COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

October 18, 2021

Matthew E Thompson Sr
J Sargeant Reynolds Community College-Parham Athletics
1651 E Parham Road
Richmond VA 23285-5622

Your nutrient management plan (NMP) dated 10/6/2021 located in Henrico County has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 2.23 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by DCR.

This site has not been inspected by DCR and this approval is contingent upon site conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Any change in personnel resulting in a change to the plan manager should be reported to the Certified Nutrient Management Planner who will then make DCR aware. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 10/6/2024. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

Anita Tuttle
Urban Nutrient Management Coordinator
Division of Soil and Water Conservation
600 East Main Street, 24th Floor
Richmond VA 23219
(804) 513-5958

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

October 18, 2021

Matthew E Thompson Sr
J Sargeant Reynolds Community College-Parham Campus
1651 E Parham Road
Richmond VA 23285-5622

Your nutrient management plan (NMP) dated 10/6/2021 located in Henrico County has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 4.2 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by DCR.

This site has not been inspected by DCR and this approval is contingent upon site conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Any change in personnel resulting in a change to the plan manager should be reported to the Certified Nutrient Management Planner who will then make DCR aware. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 10/6/2024. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

Anita Tuttle
Urban Nutrient Management Coordinator
Division of Soil and Water Conservation
600 East Main Street, 24th Floor
Richmond VA 23219
(804) 513-5958

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

October 18, 2021

Matthew E Thompson Sr
J Sargeant Reynolds Community College-Western Campus
1651 E Parham Road
Richmond VA 23285-5622

Your nutrient management plan (NMP) dated 10/6/2021 located in Goochland County has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 5.45 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by DCR.

This site has not been inspected by DCR and this approval is contingent upon site conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Any change in personnel resulting in a change to the plan manager should be reported to the Certified Nutrient Management Planner who will then make DCR aware. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 10/6/2024. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

Anita Tuttle
Urban Nutrient Management Coordinator
Division of Soil and Water Conservation
600 East Main Street, 24th Floor
Richmond VA 23219
(804) 513-5958

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

October 18, 2021

Matthew E Thompson Sr
J Sargeant Reynolds Community College-Downtown Campus
1651 E Parham Road
Richmond VA 23285-5622

Your nutrient management plan (NMP) dated 10/6/2021 located in the City of Richmond has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 0.28 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by DCR.

This site has not been inspected by DCR and this approval is contingent upon site conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Any change in personnel resulting in a change to the plan manager should be reported to the Certified Nutrient Management Planner who will then make DCR aware. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 10/6/2024. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

Anita Tuttle
Urban Nutrient Management Coordinator
Division of Soil and Water Conservation
600 East Main Street, 24th Floor
Richmond VA 23219
(804) 513-5958

Nutrient Management Plan

J. Sargeant Reynolds Parham Campus

Prepared For:

Matthew E. Thompson Sr.
1651 E Parham Road
Richmond, VA 23285-5622
804-523-5795

Prepared By:

Christy F. Smith
3160 Jacobia Lane
Cape Charles, VA 23310
757-678-6129

Certification Code: 297
Total Acreage: 4.20

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quailty. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension

DCR
Virginia Department of Conservation & Recreation

Nutrient Management Plan for:
J. Sargeant Reynolds Parham Campus

Landowner Information	
Company Name	*J. Sargeant Reynolds Parham Campus*
Customer Name	*Matthew E. Thompson Sr.*
Mailing Address	*1651 E Parham Road*
City State Zip	*Richmond, VA 23285-5622*
Phone	*804-523-5795*
Email	*Mthompson@reynolds.edu*

Planners Informaiton	
Planner Name	*Christy F. Smith*
Mailing Address	*3160 Jacobia Lane*
City State Zip	*Cape Charles, VA 23310*
Phone	*757-678-6129*
Fax	*757-331-3957*
Email	*christy@smithagronomic.com*
Certification Code	*297*

Location Information	
Physical Address	*1701 East Parham Road*
City State Zip	*Richmond, VA 23228*
Coordinates	*37° 38' 32" N*
Please Use NAD 83 Deg Min Sec	*77° 28' 49" W*
VAHU6 Watershed Code	*JL18*
County	*Henrico*

Square Footage	
Total	*183,050.00*
Area 1	*35,400.00*
Area 2	*112,000.00*
Area 3	*35,650.00*
Area 4	*Area 4*

Plan Start Date	*10/6/21*
Plan End Date	*10/6/24*
Planner Signature	Christy F. Smith

Narrative

J. Sargeant Reynolds Parham Campus is located in Richmond, VA just off I-95 at exit 83 toward Richmond. Merge onto E. Parham Road via exit 83B which brings you to the campus at 1701 E. Parham Road. The watershed code is JL18. The campus was seperated into three areas for soil testing, Campus East, West, and Middle, totaling 4.2 acres (183,050 sq ft). All buildings are extracted from the 183,050 sq ft of campus turf that is fertilized. Campus East and West were combined onto one nutrient application worksheet since results were very similar. Acreage was measured by computer. The turf type is Kentucky 31 and "contractor grass" (98% fescue) and perennial rye. Nutrient applications are usually made twice per year. Grounds maintenance is done in-house.

J. Sargeant Reynolds agrees to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations, 4VAC5-15-10 et seq,. and to follow recommendations for turf fertilization and management as described in the attached Virginia Nutrient Managemet Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. This plan is effective for 3 years, expiring 10/6/2024 or until any major renovation or major changes to maintainance practices occur which effects the fertilized/lime areas.

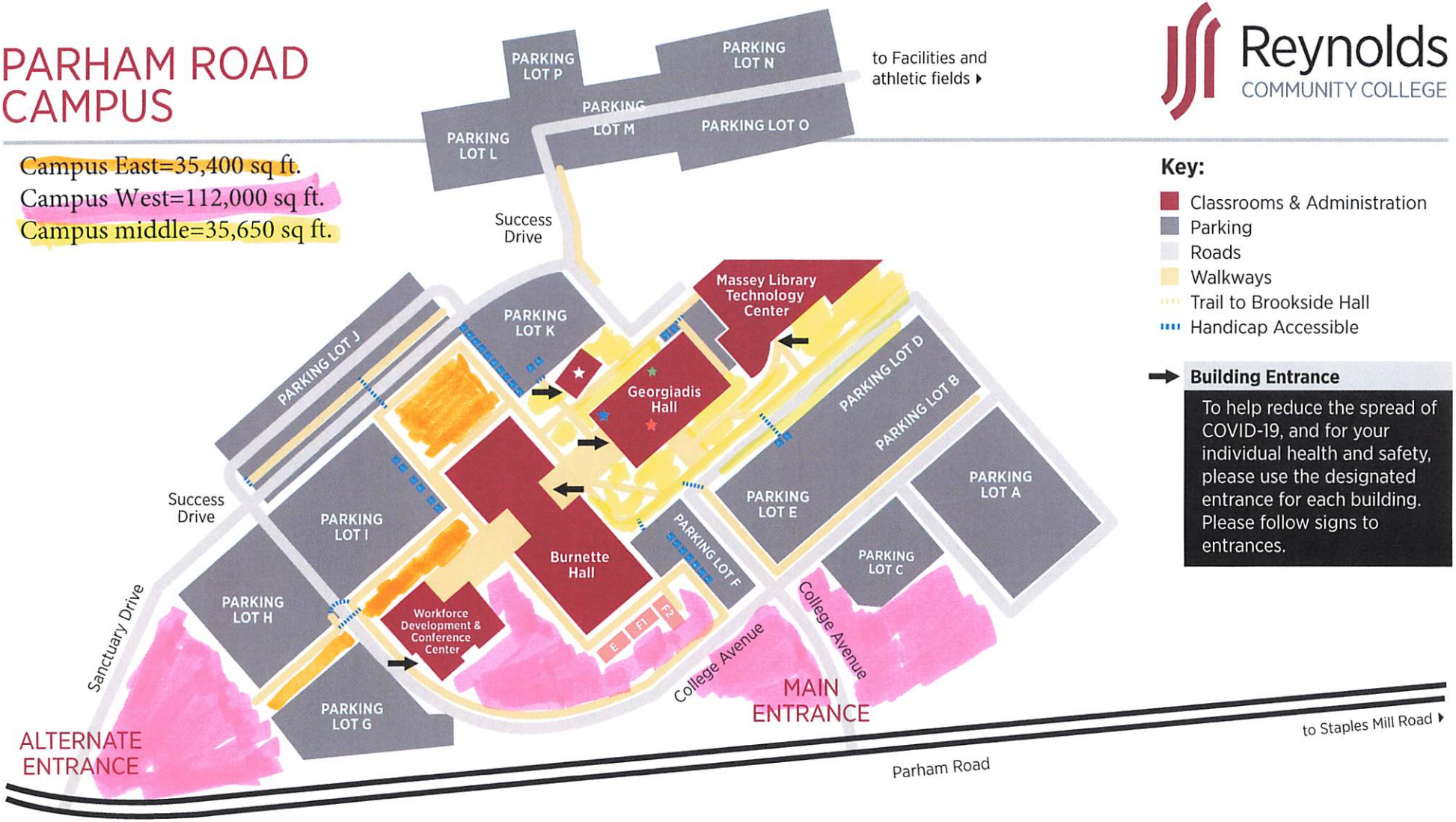
Environmentally sensitive sites: There is a perennial stream that runs through the campus and to the west of the campus. All locations have sufficient buffer.

New soil analysis recommendations at least once every 3 years. Nutrient applications are prohibited on frozen/snow covered ground. 4VAC50-85-140.f.

PARHAM ROAD CAMPUS

Campus East=35,400 sq ft.
Campus West=112,000 sq ft.
Campus middle=35,650 sq ft.

Reynolds COMMUNITY COLLEGE



Key:

- Classrooms & Administration
- Parking
- Roads
- Walkways
- Trail to Brookside Hall
- Handicap Accessible

Building Entrance

To help reduce the spread of COVID-19, and for your individual health and safety, please use the designated entrance for each building. Please follow signs to entrances.

Workforce Development & Conference Center

Advancement	200
CCWA	103
Conference Center Gallery	Main Level
Financial Operations	202
Human Resources	121
Office of the President	210

Burnette Hall

Campus Café	Main Level
Campus Police	100
School of Business	112
School of Humanities & Social Sciences	220
School of Mathematics, Science & Engineering	177

Georgiadis Hall

Registrar's Office	207
Business Office	B001
★ Campus Store	102
Student Support Services	200
★ Advising Services	100
Financial Aid	202
Gym & Fitness Studio	B010
Julian's Café	Main Level
Math Central+	206
Student Accommodations	101
Student Life	Mezzanine
★ Testing Center	104
Veterans Resource Center	237

Massey Library Technology Center

Library	103
Lipman Auditorium	108
Meeting Room	138
Tutoring Services	B05

☆ **Welcome Center**
Admissions and Campus Tours

DeLORME

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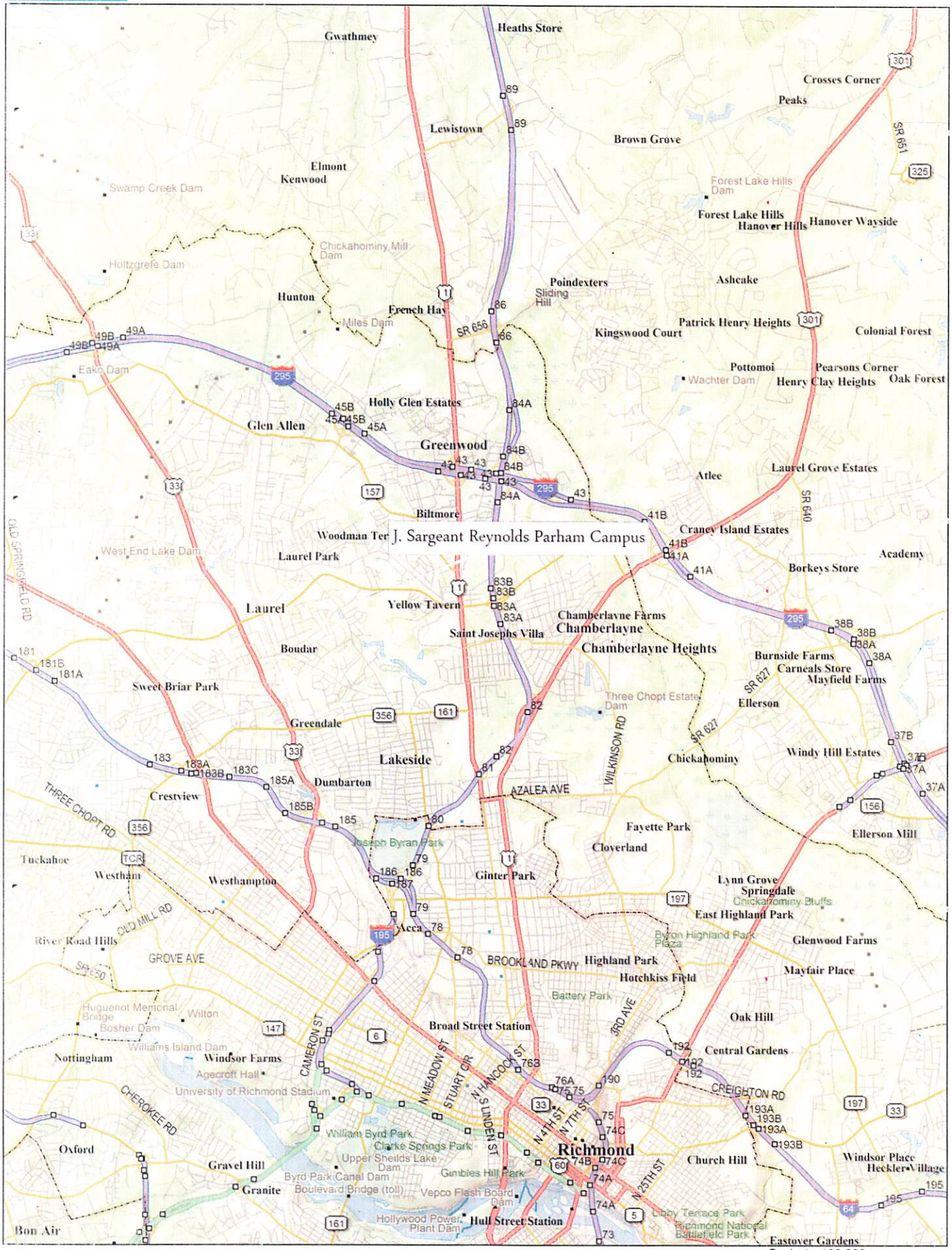

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www.delorme.com

TN

MN (0.0°E)

Scale 1 : 100,000

1" = 1.58 mi

Data Zoom 11-0

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**	**Management Area:**	Parham Campus East and West		
Prepared:	**10/6/21**	**Area (sq ft):**	**147400**	**Species:**	**Kentucky 31, Contr. Mix, per. Rye**
Expires:	**10/6/24**				

Total Nutrient Needs	Application Month/Day	Analysis	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per 1000ft^2	lbs or oz	%Slow Release N	Total NPK lbs/1000ft^2	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O			
2	September 15	20 - 20 - 15	1	> 30 days		granular	3.50	lbs	0%	0.70 - 0.70 - 0.53			516
Phosphorus	October 15	20 - 20 - 15	1	> 30 days		granular	3.50	lbs	0%	0.70 - 0.70 - 0.53			516
2		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
1.5		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		######	1.40 - 1.40 - 1.05			
				N Recommendation Range and Soil Test Ratings						2 2 1.5			

Notes: Campus is not intensively fertilized at this time, hence lower recommendations than allowed.

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**	**Management Area:**	Parham Campus Middle		
Prepared:	**10/6/21**	**Area (sq ft):**	**35650**	**Species:**	**Kentucky 31, Contr. Mix, per. Rye**
Expires:	**10/6/24**				

Total Nutrient Needs	Application Month/Day	Analysis	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per $1000ft^2$	lbs or oz	%Slow Release N	Total NPK $lbs/1000ft^2$	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O			
2	September 15	20 - 14 - 14	1	> 30 days		granular	3.50	lbs	0%	0.70 - 0.49 - 0.49			125
Phosphorus	October 15	20 - 14 - 14	1	> 30 days		granular	3.50	lbs	0%	0.70 - 0.49 - 0.49			125
1		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
1		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
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		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		######	1.40 - 0.98 - 0.98			
				N Recommendation Range and Soil Test Ratings						2 / 1 / 1			

Notes: Campus is not intensively fertilized at this time, hence lower recommendations than allowed. 1.25 tons/ac lime recommended.

Soil Test Summary

Customer Name:	Matthew E. Thompson Sr.
Testing Lab:	Virginia Tech
Sample Date:	10/4/2021
Planner Name	Christy F. Smith
Certification Number	297

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P	VT (H/M/L)	Lab Test K	VT (H/M/L)	Species
Parham Campus East	35,400	6.2	6.34	13	M-	115	M	Kentucky 31, contractor mix, perennial rye
Parham Campus West	112,000	6.4	6.34	15	M-	143	M	Kentucky 31, contractor mix, perennial rye
Parham Campus Middle	35,650	5.9	6.21	31	M+	177	H-	Kentucky 31, contractor mix, perennial rye

Notes:

Parham Campus Middle 1.25 tons/ac lime recommended.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
PAR E	PARHAM									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	13	115	1264	168	0.6	9.7	0.3	35.5	0.1	
Rating	M-	M	M+	H-	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.2	6.34	4.4	8.2	91.8	72.5	15.9	3.4	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	90	80

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
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www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
PARNW	PARHAM									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	15	143	1452	156	1.9	8.9	0.3	21.8	0.1	
Rating	M-	M	H-	H-	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.4	6.34	4.8	7.4	92.6	75.4	13.4	3.8	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	90	80

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
PARHA	PARHAM M									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	31	177	1264	223	2.8	9.8	0.6	28.8	0.2	
Rating	M+	H-	M+	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.9	6.21	5.4	20.8	79.2	58.1	16.9	4.2	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
1.25	AG

Fertilizer, lb/A		
N	P205	K20
See Comment	40	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

"Enhanced efficiency fertilizer" describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

"Water soluble nitrogen", "WSN" and "readily available nitrogen" means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

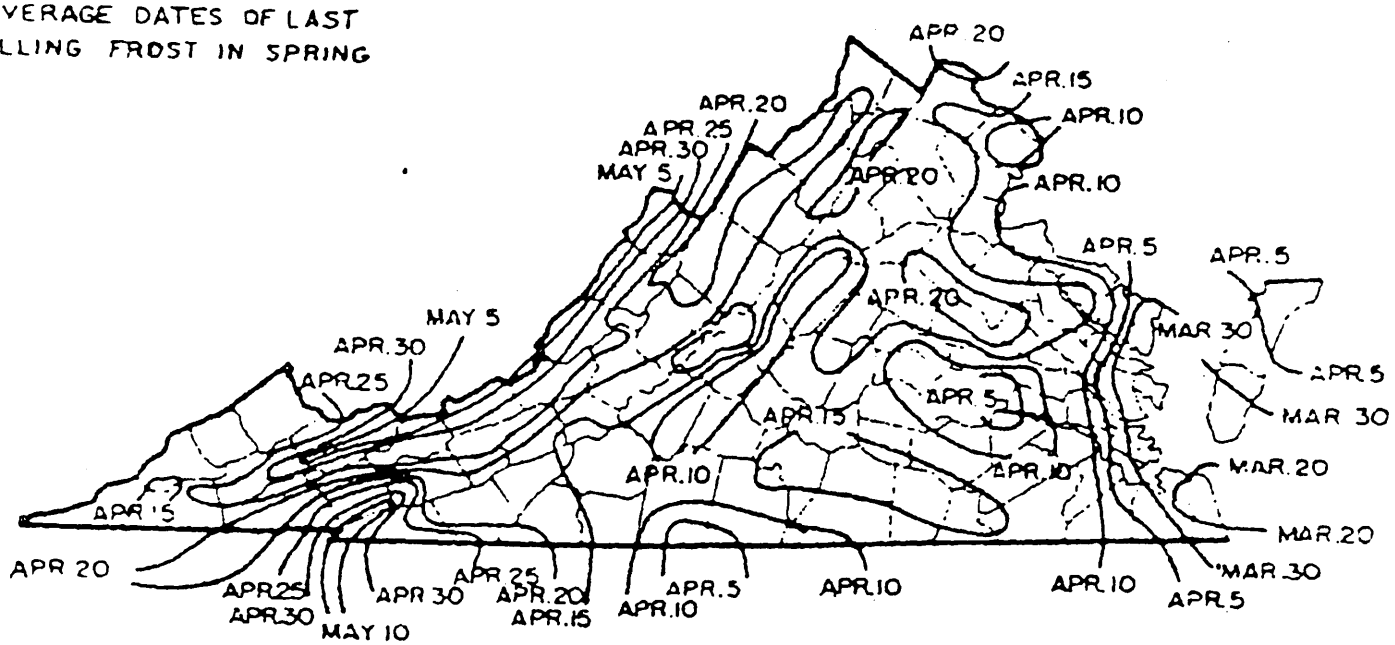
Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft^2 of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft^2 rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures 6-1 & 6-2).

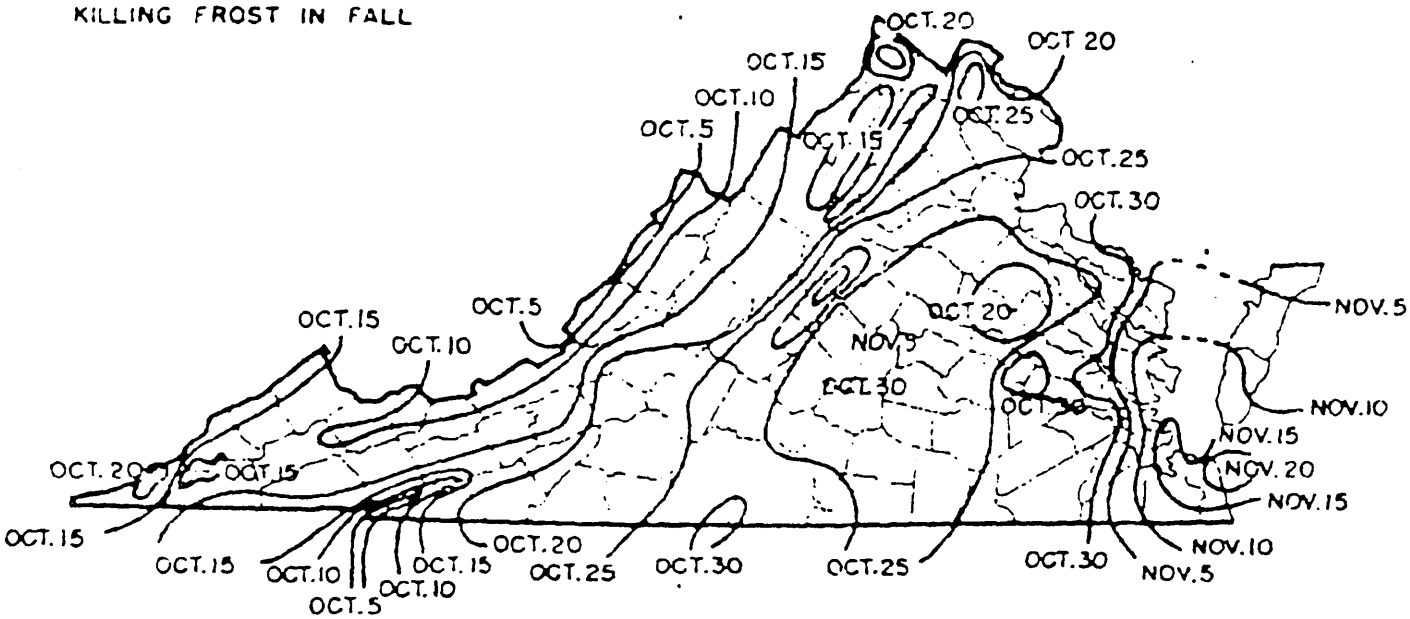
VIRGINIA

AVERAGE DATES OF LAST KILLING FROST IN SPRING



VIRGINIA

AVERAGE DATES OF FIRST KILLING FROST IN FALL



Per Application Rates

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft^2 within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

Annual Application Rates for Home Lawns and Commercial Turf

Up to 3.5 pounds per 1,000 ft^2 of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft^2 may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

Use of Slowly Available Forms of Nitrogen

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft^2 may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft^2 may be applied to warm season grasses within a 30 day period. Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft^2 in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft^2 may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

Phosphorus and Potassium Nutrient Needs (Established Turf)

Apply phosphorus (P_2O_5) and potassium (K_2O) fertilizers as indicated necessary by a soil test using the following guidelines:

Soil Test Level	Nutrient Needs (lbs /1000 ft^2) *	
	P_2O_5	K_2O
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range. (For example the recommendation for a P_2O_5 soil test level of L- would be 3 pounds per 1,000 ft^2.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

Nitrogen Applications

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft^2 of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft^2 of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft^2 total for cool season grasses and 2.0 pounds per 1,000 ft^2 for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft^2 within a 30 day period.

Phosphorus and Potassium Recommendations for Establishment

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	Matthew E. Thompson Sr.	Management Area ID:	
Address:	1701 East Parham Road	Management Area Size:	
	Richmond, VA 23228	Plant Species:	
		Notes:	
Phone #:	804-523-5795		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???
For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".
Available for download at http://pubs.ext.vt.edu/430/430-350/430-350.html

Nutrient Management Plan

J. Sargeant Reynolds Athletic Fields

Prepared For:

Matthew E. Thompson Sr.
1651 E Parham Road
Richmond, VA 23285-5622
(804) 523-5795

Prepared By:

Christy F. Smith
3160 Jacobia Lane
Cape Charles, VA 23310
(757) 678-6129

Certification Code: 297
Total Acreage: 2.23

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension

DCR
Virginia Department of Conservation & Recreation

Nutrient Management Plan for:
J. Sargeant Reynolds Athletic Fields

Landowner Information	
Company Name	*J. Sargeant Reynolds Athletic Fields*
Customer Name	*Matthew E. Thompson Sr.*
Mailing Address	*1651 E Parham Road*
City State Zip	*Richmond, VA 23285-5622*
Phone	*(804) 523-5795*
Email	*Mthompson@reynolds.edu*

Planners Information	
Planner Name	*Christy F. Smith*
Mailing Address	*3160 Jacobia Lane*
City State Zip	*Cape Charles, VA 23310*
Phone	*(757) 678-6129*
Fax	*(757) 331-3957*
Email	*christy@smithagronomic.com*
Certification Code	*297*

Location Information	
Physical Address	*1701 East Parham Road*
City State Zip	*Richmond, VA 23228*
Coordinates	*37° 38' 32" N*
Please Use NAD 83 Deg Min Sec	*77° 28' 49" W*
VAHU6 Watershed Code	*JL18*
County	*Henrico*

Square Footage	
Total	*97,000.00*
Football Field	*33,000.00*
Baseball Field	*64,000.00*

Plan Start Date	*10/6/21*
Plan End Date	*10/6/24*

Planner Signature	Christy F. Smith

Narrative

J. Sargeant Reynolds Parham Campus is located in Richmond, VA just off I-95 at exit 83 toward Richmond. Merge onto E. Parham Road via exit 83B which brings you to the campus at 1701 E. Parham Road. The watershed code is JM84. The athletic fields: a baseball and a football field, are located south of the campus. There are no environmentally sensitive sites located at the fields.

The baseball field is 64,000 square feet and the football fields is 33,000 square feet. The turf type for the baseball field is Kentucky 31 and perennial rye. The football field is irrigated and planted in Bermuda grass.

No lime is needed on either field at this time.

J. Sargeant Reynolds agrees to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations, 4VAC5-15-10 et seq,. and to follow recommendations for turf fertilization and management as described in the attached Virginia Nutrient Managemet Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. This plan is effective for 3 years, expiring10/6/2024or until any major renovation or major changes to maintainance practices occur which effects the fertilized/lime areas.

New soil analysis recommendations at least once every 3 years. Nutrient applications are prohibited on frozen/snow covered ground. 4VAC50-85-140.f.

Google Maps Reynolds Community College (Parham Campus)

Imagery ©2017 Commonwealth of Virginia, DigitalGlobe, USDA Farm Service Agency, Map data ©2017 Google 500 ft

B - 64,000 sq ft.

F 33,000 sq ft.

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www.delorme.com

TN

MN (0.0°E)

Scale 1 : 100,000

1" = 1.58 mi

Data Zoom 11-0

Nutrient Application Worksheet

NAME:	Matthew E. Thompson Sr.	Management Area:	Football Field
Prepared:	10/6/21	Area (sq ft): 33000	Species: Bermuda
Expires:	10/6/24		

Total Nutrient Needs	Application Month/Day	Analysis lb/A	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per $1000ft^2$	lbs or oz	%Slow Release N	Total NPK $lbs/1000ft^2$	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O			
2.1	June 1	20 - 20 - 9	1	30 days		granular	3.50	lbs	0%	0.70 - 0.70 - 0.32			116
Phosphorus	July 1	20 - 20 - 9	1			granular	3.50	lbs	0%	0.70 - 0.70 - 0.32			116
2	August 1	20 - 17 - 9	1			granular	3.50	lbs	0%	0.70 - 0.60 - 0.32			116
Potassium		- -								0.00 - 0.00 - 0.00			0
1		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		0%	2.10 - 2.00 - 0.95			

N Recommendation Range and Soil Test Ratings	2.1	2	1

Notes: The field is predominantly silt/clay based.

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**	**Management Area:**	Baseball Field	
Prepared:	**10/6/21**	**Area (sq ft):**	**64000**	**Species:** **Kentucky 31 and perennial rye**
Expires:	**10/6/24**			

Total Nutrient Needs	Application Month/Day	Analysis lb/A	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per $1000ft^2$	lbs or oz	%Slow Release N	Total NPK $lbs/1000ft^2$	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O			
2	September 15	20 - 28 - 28	1	30 days		granular	3.50	lbs	0%	0.70 - 0.98 - 0.98			224
Phosphorus	October 15	20 - 28 - 28	1			granular	3.50	lbs	0%	0.70 - 0.98 - 0.98			224
2		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
2		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		0%	1.40 - 1.96 - 1.96			
				N Recommendation Range and Soil Test Ratings						2 - 2 - 2			

Notes:

Soil Test Summary

Customer Name:	Matthew E. Thompson Sr.
Testing Lab:	Virginia Tech
Sample Date:	10/4/2021
Planner Name	Christy F. Smith
Certification Number	297

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P lb/A	VT (H/M/L)	Lab Test K lb/A	VT (H/M/L)	Species
Parham football field	33,000	6.2	6.34	17	M-	201	H-	Bermuda
Parham baseball field	64,000	7.2	6.6	13	M-	78	M-	Kentucky 31 and perennial rye

Notes:

No lime is needed at this time.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
BASEB	ATHLETIC									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	13	78	3124	706	3.7	11.9	0.2	12.4	0.2	
Rating	M-	M-	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	7.2	6.60	10.8	0.0	100.0	72.2	26.9	0.9	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	90	90

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
FOOTB	ATHLETIC									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	17	201	1161	239	1.9	8.5	0.2	20.9	0.2	
Rating	M-	H-	M	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.2	6.34	4.5	7.9	92.1	64.5	21.9	5.7	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	90	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

"Enhanced efficiency fertilizer" describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

"Water soluble nitrogen", "WSN" and "readily available nitrogen" means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

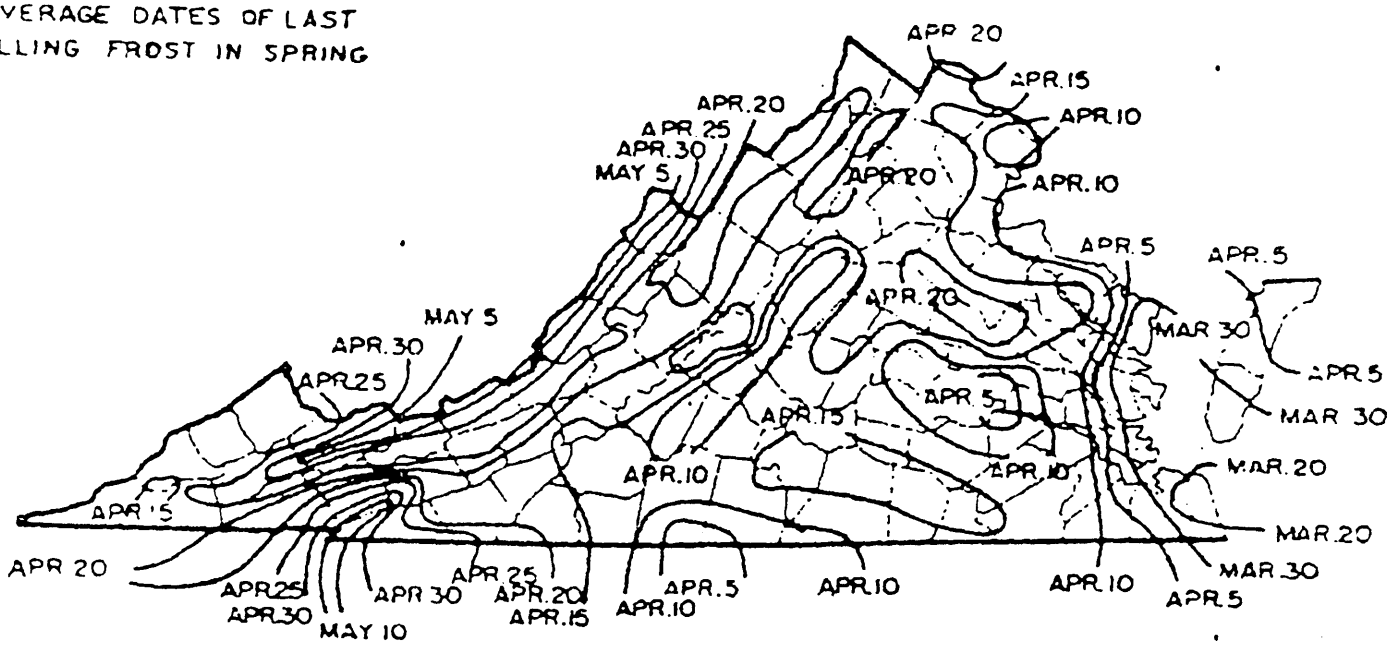
Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft^2 of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft^2 rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures 6-1 & 6-2).

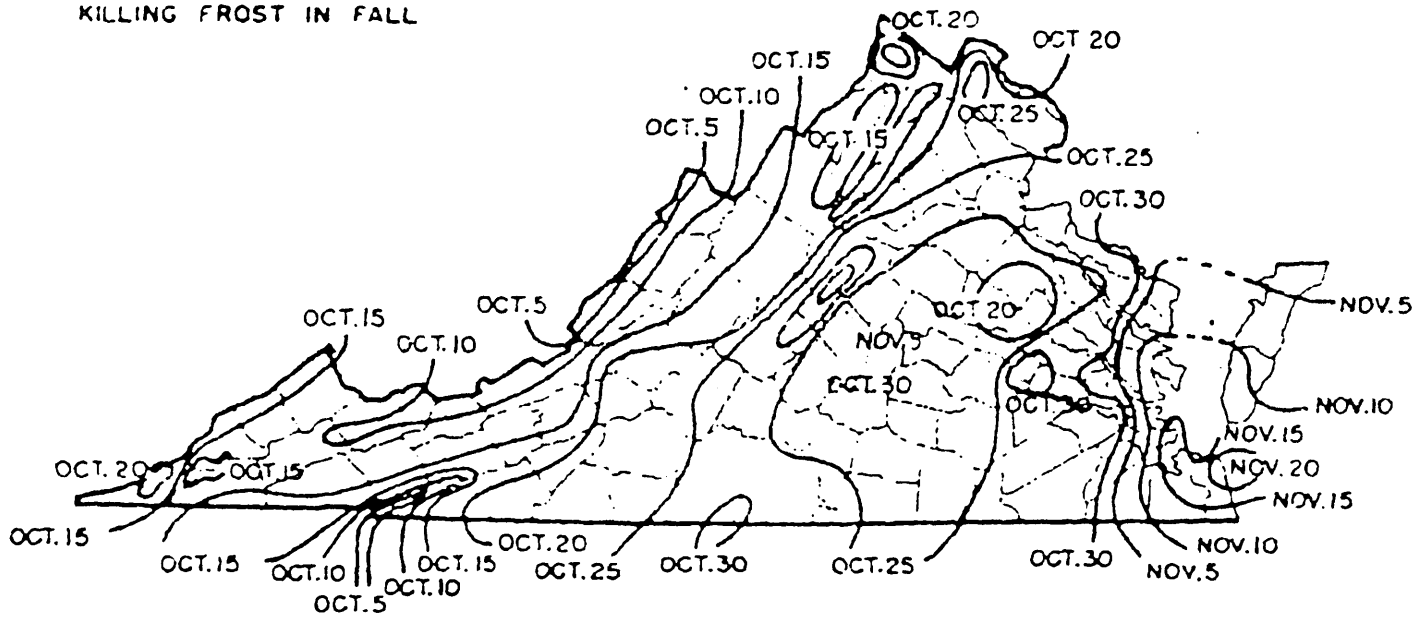
VIRGINIA

AVERAGE DATES OF LAST KILLING FROST IN SPRING



VIRGINIA

AVERAGE DATES OF FIRST KILLING FROST IN FALL



Per Application Rates

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft^2 within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

Annual Application Rates for Home Lawns and Commercial Turf

Up to 3.5 pounds per 1,000 ft^2 of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft^2 may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

Use of Slowly Available Forms of Nitrogen

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft^2 may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft^2 may be applied to warm season grasses within a 30 day period. Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft^2 in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft^2 may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

Phosphorus and Potassium Nutrient Needs (Established Turf)

Apply phosphorus (P_2O_5) and potassium (K_2O) fertilizers as indicated necessary by a soil test using the following guidelines:

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range. (For example the recommendation for a P_2O_5 soil test level of L- would be 3 pounds per 1,000 ft^2.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

Nitrogen Applications

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft^2 of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft^2 of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft^2 total for cool season grasses and 2.0 pounds per 1,000 ft^2 for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft^2 within a 30 day period.

Phosphorus and Potassium Recommendations for Establishment

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

Nitrogen Management on Athletic Fields - Cool Season Grasses

* This program is intended for those fields which are under heavy use.

* Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

Cool Season Grasses	Maintenance Program[a]	
	Normal	Intensive
When to Apply[b]	Pounds per 1,000 ft^2 Nitrogen	
After August 15	------	0.5
September	0.7	0.7 [(c)]
October	0.7 [(c)]	0.7 [(c)]
November	0.5	0.7 [(c)]
April 15 - May 15	0.5	0.5
June 1 - June 15	----	0.5

Notes:

* Soluble nitrogen rates of 0.25 pounds per 1,000 ft^2 or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual N application rate.

* WSN = water soluble nitrogen; WIN = water insoluble nitrogen

(a) Intensive managed areas must be irrigated.

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the preceding Season of Application for Nitrogen section, using Figures 6-1 and 6-2.

(c) Rates up to 0.9 pounds per 1,000 ft^2 of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.

(d) Make this application only if turf use warrants additional N for sustaining desirable growth and /or color.

Nitrogen Management on Athletic Fields - Warm Season Grasses

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

* Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20 as shown in Figure 6-1. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.

* April 15 - May 15 applications should not be made until after complete green-up of turf.

* Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

* Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

* Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

Bermudagrass - Predominantly Silt/Clay Soil Fields [a]		
When to Apply[b]	Pounds per 1,000 ft^2 Nitrogen	First Fall Killing Frost Date[b]
April 15 - May 15	0.5 - 0.7 [c]	Before Oct. 20
June	0.7	
July	0.5 - 0.7 [d]	
August	0.5 - 0.7 [d]	
Sept 1 - Sept 15	0.5 - 0.7 [c]	After Oct. 20
If overseeded with perennial ryegrass		
Oct - Nov	0.5 [e]	
Feb-Mar	0.5 [e]	

Bermudagrass - Naturally Occurring or Modified Sand based Fields [a]		
When to Apply[b]	Lbs/1,000 ft^2 Nitrogen[c]	First Fall Killing Frost Date[b]
April 15 - May 15	0.5 - 0.7 [c]	Before Oct. 20
June	0.7 [c]	
July	0.7 [c]	
August	0.7 [c]	
Sept 1 - Sept 15	0.7 [c]	After Oct. 20
If overseeded with perennial ryegrass		
Oct - Nov	0.5 [e]	
Feb - Mar	0.5 [e]	

The following notes apply to both of the Bermudagrass tables above:

(a) In the Piedmont and the Ridge and Valley areas of Virginia, the existing native soil will normally be comprised predominantly of clay and/or silt and these soils have inherently

lower water infiltration and percolation rates and greater nutrient holding capacity. However, most areas of the Coastal Plain have existing native soils that are predominantly sandy textured soils and other facilities throughout the state may choose to install modified soil root zones that are predominantly sand (>50%) in order to maximize drainage and reduce compaction tendency. If subsurface drain tile surrounded by sand and/or gravel has been installed under the playing surface of any of these fields, their nitrogen programs should be managed as predominantly sand-based systems to minimize nutrient leaching.

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date maps contained in the Season of Application for Nitrogen section, Figures 6-1 and 6-2.

(c) WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft^2 each with a minimum of 15 days between applications. Alternatively, using a material that contains slowly available nitrogen sources, split applications of 0.5 pounds per 1,000 ft^2 may be applied with a minimum of 15 days between applications.

(d) If a material containing slowly available forms of nitrogen is used, rates up to 1.0 pounds of nitrogen per 1,000 ft2 may be applied in a single application with a minimum of 30 days between applications.

(e) For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft^2 of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft^2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft^2 may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft^2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Phosphorus and Potassium Recommendations Athletic Fields

Apply phosphorus (P_2O_5) a est using the following guidelines:

Soil Test Level	Nutrient Needs (lbs /1000 ft^2) *	
	P_2O_5	K_2O
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.
* For irrigated turf grown on Naturally Occurring and Modified Sand Based soils only, up to 0.5 pounds of P_2O_5 per 1,000 ft^2 may be applied, if needed, to aid in recovery of damaged turf during times of extreme use. No phosphorus applications shall be made when the soil phosphorus test level is above 65% saturation, based on the soil test phosphorus values and region as listed in Table 4-1 of Section IV.
* Avoid the general use of high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests

Establishment/Grow-In Recommendations for Golf Courses, Athletic Fields, and Sod Production

(These rates replace normal maintenance fertilizer applications that would have occurred during these time periods.)

Warm Season Grasses:
Predominantly Silt/Clay Soils

* Plant Date - late May - June for sprigs, plugs, sod, or seeding.
* Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.
* At Planting - Up to 1.0 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied as one application or lesser amounts applied at regular intervals, through the first 4 weeks, not to exceed a total of 1.0 pounds of nitrogen per 1,000 ft^2.
* Four weeks after planting - 0.25 pounds of WSN per 1,000 ft^2 per week for the next 4 weeks.

Naturally Occurring or Modified Sand Based Soils

* Plant Date - late May -June for sprigs, plugs, sod, or seeding.
* Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.
* At Planting - Up to 1.0 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied as one application or lesser amounts applied at regular intervals, through the first 4 weeks, not to exceed a total of 1.0 pounds of nitrogen per 1,000 ft^2.
* Four weeks after planting - 0.25 pounds per 1,000 ft^2 using a material containing slowly available forms of nitrogen per week for the next 4 weeks.

Cool Season Grasses:
Predominantly Silt/Clay Soils

* Plant Date - August - September (preferred)
* Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.
* At Planting - up to 0.9 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied; 30 days after planting, apply up to 0.5 pounds of nitrogen per 1,000 ft^2 every week for the next 4 weeks.

Naturally Occurring or Modified Sand Based Soils

* Plant Date - August -September (preferred)
* Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.
* At Planting - up to 0.9 lbs pounds of nitrogen per 1,000 ft^2 using a using a material containing slowly available forms of nitrogen may be applied.
* Apply up to 0.25 pounds of nitrogen per 1,000 ft^2 per week after germination is complete, for the next 8 weeks. If using a material containing slowly available forms of nitrogen, up to 0.5 pounds of nitrogen per 1,000 ft^2 every two weeks may be applied after germination is complete for the next 8 weeks.

Sod Installations:

Site preparation should include a soil test, which can be done several months before the project begins in order to have time to get test results back. Phosphorus, potassium and lime applications should be based on soil test analysis to increase the likelihood of a successful installation. Shallow incorporation of material into the top 2 inches of the soil is preferred prior to sod installation, especially if lime is required.

No more than 0.7 pounds of nitrogen per 1,000 ft^2 of WSN may be applied before sod is installed. Alternatively, using a material with slowly available forms of nitrogen, 0.9 pounds of nitrogen per 1,000 ft^2 for cool season grasses or 1.0 pounds of nitrogen per 1,000 ft^2 for warm season grasses may be applied before sod is installed.

After installation apply adequate amounts of water to maintain sufficient soil moisture (i.e. to prevent visible wilt symptoms). Excessive water will limit initial root development. After roots begin to establish (as verified by lightly tugging on the sod pieces), shift irrigation strategy to a deep and infrequent program in order to encourage deep root growth. Apply approximately 1 inch of water per week (either by rainfall or irrigation), making sure that the water is being accepted by the soil profile without running off. This will insure thorough wetting of the soil profile.

After sod has completed rooting and is well established, initiate the normal nitrogen management program as described for the appropriate use shall be recommended.

Phosphorus and Potassium Recommendations for Establishment/Grow-In/Installation

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

Other Turf Management Considerations for Golf Courses, Athletic fields, and Home Lawns

Lime Recommendations
Lime should be recommended based on a soil test to maintain soil pH within an agronomic range for turfgrass.

For new seedings where lime is recommended, incorporate the lime into the topsoil for best results.

Returning Grass Clippings
Recycling of clippings on turf should be encouraged as an effective means of recycling nitrogen, phosphorus, and potassium. Proper mowing practices that ensure no more than 1/3 of the leaf blade is removed in any cutting event will enhance turf appearance and performance when clippings are returned. Return all leaf clippings from mowing events to the turf rather than discharging them onto sidewalks or streets. Rotary mulching mowers can further enhance clipping recycling by reducing the size of clippings being returned to the turfgrass canopy.

Management of Collected Clippings
If clippings are collected they should be disposed of properly. They may be composted or spread uniformly as a thin layer over other turf areas or areas where the nutrient content of the clippings can be recycled through actively growing plants. They should not be blown onto
impervious surfaces or surface waters, dumped down stormwater drains, or piled outside where rainwater will leach out the nutrients creating the potential for nutrient loss to the environment.

Use of Iron
Iron applications (particularly foliar applications) may periodically be used for enhanced greening as an alternative to nitrogen. These applications are most beneficial if applied in late spring through summer for cool season grasses and in late summer/fall applications for warm-season grasses.

Impervious Surfaces
Do not apply fertilizers containing nitrogen or phosphorus to impervious surfaces (sidewalks, streets, etc.). Remove any granular materials that land on impervious surfaces by sweeping and collecting, and either put the collected material back in the bag, or spread it onto the turf and /or using a leaf blower etc. to return the fertilizer back to the turfgrass canopy.

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	Matthew E. Thompson Sr.	Management Area ID:	
Address:	1701 East Parham Road	Management Area Size:	
	Richmond, VA 23228	Plant Species:	
		Notes:	
Phone #:	(804) 523-5795		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???
For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".
Available for download at http://pubs.ext.vt.edu/430/430-350/430-350.html

Nutrient Management Plan

J. Sargeant Reynolds Downtown Campus

Prepared For:

Matthew E. Thompson Sr.
1651 E Parham Road
Richmond, VA 23285-5622
(804) 523-5795

Prepared By:

Christy F. Smith
3160 Jacobia Lane
Cape Charles, VA 23310
(757) 678-6129

Certification Code: 297
Total Acreage: 0.28

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension

DCR
Virginia Department of Conservation & Recreation

Nutrient Management Plan for:
J. Sargeant Reynolds Downtown Campus

Landowner Information	
Company Name	*J. Sargeant Reynolds Downtown Campus*
Customer Name	*Matthew E. Thompson Sr.*
Mailing Address	*1651 E Parham Road*
City State Zip	*Richmond, VA 23285-5622*
Phone	*(804) 523-5795*
Email	*Mthompson@reynolds.edu*

Planners Information	
Planner Name	*Christy F. Smith*
Mailing Address	*3160 Jacobia Lane*
City State Zip	*Cape Charles, VA 23310*
Phone	*(757) 678-6129*
Fax	*(757) 331-3957*
Email	*christy@smithagronomic.com*
Certification Code	*297*

Location Information	
Physical Address	*700 East Jackson Street*
City State Zip	*Richmond, VA 23219*
Coordinates	*37° 32' 36" N*
Please Use NAD 83 Deg Min Sec	*77° 26' 51" W*
VAHU6 Watershed Code	*JL01*
County	*City of Richmond*

Square Footage	
Total	*12275 sq ft*
Front/back	*5275 sq ft*
Side	*7000 sq ft*

Plan Start Date	*10/6/21*
Plan End Date	*10/6/24*

Planner Signature	Christy F. Smith

Narrative

J. Sargeant Reynolds Downtown Campus is located in Richmond, VA off of I-64 at exit 190 toward Richmond. Stay straight to go onto N 5th Street then turn left onto E Jackson Street which brings you to the campus at 700 E Jackson Street. The watershed code is JL01.

There are no environmentally sensitive sites on the campus.

All buildings are extracted from the 12,275 square feet of campus turf that is fertilized. Acreage was measured by computer. The campus was seeded with Kentucky 31 and annual and perennial rye. The campus was seperated into two areas for soil sampling: front/back and side but treated as one on application worksheet since results were so similar and fertilized as one area.

No lime is recommended at this time.

J. Sargeant Reynolds agrees to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations, 4VAC5-15-10 et seq,. and to follow recommendations for turf fertilization and management as described in the attached Virginia Nutrient Managemet Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. This plan is effective for 3 years, expiring 10/6/2024 or until any major renovation or major changes to maintainance practices occur which effects the fertilized/lime areas.

New soil analysis recommendations at least once every 3 years. Nutrient applications are prohibited on frozen/snow covered ground. 4VAC50-85-140.f.

side 7,000 sq ft.

front/back 5,275 sq ft

DeLORME

Topo USA® 5.0

TN
MN (0.0°E)

Scale 1 : 50,000

1" = 4,166.7 ft

Data Zoom 12-0

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**						**Management Area:**			Front/back and sides			
Prepared:	**10/6/21**						**Area (sq ft):**	12275		**Species:**	**Kentucky 31, annual and perennial rye**		
Expires:	**10/6/24**												
Total Nutrient Needs	**Application Month/Day**	**Analysis lb/A**	**# of Apps**	**Application Interval**	**Fertilizer Type**	**Fertilizer Description**	**Rate per $1000ft^2$**	**lbs or oz**	**%Slow Release N**	**Total NPK $lbs/1000ft^2$**	**Gypsum**	**Lime**	**Total Product per App. (lbs or oz)**
Nitrogen		N - P - K								N - P_2O_5 - K_2O			
2	September 15	20 - 14 - 14	1	30 days		granular	3.50	lbs	0%	0.70 - 0.49 - 0.49			43
Phosphorus	October 15	20 - 14 - 14	1			granular	3.50	lbs	0%	0.70 - 0.49 - 0.49			43
1		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
1		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		0%	1.40 - 0.98 - 0.98			
				N Recommendation Range and Soil Test Ratings						2 | 1 | 1			
Notes:													

Soil Test Summary

Customer Name:	Matthew E. Thompson Sr.
Testing Lab:	Virginia Tech
Sample Date:	10/4/2021
Planner Name	Christy F. Smith
Certification Number	297

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P lb/A	VT (H/M/L)	Lab Test K lb/A	VT (H/M/L)	Species
Front/back	5,275	6.1	6.04	18	M-	194	H-	Kentucky 31, annual and perennial rye
Side	7,000	6.9	6.39	29	M	169	M+	Kentucky 31, annual and perennial rye

Notes:

No lime is needed at this time.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
DTSID	DOWNTOWN									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	29	169	3546	251	4.3	19.2	0.4	30.7	0.3	
Rating	M	M+	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.9	6.39	10.2	0.6	99.4	87.1	10.2	2.1	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	80	40

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
DT FB	DOWNTOWN									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	18	194	3723	292	4.8	18.7	0.4	41.3	0.4	
Rating	M-	H-	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.1	6.04	12.9	16.6	83.4	72.2	9.3	1.9	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	90	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

"Enhanced efficiency fertilizer" describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

"Water soluble nitrogen", "WSN" and "readily available nitrogen" means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

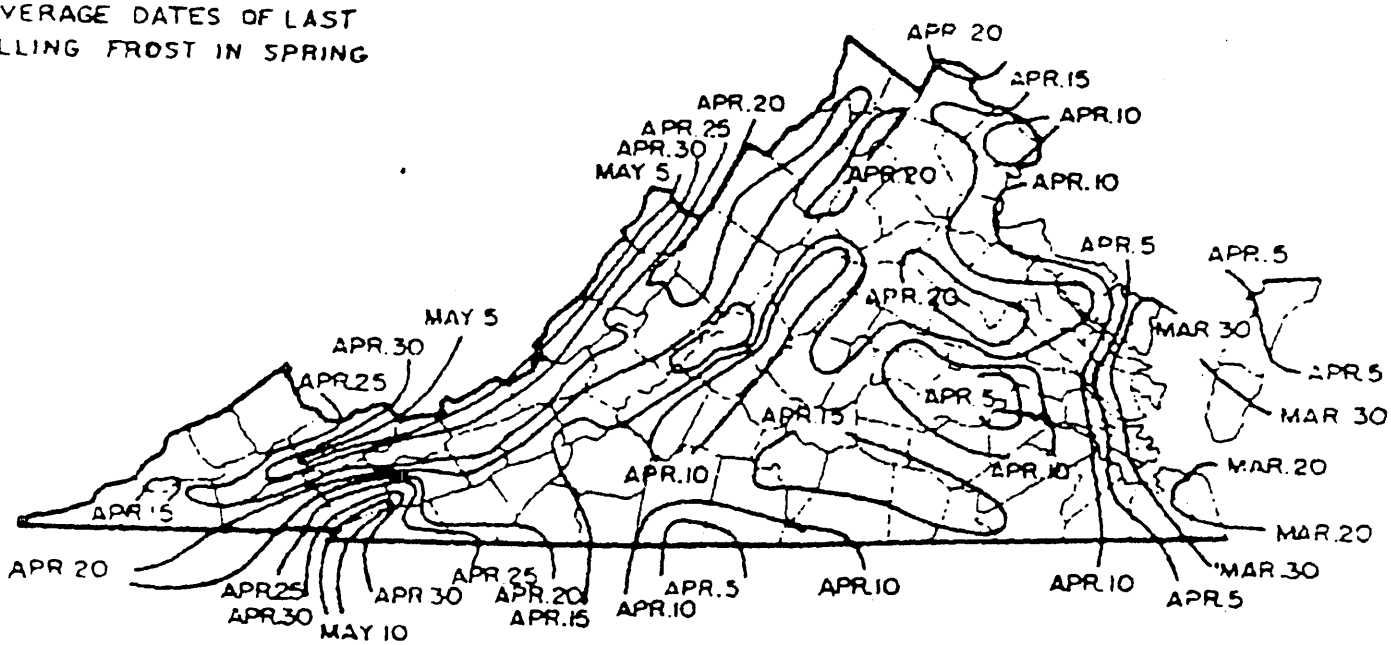
Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft^2 of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft^2 rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures 6-1 & 6-2).

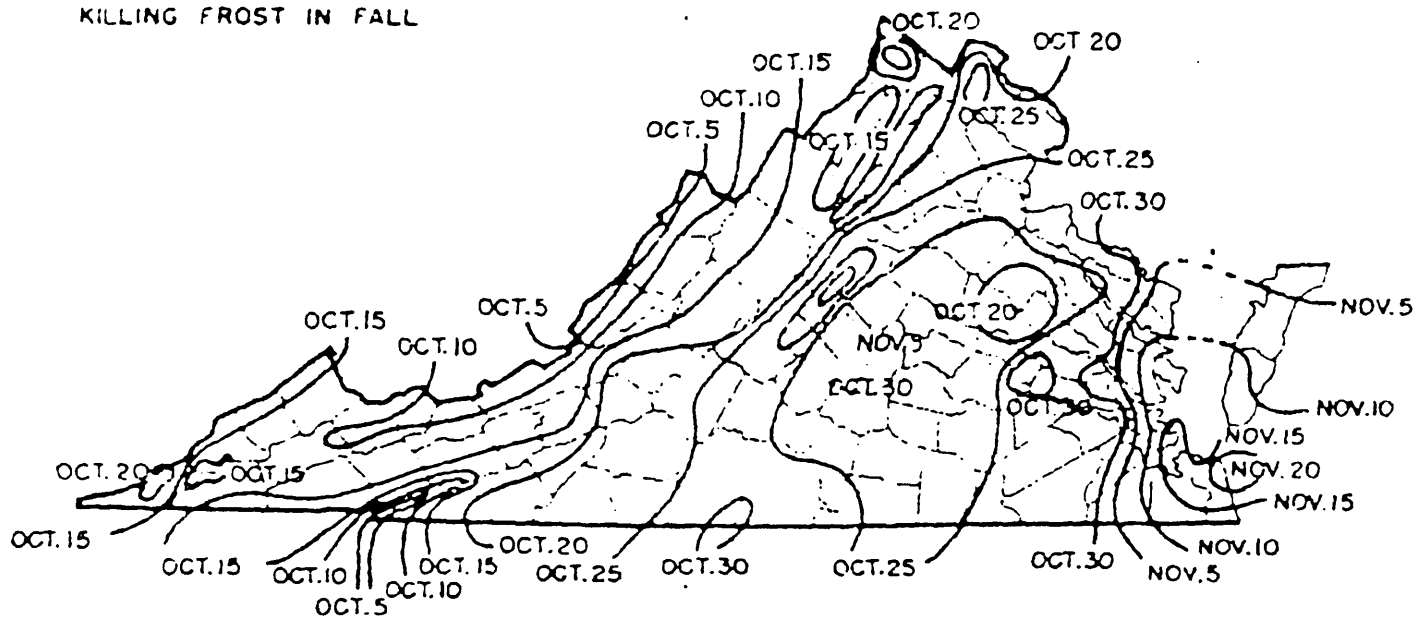
VIRGINIA

AVERAGE DATES OF LAST KILLING FROST IN SPRING



VIRGINIA

AVERAGE DATES OF FIRST KILLING FROST IN FALL



Per Application Rates

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft^2 within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

Annual Application Rates for Home Lawns and Commercial Turf

Up to 3.5 pounds per 1,000 ft^2 of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft^2 may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

Use of Slowly Available Forms of Nitrogen

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft^2 may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft^2 may be applied to warm season grasses within a 30 day period. Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft^2 in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft^2 may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

Phosphorus and Potassium Nutrient Needs (Established Turf)

Apply phosphorus (P_2O_5) and potassium (K_2O) fertilizers as indicated necessary by a soil test using the following guidelines:

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range. (For example the recommendation for a P_2O_5 soil test level of L- would be 3 pounds per 1,000 ft^2.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

Nitrogen Applications

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft^2 of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft^2 of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft^2 total for cool season grasses and 2.0 pounds per 1,000 ft^2 for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft^2 within a 30 day period.

Phosphorus and Potassium Recommendations for Establishment

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	Matthew E. Thompson Sr.	Management Area ID:	
Address:	700 East Jackson Street	Management Area Size:	
	Richmond, VA 23219	Plant Species:	
		Notes:	
Phone #:	(804) 523-5795		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???
For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".
Available for download at http://pubs.ext.vt.edu/430/430-350/430-350.html

Nutrient Management Plan

J. Sargeant Reynolds Western Campus

Prepared For:

Matthew E. Thompson Sr.
1651 E Parham Road
Richmond, VA 23285-5622
(804) 523-5795

Prepared By:

Christy F. Smith
3160 Jacobia Lane
Cape Charles, VA 23310
(757) 678-6129

Certification Code: 297
Total Acreage: 5.45

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension

DCR
Virginia Department of Conservation & Recreation

Nutrient Management Plan for:
J. Sargeant Reynolds Western Campus

Landowner Information	
Company Name	*J. Sargeant Reynolds Western Campus*
Customer Name	*Matthew E. Thompson Sr.*
Mailing Address	*1651 E Parham Road*
City State Zip	*Richmond, VA 23285-5622*
Phone	*(804) 523-5795*
Email	*Mthompson@reynolds.edu*

Planners Information	
Planner Name	*Christy F. Smith*
Mailing Address	*3160 Jacobia Lane*
City State Zip	*Cape Charles, VA 23310*
Phone	*(757) 678-6129*
Fax	*(757) 331-3957*
Email	*christy@smithagronomic.com*
Certification Code	*297*

Location Information	
Physical Address	*1851 Dickinson Road*
City State Zip	*Goochland, VA 23063*
Coordinates	*37° 41' 39" N*
Please Use NAD 83 Deg Min Sec	*77° 52' 43" W*
VAHU6 Watershed Code	*JM79*
County	*Goochland*

Square Footage	
Total	*237,500.00*
Front	*52,500.00*
Hort	*122,500.00*
Area 4	*62,500.00*

Plan Start Date	*10/6/21*
Plan End Date	*10/6/24*

Planner Signature	Christy F. Smith

Narrative

J. Sargeant Reynolds Western Campus is located in Goochland, VA off of I-64 at exit 167 toward Richmond. Turn left onto Oilville Road, right onto US 250, left onto Fairground Road, and left onto Dickinson Road which brings you to the campus at 1851 Dickinson Road. The watershed code is JM79.

Environmentally sensitive areas: Courthouse Creek and a small pond are located on campus. Both are sufficiently buffered.

All buildings are extracted from the 237,500 square feet of campus turf that is fertilized. The campus was seeded in Kentucky 31, a contractor mix (98% fescue) and perennial rye.

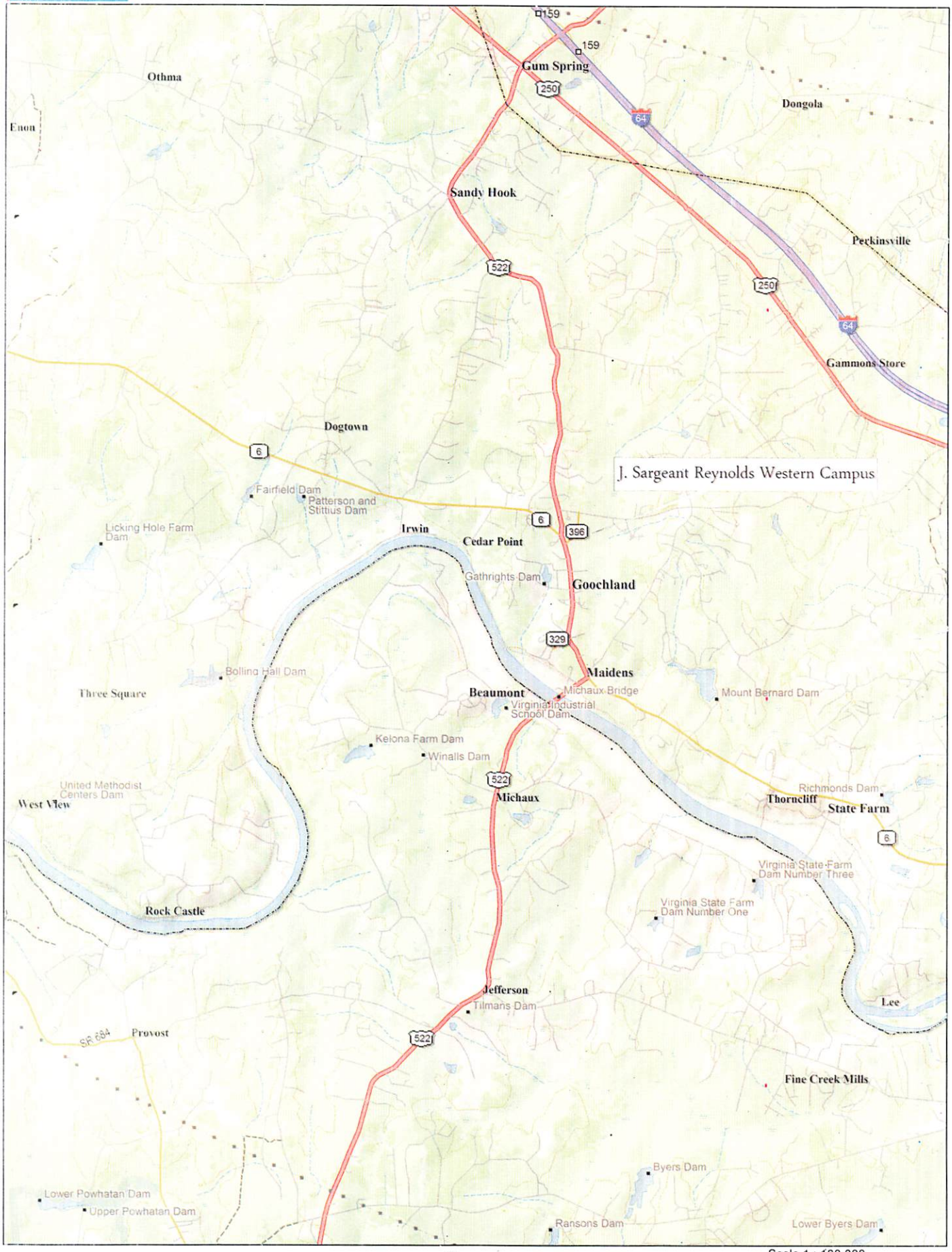
No lime is recommended at this time.

J. Sargeant Reynolds agrees to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations, 4VAC5-15-10 et seq,. and to follow recommendations for turf fertilization and management as described in the attached Virginia Nutrient Managemet Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. This plan is effective for 3 years, expiring 10/6/2024 or until any major renovation or major changes to maintainance practices occur which effects the fertilized/lime areas.

New soil analysis recommendations at least once every 3 years. Nutrient applications are prohibited on frozen/snow covered ground. 4VAC50-85-140.f.

Google Maps J. Sargeant Reynolds Western Campus Front 52,500 sq ft Hort 122,500 sq ft Area 4 62,500 sq ft

Imagery ©2018 Commonwealth of Virginia, DigitalGlobe, USDA Farm Service Agency, Map data ©2018 Google 200 ft



TN
MN (0.0°E)

Scale 1 : 100,000

1" = 1.58 mi

Data Zoom 11-0

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**	**Management Area:**	Area 4	
Prepared:	**10/6/21**	**Area (sq ft):**	**62500**	**Species:** **Kentucky 31, contractor mix (98% fescue) and perennial rye**
Expires:	**10/6/24**			

Total Nutrient Needs	Application Month/Day	Analysis lb/A	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per $1000ft^2$	lbs or oz	%Slow Release N	Total NPK $lbs/1000ft^2$	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O	1.25 T/AC		
2	September 15	20 - 35 - 10	1	30 days		granular	3.50	lbs	0%	0.70 - 1.23 - 0.35			219
Phosphorus	October 15	20 - 35 - 10	1			granular	3.50	lbs	0%	0.70 - 1.23 - 0.35			219
2.5		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
.75		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
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		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		0%	1.40 - 2.45 - 0.70			
				N Recommendation Range and Soil Test Ratings						2 | 2.5 | 0.75			
Notes:	1.25 tons/acre lime recommended.												

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**	**Management Area:**		Front	
Prepared:	**10/6/21**	**Area (sq ft):**	**52500**	**Species:**	**Kentucky 31, contractor mix (98% fescue) and perennial rye**
Expires:	**10/6/24**				

Total Nutrient Needs	Application Month/Day	Analysis lb/A	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per $1000ft^2$	lbs or oz	%Slow Release N	Total NPK $lbs/1000ft^2$	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O			
2	September 15	20 - 35 - 10	1	30 days		granular	3.50	lbs	0%	0.70 - 1.23 - 0.35			184
Phosphorus	October 15	20 - 35 - 10	1			granular	3.50	lbs	0%	0.70 - 1.23 - 0.35			184
2.5		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
.75		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
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		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		0%	1.40 - 2.45 - 0.70			
				N Recommendation Range and Soil Test Ratings						2 / 2.5 / 0.75			

Notes:

Nutrient Application Worksheet

NAME:	**Matthew E. Thompson Sr.**	**Management Area:**	Hort
Prepared:	**10/6/21**	**Area (sq ft):**	**122500**
Expires:	**10/6/24**	**Species:**	**Kentucky 31, contractor mix (98% fescue) and perennial rye**

Total Nutrient Needs	Application Month/Day	Analysis lb/A	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per $1000ft^2$	lbs or oz	%Slow Release N	Total NPK $lbs/1000ft^2$	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P_2O_5 - K_2O		2 T/acre	
2	September 15	20 - 35 - 0	1	30 days		granular	3.50	lbs	0%	0.70 - 1.23 - 0.00			429
Phosphorus	October 15	20 - 35 - 0	1			granular	3.50	lbs	0%	0.70 - 1.23 - 0.00			429
2.5		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
0		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
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		- -								0.00 - 0.00 - 0.00			0
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		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		0%	1.40 - 2.45 - 0.00			

N Recommendation Range and Soil Test Ratings	2	2.5	0

Notes: 2 tons/acre lime recommended.

Soil Test Summary

Customer Name:	Matthew E. Thompson Sr.
Testing Lab:	Virginia Tech
Sample Date:	10/4/2021
Planner Name	Christy F. Smith
Certification Number	297

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P lb/A	VT (H/M/L)	Lab Test K lb/A	VT (H/M/L)	Species
Front	52,500	6.2	6.21	4	L	219	H	Kentucky 31, contractor mix, perennial rye
Hort	122,500	5.5	6.08	6	L	328	VH	Kentucky 31, contractor mix, perennial rye
Area 4	62,500	6	6.2	6	L	274	H	Kentucky 31, contractor mix, perennial rye

Notes:

2 tons/acre lime recommended on horticulture area and 1.25 tons/acre lime recommended on Area 4.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Henrico County Office
8600 Dixon Powers Drive
P O Box 90775
Richmond, VA 23273-0775
804-501-5160

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
WESTF	WESTERN									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	4	219	1348	314	1.0	10.8	0.2	11.3	0.2	
Rating	L	H	M+	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.2	6.21	6.1	18.6	81.4	55.5	21.3	4.6	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P205	K20
See Comment	110	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Virginia Cooperative Extension
Soil Test Report

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1 3
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OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
WESTH	WESTERN									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	6	328	1011	252	1.5	11.0	0.3	12.6	0.2	
Rating	L	VH	M	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.5	6.08	5.9	32.3	67.7	42.9	17.7	7.1	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
2	AG

Fertilizer, lb/A		
N	P205	K20
See Comment	110	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
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SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITH AG & ENVIRONMENTAL
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
WEST4	WESTERN									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	5	274	1026	294	1.1	9.7	0.3	11.3	0.2	
Rating	L	H	M	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.0	6.20	5.3	22.4	77.6	48.2	22.8	6.6	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
1.25	AG

Fertilizer, lb/A		
N	P205	K20
See Comment	110	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

Standards and Criteria

Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

"Enhanced efficiency fertilizer" describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

"Water soluble nitrogen", "WSN" and "readily available nitrogen" means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

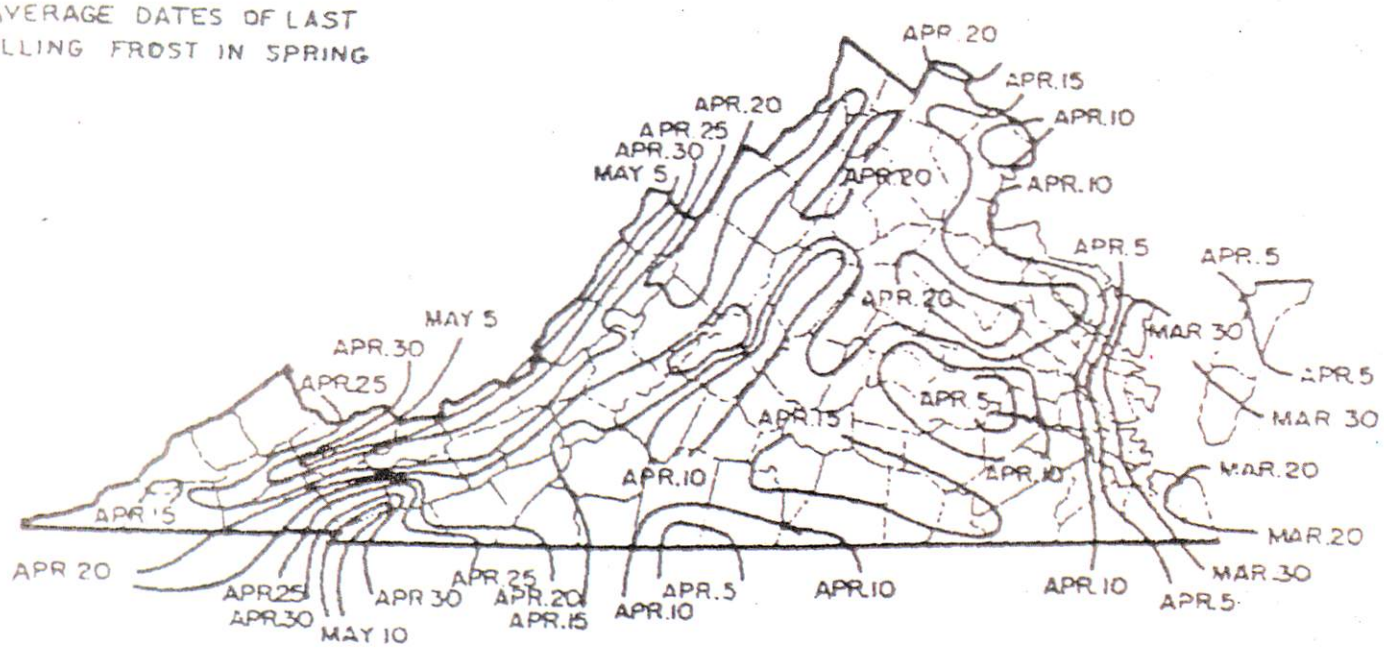
Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft^2 of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft^2 rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures 6-1 & 6-2).

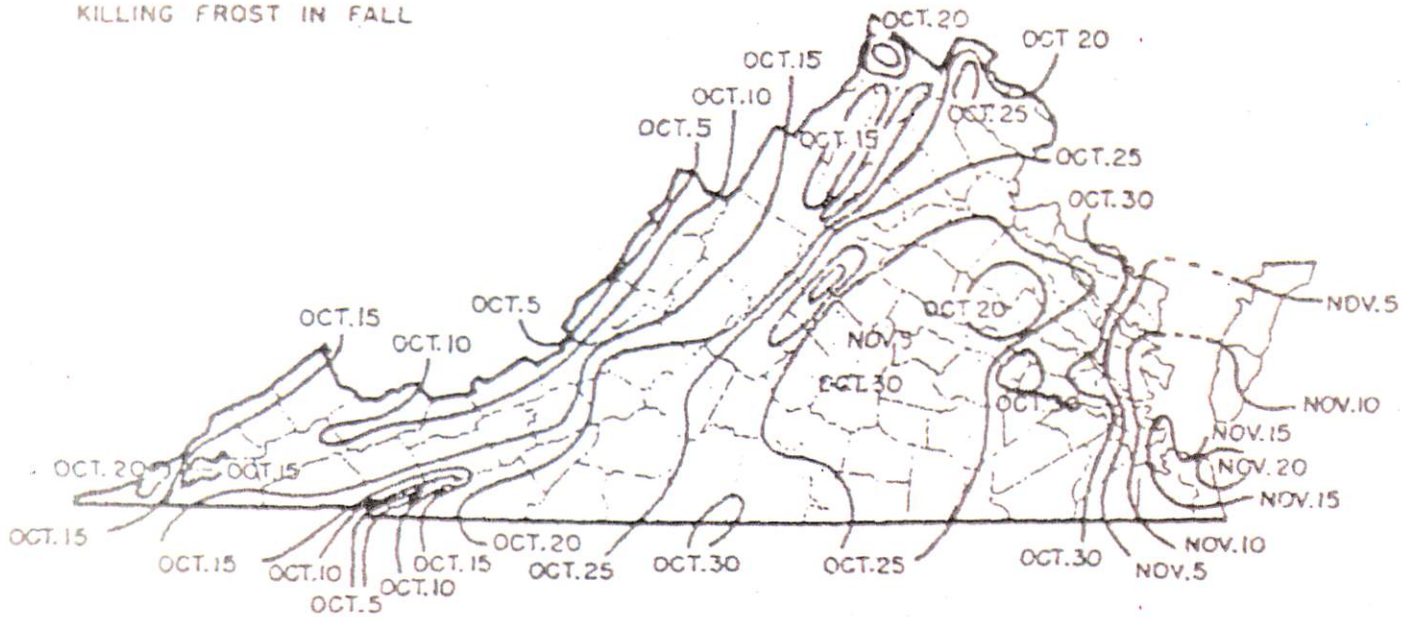
VIRGINIA

AVERAGE DATES OF LAST KILLING FROST IN SPRING



VIRGINIA

AVERAGE DATES OF FIRST KILLING FROST IN FALL



Per Application Rates

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft^2 within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

Annual Application Rates for Home Lawns and Commercial Turf

Up to 3.5 pounds per 1,000 ft^2 of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft^2 may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

Use of Slowly Available Forms of Nitrogen

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft^2 may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft^2 may be applied to warm season grasses within a 30 day period. Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft^2 in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft^2 may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

Phosphorus and Potassium Nutrient Needs (Established Turf)

Apply phosphorus (P_2O_5) and potassium (K_2O) fertilizers as indicated necessary by a soil test using the following guidelines:

Soil Test Level	Nutrient Needs (lbs /1000 ft^2) *	
	P_2O_5	K_2O
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range. (For example the recommendation for a P_2O_5 soil test level of L- would be 3 pounds per 1,000 ft^2.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

Nitrogen Applications

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft^2 of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft^2 of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft^2 total for cool season grasses and 2.0 pounds per 1,000 ft^2 for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft^2 within a 30 day period.

Phosphorus and Potassium Recommendations for Establishment

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	Matthew E. Thompson Sr.	Management Area ID:	
Address:	1851 Dickinson Road	Management Area Size:	
	Goochland, VA 23063	Plant Species:	
		Notes:	
Phone #:	(804) 523-5795		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???

For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".

Available for download at http://pubs.ext.vt.edu/430/430-350/430-350.html