential for leaching. Waste/nutrient loading rates on these soils should be held to a minimum and a suitable winter cover crop planted to take up released nutrients. Waste shall not be applied more than 30 days prior to planting of the crop or forages breaking dormancy.**
- 11. Any new swine facility sited on or after October 1, 1995 shall comply with the following: The outer perimeter of the land area onto which waste is applied from a lagoon that is a component of a swine farm shall be at least 50 feet from any residential property boundary and canal. Animal waste, other than swine waste from facilities sited on or after October 1, 1995, shall not be applied closer than 25 feet to perennial waters.**
- 12. Animal waste shall not be applied closer than 100 feet to wells.**
- 13. Animal waste shall not be applied closer than 200 feet of dwellings other than those owned by the landowner.**
- 14. Waste shall be applied in a manner not to reach other property and public right-of-ways.**
- 15. Animal waste shall not be discharged into surface waters, drainageways, or wetlands by a discharge or by over-spraying. Animal waste may be applied to prior converted cropland provided the fields have been approved as a land application site by a "technical specialist". Animal waste shall not be applied on grassed waterways that discharge directly into water courses, and on other grassed waterways, waste shall be applied at agronomic rates in a manner that causes no runoff or drift from the site.**
- 16. Domestic and industrial waste from washdown facilities, showers, toilets, sinks, etc., shall not be discharged into the animal waste management system.**

17. A protective cover of appropriate vegetation will be established on all disturbed areas (lagoon embankments, berms, pipe runs, etc.). Areas shall be fenced, as necessary, to protect the vegetation. Vegetation such as trees, shrubs, and other woody species, etc., are limited to areas where considered appropriate. Lagoon areas should be kept mowed and accessible. Berms and structures should be inspected regularly for evidence of erosion, leakage, or discharge.
18. If animal production at the facility is to be suspended or terminated, the owner is responsible for obtaining and implementing a "closure plan" which will eliminate the possibility of an illegal discharge, pollution, and erosion.
19. Waste handling structures, piping, pumps, reels, etc., should be inspected on a regular basis to prevent breakdowns, leaks, and spills. A regular maintenance checklist should be kept on site.
20. Animal waste can be used in a rotation that includes vegetables and other crops for direct human consumption. However, if animal waste is used on crops for direct human consumption, it should only be applied pre-plant with no further applications of animal waste during the crop season.
21. Highly visible markers shall be installed to mark the top and bottom elevations of the temporary storage (pumping volume) of all waste treatment lagoons. Pumping shall be managed to maintain the liquid level between the markers. A marker will be required to mark the maximum storage volume for waste storage ponds.
22. Waste shall be tested within 60 days of utilization and soil shall be tested at least annually at crop sites where waste products are applied. Nitrogen shall be the rate-determining nutrient, unless other restrictions require waste to be applied based on other nutrients, resulting in a lower application rate than a nitrogen based rate. Zinc and copper levels in the soils shall be monitored and alternative crop sites shall be used when these metals approach excessive levels. pH shall be adjusted and maintained for optimum crop production. Soil and waste analysis records shall be kept for a minimum of five years. Poultry dry waste application records shall be maintained for a minimum of three years.

Waste application records for all other waste shall be maintained for five (5) years.
23. Dead animals will be disposed of in a manner that meets North Carolina regulations.

NUTRIENT MANAGEMENT and WASTE UTILIZATION PLAN SUPPLEMENTAL INFORMATION

N.C. Practice Job Sheet: NC-590-633

Prepared for: Gilbert Clark Farm

By: Carl Henry Outy Jr.

Farm: _____ Tract: 724 Date: 4/17/07

WHAT IS NUTRIENT MANAGEMENT?

The conservation practice, Nutrient Management, is managing the amount, source, placement, form and timing of the application of nutrients and soil amendments to achieve realistic production goals, while minimizing nutrient movement to surface or ground waters. The practice, Waste Utilization, is using agricultural waste such as manure or wastewater in an environmentally sound manner. These practices are jointly accomplished through the development of a Nutrient Management/Waste Utilization Plan, which is normally part of a broader Conservation Plan that addresses multiple natural resource concerns on the land.

PURPOSE OF NUTRIENT MANAGEMENT and WASTE UTILIZATION PRACTICES

Your nutrient management/waste utilization plan is intended to accomplish one or more of the following objectives:

- To budget nutrients for plant production.
- To properly utilize manure or organic by-products as a plant nutrient source.
- To minimize the delivery of agricultural nutrients to surface and ground water resources.
- To maintain or improve the physical, chemical, and biological condition of the soil.

- To utilize agricultural wastes for livestock feed or as an energy source.

CONTENTS OF THE NUTRIENT MANAGEMENT / WASTE UTILIZATION PLAN

The information provided in this Job Sheet and the attachments meet the minimum requirements for a Nutrient Management Plan for USDA-NRCS purposes. This Nutrient Management Plan includes:

1. A plan map and soils map for the area planned (these may be part of the overall Conservation Plan).
2. Location of designated sensitive areas or resources (streams, wells, sinkholes, etc.) and any associated nutrient application setbacks, etc.
3. Your planned crop rotation.
4. Results of soil, plant, water tests.
5. Results from Phosphorus Loss Assessment Tool (PLAT) or Leaching Index (LI) as required.
6. Realistic yield expectations for the crops in the rotation, and their source if other than default values approved for N.C.
7. Recommended nutrient application rates for nitrogen, phosphorus, and potassium, as well as timing, form,

and method of application and incorporation, if applicable.

8. This Job Sheet (or comparable information), that provides the following:
- General requirements of this practice, as well as additional requirements to meet the natural resource protection purposes listed above.
 - Additional considerations specific to this plan.
 - Operation and maintenance information associated with this practice.

Because this Nutrient Management Plan includes agricultural organic sources, additional items are required in the plan to ensure proper waste utilization:

- Waste Utilization Agreement (if applicable)
- Waste Utilization Third Party Agreement (if applicable)
- Additional engineering design and operating information for waste storage structures, transport, and application system, as applicable. These designs, and the instructions for operating these structures, is an integral component of your overall Nutrient Management/Waste Utilization Plan.
- Emergency Action Plan to prevent overtopping or other discharges from storage structures or facilities, as applicable.

This plan was developed based on the current NRCS 590 and 633 standards and Federal, state, or local regulations or policies. Changes in laws or regulations may necessitate a revision of the plan.

BASIC REQUIREMENTS FOR WASTE UTILIZATION

General

All manure and organic residues must be applied according to a nutrient management plan (see the following section, "BASIC

REQUIREMENTS FOR NUTRIENT MANAGEMENT")

You are required to acquire and comply with all federal, state, or local permit requirements related to the handling and application of manure or organic materials.

The nutrient management/waste utilization plan must address all organic waste generated at or brought to the facility. A Waste Utilization Third Party Agreement must exist to address all organic waste not handled by the nutrient management/waste utilization plan.

Manure or organic wastes will not be applied to the following areas:

- surface waters,
- wetlands, unless constructed as a component in a waste treatment system,
- soils subject to frequent flooding during the period when flooding is expected,
- frozen, snow-covered, or saturated soils,
- within 200 feet of a dwelling other than those owned by the producer,
- within 100 feet of a well,
- within 25 feet of surface waters, or
- within any other setbacks as identified by federal, state, or local laws or regulations (e.g. NC General Statute prevents swine lagoon effluent from being applied within 75 feet of a residential property boundary or perennial stream or river if the facility was sited on or after October 1995.)

Manure or organic wastes will be applied in a manner not to reach surface waters, wetlands (unless constructed as a component in a waste treatment system), property owned by others, or public right-of-way.

Sludge that accumulates in waste storage structures must be analyzed prior to land

application. Adequate provisions (available land and/or third party manure agreements) must exist to ensure sludge is applied in adherence to all nutrient application requirements. All federal and state guidance regarding the proper testing, handling, planning, and application of sludge must be followed for regulated operations.

Since compliance with all applicable North Carolina laws is the responsibility of the producer, you should consult the most current version of the Guidance Memo for Implementing the Environmental Management Commission's Regulations for Animal Waste Management for questions.

ADDITIONAL REQUIREMENTS FOR PROVIDING LIVESTOCK FEED

If applicable, all agricultural wastes or other organic residues used for feedstock must be handled in a manner to minimize contamination and preserve its feed value. Chicken litter stored for this purpose must be covered. A qualified animal nutritionist shall develop rations that utilize animal wastes.

ADDITIONAL REQUIREMENTS FOR PROVIDING A SOURCE OF ENERGY

If your facility is to be used for energy production, all energy producing components of the system are included in the Nutrient Management/Waste Utilization Plan and provisions for the utilization of residues of energy production identified. Your Nutrient Management Plan includes the use of these residues, if applicable.

BASIC REQUIREMENTS FOR NUTRIENT MANAGEMENT

General

Application of nutrients must comply with all applicable Federal, state, and local laws and regulations.

The realistic yield expectations (RYEs) in this plan are based on one or more of the following:

- Default values approved by the N.C. Interagency Nutrient Management Committee that incorporate soil productivity information, yield data, and research with North Carolina soils, and cropping systems. Additional information on the default values may be found at:

www.soil.ncsu.edu/nmp/ncnmwq/index.htm

- Documented actual yield data from the site, determined by the average of the highest three yields of the last five consecutive specific crop harvests. (For forage crops, determine the average of the highest three years of the last five years.)
- A fertilization rate recommended by North Carolina State University may be used in cases where no yield data or approved RYE values exist for a crop.
- An RYE inferred from a similar crop on a soil with similar physical and chemical features may be used for new crops or in the absence of other RYE data. This inferred RYE may ONLY be specified by a certified Nutrient Management planner.

Erosion, runoff, and water management controls have been planned, as needed, on fields that receive nutrients.

Soil Testing

This nutrient management plan has been developed based on current soil test results (no older than three years).

Soil samples must be collected and prepared in accordance with North Carolina State University or the North Carolina Department of Agriculture and Consumer Services (NCDA&CS) Agronomic Division standards or recommendations.

Soil test analyses can be performed by any laboratory or program that is certified by the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Water Quality, Laboratory Section.

NCDA&CS Agronomic Division uses the Mehlich-3 extractant process for soil testing. Growers who utilize other laboratories must request the use of the Mehlich-3 methodology to ensure the test results are compatible with North Carolina's nutrient management planning and assessment tools. For statewide consistency, all laboratories used must provide fertilization recommendations using guidelines and methodologies as referenced at the NCDA&CS website:

www.ncagr.com/agronomi/oobook.htm

Growers are encouraged to use a laboratory that is supported by field research within the state.

Soil testing shall include analysis for all nutrients for which specific information is needed to develop the nutrient plan.

Plant Tissue Testing

Tissue sampling and testing, when used, shall be done in accordance with North Carolina State University or NCDA&CS standards or recommendations.

Manure Testing

Nutrient values of manure and organic by-products shall be established for planning purposes based on laboratory analysis, acceptable default values, or historic records for the operation.

When determining actual application rates, a laboratory analysis is required. State regulations require that waste be tested within 60 days of utilization for some operations. In the case of daily spreading, the waste must be sampled and analyzed at least once a year. Acceptable laboratories include the

NCDA&CS Agronomic Division, or others certified by the NCDENR.

Field Risk Assessment

A field-specific assessment of the potential for phosphorus transport from each field (or groups of similar fields) have been conducted, using the North Carolina Phosphorus Loss Assessment Tool (PLAT)

PLAT assesses the potential for phosphorus (P) to be transported from the site to surface water through each of the four primary loss pathways:

- sediment-bound P transported through erosion,
- soluble P transported through surface runoff,
- soluble P leached through the soil profile, and
- non-incorporated source P transported through surface runoff.

Based on the assessment of each loss pathway, PLAT produces a single rating for each field. As shown below, this rating will identify whether nitrogen or phosphorus shall be the rate-determining element in developing the planned application rate for manure.

PLAT Rating	Nutrient Application Criteria
LOW	Nitrogen-based manure application.
MEDIUM	Nitrogen-based manure application.
HIGH	Manure application limited to phosphorus removal from site in harvested plant biomass.
VERY HIGH	No additional manure application to be specified in plan for the site.

On all sites, regardless of the PLAT rating, starter fertilizers may be recommended in accordance with NCSU guidelines or recommendations.

In some cases, specific conservation practices that reduce the potential for phosphorus transport have been incorporated into PLAT. Examples include buffers or filter strips, ponds, water table management, and residue management and conservation tillage. Similarly, soil erosion rates, either existing or planned, have been incorporated into your PLAT analysis. This information is shown on the PLAT results enclosed. Because the management of the site actually affects the PLAT rating, all practices identified on the PLAT analysis (including any required to achieve the specified erosion rate) must be either already installed or included in a Conservation Plan for the Nutrient Management Plan to be approved.

Nutrient Application Rates

Recommended nutrient application rates are based on North Carolina State University or NCDA&CS recommendations that consider current soil test results, RYEs, and management.

Liming material shall be applied as needed to adjust soil pH to the specific range required by the crop or crops in the rotation for optimum availability and utilization of nutrients.

The application amount and rate (in/hr) for liquid wastes (e.g. applied through irrigation) shall not result in runoff from the site. The application shall not exceed the field capacity of the soil.

The planned rates of nutrient application are shown on the attached sheets. These rates have been computed as follows:

- **Nitrogen Application** - When the plan is nitrogen-based (a PLAT rating of Low or Medium), the application rate of manure or organic by-products shall be based on the recommended nitrogen rate using the RYE for the site (or a rate recommended by NCSU or NCDA in the case of crops without established RYEs). This may result in an application rate for other

nutrients that exceeds the soil test recommendation.

- When the plan is being implemented on a phosphorus standard (a PLAT rating of High or Very High), manure or other organic by-products shall be applied at rates consistent with the phosphorus application guidance below. In such situations, an additional nitrogen application from non-organic sources may be required to supply nitrogen at the rate recommended by the RYE.
- Within the limits allowed by PLAT, manure or other organic by-products may be applied on soybeans at rates equal to the estimated removal of nitrogen in harvested plant biomass.
- All nitrogen rates for hay production are for pure grass stands. Due to the nutrient recycling by grazing animals, the planned nitrogen rate per unit yield for hay crops shall be reduced by 25% for the portion of the expected yield that is removed through grazing.
- **Phosphorus Application** – When manure or other organic by-products are used, the planned rates of phosphorus application shall be based on the PLAT rating for the site, as follows:

Low or Medium Rating – The planned manure or organic by-product application rate is based on the nitrogen needs of the crop.

High Rating – The planned manure or organic by-product application rate is limited to the phosphorus removal rate of the harvested plant biomass.

Very High Rating – No additional manure or organic by-product application is specified in the plan.

On all sites, regardless of the PLAT rating, starter fertilizers containing nitrogen, phosphorus, and potassium may be recommended in accordance with North Carolina State University guidelines or recommendations.

A single application of phosphorus applied as manure or organic by-product may be made at a rate equal to the recommended phosphorus application or estimated phosphorus removal in harvested plant biomass for the crop rotation or multiple years in the crop sequence.

- When such single applications are made, the rate shall:
 - ◆ not exceed the recommended nitrogen application rate during the year of application, or
 - ◆ not exceed the estimated nitrogen removal in harvested plant biomass during the year of application when there is no recommended nitrogen application, or
 - ◆ not be made on sites with a Very High PLAT risk rating.
- **Potassium Application** – Planned potassium application rates should match the soil test recommended rates as closely as possible. (This is particularly critical in situations where a potentially harmful nutrient imbalance in crops or forages may occur, such as grass tetany). When using manure or other organic sources, the addition of potassium from non-organic sources may be required.
- **Other Plant Nutrients** - The planned rates of application of other nutrients if applicable are consistent with North Carolina State University or the NCDA&CS guidelines or recommendations.

Nutrient Application Timing

Timing of nutrient application shall correspond as closely as possible with

plant nutrient uptake characteristics, while considering cropping system limitations, weather and climatic conditions, and field accessibility. Nutrients shall not be applied to frozen, snow-covered, or saturated soil.

Manure or organic by-products shall not be applied more than 30 days prior to planting of the crop or forages breaking dormancy.

For nutrients applied through irrigation systems, application equipment should be properly calibrated to ensure uniform distribution of material at planned rates.

Plan Review and Revision Period

A thorough review and revision (if needed) of the nutrient management plan shall be conducted on a regular cycle, not to exceed five years.

Heavy Metals Monitoring

For animal waste, including sludge, zinc and copper concentrations shall be monitored and alternative crop sites for application shall be sought when these metals approach excessive concentrations. The following criteria and actions are provided:

ZINC	
<u>Mehlich-3 Index</u>	<u>Action</u>
<u>(Zn-I)</u>	
300 (21 lbs/ac)	Peanuts are very sensitive to zinc, and application on peanuts should be limited. Seek alternative sites when possible. The risk of zinc toxicity is greater with low soil pH and has been seen at Zn-I as low as 300. *
500 (35 lbs/ac)	Critical toxic level for peanuts. Cease application on peanuts. *
2,000 (142 lbs/ac)	Caution: Seek alternative sites when possible for all crops. *
3,000 (213 lbs/ac)	Critical toxic level for all crops. Cease application for all crops. *

COPPER	
Mehlich-3 Index (Cu-I)	Action
2,000 (72 lbs/ac)	Caution: Seek alternative sites when possible for all crops. *
3,000 (108 lbs/ac)	Critical toxic level for all crops. Cease application on all crops. *
	* Maintain pH at 6.0 on these sites.

When sewage sludge is applied, the accumulation of potential pollutants (including arsenic, cadmium, copper, lead, selenium, and zinc) in the soil shall be monitored in accordance with the US Code, Reference 40 CFR, Parts 403 and 503, and applicable state and local laws or regulations. Additional information on heavy metal criteria for sewage sludge may be found in Land Application of Sewage Sludge, EPA/831-B-93-002b publication number at:

<http://www.epa.gov/npdes/pubs/sludge.pdf>

ADDITIONAL REQUIREMENTS FOR MINIMIZING DELIVERY OF NUTRIENTS TO SURFACE AND GROUND WATER

In areas that have been identified as impaired with agricultural nutrients being a likely source, an assessment shall be completed of the potential for nitrogen or phosphorus transport from the site. (The streams/water bodies in this category are listed in the USDA-NRCS Field Office Technical Guide, Section I.)

NO

This nutrient management plan **IS NOT** in an area where surface waters are impaired, with agricultural nutrients identified as a likely source. The Leaching Index (LI) is not required.

YES

This nutrient management plan **IS** in an area where surface waters are impaired, with agricultural nutrients identified as a

likely source. The Leaching Index (LI) is included in this plan.

While the results of the LI does not affect your planned nutrient application rates, some additional conservation practices may be specified in the plan to reduce the risk of nutrient movement from the field, if applicable.

IMPORTANCE OF MANAGING NUTRIENTS

Nitrogen and phosphorus are water soluble elements and either or both may be components of organic and inorganic fertilizers. In soluble forms, both can move with water as leachate down through the soil, or over the soil surface as runoff after rainfall. While nitrogen and phosphorus exist in different forms and may move through different transport processes on the same site, they both can have detrimental effects on both surface and shallow ground water quality. As an example, excess nutrients can result in accelerated eutrophication with severe algal blooms and fish kills.

Because of the topography, hydrology, and other factors in the state, the environmental problems from excess nutrients reaching surface water may not be exhibited near the contributing source, but rather create water quality problems far downstream. Consequently, the Neuse River Basin, Tar-Pamlico Basin, the Chowan River, the watershed of the B. Everett Jordan Reservoir, and the watershed of the New River in Onslow County are listed as Nutrient Sensitive waters in North Carolina.

Nitrogen: Nitrogen applied as fertilizer or organic material is transformed into nitrate and can move with the water moving downward into the shallow ground water and eventually to surface waters. (Relatively small amounts of nitrogen reach our surface waters through rainfall runoff.) The Leaching Index (LI) is a

required part of the nutrient management plan in some areas of the state with surface water impairments. The LI uses soils information and local climate data to assess the potential hazard from leaching of nutrients. The results of the LI analysis and recommended actions are included in your nutrient management plan, if applicable.

Phosphorus: Research in recent decades indicates that, with high soil phosphorus levels, phosphorus has more potential to be transported off-site than recognized in the past. Phosphorus can be transported in several ways: (1) attached to soil particles leaving the field through erosion, (2) in soluble form leaving the field in surface runoff, and (3) in soluble form leaching downward through the soil profile, and eventually into surface water. Unlike nitrogen, the most likely transport pathway for phosphorus varies by site, and depends upon such factors as soil erosion rate, soil phosphorus levels, texture of soils, existence of buffers, and other factors. In N.C., PLAT is the tool used to assess potential excessive phosphorus losses. The results of the PLAT analysis and recommended actions are included in your nutrient management plan, if applicable.

If a site receives a PLAT rating of Low or Medium, then applying manure at rates based on the nitrogen needs of the crop is allowed. It is important to realize that this may result in phosphorus being applied at rates that significantly exceed the crop's phosphorus removal rate. In these cases, the planned nutrient application rate is not sustainable, and eventually a PLAT rating of High may be reached.

OPERATION & MAINTENANCE

You are responsible for safe operation and maintenance of this practice, including all equipment. The following Operation & Maintenance should be conducted:

1. Review the plan annually to determine if adjustments or modifications to the plan

are needed. (The S.B. 1217 interagency group guidelines accepted by the N.C. Division of Water Quality for .0200 operations specify a plan revision when there are changes in crops or cropping patterns that utilize more than 25 percent of the nitrogen generated by the operation.) As a minimum, nutrient management plans shall be thoroughly reviewed every five years and revised if necessary. The next review will be performed in

5 years.

2. Protect fertilizer and organic by-product storage facilities from weather and accidental leakage or spillage.
3. Ensure proper calibration of application equipment to ensure uniform distribution of material at planned rates.
4. Inspect and maintain the equipment and facilities used to implement the Nutrient Management/Waste Utilization Plan regularly. Any needed repairs should be made in a timely manner.
5. Review the Emergency Action Plan, if applicable, annually.
6. Records should be maintained for five years, or for a period as required by other Federal, state, or local ordinances, or program or contract requirements. To ensure adequate information exists to support sound nutrient management, NRCS recommends the following records be included:
 - Soil test results and recommendations for nutrient application,
 - Quantities, analyses and sources of nutrients applied (When the actual rates used exceed the recommended and planned rates on inorganic fertilizer plans,

records should indicate the reasons for the differences, e.g. inability to acquire custom blended fertilizer.)

- Dates and method of nutrient applications,
- Crops planted, planting and harvest dates, yields, and crop residues removed,
- Results of water, plant, and organic by-product analyses, and
- Dates of review and person performing the review, and recommendations that resulted from the review.

NOTE: State laws or regulations may define record-keeping requirements for some operations.

7. Ensure that workers are protected from and avoid unnecessary contact with inorganic fertilizers and organic by-products. Protection should include the use of protective clothing when working with plant nutrients. Extra caution must be taken when handling ammonia sources of nutrients, or when dealing with organic wastes stored in poorly ventilated enclosures.
8. Properly dispose of material generated by the cleaning of nutrient application equipment. Excess material should be collected and stored or field applied in an appropriate manner. Excess material should not be applied on areas of high potential risk for runoff or leaching.
9. Properly dispose of or recycle nutrient containers according to state and local guidelines or regulations.

Crop Notes

The following crop note applies to field(s): 1, 2

Fescue: Piedmont

Adaptation: Well-adapted.

In the Piedmont, tall fescue can be planted Aug. 20 to Oct. 10 (best) and Feb. 15 to Mar. 20. For pure-stand broadcast seedings use 20 to 30 lb/ac., for drilled use 15 to 20 lb/ac. seed. Use certified seed to avoid introducing weeds or annual ryegrass. Plant seed 0.25" to 0.5" deep for pure stands, 0.25" in mixture with clovers. Soil test for preplant and maintenance lime, phosphorus, and potassium recommendations. Apply 40 to 60 lb/ac nitrogen at planting for pure stands only. Do not apply N for mixtures with clovers but use proper legume inoculation techniques. Apply 150 to 200 lb/ac. N to pure-stand fescue for hay production; reduce N rates by 25% for grazing. Apply N Feb. 1 to Mar. 20 and Aug. 20 to Sept. 30, with equal amounts in each window. Refer to NCSU Technical Bulletin 305 Production and Utilization of Pastures and Forages in North Carolina for additional information or consult your regional agronomist or extension agent for assistance.

The following crop note applies to field(s): 1, 2, 3, 4, 5, 6, 7, 8, 9

Fescue: Piedmont

Adaptation: Well-adapted.

In the Piedmont, tall fescue can be planted Aug. 20 to Oct. 10 (best) and Feb. 15 to Mar. 20. For pure-stand broadcast seedings use 20 to 30 lb/ac., for drilled use 15 to 20 lb/ac. seed. Use certified seed to avoid introducing weeds or annual ryegrass. Plant seed 0.25" to 0.5" deep for pure stands, 0.25" in mixture with clovers. Soil test for preplant and maintenance lime, phosphorus, and potassium recommendations. Apply 40 to 60 lb/ac nitrogen at planting for pure stands only. Do not apply N for mixtures with clovers but use proper legume inoculation techniques. Apply 150 to 200 lb/ac. N to pure-stand fescue for hay production; reduce N rates by 25% to 50% for grazing. Apply N Feb. 1 to Mar. 20 and Aug. 20 to Sept. 30, with equal amounts in each window. Refer to NCSU Technical Bulletin 305 Production and Utilization of Pastures and Forages in North Carolina for additional information or consult your regional agronomist or extension agent for assistance.

EMERGENCY ACTION PLAN

PHONE NUMBERS

DWQ 919-571-4700
EMERGENCY MANAGEMENT SYSTEM 919-542-2811
SWCD 919-542-8240
NRCS 919-542-2244 Ext. 3

This plan will be implemented in the event that wastes from your operation are leaking, overflowing, or running off site. You should not wait until wastes reach surface waters or leave your property to consider that you have a problem. You should make every effort to ensure that this does not happen. This plan should be posted in an accessible location for all employees at the facility. The following are some action items you should take.

1. Stop the release of wastes. Depending on the situation, this may or may not be possible. Suggested responses to some possible problems are listed below.

A. Lagoon overflow-possible solutions are:

- a. Add soil to berm to increase elevation of dam.
- b. Pump wastes to fields at an acceptable rate.
- c. Stop all flows to the lagoon immediately.
- d. Call a pumping contractor.
- e. Make sure no surface water is entering lagoon.

B. Runoff from waste application field-actions include:

- a. Immediately stop waste application.
- b. Create a temporary diversion to contain waste.
- c. Incorporate waste to reduce runoff.
- d. Evaluate and eliminate the reason(s) that caused the runoff.
- e. Evaluate the application rates for the fields where runoff occurred.

C. Leakage from the waste pipes and sprinklers-action include:

- a. Stop recycle pump.
- b. Stop irrigation pump.
- c. Close valves to eliminate further discharge.
- d. Repair all leaks prior to restarting pumps.

D. Leakage from flush systems, houses, solid separators-action include:

- a. Stop recycle pump.
- b. Stop irrigation pump.
- c. Make sure no siphon occurs.
- d. Stop all flows in the house, flush systems, or solid separators.
- e. Repair all leaks prior to restarting pumps.

E. Leakage from base or sidewall of lagoon. Often this is seepage as opposed to

- a. Dig a small sump or ditch away from the embankment to catch all seepage, put in a submersible pump, and pump back to the lagoon.
- b. If holes are caused by burrowing animals, trap or remove animals and fill holes and compact with a clay type soil.
- c. Have a professional evaluate the condition of the side walls and lagoon bottom as soon as possible.

2. Assess the extent of the spill and note any obvious damages.

- a. Did the waste reach any surface waters?
- b. Approximately how much was released and for what duration?
- c. Any damage noted, such as employee injury, fish kills, or property damage?
- d. Did the spill leave the property?
- e. Does the spill have the potential to reach surface waters?
- f. Could a future rain event cause the spill to reach surface waters?
- g. Are potable water wells in danger (either on or off of the property)?
- h. How much reached surface waters?

3. Contact appropriate agencies.

- a. During normal business hours, call your DWQ (Division of Water Quality) regional office; Phone - - . After hours, emergency number: 919-733-3942. Your phone call should include: your name, facility, telephone number, the details of the incident from item 2 above, the exact location of the facility, the location or direction of movement of the spill, weather and wind conditions. The corrective measures that have been under taken, and the seriousness of the situation.
- b. If spill leaves property or enters surface waters, call local EMS phone number - -
- c. Instruct EMS to contact local Health Department.
- d. Contact CES, phone number - - , local SWCD office phone number - - , and local NRCS office for advice/technical assistance phone number - - .

4. If none of the above works call 911 or the Sheriff's Department and explain your problem to them and ask that person to contact the proper agencies for you.

5. Contact the contractor of your choice to begin repair of problem to minimize off-site

damage.

- a. Contractors Name: _____
- b. Contractors Address: _____
- c. Contractors Phone: _____

6. Contact the technical specialist who certified the lagoon (NRCS, Consulting Engineer, etc.

- a. Name: _____
- b. Phone: _____

7. Implement procedures as advised by DWQ and technical assistance agencies to rectify the damage, repair the system, and reassess the waste management plan to keep problems with release of wastes from happening again.

Insect Control Checklist for Animal Operations

Source	Cause	BMPs to Minimize Insects	Site Specific Practices
Liquid Systems			
Flush Gutters	● Accumulation of Solids	<input type="checkbox"/> Flush system is designed and operated sufficiently to remove accumulated solids from gutters as designed;	
		<input type="checkbox"/> Remove bridging of accumulated solids at discharge	
Lagoons and Pits	● Crusted Solids	<input type="checkbox"/> Maintain lagoons, settling basins and pits where pest breeding is apparent to minimize the crusting of solids to a depth of no more than 6 - 8 inches over more than 30% of surface.	
	● Decaying vegetation	<input type="checkbox"/> Maintain vegetative control along banks of lagoons and other impoundments to prevent accumulation of decaying vegetative matter along water's edge on impoundment's perimeter.	
Dry Systems			
Feeders	● Feed Spillage	<input type="checkbox"/> Design, operate and maintain feed systems (e.g., bunkers and troughs) to minimize the accumulation of decaying wastage.	
		<input checked="" type="checkbox"/> Clean up spillage on a routine basis (e.g., 7 - 10 day interval during summer; 15-30 day interval during winter).	
Feed Storage	● Accumulation of feed residues	<input type="checkbox"/> Reduce moisture accumulation within and around immediate perimeter of feed storage areas by insuring drainage away from site and/or providing adequate containment (e.g., covered bin for brewer's grain and similar high moisture grain products).	
		<input checked="" type="checkbox"/> Inspect for and remove or break up accumulated solids in filter strips around feed storage as needed.	
Animal Holding Areas	● Accumulations of animal wastes and feed wastage	<input checked="" type="checkbox"/> Eliminate low areas that trap moisture along fences and other locations where waste accumulates and disturbance by animals is minimal.	
		<input checked="" type="checkbox"/> Maintain fence rows and filter strips around animal holding areas to minimize accumulations of wastes (i.e. inspect for and remove or break up accumulated solids as needed).	

3 Stocker Coonile

Dairy Farm Waste Management Odor Control Checklist

BMPs to Minimize Odor

Site Specific Practices

Source

Cause

Farmstead

● Dairy Production

- Vegetative or wooded buffers;
- Recommended best management practices;
- Good judgement and common sense

Paved lots or barn alley surfaces

● Wet manure-covered surfaces

- Scrape or flush daily;
- Promote drying with proper ventilation;
- Routine checks and maintenance on waterers, hydrants, pipes, stock tanks

Bedded areas

● Urine;
● Partial microbial decomposition

- Promote drying with proper ventilation;
- Replace wet or manure-covered bedding

Manure dry stacks

● Partial microbial decomposition

- Provide liquid drainage for stored manure

Storage tank or basin surface

● Partial microbial decomposition;
● Mixing while filling;
● Agitation while emptying

- Bottom or mid-level loading;
- Tank covers;
- Basin surface mats of solids;
- Minimize lot runoff and liquid additions;
- Agitate only prior to manure removal;
- Proven biological additives or oxidants

Settling basin surfaces

● Partial microbial decomposition;
● Mixing while filling;
● Agitation while emptying

- Liquid drainage from settled solids;
- Remove solids regularly

Manure, slurry, or sludge spreader outlets

● Agitation when spreading;
● Volatile gas emissions

- Soil injection of slurry/sludges;
- Wash residual manure from spreader after use;
- Proven biological additives or oxidants

Uncovered manure, slurry or sludge on field surfaces

● Volatile gas emissions while drying

- Soil injection of slurry/sludges;
- Soil incorporation within 48 hrs;
- Spread in thin uniform layers for rapid drying;
- Proven biological additives or oxidants

Flush tanks

● Agitation of recycled lagoon liquid while tanks are filling

- Flush tank covers;
- Extend fill lines to near bottom of tanks with anti-siphon vents

Outside drain collection or junction boxes

● Agitation during wastewater conveyance

- Box covers

NA ✓ NO STORAGE TANK

NA ✓ NO LAGOON LIQUID

Source	Cause	BMPs to Minimize Odor	Site Specific Practices
Lift stations	<ul style="list-style-type: none"> ● Agitation during sump tank filling and drawdown 	<input type="checkbox"/> Sump tank covers	NA No sump tank
End of drainpipes at lagoon	<ul style="list-style-type: none"> ● Agitation during wastewater conveyance 	<input type="checkbox"/> Extend discharge point of pipes underneath lagoon liquid level	NA No lagoon
Lagoon surfaces	<ul style="list-style-type: none"> ● Volatile gas emission; ● Biological mixing; ● Agitation 	<input type="checkbox"/> Proper lagoon liquid capacity; <input type="checkbox"/> Correct lagoon startup procedures; <input type="checkbox"/> Minimum surface area-to-volume ratio; <input type="checkbox"/> Minimum agitation when pumping; <input type="checkbox"/> Mechanical aeration; <input type="checkbox"/> Proven biological additives	NA ✓
Irrigation sprinkler nozzles	<ul style="list-style-type: none"> ● High pressure agitation; ● Wind drift 	<input type="checkbox"/> Irrigate on dry days with little or no wind; <input type="checkbox"/> Minimum recommended operating pressure; <input type="checkbox"/> Pump intake near lagoon liquid surface; <input type="checkbox"/> Pump from second stage lagoon;	NA ✓
Dead animals	<ul style="list-style-type: none"> ● Carcass decomposition 	<input checked="" type="checkbox"/> Proper disposition of carcasses	
Standing water around facilities	<ul style="list-style-type: none"> ● Improper drainage; ● Microbial decomposition of organic matter 	<input checked="" type="checkbox"/> Grade and landscape such that water drains away from facilities	
Mud tracked onto public roads from farm access	<ul style="list-style-type: none"> ● Poorly maintained access roads 	<input checked="" type="checkbox"/> Farm access road maintenance	

Additional Information:

Cattle Manure Management: 0200 Rule/BMP Packet
 Dairy Educational Unit Manure Management System - Lake Wheeler Road Filed Laboratory; EBAE 209-95
 Lagoon Design and Management for Livestock Manure Treatment and Storage; EBAE 103-83
 Management of Dairy Wastewater; EBAE 106-83
 Calibration of Manure and Wastewater Application Equipment; EBAE Fact Sheet
 Nuisance Concerns in Animal Manure Management: Odors and Flies; PRO107, 1995 Conference Proceedings

Available From:

NCSU, County Extension Center
 NCSU - BAE
 NCSU - BAE
 NCSU - BAE
 NCSU - BAE
 Florida Cooperative Extension

Stacked Coattle

Dairy Farm Waste Management Odor Control Checklist

Source	Cause	BMPs to Minimize Odor	Site Specific Practices
Farmstead	<ul style="list-style-type: none"> • Dairy Production 	<input checked="" type="checkbox"/> Vegetative or wooded buffers; <input checked="" type="checkbox"/> Recommended best management practices; <input checked="" type="checkbox"/> Good judgement and common sense	
Paved lots or barn alley surfaces	<ul style="list-style-type: none"> • Wet manure-covered surfaces 	<input type="checkbox"/> Scrape or flush daily; <input checked="" type="checkbox"/> Promote drying with proper ventilation; <input checked="" type="checkbox"/> Routine checks and maintenance on waterers, hydrants, pipes, stock tanks	
Bedded areas	<ul style="list-style-type: none"> • Urine; • Partial microbial decomposition 	<input type="checkbox"/> Promote drying with proper ventilation; <input type="checkbox"/> Replace wet or manure-covered bedding	
Manure dry stacks	<ul style="list-style-type: none"> • Partial microbial decomposition 	<input checked="" type="checkbox"/> Provide liquid drainage for stored manure	
Storage tank or basin surface	<ul style="list-style-type: none"> • Partial microbial decomposition; • Mixing while filling; • Agitation while emptying 	<input type="checkbox"/> Bottom or mid-level loading; <input type="checkbox"/> Tank covers; <input type="checkbox"/> Basin surface mats of solids; <input type="checkbox"/> Minimize lot runoff and liquid additions; <input type="checkbox"/> Agitate only prior to manure removal; <input type="checkbox"/> Proven biological additives or oxidants	NA ✓ NO STORAGE TANK
Settling basin surfaces	<ul style="list-style-type: none"> • Partial microbial decomposition; • Mixing while filling; • Agitation while emptying 	<input type="checkbox"/> Liquid drainage from settled solids; <input checked="" type="checkbox"/> Remove solids regularly	
Manure, slurry, or sludge spreader outlets	<ul style="list-style-type: none"> • Agitation when spreading; • Volatile gas emissions 	<input type="checkbox"/> Soil injection of slurry/sludges; <input checked="" type="checkbox"/> Wash residual manure from spreader after use; <input type="checkbox"/> Proven biological additives or oxidants	
Uncovered manure, slurry or sludge on field surfaces	<ul style="list-style-type: none"> • Volatile gas emissions while drying 	<input type="checkbox"/> Soil injection of slurry/sludges; <input checked="" type="checkbox"/> Soil incorporation within 48 hrs; <input checked="" type="checkbox"/> Spread in thin uniform layers for rapid drying; <input type="checkbox"/> Proven biological additives or oxidants	
Flush tanks	<ul style="list-style-type: none"> • Agitation of recycled lagoon liquid while tanks are filling 	<input type="checkbox"/> Flush tank covers; <input type="checkbox"/> Extend fill lines to near bottom of tanks with anti-siphon vents	NA ✓ NO LAGOON LIQUID
Outside drain collection or junction boxes	<ul style="list-style-type: none"> • Agitation during wastewater conveyance 	<input type="checkbox"/> Box covers	

Source	Cause	BMPs to Minimize Insects	Site Specific Practices
Dry Manure Handling Systems	<ul style="list-style-type: none"> ● Accumulations of animal wastes 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Remove spillage on a routine basis (e.g., 7-10 day interval during summer; 15-30 day interval during winter) where manure is loaded for land application or disposal. <input checked="" type="checkbox"/> Provide for adequate drainage around manure stockpiles. <input checked="" type="checkbox"/> Inspect for an remove or break up accumulated wastes in filter strips around stockpiles and manure handling areas as needed. 	

For more information contact the Cooperative Extension Service, Department of Entomology, Box 7613, North Carolina State University, Raleigh, NC 27695-7613

Mortality Management Methods

(check which method(s) are being implemented)

- Burial three feet beneath the surface of the ground within 24 hours after knowledge of the death. The burial must be at least 300 feet from any flowing stream or public body of water.
- Rendering at a rendering plant licensed under G.S. 106-168.7.
- Complete incineration
- In the case of dead poultry only, placing in a disposal pit of a size and design approved by the Department of Agriculture.
- Any method which in the professional opinion of the State Veterinarian would make possible the salvage of part of a dead animal's value without endangering human or animal health. (Written approval of the State Veterinarian must be attached)

Grower: Clark, Gilbert Copies To:

690 Oakley Church Rd.
Bear Creek, NC 27207

Waste Analysis Report

Farm:

Chatham County

7/6/05

Sample Info.		Laboratory Results (parts per million unless otherwise noted)																			
Sample #D:		N	P	K	Ca	Mg	S	Fe	Mn	Zn	Cu	B	Mo	C							
000001	Total	11437	8384	10607	11259	6904	2962	13649	537	185	79.5	0.00									
	IN-N																				
	-NH4																				
	-NO3																				
	OR-N																				
	Urea																				
			Na	Ni	Cd	Pb	Al	Se	Li	pH	SS	C:N	DM%	CCE%	ALE(tons)						
			1303										83.64								
Recommendations:		Nutrients Available for First Crop											Other Elements								
Application Method		N	P2O5	K2O	Ca	Mg	S	Fe	Mn	Zn	Cu	B	Mo	Cl	Na	Ni	Cd	Pb	Al	Se	Li
Broadcast		7.8	19.3	17.0	11.3	6.9	3.0	13.7	0.54	0.19	0.08	0.00			2.2						
Soil Incorp		10.7	24.1	19.2	14.1	8.7	3.7	17.1	0.67	0.23	0.10	0.00			2.2						

Field Information		Applied Lime Recommendations																					
Sample No.	Last Crop	Mo	Yr	T/A	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na	See Note	
00006						1.9T			19.0	17.0	23	31		32	32	23	126		0	0	0	12	
		1st Crop: Fes/OG/Tim,M																					
		2nd Crop:																					

Test Results

Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na
MIN	0.04	1.03	4.4	41.0	2.6	4.3	0	44	19.0	17.0	23	31		32	32	23	126		0	0	0.1

Field Information

Sample No.	Last Crop	Mo	Yr	T/A	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na	See Note
0000C						0			0	0	120-200	0		0	0	0	0	0	0	0	12	
		1st Crop: Fes/OG/Tim,M																				
		2nd Crop:																				

Test Results

Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na
MIN	0.41	1.05	13.3	95.0	0.7	6.3	276	763	36.0	30.0	520	324		252	252	102	397		0	0	0.7

Grower: Clark, Gilbert
 690 Oakley Church Rd.
 Bear Creek, NC 27207

Farm: Ingle
 Chatham County

7/8/05 SERVING N.C. CITIZENS FOR OVER 50 YEARS
 Agronomist Comments: C -- 12



Soil Test Report

Field Information		Applied Lime		Recommendations											
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P2O5	K2O	Mg	Cu	Zn	B	Mn	See Note
1					1st Crop: Fes/OG/Tim.M	.9T	120-200	90-110	60-80	0	0	0	0	0	12
					2nd Crop:										

Test Results

Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al (1)	Mn-Al (2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO3-N	NH4-N	Na
MIN	0.32	1.27	3.8	61.0	1.5	5.2	18	33	45.0	12.0	126	93	51	51	85	30					0.0

Field Information		Applied Lime		Recommendations											
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P2O5	K2O	Mg	Cu	Zn	B	Mn	See Note
2					1st Crop: Fes/OG/Tim.M	.8T	120-200	0	0-20	0	0	0	0	0	12
					2nd Crop:										

Test Results

Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al (1)	Mn-Al (2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO3-N	NH4-N	Na
MIN	0.66	0.93	5.0	70.0	1.5	5.4	124	72	52.0	12.0	274	181	171	171	192	31					0.1

Field Information		Applied Lime		Recommendations											
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P2O5	K2O	Mg	Cu	Zn	B	Mn	See Note
3					1st Crop: Fes/OG/Tim.M	1.1T	120-200	60-80	0	0	0	0	0	0	12
					2nd Crop:										

Test Results

Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al (1)	Mn-Al (2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO3-N	NH4-N	Na
MIN	0.41	1.05	4.0	53.0	1.9	5.1	30	93	30.0	10.0	1136	699	92	92	161	45					0.0

NCDA Agronomic Division 4300 Reedy Creek Road Raleigh, NC 27607-6465 (919) 733-2655 Report No: 00572
 Copies to: County Extension Director
 Grower: Clark, Gilbert
 690 Oakley Church Rd.
 Bear Creek, NC 27207
 Farm: Wrenn
 Chatham County
 7/8/05 SERVING N.C. CITIZENS FOR OVER 50 YEARS
 C -- 12



Soil Test Report

Field Information		Applied Lime		Recommendations	
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year
1					1st Crop: Fes/OG/Tim.M 2nd Crop:

Test Results		HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO-N	NH-N	Na
MIN	0.46	0.96	8.3	83.0	1.4	6.0	116	146	55.0	19.0	437	279	238	238	205	32						0.1

Copies to: County Extension Director

Grower: Clark, Gilbert
 690 Oakley Church Rd.
 Bear Creek, NC 27207

Farm: Gerald

7/8/05 SERVING N.C. CITIZENS FOR OVER 50 YEARS

Chatham County

C -- 12



Soil Test Report

Agronomist Comments:

Field Information		Applied Lime		Recommendations																	
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P ₂ O ₅	K ₂ O	Mg	Cu	Zn	B	Mn	See Note						
1					1st Crop: Fes/OG/Tim,M	1.8T	120-200	130-150	100-120	0	0	0	0	0	12						
2nd Crop:																					
Test Results																					
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na
MIN	0.27	1.16	3.4	26.0	2.5	4.5	2	15	12.0	12.0	100	77	28	28	28	76	91				0.1

NOTE: THESE ARE THE RECOMMENDED REALISTIC YIELD NITROGEN APPLICATION RATES FOR THE SOIL TYPES LISTED ON THE PRECEEDING PAGES. WHEN A CROP IS PLANTED THAT VARIES FROM THE WASTE MANAGEMENT PLAN, THE NITROGEN APPLICATION RATES FROM ABOVE MUST BE USED IN ORDER TO COMPLY WITH .0200 REGULATIONS. IF HAYLAND IS USED FOR GRAZING, THE HAYLAND APPLICATION RATE MUST BE REDUCED BY 25 PERCENT. IF YOU HAVE ANY QUESTIONS PLEASE CALL OUR OFFICE, THE PHONE NUMBER IS 545-8353, OR 542-2244 EXT 3.



RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Gilbert Clark continuous hayland

Inputs:

Location: North Carolina\Chatham County
 Soil: 205B Georgeville silt loam, 2 to 6 percent slopes\Georgeville silt loam 95%
 Slope length (horiz): 150 ft
 Avg. slope steepness: 4.0 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 661a.Single Year/Single Crop Templates\Forages, Hay\Grass.coolseason,established;HAY,66	Orchardgrass, y3 regrowth after cut	tons	2.0
CMZ 661a.Single Year/Single Crop Templates\Forages, Hay\Grass.coolseason,established;HAY,66	Orchardgrass, y3 regrowth after cut	tons	2.0
CMZ 661a.Single Year/Single Crop Templates\Forages, Hay\Grass.coolseason,established;HAY,66	Orchardgrass, y3 senesc to 1st cut,yr4	tons	2.0

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

Outputs:

Soil loss erod. portion: 0.20 t/ac/yr
 Detachment on slope: 0.20 t/ac/yr
 Soil loss for cons. plan: 0.20 t/ac/yr
 Sediment delivery: 0.20 t/ac/yr

Crit. slope length: --
 Surf. cover after planting: --

Date	Operation	Vegetation	Surf. res. cov. after op, %
3/15/0	Fert applic. surface broadcast		42
5/10/0	Harvest, hay, grass	Orchardgrass, y3 regrowth after cut	45
7/10/0	Harvest, hay, grass	Orchardgrass, y3 regrowth after cut	42
9/10/0	Harvest, hay, grass	Orchardgrass, y3 senesc to 1st cut,yr4	40
10/1/0	Fert applic. surface broadcast		32