GENERAL PERMIT FOR SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
PERMIT NUMBER: VAR040053

Permit Year 1 Annual Report
Reporting Period: July 1, 2018 - June 30, 2019

City of Winchester, Virginia
Rouss City Hall
Public Services Department
15 North Cameron Street
Winchester, VA 22601

October 1, 2019

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Attachments

1.0 Background Information

(1) Name and State permit number of the program submitting the annual report; (2) The annual report permit year; (3) Modifications to any operator's department's roles and responsibilities; (4) Number of new MS4 outfalls and associated acreage by HUC added during the permit year; (5) Signed certification in accordance with 9 VAC25-870-370.

1. Name and State permit number of the program submitting the annual report:

City of Winchester, VA
Permit # VAR040053

2. The annual report permit year:

This serves as the Annual Report for permit Year 1 of the 2018 - 2023 Virginia MS4 General Permit. This Report covers the reporting period from July 1, 2018 – June 30, 2019.

3. Modifications to any operator's department's roles and responsibilities:

There have been no modifications to the roles and responsibilities of the various City departments responsible for implementation of the program during this reporting period. The City's Engineering Division, led by the City Engineer, is responsible for implementing the commitments in the MS4 Program Plan. The City's Department of Fire and Rescue, led by the Fire and Rescue Chief, is responsible for implementation of BMP 3.7: Hazardous Spill Response. The City's Public Works Division, led by the Refuse and Recycling Coordinator, is responsible for the implementation of BMP 3.8: Household Hazardous Waste Collection and BMP 3.9: Household Waste Reduction. The City's Public Works Division, led by the Public Works Division Manager, is responsible for implementation of BMP 5.5: City-Owned Stormwater Management Facility Maintenance and BMP 6.8: Street Sweeping.

4. Number of new MS4 outfalls and associated acreage by HUC added during the permit year:

No new outfalls were added to the City's inventory during the reporting period.

5. Signed certification in accordance with 9 VAC25-870-370

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

9/26/19

Perry Eisenach, P.E.
Public Services Director

Date

For questions about the annual report submittal or Winchester's MS4 Program Plan, please contact:

Joseph Formanski, Stormwater Engineer
15 N. Cameron Street
Winchester, VA 22601

540-667-2376
Joe.Formanski@winchesterva.gov

2.0 Status of Permit Condition Compliance

The status of compliance with state permit conditions, an assessment of the appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures.

2.1. Assessment of BMP Appropriateness

The City of Winchester is confident that the BMPs we have chosen to implement under our 2018-2023 MS4 Program Plan are appropriate and meet the requirements of the MS4 General Permit. We will continue to monitor the status and appropriateness of each BMP as implementation continues.

2.2. Required MS4 Program Plan Updates

The MS4 General Permit identified a compliance schedule for the development and implementation of a number of new MS4 General Permit Requirements. There were no updates required this reporting period and the City is currently in compliance with the schedule included in Table 1 of the MS4 General Permit.

2.3. Measurable Goals Progress

I. Public Education and Outreach

BMP 1.1. City Stormwater Webpage: The City will maintain a web page dedicated to the City's stormwater management program. The MS4 Program Plan, MS4 Annual Reports and other information will be made available to the public through this website. Once a year in conjunction with development of the MS4 Annual Report, the City will insure the validity of all links to stormwater information included on the web page.

During this reporting period, the City continued to maintain a stormwater specific webpage found at: http://www.winchesterva.gov/engineering/stormwater. The City's webpage is the primary public education and outreach tool utilized for reaching the program's targeted audiences and providing for distribution of educational materials to convey the appropriate messages. Through this webpage, the City provided year-long public access to the following:

- *EPA video series "After the Storm".*
- *Advertisement of the Stormwater Complaint Hotline and distribution (via direct download) of the Stormwater Complaint Hotline Flyer.*
- *Pollution prevention and water conservation tips.*
- *Distribution (via direct download) of flyers about picking up pet waste and the hazards of feeding wild waterfowl.*
- *Benefits of rain barrels and instructions on how to make them.*

- *Current and past regulatory documents pertaining to City's stormwater program including the Program Plan, Annual Report, and TMDL Action Plans.*
- *Links to other stormwater webpages maintained by the EPA and Virginia DEQ.*

There were approximately 491 unique page views on the City's Stormwater Webpage during this reporting period. This represents a decrease from the previous reporting period. The City will continue to explore ways to further promote the stormwater webpage.

BMP 1.2. Social Media: The City will use its Facebook and Twitter accounts as necessary to distribute stormwater related information to its citizens.

The City has approximately 14,158 Facebook and 3,610 Twitter individual followers which facilitated distribution of stormwater related materials and messages during this reporting period. These numbers are subject to fluctuation.

BMP 1.3. Public Events: The City will participate in public events such as the Community Wellness Festival, as necessary, to distribute stormwater related information to its citizens. Expected public events will be identified as part of the intended MS4 Public Education and Outreach Program for the next reporting year in the applicable MS4 Annual Report.

The City participated in the Valley Health Community Wellness Festival on February 23, 2019. During this event, City Public Services educated the public on the effects of pollution on waterbodies. Roughly 295 people were given fliers pertaining to pollution.

The City held its third annual Spring Greening on April 27, 2019. The Spring Greening is a way to involve citizen volunteers in trash pickup along the City's streams. Volunteers were solicited through various media, asking volunteers to meet at a city park and then be directed to stretches of Abrams Creek running though city-owned property. The city arborist also performed a tree planting demonstration. Five volunteers picked up approximately 10 bags worth of trash from the streams.

Moving forward, the City will continue its participation in the Community Wellness Festival and will explore ways to increase involvement in the annual Spring Greening event. The City no longer holds the Green Neighborhood Expo event due to its low interest and change in the organizing committee. The City will continue holding the Spring Greening event even though it saw a decrease in participation (from 30 participants in 2018 to 5 participants in 2019). Weather conditions were likely the key factor in this year's decline in participation. In addition, the City will continue to explore the possibility of creating new public events which target specific audiences such as contractors, dog owners, or car washes.

BMP 1.4 Publications (Print and Electronic): The City will use publications such as its Cit-E newsletter as necessary to distribute stormwater related information to its citizens. Expected use of publications will be identified as part of the intended MS4 Public Education and Outreach Program for the next reporting year in the applicable MS4 Annual Report.

The City's webpage is the primary public education and outreach tool utilized for reaching the program's targeted audiences and providing for distribution of educational materials to convey the appropriate messages. Publications currently available for download from the City's Stormwater webpage during this reporting period included:

- *Stormwater Complaint Hotline Flyer*
- *EPA's "After the Storm" Video Series*
- *"Pick it Up, It's Your Doodie" Pet Waste Brochure*
- *"Please Do Not Feed the Waterfowl" Wildlife Waste Brochure*
- *"How to Make Your Own Rain Barrel" Presentation*
- *2018 - 2023 Municipal Separate Storm Sewer System (MS4) Program Plan*
- *MS4 Permit Years 1-5 Annual Reports from the 2014-2018 permit cycle.*
- *After the Storm Brochure - English*
- *After the Storm Brochure - Spanish*
- *SepticSmart:Septic Tank Maintenance – English*
- *SepticSmart:Septic Tank Maintenance - Spanish*
- *Make Your Home the Solution to Stormwater Pollution Brochure*
- *Kids Stormwater Stickers*

In addition, the City uses its email newsletter, The Cit-E News, to announce and promote various activities throughout the year that have an impact on stormwater. Educational articles dealing with stormwater are also published in the newsletter. The Cit-E Newsletter currently has a total of 1,375 subscribers; however, many of the City's Facebook and Twitter posts direct readers to articles in the Cit-E Newsletter, so readership is much larger than just the subscriber list.

BMP 1.5. Watershed and Stormwater Educational Opportunities Program: The City will continue to implement its Watershed and Stormwater Opportunities Education Program directed at students in Winchester City Public Schools. The City will concentrate on delivery of this program to grade school students in a manner necessary to insure that high priority water quality issues are addressed to the target audiences.

The City continued the Watershed and Stormwater Educational Opportunities Program as part of the City's formal program of stormwater education at schools within the City. The City's engineering staff conducted the following school presentations regarding engineering and high priority water quality issues during the current reporting period:

- *October 2, 2018 – Winchester STARBASE Academy – 35 students*
- *October 26, 2018 – Winchester STARBASE Academy – 35 students*
- *November 27, 2018 – Winchester STARBASE Academy – 50 students*
- *January 28, 2019 – Winchester STARBASE Academy – 55 students*
- *February 6, 2019 – Winchester STARBASE Academy – 55 students*
- *February 22, 2019 – Massanutten Military Academy – 30 students*
- *May 29, 2019 – Orchard View Elementary School 3rd graders – 40 students*

BMP 1.6. Other Message Delivery: The City will utilize other types of message delivery as necessary such as "Clean Up After Your Dog" signage at the City's Dog Park to reach the target audiences. These types of message delivery will be identified as part of the intended MS4 Public Education and Outreach Program for the next reporting year in the applicable MS4 Annual Report.

The City continued to promote picking up pet waste through the use of "Clean Up After Your Dog" signs placed at the Dog Park located in Jim Barnett Park. The number of registered dog owners with access to the Dog Park is no longer monitored due to the fact that the dog park is now considered a public facility.

The City's Public Works Division continued to promote its Adopt-A-Tree, Watch It Grow program on its web page and through distribution of its pamphlet. There were 2 Adopt-A-Tree plantings during this reporting period.

BMP 1.7. Educational Materials: The City will retain copies (electronic or hard copy) of educational materials utilized in delivery of its messages regarding high priority water quality issues to target audiences.

The City continues to maintain current copies of all the educational materials utilized under its Public Education and Outreach program to include the publications listed under BMP 1.4 above.

Additional Reporting Requirements:

Provide a list of the education and outreach activities conducted during this reporting period for each high-priority water quality issue.

The City addressed three High Priority Water Quality Issues (HPWQI) during the reporting period. The activities utilized for each HPWQI were as follows.

- *HPWQI #1 – Reduce the amount of sediments and nutrients in area stormwater discharges.*
  - *Watershed model and Stormwater Educational Opportunities Program at local schools.*
  - *Community Wellness Festival*
  - *Spring Greening.*
  - *Social Media Campaign*
- *HPWQI #2 – Reduce bacteria levels in City streams.*
  - *Watershed model and Stormwater Educational Opportunities Program at local schools.*
  - *Community Wellness Festival*
  - *Spring Greening.*
  - *Social Media Campaign*
- *HPWQI #3 – Reduce the number of Illicit Discharges.*
  - *Watershed model and Stormwater Educational Opportunities Program at local schools.*
  - *Community Wellness Festival*
  - *Spring Greening.*

- *Social Media Campaign*

Provide a list of the education and outreach activities that will be conducted during the next reporting period for each high-priority water quality issue.

The City plans to continue with the following education and outreach activities during the next reporting cycle and expects to reach the same or even more members of the targeted audiences as were reached during this reporting period (which was well over the targeted 20%):

- *Watershed model and Stormwater Educational Opportunities Program at local schools (To be scheduled)*
- *Rain Barrel Workshop (Potentially early-Spring 2020)*
- *Safety Fair (September 7, 2019)*
- *Nature Nurtures (September 14, 2019)*
- *Community Wellness Festival (February 2020)*
- *Spring Greening (Spring 2020)*
- *Social Media Campaign on Facebook and Twitter (Continuously throughout the year)*

II. Public Involvement and Participation

BMP 2.1. Public Announcements: The City will provide public notification of all public meetings and hearings in accordance with any applicable federal, state, and local public notice requirements.

The City has continued to comply with the applicable public notice requirements under the MS4 General Permit. Public meetings are advertised on the City's web page http://www.winchesterva.gov/government/public-meeting-and-business-procedures *and in the Winchester Star Newspaper, as required by Virginia Open Meetings Law.*

BMP 2.2. Public MS4 Program Information Access: The City will provide public access to the MS4 Program Plan and MS4 Annual Reports by placing copies of the updated MS4 Program Plan and MS4 Annual Report on the City's Stormwater Webpage (BMP 1.1). Copies of each year's annual report will be retained on-line for the length of the current General Permit.

The City of Winchester's current MS4 Program Plan and previous Annual Reports are available for download at: http://www.winchesterva.gov/engineering/stormwater*. This MS4 Annual Report and any revisions to the City's MS4 Program Plan will be placed on-line within 30 days of submission to DEQ.*

BMP 2.3. Stormwater Complaint Hotlines: The City will maintain its current stormwater complaint hotlines to encourage public reporting and involvement. The City promotes 540-662-4131 for reporting urgent issues such as illegal dumping and spills. The City promotes 540-542-1346 for reporting of less urgent issues such as maintenance issues and erosion and sediment control complaints.

During this reporting period, the City continued to advertise the Stormwater Complaint Hotlines on its stormwater webpage, processed calls placed to the Stormwater Complaint Hotlines, and facilitated distribution (via direct download) of the Stormwater Complaint Hotline Flyer.

BMP 2.4. Promotion of the Local Environmental Events: The City will annually promote a total of four events encouraging public participation and involvement including Household Hazardous Collection Days and Adopt-A-Stream. The City will promote these activities through use of its public education and outreach BMPs such as 1.1 City Stormwater Webpage, 1.4 Publications and 1.6 Other Message Delivery.

The local environmental events that the City promoted during this reporting period were:

- *Household Hazardous Waste Collection Days (see schedule under BMP 2.5)*
- *October – December – Leaf Collection – via Facebook, Cit-E News*
- *February 23 – Publicize Valley Health Wellness Festival event – via Cit-E News*
- *April 27 – Promoting Arbor Day tree plantings – via Facebook, Cit-E News*
- *April 27 – Spring Greening – via Facebook, Cit-E News*

BMP 2.5. Promotion of the Household Hazardous Waste Collection Days: The City will continue to promote the joint Frederick County /Winchester Household Hazardous Waste Collection Days program. The City will promote the Household Hazardous Waste Collection Days as one of its four local participation programs and will contribute to its implementation by providing pick-up and disposal of trash and debris collected by the participants.

The City continued to promote the Household Hazardous Waste Collection Days as one of its four local participation programs. These events were held on the first and third Wednesdays of each month from noon to 6 p.m. during the months of April through October. During the months of November, December, January, February and March, one event was held each month on the third Wednesday of the month.

BMP 2.6. Sponsorship of Adopt-A-Stream Program: The City will continue to promote Adopt-A-Stream program by sponsoring an annual stream clean-up day. In addition, the City will sponsor an Adopt-A-Stream Stream Clean-Up Day as one of its four local participation programs and will contribute to its implementation by providing pick-up and disposal of trash and debris collected by the participants.

The City is continuing its annual Spring Greening event which promotes stream cleanup along with its Arbor Day program which promotes tree planting. The event was held on April 27, 2019 from 11:00AM – 3:00PM and 5 volunteers collected trash from one city stream running through city-owned property. Roughly 10 bags of trash were collected during this event.

Additional Reporting Requirements:

Provide a web link to the MS4 Program Plan and annual report.

The City of Winchester's current MS4 Program Plan and previous Annual Reports are available for download at: http://www.winchesterva.gov/engineering/stormwater . *This MS4 Annual Report and any revisions to the City's MS4 Program Plan will be placed on-line within 30 days of submission to DEQ.*

Provide documentation of compliance with the public participation requirements of this section.

Documentation of the City's compliance with the public participation requirements contained in Section II.B.2 of the MS4 General Permit has been provided in the write-ups shown above under the Public Involvement and Participation section of this Annual Report and via the City's stormwater webpage.

III. Illicit Discharge Detection and Elimination

BMP 3.1. Storm Sewer Infrastructure and Outfall Mapping: The City will maintain a stormwater infrastructure layer as part of its overall GIS program. The General Public will be able to access the stormwater infrastructure layer using the City's interactive mapping program. The City will maintain an MS4 Outfall layer that identifies the location of the City's MS4 outfalls.

There have been no new outfalls recorded during the reporting period. The up to date outfall database and map can be found in attachment 2.
The City updates the storm sewer map on a continuous basis with the receipt of "as-built" development plans. A utilities map including storm sewer infrastructure mapping is available to the public on the following website: http://gis.winchesterva.gov/utilitiesmapping/

BMP 3.2. MS4 Operator Coordination: The City will provide written notification to downstream MS4 operators where it identifies that the City's MS4 infrastructure is physically connected. At this time, the only local MS4 is the Virginia Department of Transportation.

The City did not provide any new written notifications of physical interconnections with downstream MS4 operators as they are the same as in previous years.

BMP 3.3. Legal Authority - IDDE: The City will maintain legal authority prohibiting illicit discharges into the MS4 system. The legal authority will also identify those non-stormwater discharges allowed to be discharged into the MS4 system. This legal authority is established at Chapter 9, Section III of the Code of Winchester.

The City continues to maintain the legal authority to prohibit illicit discharges through the City's Water Protection Ordinance (Chapter 9 of the City Code). The City provides information on illicit discharges and links to Chapter 9 of the City Code on the following website: http://www.winchesterva.gov/engineering/stormwater.

BMP 3.4. IDDE Investigation and Follow-Up: The City will investigate and conduct follow-up on suspect discharges in accordance to procedures included in the Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual, June 2014 edition.

The City's Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual provides guidance for investigating complaints, determining the source of suspect discharges, and eliminating illicit discharges. Those investigations are summarized below under BMP 3.6.

BMP 3.5. MS4 Outfall Dry Weather Field Screening: The City will conduct dry weather screening on fifty (50) MS4 outfalls annually using procedures included in the Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual.

In conjunction with the update to the outfall mapping noted above under BMP 3.1, the City conducted dry weather screening inspections on a total of 50 regulated outfalls along Town Run. No suspect discharges were found at the 50 outfalls.

BMP 3.6. Illicit Discharge Tracking and Documentation: The City will track and document suspect and illicit discharges, as well as, City investigation, follow-up and enforcement actions in accordance to procedures included in the Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual.

During this reporting period, the City investigated 11 reports of illicit discharges, all of which were followed up with and eventually closed. .

Table 2. Illicit Discharge Tracking Summary

ID #	Date Opened	Description of Discharge	Actions Taken	Date Closed
IDR19-001	7/5/2018	A citizen, who wants to remain confidential, called Trevor Hess (City employee) about seeing an employee from Auto Cycle carrying a bucket/tub of oil and dumping into the sewer.	The Stormwater Engineer and the Construction Inspector went out to the site and investigated around the block and the nearest storm inlet. The location was checked for a week, but no evidence of an illicit discharge was found.	7/16/2018
IDR19-002	8/2/2018	The Construction Inspector noticed downed silt fence on the Meadow Branch Apartment Construction site due a heavy thunderstorm. As a result, sediment was flowing down Meadow Branch Avenue.	The Construction Inspector discussed the issue with the Contractors. They agreed to clean the street, re-install the silt fence, and add super silt fence to the site as well.	8/3/2018
IDR19-003	8/8/2018	Someone power washed the sidewalk, causing grit to come off from a walk path filled with stones.	The Stormwater Engineer contacted the City's Street Department to have the curb and gutter cleaned before the grit entered the storm inlet.	8/8/2018

IDR19-004	8/29/2018	City employees noticed a contractor dumping some liquid into the storm drain several times. After confronting the contractor, it was determined that he was dumping brick mixture, which has sand, mortar, and concrete. He mentioned he only dumped one bucket of this mixture and poured one bucket of water.	The Stormwater Engineer and the Construction Inspector told the contractor that what he did was an illicit discharge, and he needed to have someone go down the manhole and shovel out the mixture before it went any further downstream. The contractor complied and addressed the issue immediately.	8/29/2018
IDR19-005	9/13/2018	The Stormwater Engineer noticed mud and debris on the curb and gutter on the City's Right of Way.	The Stormwater Engineer notified the contractor to clean up the mud, sediment, and debris. The contractor had a wash truck to clean the area.	9/14/2018
IDR19-006	9/27/2018	The construction inspector noticed brown water flowing down the City street, and he tracked the source. The brown flowing water was coming from mud and debris in the cemetery	The Stormwater Engineer notified the cemetery, and the property manager added filter socks towards their entrance on Woodstock Lane to prevent sediment water from entering the MS4.	4/23/2018
IDR-007	10/1/2018	The Stormwater Engineer noticed mud tracks throughout Bellview, and the source was coming from property owner of 210 Bellview from the owners parking on the front yard.	The Stormwater Engineer notified the Deputy Director for Zoning and Inspections regarding this situation.	10/30/18
IDR-008	12/14/2018	The Stormwater Engineer and the Construction Inspector noticed white foam throughout Town Run.	The Stormwater Engineer and the Construction Inspector followed the tracks of the white foam and realized it was coming from Frederick County. Photos were taken for the Illicit Discharge and documented.	12/21/18

IDR-009	12/14/2018	The Stormwater Engineer and the Construction Inspector noticed a mulch stockpile next the storm inlet with weather forecasted for rain the next day.	City's Public Works department was contacted to pick up the stockpile, and it was picked up around 4:30pm.	12/14/18
IDR-010	5/16/2019	Car wash soap was being deposited down a city storm drop inlet. The issue was reported to the Construction Inspector, and then passed on to the Stormwater Engineer. After investigation, it was determined that Quality Touch Mobile Auto Detailing LLC was responsible for the action.	A cease and desist letter was written to the company. The letter directed them to stop all car washing immediately. It explained the significance of illicit discharges and pollution. The letter also explained where more information on the City code can be found. No repeat offense was reported since.	5/21/2019
IDR-011	6/13/2019	Larry Whitehead contacted the City regarding his neighbor at 301 Lanny Dr. disposing clipped tree branches into the nearby swale. The Stormwater Engineer and Construction Inspector visited the site to document it.	The owner of 301 Lanny Dr. was not present. The property was being sold. After calling the realtor, she assured the City that the branches would be taken care of as soon as possible. The site was revisited on the 18th, and the branches were cleaned up.	6/18/2019

BMP 3.7. Hazardous Spill Response: The City, in cooperation with Frederick County, will provide emergency response to hazardous material spills and accidental chemical releases.

During this reporting period, there were 72 incidents reported by emergency response personnel. All of these incidents were minor in nature and were contained to the area of origin. None of these events resulted in a discharge to the City's MS4.

BMP 3.8. Household Hazardous Waste Collection: The City, in cooperation with Frederick County, will continue to provide household hazardous waste collection opportunities for its residents. The collection schedule will be promoted through use of the City's social media and Cit-E newsletter.

The City continued to promote the Household Hazardous Waste Collection Days as one of its four local participation programs. These events were held on the first and third Wednesdays of each month from noon to 6 p.m. during the months of April through October. During the months of November, December, January, February and March, one event was held each month on the third Wednesday of the month. All collections take place at the landfill's citizens' convenience center.

BMP 3.9. Household Waste Reduction: The City will continue to provide weekly waste collection services for City residents. In addition, the City will continue to provide fall leaf collection services, yard waste collection services and bulky waste collection services to City residences. Schedules for these services will be placed on the City's Public Works web page regarding refuse and recycling (http://www.winchesterva.gov/public-works/refuse).

The City continued to provide weekly waste collection services for City residents. The following are statistics associated with the City's Household Waste Reduction Program during this permit cycle:

- Household waste collected – 6719.4 tons
- Recycled materials (paper/cardboard, bottles/cans/plastic, scrap metal, yard waste) collected – 2852.91 tons
- Recycling bins distributed – 834

BMP 3.10. Elimination of Sanitary Sewage Seepage from Public Sewers: The City will continue, as part of its sanitary sewer utilities program, implementation of its inflow and infiltration program to replace or slipline sanitary sewers to prevent illicit discharge. The level of implementation of this BMP each year will be established by the City Council as part of annual budget approval.

As part of the City's ongoing inflow and infiltration program, the City replaced 6,564 feet of sewer main and replaced 25 manholes during this reporting period.

Additional Reporting Requirements:

List any written notifications of physical interconnections given by the operator to other MS4s

The City did not provide any <u>new</u> written notifications of physical interconnections with downstream MS4 operators as they are the same as in previous years (Virginia Department of Transportation).

List the total number of outfalls screened during the reporting period, the screening results, and details of any follow-up actions necessitated by the screening results

The City screened 50 outfalls during this reporting period. The City's outfall screening results were provided under BMP 3.5 above.

Provide a summary of each investigation conducted by the operator of any suspected illicit discharge. The summary must include: (i) the date that the suspected discharge was observed, reported, or both; (ii) how the investigation was resolved, including any follow-up, and (iii) resolution of the investigation and the date the investigation was closed.

The City investigated 11 potential illicit discharge events during this reporting period. Details, including dates, of these investigations were provided under BMPs 3.5 and 3.6 above.

IV. Construction Site Stormwater Runoff Control

BMP 4.1. Legal Authority – E and SC: The City will maintain legal authority for implementation of a local erosion and sediment control program consistent with 9VAC25-840-10 et. seq. This legal authority is established at Chapter 9, Section II of the Code of Winchester.

The City continues to maintain the legal authority for implementation of a local erosion and sediment control program consistent with 9VAC25-840-10 through the City's Water Protection Ordinance (Chapter 9, Section II of the City Code). The City provides information on erosion sediment control and links to Chapter 9 of the City Code on the following website: http://www.winchesterva.gov/engineering/*. The City also provides access to a downloadable Land Disturbance Permit Package on the following website:* http://www.winchesterva.gov/engineering/permits*.*

BMP 4.2. Land Disturbing Activity Plan Review: The City will require submission of complete Land Disturbance Permit Applications and Virginia Stormwater Management Program Permit Packages for regulated land disturbance activities. The City will review the packages for compliance with Chapter 9, Section II of the City Code (Erosion Control) and Chapter 9, Section III of the City Code (Stormwater Management) by reviewing the checklists included in the permit application packages. Approval for land disturbance will not be given by the City until an application is approved.

The City continues to require permits for land disturbing activities including a VSMP authority permit through Chapter 9 of the City Code. The City provides access to a downloadable Land Disturbance Permit Package and Virginia Stormwater Management Program Permit Package on the following website: http://www.winchesterva.gov/engineering/permits*. The City approved 11 construction plan sets during the reporting period.*

BMP 4.3. VPDES Construction Activity Permit Coordination: The City will not authorize initiation of land disturbance activities until it receives evidence that the applicant has applied for and obtained coverage under the Virginia General Permit for Discharges of Stormwater from Construction Activities for construction activity, including a completed general permit registration statement as required under City Code Section 9-50.

The City continues to require evidence that the applicant has applied for and obtained coverage under the Virginia General Permit for Discharges of Stormwater from Construction Activities per Section 9-50(b)(4) of the City Code. During this reporting period, there were three sites located within the City that were approved for coverage under the VPDES General Permit for the Discharge of Stormwater.

BMP 4.4. Land Disturbing Activity Inspections: The City will maintain a land disturbance inspection program that is consistent with the requirements of Section 9-39 of the City Code. In addition, as part of these inspections, the City will inspect sites for compliance with Section 9-58 of the City Code requiring implementation of a pollution prevention plan and Section 9-67 of the City Code requiring compliance with the approved stormwater management plan. The City will enforce these requirements as authorized and in accordance to Chapter 9 of the City Code.

The City continues to maintain an inspection program in accordance with Sections 9-39 and 9-67 of the City Code. The City's inspection program provides for inspection of land disturbing activities during construction to ensure compliance with:

- *Approved erosion and sediment control plans*
- *Approved stormwater management plans*
- *Development, updating, and implementation of pollution prevention plans*
- *Development and implementation of any additional control measures necessary to address TMDLs*

During this reporting period, there were a total of 2,732 inspections conducted across all construction sites located within the City.

BMP 4.5. Land Disturbing Activity Tracking and Recordkeeping: The City has an existing program to track land disturbance activities to provide the necessary information for routine inspections, as-built inspections, surveys, and determining which areas may be most likely to incur heavier than normal sediment loading. Plan approval records and inspections will be tracked and documented in the City's digital records system, SunGard.

During this reporting cycle, there were 18 Land Disturbance Permit Applications submitted, reviewed, and subsequent permits issued by the City. 7 out of the 18 permits were for Single Family Homes.

Additional Reporting Requirements:

The operator shall track regulated land-disturbing activities and submit the following information in all annual reports: (1) Total number of regulated land-disturbing activities; (2) Total number of acres disturbed; (3) Total number of inspections conducted; and (4) A summary of the enforcement actions taken, including the total number and type of enforcement actions taken during the reporting period.

The following statistics apply to this reporting period:

Table 4. Regulated Land-Disturbing Activities

ITEM	TOTAL
Land Disturbing Permits Issued	18
Disturbed Acres	38
Inspections Conducted	2,732
Written Enforcement Actions Necessary	28

V. Post Construction Stormwater Management in New Development and Development on Prior Developed Lands

BMP 5.1. Legal Authority - SWM: The City will maintain the legal authority necessary to implement a VSMP that is consistent with 9VAC25-870-10 et. seq. This legal authority is established at Chapter 9, Section III of the City Code.

The City continues to maintain the legal authority for implementation of a local Virginia Stormwater Management Program (VSMP) consistent with 9VAC25-870-10 through the City's Water Protection Ordinance (Chapter 9, Article III of the City Code). Furthermore, the City provides a link to Chapter 9 of the City Code on the following website: http://www.winchesterva.gov/engineering/. *The City provides access to a downloadable Virginia Stormwater Management Program Permit Package on the following website:* http://www.winchesterva.gov/engineering/permits.

BMP 5.2. Private Stormwater Management Facility Inspections: The City will maintain a post development stormwater management facility inspection program in accordance with Section 9-67 of the City Code. Inspections on such facilities will be conducted at least once every five (5) years. Under required maintenance agreements executed by and between a private landowner (BMP 5.3), the City is provided with right-of-access to the private property on which a stormwater BMP is located, confers responsibility for construction and maintenance to the private landowner or property owners' association, and ensures that the City can undertake steps to maintain a facility should an inspection identify any deficiencies or problems. Maintenance agreements are recorded with the title to the property, providing the City with an enforceable legal instrument should a private landowner neglect to maintain a stormwater management facility constructed on his or her property. Inspection records will be kept on file with the City Engineer's Division.

The City continues to maintain a post development stormwater management facility inspection program in accordance with Section 9-67 of the City Code. The City requires inspections once every five years by City personnel, and annual self-inspections by owners. During this reporting period, there were 104 inspections reported on 54 different sites. Of the BMP's that were inspected, 4 were found to have deficiencies beyond the scope of routine maintenance. Notices were sent to the property owners and follow up inspections were scheduled for 60 days from the date of the notices.

BMP 5.3. Maintenance Agreements: The City will require executed maintenance agreements for stormwater management facilities in accordance to Section 9-63 of the City Code. The agreement shall be recorded in the office of the Clerk of the Circuit Court for the City of Winchester. A copy of the City of Winchester Stormwater Facilities/BMP Maintenance Agreement is included in the Virginia Stormwater Management Program Permit Application.

The City continues to require the execution of maintenance agreements for private stormwater management facilities in accordance with Section 9-63 of the City Code. During this reporting period, there was one maintenance agreement executed with the City and recorded in the office of the Clerk of the Circuit Court for the City of Winchester.

BMP 5.4. City-Owned Stormwater Management Facility Inspections: The City Division of Engineering will inspect stormwater management facilities owned/operated by the City annually using procedures identified in the Public Stormwater Management Facility Inspection Standard

Operating Procedures Manual. Copies of the inspections will be kept on file with the City Engineer's Division.

The City continued with its program to inspect stormwater management facilities owned/operated by the City annually. During this reporting period, there were 41 City owned/operated stormwater facilities that were inspected. Copies of the inspection reports are available in the City Engineer's office.

BMP 5.5. City-Owned Stormwater Management Facility Maintenance: The City Division of Public Works will conduct maintenance on City-Owned Stormwater Management Facilities as necessary and in response to Division of Engineering inspections.

Based on the results of the inspections of the 41 City owned/operated stormwater management facilities, 19 of these facilities required maintenance and/or follow-up inspections.

BMP 5.6. Tracking and Documentation: The City will track and document permanent stormwater management facilities in the City's BMP spreadsheet maintained by the City Engineering Division.

An updated electronic database/spreadsheet of all known operator-owned and privately-owned stormwater management facilities that discharge into the MS4 is provided under Attachment 1 to this Annual Report.

Additional Reporting Requirements:

The operator shall maintain an updated electronic database of all known operator-owned and privately-owned stormwater management facilities that discharge into the MS4. The operator shall submit an electronic database or spreadsheet of all stormwater management facilities brought online during each reporting year with the appropriate annual report.

An updated electronic database/spreadsheet of all known operator-owned and privately-owned stormwater management facilities that discharge into the MS4 is provided under Attachment 1.

The operator shall annually track and report the total number of inspections completed and, when applicable, the number of enforcement actions taken to ensure long-term maintenance.

During this reporting period, there were a total of 28 private stormwater management facility inspections performed and 41 City owned/operated stormwater facility inspections performed. Based on these inspections, 33 sites were found to be deficient and follow up inspections were scheduled.

VI. Pollution Prevention/Good Housekeeping for Municipal Operations

BMP 6.1. Standard Operating Procedures: The City will develop and implement standard operating procedures and pollution prevention methods for its daily operational activities.

The City continues to follow Standard Operating Procedures (SOPs) that were developed and implemented in the previous permit cycle.

BMP 6.2. Stormwater Pollution Prevention Plans: The City will develop a stormwater pollution prevention plan (SWPPP) for the equipment and maintenance facility located at Jim Barnett Park.

The Jim Barnett Park equipment and maintenance facility continues to maintain the SWPPP dated June 30, 2017 and is included in this report as Attachment 4. This SWPPP is temporary in nature – the renovation of the existing building was postponed due to funding issues. Until new construction occurs, this temporary SWPPP will be used for any inspections. The SWPPP will likely be updated within the new reporting period.

BMP 6.3. Nutrient Management Plans: NMPs will be developed by a certified turf and landscape nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia. NMPs must be renewed every three years. Copies of the nutrient management plans will be incorporated by reference into the MS4 Program Plan upon approval.

In accordance with Section II.B.6.c(1)(b) and Table 1 of the City's MS4 Permit, NMPs for all applicable sites, as identified in the City's NMP Facility Evaluation, were developed during the Year 1 reporting period. These plans cover a total of approximately 18.29 Acres.

BMP 6.4. Pollution Prevention Inspections: The City will conduct an annual pollution prevention inspection at the equipment and maintenance facility located at Jim Barnett Park.

This BMP was implemented in conjunction with the development and implementation of the facility's SWPPP on June 30, 2017. An inspection was conducted on January 11, 2019.

BMP 6.5. Staff Training: The City will conduct staff training in accordance with the training schedule and training modules included in the City of Winchester Stormwater Training Plan, June 2014 edition. The City will ensure necessary certifications identified in the training plan are maintained.

The City continued implementation of the City of Winchester Stormwater Training Plan dated June 2014. The following is a list of training events held during this reporting period:

- *Training Module #1 – Recognition and Reporting of Illicit Discharges*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*
- *Training Module #2 – Pollution Prevention for Road, Street and Parking Maintenance*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*

- *Training Module #3 – Pollution Prevention for Fleet and Public Works Facilities*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*
- *Training Module #4 – Minimizing Stormwater Pollution Practices for Parks and Rec Facilities*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*

BMP 6.6. Street Sweeping: The City will continue its street sweeping program and track the amount of litter and debris removed.

During this reporting period, the City swept approximately 2,109.3 lane miles of roadways within the City.

BMP 6.7. VPDES Industrial Stormwater Permit Compliance Coordination: As part of the MS4 Program, the City will confirm that the City Yards maintains a current Stormwater Pollution Prevention Plan (SWPPP) as required under the Virginia General Permit for Discharge of Stormwater from Industrial Activities.

The City Yards facility continues to maintain a current Stormwater Pollution Prevention Plan (SWPPP) dated June, 2014. The SWPPP will likely be updated by the time the next annual report is submitted. The City also continued coverage under the Virginia General Permit for Discharge of Stormwater from Industrial Activities for this facility as evidenced by the letter from DEQ that is provided in Attachment 4.

Additional Reporting Requirements:

Provide a summary report on the development and implementation of the daily operational procedures.

The City developed written Standard Operating Procedures (SOPs) for Daily Good Housekeeping and Pollution Prevention during Permit Year 2 of the 2013-2018 permit cycle. The Pollution Prevention/Good Housekeeping for Municipal Operations - Standard Operating Procedures were attached to the (2013-2018) Year 2 report.

Provide a summary report on the development and implementation of the required SWPPPs.

In accordance with Section II.B.6.b(3) and Table 1 of the City's MS4 Permit, a SWPPP for the equipment and maintenance facility located at Jim Barnett Park was developed and implemented on June 30, 2017. An update to the SWPPP is planned for the near future.

Provide a summary report on the development and implementation of the turf and landscape nutrient management plans that includes: *(a) The total acreage of lands where turf and landscape nutrient management plans are required; and* *(b) The acreage of lands upon which turf and landscape nutrient management plans have been implemented.*

In accordance with Section II.B.6.c(1)(b) and Table 1 of the City's MS4 Permit, NMPs for all applicable sites, as identified in the City's NMP Facility Evaluation, were developed by a certified turf and landscape nutrient management planner as outlined under BMP 6.3 above.

Provide a summary report on the required training, including a list of training events, the training date, the number of employees attending training and the objective of the training.

The City continued implementation of the City of Winchester Stormwater Training Plan dated June 2014. The following is a list of training events held during this reporting period:

- *Training Module #1 – Recognition and Reporting of Illicit Discharges*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*
- *Training Module #2 – Pollution Prevention for Road, Street and Parking Maintenance*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*
- *Training Module #3 – Pollution Prevention for Fleet and Public Works Facilities*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*
- *Training Module #4 – Minimizing Stormwater Pollution Practices for Parks and Rec Facilities*
  - *February 25, 2019 – 18 attendees*
  - *June 25, 2019 – 21 attendees*
  - *June 28, 2019 – 5 attendees*

3.0 Results of Collected Data

Results of information collected and analyzed, including monitoring data, if any, during the reporting period.

Under the Abrams Creek and Lower Opequon Creek Combined Sediment and Bacteria TMDL Action Plan, the City was required to develop a water quality monitoring program for POC reductions assessment, which was attached to the Year 3 report. That plan was implemented on September 15, 2016. One sample was taken from each of the four sampling sites during this reporting period and the result is summarized below.

Table 5. Water Quality Monitoring Results

Sample Location	Sample Date	Total E.coli Count (CFU/100ml)	Total Suspended Solids (mg/L)
OT–11	7/30/18	450	123
OT-34	7/30/18	TNTC*	212
OT-42	7/30/18	TNTC*	25.2
OT-54	7/30/18	550	2.8

**Too numerous to count using 5ml sample size. Sample size will be reduced for next sample test.*

4.0 Future Stormwater Activities

A summary of the stormwater activities the operator plans to undertake during the next reporting cycle.

During the next reporting period, the City plans to continue implementation of the 40 BMPs contained in its current 2014-2018 MS4 Program Plan. Additionally, in order to comply with the MS4 General Permit's compliance schedule (Table 1) and other permit requirements, the City plans to undertake the following activities as well:

- *Reapplication for the City Yards Facility General Permit for discharge of stormwater as industrial activity.*
- *Submit a GIS compatible shapefile of MS4 Map.*
- *Updated Chesapeake Bay TMDL Action Plan*

5.0 Changes in BMPs and Measurable Goals

A change in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies.

5.1. Changes in BMPs/Program Elements

The City does not plan to make any changes to the BMPs/Program Elements for the 2018-2023 Program Plan at this time.

5.2. Changes in Measurable Goals

The City does not plan to make any changes to the measureable goals in the 2018-2023 Program Plan at this time.

6.0 Government Reliance for Permit Obligations

Notice that the operator is relying on another government entity to satisfy some of the State permit obligations (if applicable).

At this time, the City is not relying on any other government entity to satisfy any direct permit obligations.

7.0 Section II C Program Status

The approval status of any programs pursuant to Section II C (if appropriate), or the progress towards achieving full approval of these programs.

The City does operate a local Erosion and Sediment Control Program consistent with the requirements contained in Section 62.1-44-15:54 of the State Water Control Law and Section 9VAC25-840 of the Virginia Administrative Code. The City also operates a local Virginia Stormwater Management Program consistent with the requirements contained in Section 62.1-44.15:27 of the State Water Control Law and Section 9VAC25-870 of the Virginia Administrative

Code. Both of these City programs have been found to be in compliance with their respective regulatory requirements by the appropriate oversight agencies in Virginia.

8.0 General Permit Section I Information

Information required for any applicable TMDL special condition contained in Section I.

The Abrams Creek and Lower Opequon Creek Combined Sediment and Bacteria TMDL Action Plan and the Chesapeake Bay TMDL Action Plan were both approved during the 2nd Annual reporting period and can be found on the City's website at http://www.winchesterva.gov/engineering/stormwater*.*

Attachment 1. Electronic Database/Spreadsheet of City-Owned and Privately-Owned Stormwater Management Facilities

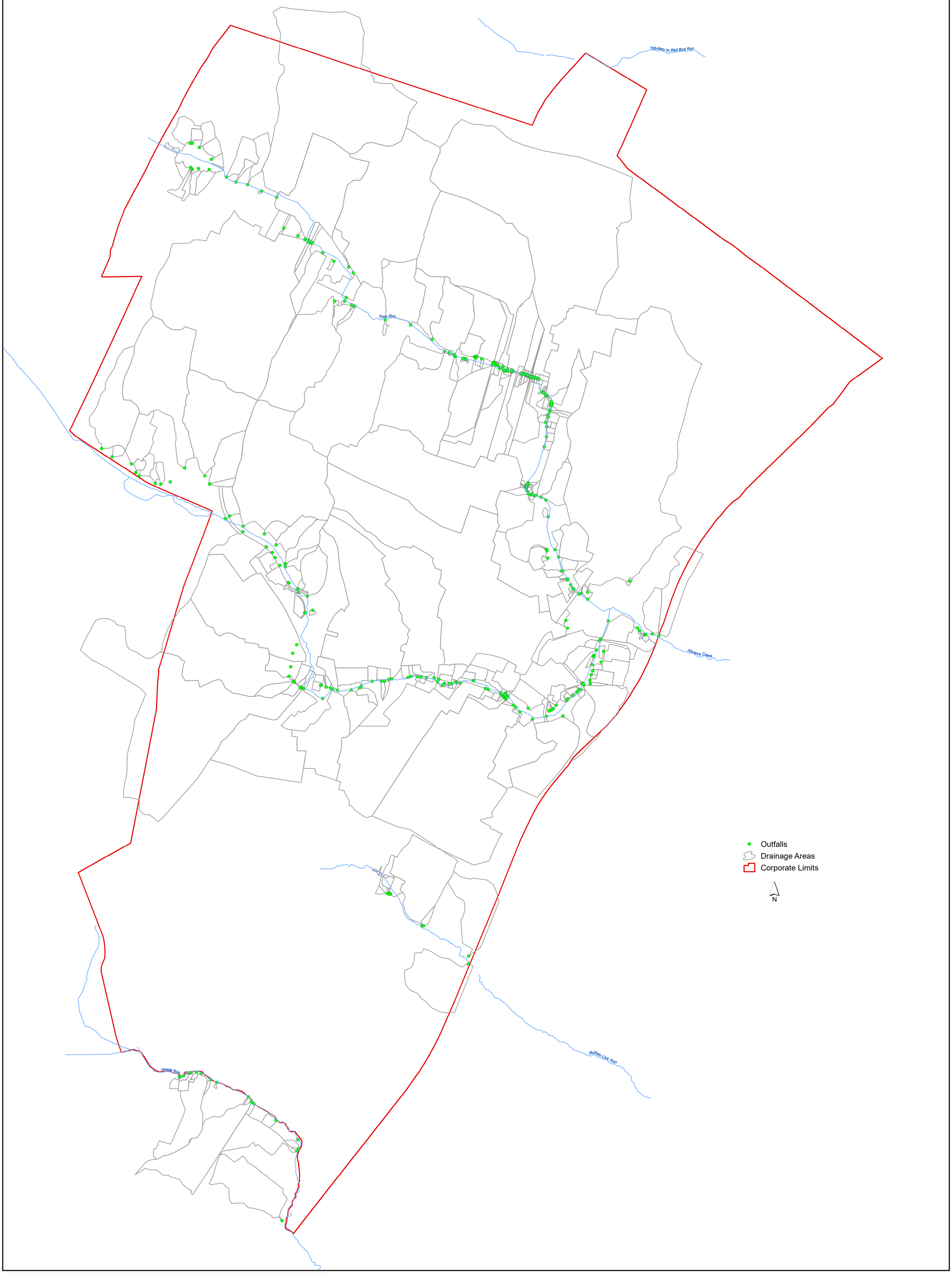
Project	Owner Name	c/o	BMP ID	Type ID	BMP Address	Acres Treated	Imperv. Ac. Treated	Constructed?	Online Date	HUC ID	Public/Private	MA Signed by Owner	Last Inspection	Type of Inspection
804 Amherst Street	Iris, LC		0001	Pervious Pavers (Concrete)	804 Amherst Street	0.08		TRUE	4/30/10	17	Private	28-Apr-10	01-Jun-14	Inspector
804 Amherst Street	Iris, LC		0002	Grass Swale	804 Amherst Street	0.04		TRUE	4/30/10	17	Private	28-Apr-10	27-Jun-14	Inspector
Aiken Strip Mall	Aikens Group		0003	Detention Basin (Dry Pond)	2820-2836 Valley Avenue	6.00		TRUE	6/30/05	16	Private		09-Jul-14	Inspector
Allston Mews	Neil J. & Bobbie J. Keefe		0005	Detention Basin (Dry Pond)	500-552 Allston Circle, 500-520 Mews Lane	0.75		TRUE	6/30/05	16	Private		28-May-14	Inspector
Allston Mews	Neil J. & Bobbie J. Keefe		0006	Detention Basin (Dry Pond)	500-552 Allston Circle, 500-520 Mews Lane	0.75		TRUE	6/30/05	16	Private		28-May-14	Inspector
American Woodmark	American Woodmark		0007	Detention Basin (Dry Pond)	3102 Shawnee Drive	2.60		TRUE	6/30/05	16	Private	20-Sep-10	28-May-14	Inspector
Amherst St. CVS	Summit Community Bank		0008	Detention Basin (Dry Pond)	1721 Amherst Street	43.50		TRUE	7/28/08	17	Private	07-Oct-05	07-Jul-14	Inspector
The Corners I and II	Molden Real Estate Corporation		0009	Underground Detention	2310 Valor Drive	1.60		FALSE		17	Private	05-Feb-07		
Bank of Clarke County	Bank of Clarke County		0010	Hydrodynamic Separator	2555 South Pleasant Valley Road	1.12		TRUE	3/25/13	17	Private	31-Oct-09	11-Jun-14	Inspector
Saturn of Winchester	O'Malley LLC		0011	Detention Basin (Dry Pond)	3003-3019 Valley Avenue	3.80		TRUE	6/30/05	16	Private		06-Jun-17	City
Saturn of Winchester	O'Malley LLC		0011	Detention Basin (Dry Pond)	3003-3019 Valley Avenue	3.80		TRUE	6/30/05	16	Private		17-May-12	Inspector
Berryville Ave. CVS	SCP 2006-C23-208-LLC	CVS Corporation	0012	Underground Detention	836-906 Berryville Avenue	1.10		TRUE	6/30/07	17	Private		18-Sep-14	City
BSW Investments	BSW Investments, LLC		0013	Bioretention Basin	2264 Papermill Road	0.16		FALSE		17	Private	31-Aug-09		
Byrd Office Building	Byrd Enterprises, LLC		0014	Detention Basin (Dry Pond)	2909-2919 Valley Avenue	2.06		TRUE	2/27/08	16	Private		12-Jun-17	City
Byrd Office Building	Byrd Enterprises, LLC		0014	Detention Basin (Dry Pond)	2909-2919 Valley Avenue	2.06		TRUE	2/27/08	16	Private		10-Jun-14	Inspector
George Washington Autopark	Winchester Parking Authority		0015	Filterra	131 North Kent Street	0.20		TRUE	4/11/08	17	Private	04-Apr-08	30-May-14	Inspector
Castleman Subdivision	City of Winchester		0016	Underground Detention	Mosby Street ROW	6.39		TRUE	11/27/07	17	Public		30-Apr-18	City
Cedar Creek Grade Office Complex	Dinapoli Properties, LLC		0017	Filterra	905 Cedar Creek Grade	0.36		TRUE	2/27/07	17	Private	19-Feb-07	03-Jun-14	Inspector
Cedar Creek Grade Office Complex	Treybul Co., LLC		0018	Filterra	817 Cedar Creek Grade	0.48		TRUE	2/27/07	17	Private	19-Feb-07	07-Jul-14	Inspector
Cedar Creek Grade Office Complex	Dinapoli Properties, LLC		0019	Filterra	905 Cedar Creek Grade	0.48		TRUE	2/27/07	17	Private	19-Feb-07	03-Jun-14	Inspector
Cedar Creek Grade Office Complex	Dinapoli Properties, LLC		0020	Filterra	905 Cedar Creek Grade	0.61		TRUE	2/27/07	17	Private	19-Feb-07	03-Jun-14	Inspector
Cedar Creek Grade Office Complex	Treybul Co., LLC		0021	Filterra	817 Cedar Creek Grade	0.78		TRUE	2/27/07	17	Private	19-Feb-07	07-Jul-14	Inspector
Centre at Winchester - Home Depot, Target	P D K Winchester LC	Dierman Realty Group	0022	Detention Basin (Dry Pond)	2320 Legge Boulevard	8.50		TRUE	6/30/15	17	Private		20-Jun-14	Inspector
Southside Church of Christ	Southside Church of Christ		0023	General Infiltration Practice	3136 Papermill Road	0.75	0.59	TRUE	11/1/17	17	Private	26-Sep-13	16-May-18	City
Commercial Street Used Cars	Major Properties, LLC		0024	Underground Detention	154 Commercial Street	0.70		FALSE		17	Private			
Cottages at Willow Lawn	City of Winchester		0025	Detention Basin (Dry Pond)	1826 Tilghman Lane	40.60		TRUE	6/30/05	17	Public		09-Apr-18	City
Craun Property	Timothy Mellon		0026	Filterra	220 East Pall Mall Street	0.00		FALSE		17	Private	28-Oct-08		
Dermatology Associates	Dermatology Properties, LC		0027	Detention Basin (Dry Pond)	1514 Amherst Street	5.20		TRUE	6/30/05	17	Private		20-May-14	Inspector
Dermatology Associates	Dermatology Properties, LC		0027	Detention Basin (Dry Pond)	1514 Amherst Street	5.20		TRUE	6/30/05	17	Private		12-Jun-17	City
Drissi Plaza	Drissi Properties, LLC		0028	Underground Detention	29-35 East Jubal Early Drive	2.10		TRUE	6/30/05	17	Private		07-Jul-14	Inspector
Ft. Collier Rd. Food Lion [Shop N Save]	Kentland Foundation Inc.		0029	Detention Basin (Dry Pond)	699-723 Fort Collier Road	20.20		TRUE	6/30/05	17	Private		01-Jul-14	Inspector
Elite Settlements	D & E Lee LLC		0032	Permeable Pavement (Concrete, Asphalt)	802 South Braddock Street	0.10		FALSE		17	Private	09-Nov-07		
FCPS Admin Annex	Frederick County Public Schools		0033	Bioretention Basin	1415 Amherst Street	0.10		TRUE	11/1/11	17	Private	07-Apr-08	17-Jun-14	Inspector
FCPS Admin Annex	Frederick County Public Schools		0034	General Infiltration Practice	1415 Amherst Street	0.10		TRUE	11/1/11	17	Private	07-Apr-08	17-Jun-14	Inspector
Fern Adams Building	Fern Adams Building, LLC		0038	Underground Detention	303 South Loudoun Street	0.47		TRUE	6/30/05	17	Private		20-Jun-14	Inspector
Burke Center	Pine-Burke Realty, LLC		0039	Detention Basin (Dry Pond)	2-40 Weems Lane	7.10		TRUE	6/30/05	17	Private		07-Jul-14	Inspector
Frederick Douglas School	City of Winchester		0040	Detention Basin (Dry Pond)	100 West Tevis Street	78.90		TRUE	6/30/05	16	Public		09-Apr-18	City
Friendship Fire Hall	City of Winchester		0041	Detention Basin (Dry Pond)	627 North Pleasant Valley Road	50.50		TRUE	6/30/05	17	Public		31-Jan-18	City
G&M Music	Carolin M. Schebish		0042	Bioretention Filter	1817 South Loudoun Street	0.15		FALSE		17	Private	10-Jul-09		
Saturn of Winchester			0043			0.00		FALSE			Private			
Trinity Express Lube	Grasso & Sons Development Corp.		0044	Detention Basin (Dry Pond)	2409-2433 Valley Avenue	0.81		TRUE	6/30/05	17	Private		27-Jul-10	Inspector
Trinity Express Lube	Grasso & Sons Development Corp.		0044	Detention Basin (Dry Pond)	2409-2433 Valley Avenue	0.81		TRUE	6/30/05	17	Private		31-May-17	City
Harvest Drive Medical	Valley Proteins, Inc.		0046	Filterra	501-519 Harvest Drive	0.53		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Harvest Drive Medical	Valley Proteins, Inc.		0047	Filterra	501-519 Harvest Drive	0.51		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Harvest Drive Medical	Valley Proteins, Inc.		0048	Filterra	501-519 Harvest Drive	0.17		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Harvest Drive Medical	Valley Proteins, Inc.		0049	Filterra	501-519 Harvest Drive	0.16		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Harvest Drive Medical	Valley Proteins, Inc.		0050	Filterra	501-519 Harvest Drive	0.14		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Harvest Drive Medical	Valley Proteins, Inc.		0051	Filterra	501-519 Harvest Drive	0.49		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Harvest Drive Medical	Valley Proteins, Inc.		0052	Filterra	501-519 Harvest Drive	0.78		TRUE	12/11/12	17	Private	25-Sep-12	07-Jul-14	Inspector
Henkel-Harris	Henkel-Harris III, LLC		0054	Detention Basin (Dry Pond)	2983 South Pleasant Valley Road	30.10		TRUE	6/30/05	16	Private		20-Jun-14	Inspector
High End Automotive	SMD Properties, LLC		0055	Detention Basin (Dry Pond)	2970 Valley Avenue	0.55		TRUE	4/19/07	16	Private	05-Mar-07	20-Jun-14	Inspector
High End Automotive	SMD Properties, LLC		0056	Bioretention Filter	2970 Valley Avenue	0.55		TRUE	4/19/07	16	Private	05-Mar-07	20-Jun-14	Inspector
Hilton Garden Inn	Lucky 7 LP-LLP		0057	Underground Detention	120 Wingate Drive	5.50		TRUE	12/4/06	17	Private	19-Jan-09	09-Jul-14	Inspector
Hirschberg Office Building	Neurosurgical Investment Properties		0058	General Infiltration Practice	1818 Amherst Street	1.10		TRUE	6/30/05	17	Private		19-Jun-14	Inspector
History and Tourism Center	City of Winchester		0059	Bioretention Basin	1400 South Pleasant Valley Road	1.63		TRUE	2/27/08	17	Public		31-Jan-18	City
History and Tourism Center	City of Winchester		0060	Bioretention Basin	1400 South Pleasant Valley Road	1.77		TRUE	2/27/08	17	Public		31-Jan-18	City
HN Funkhouser	KVC LLC		0062	Detention Basin (Dry Pond)	2148-2150 South Loudoun Street	1.16		TRUE	1/1/08	17	Private	01-Nov-07	08-Jul-14	Inspector
HN Funkhouser	KVC LLC		0063	Grass Swale	2148-2150 South Loudoun Street	0.56		TRUE	1/1/08	17	Private	01-Nov-07	08-Jul-14	Inspector
HN Funkhouser	KVC LLC		0064	Grass Swale	2148-2150 South Loudoun Street	0.22		TRUE	1/1/08	17	Private	01-Nov-07	08-Jul-14	Inspector
HN Funkhouser	KVC LLC		0065	Grass Swale	2148-2150 South Loudoun Street	1.53		TRUE	1/1/08	17	Private	01-Nov-07	08-Jul-14	Inspector
Hope Drive Site Plan	Dave Holliday Rentals, LLC		0066	Detention Basin (Dry Pond)	321 Hope Drive	2.69		TRUE	7/12/11	16	Private	29-Oct-09	07-Oct-14	Inspector
Hope Drive Subdivision	City of Winchester		0067	Detention Basin (Dry Pond)	230 Hope Drive	66.00		TRUE	6/30/05	17	Public		09-Apr-18	City
Islamic Society of Winchester	Islamic Society of Winchester		0068	Permeable Pavement (Concrete, Asphalt)	601 Woodstock Lane	0.20		TRUE	9/1/10	17	Private	01-Nov-08	07-Jul-14	Inspector
Jenkins - Cooper	Jenkins Cooper, LLC		0069	Detention Basin (Dry Pond)	2944-2950 Valley Avenue	0.68		FALSE		16	Private			
John Handley Parking Lot	Winchester Public School Board		0070	Underground Detention	338 Handley Boulevard	0.00		TRUE	1/30/07	17	Private		07-Jun-17	City
John Handley Parking Lot	Winchester Public School Board		0070	Underground Detention	338 Handley Boulevard	0.00		TRUE	1/30/07	17	Private		28-Jun-13	Inspector
John Handley Bowl	Winchester Public School Board		0071	Underground Detention	425 Handley Boulevard	4.83		TRUE	2/2/11	17	Private	14-May-09	07-Jun-17	City
John Handley Bowl	Winchester Public School Board		0071	Underground Detention	425 Handley Boulevard	4.83		TRUE	2/2/11	17	Private	14-May-09	28-Jun-13	Inspector
John Handley Tennis	Winchester Public School Board		0072	Underground Detention	338 Handley Boulevard	0.24		TRUE	2/2/11	17	Private	14-May-09	28-Jun-13	Inspector
John Handley Tennis	Winchester Public School Board		0072	Underground Detention	338 Handley Boulevard	0.24		TRUE	2/2/11	17	Private	14-May-09	07-Jun-17	City
Jubal Early Plaza I - Lot 2	Randolph Craun		0073	Detention Basin (Dry Pond)	21-29 West Jubal Early Drive	4.22		TRUE	6/30/05	17	Private		14-Jul-14	Inspector
Jubal Early Plaza II - Lot 9	Women's Center of Winchester		0074	Detention Basin (Dry Pond)	1820 West Plaza Drive	4.22		TRUE	6/30/05	17	Private		07-Jul-14	Inspector
KSR LLC	The Townes at Kent HOA		0075	Sand Filter	210 East Clifford Street	0.12		TRUE	1/29/07	17	Private		19-Jun-17	Inspector
SU Sarah's Glen	Shenandoah University		0076	Pervious Pavers (Concrete)	1460 University Drive	0.00		TRUE	1/21/13	17	Private		12-Jun-17	City
SU Sarah's Glen	Shenandoah University		0076	Pervious Pavers (Concrete)	1460 University Drive	0.00		TRUE	1/21/13	17	Private		21-May-14	Inspector

Limestone Court	White Properties of Winchester, Inc.		0077	Detention Basin (Dry Pond)	2610 Hockman Avenue	0.00		TRUE	6/30/05	17	Private		18-Sep-14	City
Linden Drive Office Park	La Rose, LLC		0078	Detention Basin (Dry Pond)	136 Linden Drive	2.13		TRUE	3/14/11	17	Private		14-May-18	City
Linden Heights Animal Hospital	Schmitt Properties		0079	Enhanced Extended Detention Basin	274 Linden Drive	1.34		TRUE	3/14/11	17	Private	03-Oct-07	10-Jun-14	Inspector
Linden Medical Center	Linden Westside Condominiums Assoc.	Cambridge Companies	0080	Detention Basin (Dry Pond)	172 Linden Drive	4.40		TRUE	6/12/07	17	Private		12-Jun-12	Inspector
Linden Medical Center	Linden Westside Condominiums Assoc.	Cambridge Companies	0080	Detention Basin (Dry Pond)	172 Linden Drive	4.40		TRUE	6/12/07	17	Private		05-Jun-18	City
Lowes	Lowes Home Center Inc		0081	Detention Basin (Dry Pond)	2200 South Pleasant Valley Road	13.50		TRUE	6/30/05	17	Private		01-Jul-13	Inspector
Lowes	Lowes Home Center Inc		0081	Detention Basin (Dry Pond)	2200 South Pleasant Valley Road	13.50		TRUE	6/30/05	17	Private		16-May-18	City
Lowes	Lowes Home Center Inc		0082	Detention Basin (Dry Pond)	2210 Legge Boulevard	19.70		TRUE	6/30/05	17	Private		16-Sep-13	Inspector
Lowes	Lowes Home Center Inc		0082	Detention Basin (Dry Pond)	2210 Legge Boulevard	19.70		TRUE	6/30/05	17	Private		24-May-18	City
Madison Center	NC Development LLC		0083	Detention Basin (Dry Pond)	320 Hope Drive	0.78		TRUE	1/7/08	17	Private	07-Oct-09	08-Sep-14	Inspector
Madison Center	NC Development LLC		0084	Bioretention Filter	320 Hope Drive	0.20		TRUE	1/7/08	17	Private	07-Oct-09	08-Sep-14	Inspector
Madison Center	NC Development LLC		0085	Bioretention Filter	320 Hope Drive	0.20		TRUE	1/7/08	17	Private	07-Oct-09	08-Sep-14	Inspector
Madison Center	NC Development LLC		0086	Bioretention Filter	320 Hope Drive	0.20		TRUE	1/7/08	17	Private	07-Oct-09	08-Sep-14	Inspector
Madison Center	NC Development LLC		0087	Bioretention Filter	320 Hope Drive	0.20		TRUE	1/7/08	17	Private	07-Oct-09	08-Sep-14	Inspector
Madison Center	NC Development LLC		0088	Underground Detention	320 Hope Drive	1.80		TRUE	1/7/08	17	Private	07-Oct-09	08-Sep-14	Inspector
Madison Place I	Madison Winds, LLC		0089	Detention Basin (Dry Pond)	3018 Shawnee Drive	5.53		TRUE	12/20/05	16	Private		09-Jul-14	Inspector
McDonald's - Berryville Ave.	McDonald's Restaurant		0090	Underground Detention	1124 Berryville Avenue	0.60		TRUE	6/30/05	17	Private		20-May-14	Inspector
McDonald's - Berryville Ave.	McDonald's Restaurant		0090	Underground Detention	1124 Berryville Avenue	0.60		TRUE	6/30/05	17	Private		23-May-18	City
McKinley Office Building	Michael J. Bermel		0091	Detention Basin (Dry Pond)	700 Fort Collier Road	3.20		TRUE	6/30/05	17	Private		18-Sep-14	City
Meddent Center	Meddent LLC		0092	Bioretention Basin	1002 Amherst Street	0.40		FALSE		17	Private	13-Aug-07		
Morlyn Hills Subdivision	City of Winchester		0093	Constructed Wetlands	1511 Stone House Court	0.00		TRUE	6/30/05	17	Public		20-Feb-18	City
Orchard Terrace	City of Winchester		0094	Detention Basin (Dry Pond)	282 Green Street	6.40		TRUE	6/30/05	18	Public		09-Apr-18	City
Our Health - Phase II	North Cameron Properties, LLC		0095	Pervious Pavers (Concrete)	401 North Cameron Street	0.08		TRUE	5/28/10	17	Private	31-Mar-10	01-Jun-17	City
Our Health - Phase II	North Cameron Properties, LLC		0095	Pervious Pavers (Concrete)	401 North Cameron Street	0.08		TRUE	5/28/10	17	Private	31-Mar-10	03-Jul-13	Inspector
Panera	Glaize Developments		0096	Filterra	2605 South Pleasant Valley Road	0.12		TRUE	6/18/07	16	Private	02-Apr-07	11-Jun-14	Inspector
Panera	Glaize Developments		0097	Filterra	2605 South Pleasant Valley Road	0.51		TRUE	6/18/07	16	Private	02-Apr-07	11-Jun-14	Inspector
Panera	Glaize Developments		0098	Filterra	2605 South Pleasant Valley Road	0.34		TRUE	6/18/07	16	Private	02-Apr-07	11-Jun-14	Inspector
Panera	Glaize Developments		0099	Detention Basin (Dry Pond)	2605 South Pleasant Valley Road	0.34		TRUE	6/18/07	16	Private	02-Apr-07	11-Jun-14	Inspector
Park Place	City of Winchester		0100	Detention Basin (Dry Pond)	2024 Harvest Drive	33.10		TRUE	6/30/05	17	Public		09-Apr-18	City
Patriot Collision Center	Patriot Collision Center LLC		0101	Underground Detention	3064-3068 Shawnee Drive	1.20		TRUE	6/30/05	16	Private		20-May-14	Inspector
Patriot Collision Center	Patriot Collision Center LLC		0101	Underground Detention	3064-3068 Shawnee Drive	1.20		TRUE	6/30/05	16	Private		31-May-17	City
Rubbermaid Building Expansion	Rubbermaid Commercial Products		0102	Detention Basin (Dry Pond)	3124 Valley Avenue	0.00		TRUE	6/25/12	16	Private		20-Jun-14	Inspector
Rubbermaid Building Expansion	Rubbermaid Commercial Products		0102	Detention Basin (Dry Pond)	3124 Valley Avenue	0.00		TRUE	6/25/12	16	Private		04-Jun-18	City
Pine-Burke Apartments - Phase I	Pine-Burke Realty, LLC		0103	Underground Detention	2-14 Taft Avenue	0.47		TRUE	6/30/05	17	Private		07-Jul-14	Inspector
JD Byrider	JSB Associates		0104	Extended Detention Basin	1930 South Loudoun Street	1.41		TRUE	4/2/12	17	Private	10-Sep-10	03-Jun-14	Inspector
Popeye's	Christina Tseng		0105	Underground Detention	2659 Valley Avenue	0.93		TRUE	6/12/07	16	Private		23-May-18	City
Popeye's	Christina Tseng		0105	Underground Detention	2659 Valley Avenue	0.93		TRUE	6/12/07	16	Private		01-Jun-12	Inspector
Rolling Hills Park	City of Winchester		0107	Detention Basin (Dry Pond)	702 Kennedy Drive	4.50		TRUE	6/30/05	16	Public		09-Apr-18	City
Rolling Hills Subdivision	Rolling Hills Estates HOA	Cambridge Companies	0108	Detention Basin (Dry Pond)	612 Lake Drive	54.70		TRUE	8/24/12	16	Private		20-Jun-13	Inspector
Rolling Hills Subdivision	Rolling Hills Estates HOA	Cambridge Companies	0108	Detention Basin (Dry Pond)	612 Lake Drive	54.70		TRUE	8/24/12	16	Private		21-May-18	City
Major Properties	Major Properties, LLC		0109	Pervious Pavers (Concrete)	150 Commercial Street	0.72		TRUE	5/29/15	17	Private	30-Jun-14	18-May-18	City
Selma Medical	City of Winchester		0110	Detention Basin (Dry Pond)	330 Amherst Street	7.50		TRUE	6/30/05	17	Public		18-Apr-18	City
Shawnee Drive Business Park	LHZ Properties, LLC		0111	Underground Detention	2900 Shawnee Drive	2.42		FALSE		16	Private	06-Jan-09		
Shawnee Fire Department	Shawnee Volunteer Fire Dept		0112	Detention Basin (Dry Pond)	2210 Valor Drive	20.30		TRUE	6/30/05	17	Private		20-Jun-14	Inspector
812 & 830 Amherst Street	812 Amherst Street Condo Association, Inc.		0115	Pervious Pavers (Concrete)	812 Amherst Street	0.14		TRUE	8/31/10	17	Private	31-Aug-10	27-Jun-14	Inspector
Sorrel Court	Sorrel Court HOA	Coventry Group	0116	Detention Basin (Dry Pond)	2946 Sorrel Court	4.80		TRUE	6/30/05	16	Private		27-May-14	Inspector
Sorrel Court	Sorrel Court HOA	Coventry Group	0116	Detention Basin (Dry Pond)	2946 Sorrel Court	4.80		TRUE	6/30/05	16	Private		16-May-18	City
Spencer Square	Melco Inc		0117	Detention Basin (Dry Pond)	2856 Spencer Square	1.50		TRUE	6/30/05	16	Private		07-Jul-14	Inspector
Stonecrest Village	Stonecrest Village HOA	Coventry Group	0119	Detention Basin (Dry Pond)	415 Russelcroft Road	87.00		TRUE	6/30/05	16	Private		20-Jun-14	Inspector
Stutzman Body Shop	JACC, LLC		0120	Underground Detention	2725 Valley Avenue	1.10		TRUE	8/28/09	16	Private	03-Jan-08	08-Jul-14	Inspector
SU Student Center Addendum	Shenandoah University		0121	Pervious Pavers (Concrete)	1460 University Drive	0.40		TRUE	7/10/08	17	Private	26-May-08	12-Jun-17	City
SU Student Center Addendum	Shenandoah University		0121	Pervious Pavers (Concrete)	1460 University Drive	0.40		TRUE	7/10/08	17	Private	26-May-08	20-May-14	Inspector
Summerfield Apartments	Page-Brooke Developments		0122	Detention Basin (Dry Pond)	900-975 Summerfield Lane	5.40		TRUE	6/30/05	17	Private		07-Jul-14	Inspector
812 & 830 Amherst Street	Amherst Street Condo Association, Inc.		0123	Pervious Pavers (Concrete)	830 Amherst Street	0.24		TRUE	8/31/10	17	Private	31-Aug-10	27-Jun-14	Inspector
Sun Trust Bank	Amherst Associates II, LLC		0125	Underground Detention	1738 Amherst Street	1.00		TRUE	6/30/05	17	Private		21-Jun-14	Inspector
TGI Friday's	Glaize Developments		0126	Hydrodynamic Separator	2600-2690 South Pleasant Valley Road	1.30		TRUE	7/23/07	16	Private	02-Apr-07	11-Jun-14	Inspector
TGI Friday's	Glaize Developments		0127	Hydrodynamic Separator	2600-2690 South Pleasant Valley Road	1.23		TRUE	7/23/07	16	Private	02-Apr-07	11-Jun-14	Inspector
TGI Friday's	Glaize Developments		0128	Extended Detention Basin	2600-2690 South Pleasant Valley Road	1.30		TRUE	7/23/07	16	Private	02-Apr-07	11-Jun-14	Inspector
TGI Friday's	Glaize Developments		0129	Extended Detention Basin	2600-2690 South Pleasant Valley Road	1.23		TRUE	7/23/07	16	Private	02-Apr-07	11-Jun-14	Inspector
The Corners I and II	Biggs Corner Winchester, LLC		0130	Underground Detention	2270 Valor Drive	1.51		TRUE	9/30/08	17	Private	05-Feb-07	28-May-14	Inspector
Timberlake Office Building	Grove Hill, LLC		0131	Filterra	900 South Pleasant Valley Road	0.24		TRUE	11/27/06	17	Private	09-Mar-07	07-Jul-14	Inspector
Timberlake Office Building	Grove Hill, LLC		0132	Filterra	900 South Pleasant Valley Road	0.22		TRUE	11/27/06	17	Private	09-Mar-07	07-Jul-14	Inspector
Valley Ave. Food Lion	Kentland Foundation Inc.		0133	Detention Basin (Dry Pond)	2584-2606 Valley Avenue	20.70		TRUE	12/19/06	17	Private		01-Jul-14	Inspector
Valley Mortgage	SEE Properties LP LLP		0134	Detention Basin (Dry Pond)	2654 Valley Avenue	58.00		TRUE	6/30/05	16	Private		09-Jul-14	Inspector
Limestone Court	Limestone Court HOA	Joyce Mull	0135	Detention Basin (Dry Pond)	2658 Limestone Court	18.30		TRUE	6/30/05	17	Private		18-Sep-14	City
Valor Drive Site Plan	Alejandro Orfila	Edwin P. Markowitz	0136	Detention Basin (Dry Pond)	2233-2265 Valor Drive	3.44		TRUE	5/15/06	17	Private		28-Sep-14	Inspector
Valor View Shopping Center	PRO Properties, LLC		0137	Underground Detention	2301-2325 Valor Drive	1.36		TRUE	12/3/10	17	Private	10-Apr-10	13-Jun-17	City
Valor View Shopping Center	PRO Properties, LLC		0137	Underground Detention	2301-2325 Valor Drive	1.36		TRUE	12/3/10	17	Private	10-Apr-10	08-Apr-14	Inspector
Valor View Shopping Center	PRO Properties, LLC		0138	Bioretention Basin	2301-2325 Valor Drive	0.59		TRUE	12/3/10	17	Private	10-Apr-10	13-Jun-17	City
Valor View Shopping Center	PRO Properties, LLC		0138	Bioretention Basin	2301-2325 Valor Drive	0.59		TRUE	12/3/10	17	Private	10-Apr-10	08-Apr-14	Inspector
Northside Station	Pari Plaza LLC		0139	General Infiltration Practice	823 North Loudoun Street	1.60		TRUE	6/30/05	18	Private		28-May-14	Inspector
Walmart	Walmart Supercenter		0140	Detention Basin (Dry Pond)	2350 South Pleasant Valley Road	19.40		TRUE	6/30/05	17	Private		06-Jun-14	Inspector
Walnut Street Extension Subdivision	Don Packard Jr.		0141	Grass Swale	400 Walnut Drive	1.24		TRUE	9/26/05	17	Private		20-Jun-17	City
Walnut Street Extension Subdivision	Don Packard Jr.		0141	Grass Swale	400 Walnut Drive	1.24		TRUE	9/26/05	17	Private		20-May-14	Inspector
Westridge Section 1	City of Winchester		0143	Detention Basin (Dry Pond)	2505 Goldenfield Lane	9.20		TRUE	6/30/05	17	Public		09-Apr-18	City
Westridge Section 2	City of Winchester		0144	Detention Basin (Dry Pond)	2653 Windwood Drive	15.10		TRUE	6/30/05	17	Public		09-Apr-18	City

Whitacre Property	1726 Valley Avenue, LLC		0145	Filterra	1726 Valley Avenue	0.33		FALSE		17	Private				
Whittier Ponding Basin	City of Winchester		0146	Detention Basin (Dry Pond)	841 Whittier Avenue	124.70		TRUE	6/30/05	17	Public			18-Apr-18	City
Winchester Medical Center	Winchester Medical Center		0147	Retention Basin (Wet Pond)	1840 Amherst Street	57.00		TRUE	6/30/05	17	Private			10-Jun-14	Inspector
Winchester Medical Center	Winchester Medical Center		0148	Retention Basin (Wet Pond)	1840 Amherst Street	57.00		TRUE	6/30/05	17	Private			10-Jun-14	Inspector
Winchester Medical Center	Winchester Medical Center		0149	Retention Basin (Wet Pond)	1840 Amherst Street	57.00		TRUE	6/30/05	17	Private			10-Jun-14	Inspector
Commonwealth Plaza - Phase 3	GWG Profit Sharing, TST Properties		0160	Filterra	2001-2027 South Loudoun Street	0.17		FALSE		17	Private	07-Feb-11			
FCPS Admin Building Addition	Frederick County Public Schools		0161	Filterra	1415 Amherst Street	0.20		TRUE	11/1/11	17	Private	07-Apr-08		17-Jun-14	Inspector
Five Star Auto Spa	One Hanul LLC		0162	Filterra	555-565 Adams Drive	0.11		FALSE		17	Private	03-Feb-11			
Medical Circle Imaging	Neurological Properties, LLC		0165	Filterra	125 Medical Circle	0.00		TRUE	9/14/05	17	Private	02-Dec-10		20-May-14	Inspector
Medical Circle Imaging	Neurological Properties, LLC		0165	Filterra	125 Medical Circle	0.00		TRUE	9/14/05	17	Private	02-Dec-10		01-Jun-17	City
Medical Circle Imaging	Neurological Properties, LLC		0166	Filterra	125 Medical Circle	0.00		TRUE	9/14/05	17	Private	02-Dec-10		01-Jun-17	City
Medical Circle Imaging	Neurological Properties, LLC		0166	Filterra	125 Medical Circle	0.00		TRUE	9/14/05	17	Private	02-Dec-10		20-May-14	Inspector
Medical Circle Imaging	Neurological Properties, LLC		0167	Underground Detention	125 Medical Circle	0.00		TRUE	9/14/05	17	Private	02-Dec-10		20-May-14	Inspector
Medical Circle Imaging	Neurological Properties, LLC		0167	Underground Detention	125 Medical Circle	0.00		TRUE	9/14/05	17	Private	02-Dec-10		23-May-18	City
Omps Pet Crematory	Omps Funeral Home		0168	Bioretention Filter	1600 Amherst Street	4.57		TRUE	8/4/11	17	Private	16-Jun-11		20-May-14	Inspector
Omps Pet Crematory	Omps Funeral Home		0168	Bioretention Filter	1600 Amherst Street	4.57		TRUE	8/4/11	17	Private	16-Jun-11		20-Jun-17	City
Rubbermaid Storage Area	Rubbermaid Commercial Products		0169	Grass Swale	3124 Valley Avenue	0.49		TRUE	7/12/13	16	Private	16-Dec-10		20-Jun-14	Inspector
Rubbermaid Storage Area	Rubbermaid Commercial Products		0169	Grass Swale	3124 Valley Avenue	0.49		TRUE	7/12/13	16	Private	16-Dec-10		04-Jun-18	City
Rubbermaid Storage Area	Rubbermaid Commercial Products		0170	Grass Swale	3124 Valley Avenue	0.27		TRUE	7/12/13	16	Private	16-Dec-10		20-Jun-14	Inspector
Rubbermaid Storage Area	Rubbermaid Commercial Products		0170	Grass Swale	3124 Valley Avenue	0.27		TRUE	7/12/13	16	Private	16-Dec-10		04-Jun-18	City
Shawnee Drive Business Park	LHZ Properties, LLC		0171	Bioretention Filter	2900 Shawnee Drive	2.42		FALSE		16	Private	06-Jan-09			
South Valley Plaza	Dixie Distributing, LLC		0172	Filterra	2725 South Pleasant Valley Road	0.12		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0173	Filterra	2725 South Pleasant Valley Road	0.46		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0174	Filterra	2725 South Pleasant Valley Road	0.20		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0175	Filterra	2725 South Pleasant Valley Road	0.45		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0176	Filterra	2725 South Pleasant Valley Road	0.29		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0177	Filterra	2725 South Pleasant Valley Road	0.39		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0178	Filterra	2725 South Pleasant Valley Road	0.38		FALSE		16	Private	10-Dec-07			
South Valley Plaza	Dixie Distributing, LLC		0179	Filterra	2725 South Pleasant Valley Road	0.56		FALSE		16	Private	10-Dec-07			
Spanish United Pentecostal Church	Spanish United Pentecostal Church Trustees		0180	Pervious Pavers (Concrete)	672 Virginia Avenue	0.23		TRUE	4/30/13	17	Private	22-Apr-11		12-Jun-17	City
Spanish United Pentecostal Church	Spanish United Pentecostal Church Trustees		0180	Pervious Pavers (Concrete)	672 Virginia Avenue	0.23		TRUE	4/30/13	17	Private	22-Apr-11		02-Jul-13	Inspector
TGI Friday's	Glaize Developments		0182	Filterra	2600-2690 South Pleasant Valley Road	0.33		TRUE	7/23/07	16	Private	02-Apr-07		11-Jun-14	Inspector
City National Bank	City National Bank		0183	Underground Detention	1830 Valley Avenue	0.29		TRUE	8/20/13	17	Private	07-Nov-12		19-Jun-14	Inspector
City National Bank	City National Bank		0184	Filterra	1830 Valley Avenue	0.21		TRUE	8/20/13	17	Private	07-Nov-12		19-Jun-14	Inspector
City National Bank	City National Bank		0185	Filterra	1830 Valley Avenue	0.29		TRUE	8/20/13	17	Private	07-Nov-12		19-Jun-14	Inspector
Winchester Marketplace	DSC Properties LLC		0192	Filterra	1551 South Pleasant Valley Road	0.12	0.12	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	JDC Winchester, LLC		0193	Filterra	1531-1539 Pleasant Valley Road	0.37	0.37	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	JDC Winchester, LLC		0194	Filterra	1531-1539 Pleasant Valley Road	0.12	0.12	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	DSC Properties LLC		0195	Filterra	1551 South Pleasant Valley Road	0.11	0.11	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	DSC Properties LLC		0196	Filterra	1551 South Pleasant Valley Road	0.21	0.21	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	DSC Properties LLC		0197	Filterra	1551 South Pleasant Valley Road	0.28	0.28	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	JDC Winchester, LLC		0198	Filterra	1531-1539 Pleasant Valley Road	0.08	0.27	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	JDC Winchester, LLC		0199	Filterra	1531-1539 Pleasant Valley Road	0.42	0.30	TRUE	9/30/15	17	Private	14-Apr-15		16-May-18	City
Winchester Marketplace	DSC Properties LLC		0200	Filterra	1551 South Pleasant Valley Road	0.27		TRUE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0201	Filterra	222 Spring Street	0.19		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0202	Filterra	222 Spring Street	0.51		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0203	Filterra	222 Spring Street	0.15		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0204	Filterra	222 Spring Street	0.65		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0205	Filterra	222 Spring Street	0.34		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0206	Filterra	222 Spring Street	1.07		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0207	Filterra	222 Spring Street	0.24		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0208	Filterra	222 Spring Street	0.24		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0209	Filterra	222 Spring Street	0.39		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0210	Filterra	222 Spring Street	0.35		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0211	Filterra	222 Spring Street	0.21		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0212	Filterra	222 Spring Street	0.52		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0213	Filterra	222 Spring Street	0.30		FALSE		17	Private	14-Apr-15			
Winchester Marketplace	JDC Winchester, LLC		0214	Underground Detention	222 Spring Street	13.20		FALSE		17	Private	14-Apr-15			
Trinity Auto Center	Grasso & Sons Development Corp.		0218	Bioretention Basin	2409-2433 Valley Avenue	0.67		TRUE	8/26/13	17	Private	14-Mar-12		31-May-17	City
Spring Street	City of Winchester		0223	Filterra	Spring Street ROW	0.05	0.05	TRUE	9/30/15	17	Public			25-Apr-18	City
Spring Street	City of Winchester		0224	Filterra	Spring Street ROW	0.21	0.21	TRUE	9/30/15	17	Public			25-Apr-18	City
Spring Street	City of Winchester		0225	Filterra	Spring Street ROW	0.30	0.15	TRUE	9/30/15	17	Public			25-Apr-18	City
Stewart Street Properties	Kilmer & Associates, CPA, P.C.		0230	Bioretention Filter	120 South Stewart Street	0.55		TRUE	6/24/15	17	Private	17-Mar-15		23-May-18	City
WMC Cancer Center	Winchester Medical Center		0231	Cartridge Filter	1840 Amherst Street	2.65	1.38	TRUE	8/25/16	17	Private	31-Oct-14		16-May-18	City
New John Kerr Elementary School	Winchester Public School Board		0232	Bioretention Basin	427 Meadowbranch Avenue	1.19	0.80	TRUE	1/12/17	17	Private	06-Nov-14		16-May-18	City
New John Kerr Elementary School	Winchester Public School Board		0233	Bioretention Basin	427 Meadowbranch Avenue	1.24	0.55	TRUE	1/12/17	17	Private	06-Nov-14		16-May-18	City
New John Kerr Elementary School	Winchester Public School Board		0234	Bioretention Basin	427 Meadowbranch Avenue	4.42	2.10	TRUE	1/12/17	17	Private	06-Nov-14		16-May-18	City
The Lofts at Jubal Square	Jubal Square, LLC		0238	Detention Basin (Dry Pond)	1900 Valley Avenue	6.89		FALSE		17	Private	02-Jul-15			
SU Aspirational Village	Shenandoah University		0244	Bioretention Filter	1460 University Drive	0.18	0.14	FALSE		17	Private	05-Nov-15			
Murphy Oil	Murphy Oil USA, Inc.		0245	Hydrodynamic Separator	2302 South Pleasant Valley Road	1.58	1.08	FALSE		17	Private	04-Dec-15			
Meadow Branch Avenue	City of Winchester		0246	Filterra	Meadow Branch Avenue ROW	0.16		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0247	Filterra	Meadow Branch Avenue ROW	0.25		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0248	Filterra	Meadow Branch Avenue ROW	0.07		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0249	Filterra	Meadow Branch Avenue ROW	0.12		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0250	Filterra	Meadow Branch Avenue ROW	0.23		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0251	Filterra	Meadow Branch Avenue ROW	0.30		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0252	Filterra	Meadow Branch Avenue ROW	0.18		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0253	Filterra	Meadow Branch Avenue ROW	0.33		TRUE	7/1/17	17	Public			26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0254	Filterra	Meadow Branch Avenue ROW	0.29		TRUE	7/1/17	17	Public			26-Apr-18	City

Meadow Branch Avenue	City of Winchester		0255	Filterra	Meadow Branch Avenue ROW	0.20		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0256	Filterra	Meadow Branch Avenue ROW	0.16		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0257	Filterra	Meadow Branch Avenue ROW	0.47		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0258	Filterra	Meadow Branch Avenue ROW	0.55		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0259	Filterra	Meadow Branch Avenue ROW	0.36		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0260	Filterra	Meadow Branch Avenue ROW	0.47		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0261	Filterra	Meadow Branch Avenue ROW	0.20		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0262	Filterra	Meadow Branch Avenue ROW	0.17		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0263	Filterra	Meadow Branch Avenue ROW	0.26		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0264	Filterra	Meadow Branch Avenue ROW	0.20		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0265	Filterra	Meadow Branch Avenue ROW	0.43		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0266	Filterra	Meadow Branch Avenue ROW	0.34		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0267	Filterra	Meadow Branch Avenue ROW	0.18		TRUE	7/1/17	17	Public		26-Apr-18	City
Meadow Branch Avenue	City of Winchester		0268	Filterra	Meadow Branch Avenue ROW	0.22		TRUE	7/1/17	17	Public		26-Apr-18	City
Malloy Toyota	Malloy Properties V, LLC	Malloy Toyota	0269	Detention Basin (Dry Pond)	400 Weems Lane	0.20	0.20	TRUE		17	Private	05-Dec-16	16-May-18	City

Attachment 2. City of Winchester Outfall Mapping



CITY OF WINCHESTER
PUBLIC SERVICES DEPARTMENT
15 N CAMERON STREET
WINCHESTER,VA 22601
PHONE: 540-667-1815
FAX: 540-662-3351

CITY OF WINCHESTER
STREAM OUTFALLS AND DRAINAGE AREAS

SCALE:1 " = 900 '
DATE: 9/25/2019

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
1	TR147	39.19750000000	-78.19290000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	1.91107094151697E-02
2	TR146	39.19730000000	-78.19230000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	0.944810913129122
3	TR145	39.19720000000	-78.19220000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.86479977503553E-02
4	TR144	39.19710000000	-78.19200000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	1.24589876712233E-02
5	TR143	39.19710000000	-78.19200000000	Pipe	Concrete	48					Town Run	Yes	Yes	020700040901	13.0550172261055
6	TR142	39.19710000000	-78.19190000000								Town Run	Yes	Yes	020700040901	0.268560306779201
7	TR135	39.19600000000	-78.18840000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	11.5622883082572
8	TR132	39.19530000000	-78.18740000000	Pipe	Other	24"					Town Run	Yes	Yes	020700040901	1.13961531258309
9	TR131	39.19510000000	-78.18650000000	Pipe	CMP	24"					Town Run	Yes	Yes	020700040901	5.54875517087168
10	TR130	39.19470000000	-78.18540000000	Pipe	Other	4"				Pool Drain	Town Run	Yes	Yes	020700040901	6.63307588496857E-02
11	TR128	39.19440000000	-78.18420000000								Town Run	Yes	Yes	020700040901	178.696561967364
12	TR104	39.18770000000	-78.17820000000	Pipe	Other	6" 12"					Town Run	Yes	Yes	020700040901	7.27434930845649E-02
13	TR103	39.18770000000	-78.17810000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.826802051468187
14	TR92	39.18490000000	-78.17110000000	Pipe	Other	24"					Town Run	Yes	Yes	020700040901	8.27805754351107
15	TR173	39.18440000000	-78.16940000000		Other	4"					Town Run	Yes	Yes	020700040901	1.63646323284582E-02
16	TR172	39.18440000000	-78.16940000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.59213487052694E-02
17	TR89	39.18350000000	-78.16500000000								Town Run	Yes	Yes	020700040901	0.48147178553897
18	TR84	39.18350000000	-78.16490000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	7.49877590999378E-02
19	TR82	39.18350000000	-78.16490000000		Other	4"					Town Run	Yes	Yes	020700040901	0.287796738450385
20	TR83	39.18350000000	-78.16490000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	7.44068883831757E-02
21	TR85	39.18350000000	-78.16480000000		Other	4"					Town Run	Yes	Yes	020700040901	6.71953832564588E-02
22	TR86	39.18350000000	-78.16470000000		Other	4"					Town Run	Yes	Yes	020700040901	6.57246692315928E-02
23	TR77	39.18340000000	-78.16460000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	3.08328501194211E-02
24	TR62	39.18320000000	-78.16380000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.312132569677893
25	TR59	39.18240000000	-78.16340000000	Pipe	Other	8"					Town Run	Yes	Yes	020700040901	0.486498581120225
26	TR60	39.18240000000	-78.16350000000	Pipe	Other	4"				Roof drain	Town Run	Yes	Yes	020700040901	5.79756201505938E-02
27	TR57	39.18230000000	-78.16330000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	8.37569875008818E-02
28	TR50	39.18170000000	-78.16270000000	Pipe	Other	24"					Town Run	Yes	Yes	020700040901	9.92375716430522
29	TR49	39.18160000000	-78.16270000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.02359275411035E-02
30	TR45	39.18100000000	-78.16300000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.028806284041949
31	TR44	39.18090000000	-78.16300000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	1.02092582885984
32	TR41	39.18030000000	-78.16310000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	0.720796173660779
33	TR40	39.17970000000	-78.16310000000	Curb Cut	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.700234401201954
34	TR38	39.17910000000	-78.16330000000	Curb Cut	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.625723968541308
35	TR37	39.17680000000	-78.16460000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.12013803591192E-02
36	TR32	39.17660000000	-78.16470000000	Pipe	Concrete		4'	4'			Town Run	Yes	Yes	020700040901	113.498550970317
37	TR29	39.17630000000	-78.16460000000	Pipe	Other						Town Run	Yes	Yes	020700040901	0.158733736420088
38	TR25	39.17610000000	-78.16420000000	Pipe	Other	15"					Town Run	Yes	Yes	020700040901	3.66436616423359E-02
39	TR22	39.17610000000	-78.16400000000	Pipe	Other	15"					Town Run	Yes	Yes	020700040901	0.701299704424943
40	TR23	39.17600000000	-78.16360000000	Pipe	Concrete	36"					Town Run	Yes	Yes	020700040901	13.1391894881834
41	TR21	39.17580000000	-78.16320000000	Pipe	Concrete	12"					Town Run	Yes	Yes	020700040901	6.88861399153393
42	TR18	39.17480000000	-78.16300000000	Pipe	CMP	15"					Town Run	Yes	Yes	020700040901	0.437522188102709
43	TR11	39.17150000000	-78.16190000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	1.78267419578629
44	TR3	39.17000000000	-78.16060000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	4.94045371106426
45	TR4	39.17010000000	-78.16040000000	Pipe							Town Run	Yes	Yes	020700040901	2.52629310439879
46	TR1	39.17010000000	-78.15970000000	Ditch	Other		2'	6"			Town Run	Yes	Yes	020700040901	0.185111164654011
47	TR2	39.17020000000	-78.15990000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	275.087725277762
48	TR5	39.17030000000	-78.16100000000	Pipe	Other	6"				Roof drain	Town Run	Yes	Yes	020700040901	6.49885421783559E-02
49	TR6	39.17040000000	-78.16110000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.36294607567964
50	TR7	39.17060000000	-78.16120000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.283344415815987

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
51	TR8	39.17090000000	-78.16150000000	Pipe	Concrete	18"					Town Run	Yes	Yes	020700040901	24.9060668177542
52	TR9	39.17090000000	-78.16150000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.208898066834344
53	TR10	39.17100000000	-78.16150000000	Other	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.1433855217527
54	TR12	39.17150000000	-78.16190000000	Ditch	Other		4'	6"			Town Run	Yes	Yes	020700040901	1.30521045049537
55	TR13	39.17230000000	-78.16220000000	Ditch	Grouted Riprap		6'	1'			Town Run	Yes	Yes	020700040901	10.8706985239355
56	TR14	39.17220000000	-78.16300000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.254167058299363
57	TR15	39.17200000000	-78.16290000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.277206043645228
58	TR16	39.17170000000	-78.16270000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.576457578685474
59	TR17	39.17270000000	-78.16310000000	Ditch	Natural		2'	6"			Town Run	Yes	Yes	020700040901	3.50050596658813
60	TR19	39.17280000000	-78.16310000000	Pipe	Other	8"					Town Run	Yes	Yes	020700040901	0.224139436851035
61	TR133	39.17280000000	-78.16250000000	Pipe	Other		18"				Town Run	Yes	Yes	020700040901	1.52743005744259
62	TR24	39.17610000000	-78.16410000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.215661041660205
63	TR26	39.17610000000	-78.16440000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.130389574844058
64	TR27	39.17610000000	-78.16450000000	Pipe	Other	2"				Roof drain	Town Run	Yes	Yes	020700040901	7.17865717680435E-02
65	TR28	39.17620000000	-78.16450000000	Pipe	CMP	15"					Town Run	Yes	Yes	020700040901	13.2113982047202
66	TR30	39.17650000000	-78.16470000000	Pipe	Other		8"	8"			Town Run	Yes	Yes	020700040901	6.57907136143989E-02
67	TR31	39.17660000000	-78.16470000000	Pipe	Other		8"	8"			Town Run	Yes	Yes	020700040901	2.50396949300194E-02
68	TR33	39.17670000000	-78.16460000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	6.91656562849519E-02
69	TR34	39.17670000000	-78.16470000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	5.14509975831009E-02
70	TR35	39.17670000000	-78.16460000000	Pipe	Other	2"					Town Run	Yes	Yes	020700040901	9.72840132102334E-02
71	TR36	39.17670000000	-78.16470000000	Ditch	Concrete		2'	3"			Town Run	Yes	Yes	020700040901	0.190457006894263
72	TR39	39.17690000000	-78.16460000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.195787039701116
73	TR42	39.18030000000	-78.16310000000	Curb Cut	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.351478070094694
74	TR43	39.18050000000	-78.16320000000	Pipe	CMP	18"					Town Run	Yes	Yes	020700040901	0.598587134121305
75	TR46	39.18120000000	-78.16290000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.23867443310606
76	TR47	39.18130000000	-78.16280000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	0.666784442327949
77	TR48	39.18150000000	-78.16270000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.10282438898048E-02
78	TR51	39.18170000000	-78.16270000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.131724657830149
79	TR52	39.18180000000	-78.16270000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	8.97476667494663E-02
80	TR53	39.18220000000	-78.16310000000	Pipe	Concrete		6'	4'			Town Run	Yes	Yes	020700040901	42.9014421023343
81	TR54	39.18210000000	-78.16310000000	Ditch	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.555240147095736
82	TR55	39.18220000000	-78.16310000000	Ditch	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.103074124645271
83	TR56	39.18220000000	-78.16310000000	Ditch	Concrete		4'	6"			Town Run	Yes	Yes	020700040901	0.546842475636978
84	TR58	39.18230000000	-78.16330000000	Pipe	Other	2"					Town Run	Yes	Yes	020700040901	9.81087682712817E-02
85	TR61	39.18320000000	-78.16370000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	0.537504579512567
86	TR63	39.18320000000	-78.16380000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.103953878930183
87	TR64	39.18330000000	-78.16390000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.174657344755739
88	TR65	39.18330000000	-78.16400000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	5.41882950326374E-02
89	TR66	39.18330000000	-78.16410000000	Pipe	Concrete	48"					Town Run	Yes	Yes	020700040901	244.033144465234
90	TR67	39.18330000000	-78.16410000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.72793044677919E-02
91	TR68	39.18330000000	-78.16420000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	0.982705850881812
92	TR69	39.18330000000	-78.16420000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	6.14939922248523E-02
93	TR70	39.18330000000	-78.16430000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	8.59935454808601
94	TR71	39.18330000000	-78.16440000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	4.58469846606005E-02
95	TR72	39.18330000000	-78.16430000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	0.272446011331066
96	TR73	39.18330000000	-78.16440000000	Pipe	Concrete	18"					Town Run	Yes	Yes	020700040901	0.152240035894251
97	TR74	39.18330000000	-78.16440000000	Pipe	CMP	18"					Town Run	Yes	Yes	020700040901	0.107427729662589
98	TR75	39.18330000000	-78.16440000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	7.76959349390195
99	TR76	39.18340000000	-78.16440000000	Pipe	CMP	24"					Town Run	Yes	Yes	020700040901	4.81029522748552
100	TR78	39.18340000000	-78.16460000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	5.70615855602798E-02

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
101	TR79	39.18340000000	-78.16460000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.197553566205688
102	TR80	39.18340000000	-78.16460000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	2.51659564061187E-02
103	TR81	39.18340000000	-78.16470000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	2.42744651472521E-02
104	TR87	39.18350000000	-78.16510000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.092377383422047
105	TR88	39.18350000000	-78.16500000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.271452483899926
106	TR181	39.18350000000	-78.16490000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.141118824952695
107	TR180	39.18480000000	-78.17070000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.073798282796062
108	TR93	39.18480000000	-78.17070000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	3.54314015437762E-02
109	TR94	39.18560000000	-78.17210000000	Pipe	Other	36"					Town Run	Yes	Yes	020700040901	12.8755658880941
110	TR95	39.18650000000	-78.17370000000	Pipe	Concrete	48"					Town Run	Yes	Yes	020700040901	23.7785030606851
111	TR96	39.18680000000	-78.17460000000	Other	Concrete	36"					Town Run	Yes	Yes	020700040901	0.214936119091453
112	TR97	39.18650000000	-78.17470000000	Other	Concrete	48"					Town Run	Yes	Yes	020700040901	0.574323127484574
113	TR98	39.18640000000	-78.17490000000	Other	Other	12"					Town Run	Yes	Yes	020700040901	0.455690165243986
114	TR99	39.18670000000	-78.17550000000	Other	Concrete	48"					Town Run	Yes	Yes	020700040901	0.264469081762765
115	TR100	39.18650000000	-78.17560000000	Other	Concrete	48"					Town Run	Yes	Yes	020700040901	7.74428735786067
116	TR101	39.18680000000	-78.17570000000	Pipe	Concrete	48"					Town Run	Yes	Yes	020700040901	0.452109721025736
117	TR102	39.18740000000	-78.17650000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	7.29170731762965
118	TR105	39.18780000000	-78.17840000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	2.80402973516235
119	TR106	39.18800000000	-78.17890000000	Pipe	Other	12"					Town Run	Yes	Yes	020700040901	9.73678525538106E-02
120	TR107	39.18820000000	-78.17880000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	6.25392370007856
121	TR108	39.18800000000	-78.17920000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	0.142881932710379
122	TR109	39.18800000000	-78.17950000000	Pipe	Concrete	18"					Town Run	Yes	Yes	020700040901	0.359657010376062
123	TR110	39.18800000000	-78.17970000000	Pipe	Concrete	18 x 30					Town Run	Yes	Yes	020700040901	56.1218007329094
124	TR111	39.18830000000	-78.17980000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	7.3591163772401
125	TR112	39.18970000000	-78.17820000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	118.97690423989
126	TR113	39.19010000000	-78.17860000000	Pipe	CMP	15"					Town Run	Yes	Yes	020700040901	2.71196810519777
127	TR114	39.18970000000	-78.17920000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	1.17684776374648
128	TR115	39.19040000000	-78.17970000000	Curb Cut	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.403882871628776
129	TR116	39.19060000000	-78.18010000000	Curb Cut	Concrete		2'	6"			Town Run	Yes	Yes	020700040901	2.07953510417994
130	TR117	39.19090000000	-78.18060000000	Other	Concrete		15'	2'		Pond control structure	Town Run	Yes	Yes	020700040901	9.67412760321989
131	TR118	39.19150000000	-78.18150000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	2.63477085504655
132	TR119	39.19160000000	-78.18140000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.58337544834652
133	TR120	39.19170000000	-78.18170000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.912474874714687
134	TR121	39.19160000000	-78.18170000000	Ditch	Grouted Riprap		2'	6"			Town Run	Yes	Yes	020700040901	0.951565912067969
135	TR122	39.19170000000	-78.18200000000	Ditch	Concrete		10'	3'			Town Run	Yes	Yes	020700040901	201.239132917736
136	TR123	39.19180000000	-78.18190000000	Ditch	Concrete		10'	3'			Town Run	Yes	Yes	020700040901	54.9249691897027
137	TR124	39.19200000000	-78.18250000000	Other	Concrete	30"					Town Run	Yes	Yes	020700040901	3.0143095059328
138	TR125	39.19250000000	-78.18370000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	3.84695313497705
139	TR126	39.19290000000	-78.18460000000	Other	Concrete		3'	2'			Town Run	Yes	Yes	020700040901	0.122159551885466
140	TR127	39.19280000000	-78.18470000000	Other	Concrete		3'	2'			Town Run	Yes	Yes	020700040901	0.519922199429827
141	TR129	39.19320000000	-78.18550000000	Other	Concrete		3'	20'			Town Run	Yes	Yes	020700040901	3.75558508890883
142	TR134	39.19560000000	-78.18810000000	Ditch	Natural		2'	6"			Town Run	Yes	Yes	020700040901	6.67636690508506
143	TR136	39.19610000000	-78.18830000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	0.166400823674997
144	TR137	39.19610000000	-78.18950000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	2.97144310116972
145	TR138	39.19610000000	-78.19030000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	1.66840175321243
146	TR139	39.19610000000	-78.19080000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.38147430780886
147	TR140	39.19610000000	-78.19090000000	Pipe	Concrete	24"					Town Run	Yes	Yes	020700040901	1.78894809345812
148	TR141	39.19620000000	-78.19090000000	Pipe	Concrete	15"					Town Run	Yes	Yes	020700040901	1.51221755458711
149	TR148	39.19750000000	-78.19290000000	Pipe	Concrete		6'	6'			Town Run	Yes	Yes	020700040901	1.6211066650774
150	TR149	39.19770000000	-78.19100000000	Pipe	Concrete	30"					Town Run	Yes	Yes	020700040901	4.99468128858555

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estiamted_
151	TR150	39.19770000000	-78.19080000000	Pipe	Other	15"					Town Run	Yes	Yes	020700040901	1.40942250900382
152	TR151	39.19740000000	-78.19030000000	Pipe	Concrete	36"					Town Run	Yes	Yes	020700040901	2.90612253903748
153	TR152	39.19670000000	-78.18930000000	Pipe	Other	18"					Town Run	Yes	Yes	020700040901	2.72574135605823
154	TR153	39.18360000000	-78.16580000000	Other	Concrete		3'	3'			Town Run	Yes	Yes	020700040901	9.70190212109223
155	TR154	39.18370000000	-78.16580000000	Other	Concrete		3'	3'			Town Run	Yes	Yes	020700040901	15.7096264106388
156	TR155	39.18370000000	-78.16580000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.88507112762242E-02
157	TR156	39.18370000000	-78.16630000000	Other	Concrete		3'	3'			Town Run	Yes	Yes	020700040901	0.164215326539128
158	TR157	39.18370000000	-78.16620000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.41451748219476E-02
159	TR158	39.18380000000	-78.16610000000	Other	Concrete	36"					Town Run	Yes	Yes	020700040901	0.116057415953309
160	TR159	39.18370000000	-78.16640000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	0.205717151380358
161	TR160	39.18380000000	-78.16650000000	Other	Concrete		2'	4'			Town Run	Yes	Yes	020700040901	4.69009122035415
162	TR161	39.18380000000	-78.16680000000	Other	Concrete		2'	2'			Town Run	Yes	Yes	020700040901	0.471310964033628
163	TR162	39.18400000000	-78.16690000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.160485421661929
164	TR163	39.18410000000	-78.16700000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.10336423056159E-02
165	TR164	39.18400000000	-78.16700000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	4.31068006720586E-02
166	TR165	39.18400000000	-78.16710000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	6.94699664430714E-02
167	TR166	39.18410000000	-78.16720000000	Other	Concrete	4'	8'				Town Run	Yes	Yes	020700040901	3.95306135216593
168	TR167	39.18400000000	-78.16730000000	Other	Concrete		2'	8'			Town Run	Yes	Yes	020700040901	20.8788973828074
169	TR169	39.18420000000	-78.16730000000	Other	Grouted Riprap		2'	8'			Town Run	Yes	Yes	020700040901	19.7191552750979
170	TR168	39.18440000000	-78.16820000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.247005825624886
171	TR171	39.18460000000	-78.16860000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	1.98546535421771E-02
172	TR170	39.18450000000	-78.16860000000	Other	Concrete		2'	8'			Town Run	Yes	Yes	020700040901	0.713377618325939
173	TR174	39.18450000000	-78.16860000000	Pipe	Other	4"					Town Run	Yes	Yes	020700040901	0.01614733438567
174	TR175	39.18460000000	-78.16870000000	Other	Concrete		2'	6'			Town Run	Yes	Yes	020700040901	4.21648268190054
175	TR179	39.18440000000	-78.16950000000	Pipe	Other	"					Town Run	Yes	Yes	020700040901	2.70343075534596E-02
176	TR177	39.18360000000	-78.17000000000	Pipe	Other	6"					Town Run	Yes	Yes	020700040901	4.62035398629631E-02
177	TR178	39.18460000000	-78.17020000000	Other	Concrete						Town Run	Yes	Yes	020700040901	1.59201859933474
178	TR176	39.18470000000	-78.17030000000								Town Run	Yes	Yes	020700040901	60.644568814441
179	TR0	0.00000000000	0.00000000000	Pipe	Concrete	15"				Not a regulated outfall.	Town Run	Yes	Yes	020700040901	0.893879099662689
180	TR181	0.00000000000	0.00000000000	Pipe	Unknown						Town Run	Yes	Yes	020700040901	0.141118824952695
181	TR182	0.00000000000	0.00000000000	Pipe	Unknown						Town Run	Yes	Yes	020700040901	189.603462417491
182	TR182	0.00000000000	0.00000000000	Pipe	Concrete						Town Run	Yes	Yes	020700040901	189.603462417491
183	TR183	0.00000000000	0.00000000000							Not located in field. Delineated from GIS info.				020700040901	
184	TR184	0.00000000000	0.00000000000							Not located in field. Delineated from GIS.				020700040901	
185	TR185	0.00000000000	0.00000000000							Not located in the field. Delineated based on GIS				020700040901	
186	TR185	0.00000000000	0.00000000000											020700040901	

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
1	AC1	39.16750000000	-78.15430000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	18.3330870602523
2	AC5	39.16840000000	-78.15830000000	Pipe	Other	18"					Abrams Creek	Yes	Yes	020700040902	7.14853461069664
3	AC6	39.16730000000	-78.15890000000	Pipe	Concrete	38 x 24!					Abrams Creek	Yes	Yes	020700040902	7.97739614998404
4	AC7	39.16720000000	-78.15900000000	Pipe	CMP	12					Abrams Creek	Yes	Yes	020700040902	1.42533294396259
5	AC8	39.16690000000	-78.15900000000	Pipe	CMP	18"				Outfall for wet pond. Inline stream.	Abrams Creek	Yes	Yes	020700040902	0.606292229059304
6	AC9	39.16660000000	-78.15920000000	Pipe	CMP	21"					Abrams Creek	Yes	Yes	020700040902	3.36760248237601
7	AC12	39.16630000000	-78.15940000000	Other	Concrete					Drop inlet could not locate outfall into stream	Abrams Creek	Yes	Yes	020700040902	0.558005696390543
8	AC14	39.16570000000	-78.15960000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.636114287619572
9	AC16	39.16450000000	-78.16020000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	14.8562444039031
10	AC17	39.16450000000	-78.16030000000	Pipe	CMP	36"					Abrams Creek	Yes	Yes	020700040902	10.6287741611139
11	AC15	39.16460000000	-78.16030000000	Pipe	Concrete	60					Abrams Creek	Yes	Yes	020700040902	18.1839954184506
12	AC14	39.16460000000	-78.16030000000	Pipe	Concrete	15					Abrams Creek	Yes	Yes	020700040902	0.636114287619572
13	AC20	39.16400000000	-78.16080000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.151633355290411
14	AC21	39.16380000000	-78.16110000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.115612539695503
15	AC22	39.16360000000	-78.16150000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.137704094545544
16	AC22	39.16350000000	-78.16160000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	0.137704094545544
17	AC23	39.16350000000	-78.16160000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.525636338834166
18	AC24	39.16260000000	-78.16320000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	4.96559538690058
19	AC25	39.16240000000	-78.16430000000	Pipe	CMP	48"					Abrams Creek	Yes	Yes	020700040902	22.5012432700939
20	AC26	39.16290000000	-78.16530000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	22.5512586814321
21	AC27	39.16310000000	-78.16560000000	Pipe	Concrete	60"					Abrams Creek	Yes	Yes	020700040902	85.6804715284653
22	AC45	39.16400000000	-78.16640000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	7.31814788918363
23	AC47	39.16390000000	-78.16680000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	0.536480712091713
24	AC46	39.16400000000	-78.16670000000	Pipe	Concrete	18"					Abrams Creek	Yes	Yes	020700040902	2.65918963197453
25	AC49	39.16480000000	-78.16890000000	Pipe	Concrete	12"					Abrams Creek	Yes	Yes	020700040902	0.92729984892364
26	AC51	39.16470000000	-78.17000000000	Pipe	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	3.21255848093938E-02
27	AC51	39.16470000000	-78.17030000000	Pipe	Other	6"				Roof drain	Abrams Creek	Yes	Yes	020700040902	3.21255848093938E-02
28	AC53	39.16470000000	-78.17030000000	Pipe	Other	4"					Abrams Creek	Yes	Yes	020700040902	3.93858442582114E-02
29	AC54	39.16460000000	-78.17060000000	Pipe	Other	8"					Abrams Creek	Yes	Yes	020700040902	0.116913029815461
30	AC55	39.16460000000	-78.17080000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.852420939537308
31	AC59	39.16500000000	-78.17200000000	Pipe	Concrete	36"					Abrams Creek	Yes	Yes	020700040902	7.55367433182378
32	AC59	39.16500000000	-78.17260000000	Pipe	Concrete	18"					Abrams Creek	Yes	Yes	020700040902	7.55367433182378
33	AC158	39.16480000000	-78.17610000000								Abrams Creek	Yes	Yes	020700040902	1.47682076131297
34	AC157	39.16440000000	-78.17780000000	Pipe							Abrams Creek	Yes	Yes	020700040902	1.89105936706258
35	AC156	39.16420000000	-78.17850000000								Abrams Creek	Yes	Yes	020700040902	8.0537280279997
36	AC155	39.16420000000	-78.17960000000								Abrams Creek	Yes	Yes	020700040902	3.95627677319865
37	AC154	39.16440000000	-78.18010000000								Abrams Creek	Yes	Yes	020700040902	11.9686932553953
38	AC71	39.17020000000	-78.18260000000	Other	Concrete					Curb inlet into Stream below	Abrams Creek	Yes	Yes	020700040902	0.504105440756224
39	AC76	39.17200000000	-78.18360000000	Pipe	Other	24"					Abrams Creek	Yes	Yes	020700040902	8.89818057246878
40	AC75	39.17180000000	-78.18360000000	Pipe	Other	15"					Abrams Creek	Yes	Yes	020700040902	0.770686691056888
41	AC2	39.16760000000	-78.15490000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	7.10548843689292
42	AC3	39.16750000000	-78.15540000000	Curb Cut	Concrete		18	6			Abrams Creek	Yes	Yes	020700040902	0.767535407858058
43	AC4	39.16760000000	-78.15540000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.386705551543535
44	AC5	39.17080000000	-78.15660000000	Other	Concrete					Inlet at amphitheater at Park	Abrams Creek	Yes	Yes	020700040902	7.14853461069664
45	AC10	39.16650000000	-78.15870000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	6.89393436354541
46	AC11	39.16590000000	-78.15890000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	5.14348126421565
47	AC13	39.16630000000	-78.15950000000	Curb Cut	Concrete		2	6"			Abrams Creek	Yes	Yes	020700040902	1.24257116282192
48	AC13	39.16620000000	-78.15950000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	1.24257116282192
49	AC18	39.16410000000	-78.16070000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	0.326611824245721

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
50	AC19	39.16420000000	-78.16060000000	Pipe	Concrete	15					Abrams Creek	Yes	Yes	020700040902	0.876013823588502
51	AC28	39.16330000000	-78.16580000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.324165849157145
52	AC29	39.16360000000	-78.16640000000	Pipe	Concrete	15"				Side of culvert at Pleasant Valley Road	Abrams Creek	Yes	Yes	020700040902	10.5781822155192
53	AC29	39.16380000000	-78.16620000000	Pipe	Concrete	15"				At culvert under pleasant valley road	Abrams Creek	Yes	Yes	020700040902	10.5781822155192
54	AC30	39.16370000000	-78.16640000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	1.09872506462479E-02
55	AC31	39.16370000000	-78.16640000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	1.02685515355686E-02
56	AC32	39.16370000000	-78.16630000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	9.41789017191844E-03
57	AC33	39.16370000000	-78.16630000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	8.44653289292504E-03
58	AC34	39.16380000000	-78.16630000000	Other	Concrete	6"				Bridge scupper	Abrams Creek	Yes	Yes	020700040902	1.17259362543233E-02
59	AC35	39.16380000000	-78.16630000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	0.018406233507053
60	AC36	39.16390000000	-78.16640000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	8.95562553725821E-03
61	AC37	39.16390000000	-78.16640000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	6.57115482779274E-03
62	AC38	39.16390000000	-78.16650000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	7.2124949448762E-03
63	AC39	39.16380000000	-78.16650000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	7.06018416394385E-03
64	AC40	39.16380000000	-78.16650000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	8.80452843876427E-03
65	AC41	39.16380000000	-78.16650000000	Other	Concrete	6"					Abrams Creek	Yes	Yes	020700040902	8.28472787781651E-03
66	AC42	39.16380000000	-78.16660000000	Pipe	Concrete	36"					Abrams Creek	Yes	Yes	020700040902	6.72461810840014E-02
67	AC43	39.16380000000	-78.16650000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	0.18761256770415
68	AC44	39.16390000000	-78.16640000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	9.93770666273565E-02
69	AC47	39.16420000000	-78.16770000000	Pipe	Other	12"					Abrams Creek	Yes	Yes	020700040902	0.536480712091713
70	AC48	39.16430000000	-78.16800000000	Pipe	Concrete	6' x 4'					Abrams Creek	Yes	Yes	020700040902	6.48296063233411
71	AC50	39.16480000000	-78.16890000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	4.86895345189806
72	AC52	39.16470000000	-78.17020000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	1.91947786344223
73	AC56	39.16460000000	-78.17120000000	Pipe	Other	4"				Roof drain	Abrams Creek	Yes	Yes	020700040902	2.78302338049059E-02
74	AC56	39.16450000000	-78.17130000000	Pipe	Other	4"				Roof drain	Abrams Creek	Yes	Yes	020700040902	2.78302338049059E-02
75	AC58	39.16490000000	-78.17160000000	Pipe	Concrete	30"					Abrams Creek	Yes	Yes	020700040902	1.92818296262652
76	AC59	39.16470000000	-78.17170000000	Pipe	Concrete	42"					Abrams Creek	Yes	Yes	020700040902	7.55367433182378
77	AC60	39.16500000000	-78.17300000000	Pipe	Other	12"					Abrams Creek	Yes	Yes	020700040902	0.286995766582464
78	AC61	39.16330000000	-78.16240000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	1.05803446488568
79	AC62	39.16300000000	-78.16260000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.203286819044244
80	AC63	39.16300000000	-78.16280000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	4.28826731900947E-02
81	AC64	39.16290000000	-78.16290000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.0860982020233
82	AC65	39.16290000000	-78.16300000000	Curb Cut	Concrete		3'	6"			Abrams Creek	Yes	Yes	020700040902	0.23033025165506
83	AC64	39.16500000000	-78.17330000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.0860982020233
84	AC66	39.16500000000	-78.17380000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.4389950457915
85	AC67	39.16500000000	-78.17400000000	Curb Cut	Concrete		2'	6"			Abrams Creek	Yes	Yes	020700040902	0.853398490694399
86	AC68	39.16900000000	-78.18210000000	Curb Cut	Concrete		6'	6"			Abrams Creek	Yes	Yes	020700040902	4.16156334352798
87	AC69	39.16890000000	-78.18210000000	Pipe	Other	4"				Underdrain outfall for permeable pavers	Abrams Creek	Yes	Yes	020700040902	0.235028976700521
88	AC70	39.16910000000	-78.18150000000	Curb Cut	Natural		2'	2"			Abrams Creek	Yes	Yes	020700040902	0.27576609875967
89	AC70	39.17000000000	-78.18190000000	Pipe	Concrete	30"					Abrams Creek	Yes	Yes	020700040902	0.27576609875967
90	AC72	39.17040000000	-78.18270000000	Other	Concrete					Curb inlet into stream below	Abrams Creek	Yes	Yes	020700040902	0.317289125689952
91	AC73	39.17040000000	-78.18270000000	Pipe	Other	15"					Abrams Creek	Yes	Yes	020700040902	7.30084190487048E-02
92	AC73	39.17080000000	-78.18330000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	7.30084190487048E-02
93	AC74	39.17080000000	-78.18340000000	Pipe	Concrete	18".					Abrams Creek	Yes	Yes	020700040902	2.59194146574027
94	AC76	39.17310000000	-78.18430000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	8.89818057246878
95	AC77	39.17380000000	-78.18530000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	98.8163119591523
96	AC77	39.17430000000	-78.18690000000	Ditch	Natural						Abrams Creek	Yes	Yes	020700040902	98.8163119591523
97	AC78	39.17490000000	-78.18800000000	Pipe	CMP	24"					Abrams Creek	Yes	Yes	020700040902	0.440686297335793
98	AC79	39.17470000000	-78.18830000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	0.786474572386306

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
99	AC78	39.17680000000	-78.19340000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.440686297335793
100	AC79	39.17690000000	-78.19380000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	0.786474572386306
101	AC80	39.17740000000	-78.19510000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	1.90085938784824
102	AC81	39.17760000000	-78.19530000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	1.1697671623468
103	AC82	39.17810000000	-78.19570000000	Pipe	Concrete	24"					Abrams Creek	Yes	Yes	020700040902	10.9110403709579
104	AC84	39.17900000000	-78.19800000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	30.6876794804618
105	AC83	39.17850000000	-78.19720000000	Pipe	Other	6"					Abrams Creek	Yes	Yes	020700040902	1.28998379121924
106	AC85	39.17190000000	-78.18410000000	Pipe	CMP	18"					Abrams Creek	Yes	Yes	020700040902	0.664556974922268
107	AC86	39.17230000000	-78.18440000000	Pipe	Concrete	15"					Abrams Creek	Yes	Yes	020700040902	3.99429022062561
108	AC87	39.17260000000	-78.18460000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	0.655394503794112
109	AC88	39.17300000000	-78.18510000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	14.2683569601159
110	AC89	39.17390000000	-78.18700000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	0.671572120789138
111	AC90	39.16440000000	-78.18250000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	1.4800564666403
112	AC91	39.16440000000	-78.18240000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	0.420441672962314
113	AC92	39.16470000000	-78.18290000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	1.84082891485358
114	AC93	39.16480000000	-78.18300000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	3.7820204332799
115	AC94	39.16510000000	-78.18340000000	Other	Other	48"					Abrams Creek	Yes	Yes	020700040902	71.9533535704981
116	AC94	39.16570000000	-78.18320000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	71.9533535704981
117	AC95	39.16650000000	-78.18310000000	Other	Concrete		4'	4'			Abrams Creek	Yes	Yes	020700040902	62.2900516972993
118	AC95	39.16700000000	-78.18280000000	Pipe	Other					Discharges into underground culvert from riser	Abrams Creek	Yes	Yes	020700040902	62.2900516972993
119	AC96	39.17680000000	-78.18950000000	Pipe	Other	15"					Abrams Creek	Yes	Yes	020700040902	1.5052166764487
120	AC97	39.17690000000	-78.18950000000	Pipe	CMP	15"					Abrams Creek	Yes	Yes	020700040902	13.1006769849395
121	AC98	39.17730000000	-78.18990000000	Pipe	Other	36"					Abrams Creek	Yes	Yes	020700040902	47.9532065509929
122	AC101	39.16260000000	-78.16190000000	Pipe	CMP	72"					Abrams Creek	Yes	Yes	020700040902	7.74448992318177
123	AC150	39.16450000000	-78.18090000000	Other		4"					Abrams Creek	Yes	Yes	020700040902	0.737894834677753
124	AC151	39.16450000000	-78.18090000000	Pipe	Other						Abrams Creek	Yes	Yes	020700040902	0.737663452197583
125	AC152	39.16370000000	-78.18070000000	Pipe		48"					Abrams Creek	Yes	Yes	020700040902	6.1586817926597
126	AC153	39.16440000000	-78.18050000000								Abrams Creek	Yes	Yes	020700040902	39.0612150838457
127	AC154	39.16430000000	-78.18000000000	Ditch	Natural						Abrams Creek	Yes	Yes	020700040902	11.9686932553953
128	AC157	39.16440000000	-78.17770000000							Outfall 7	Abrams Creek	Yes	Yes	020700040902	1.89105936706258
129	AC158	39.16480000000	-78.17680000000								Abrams Creek	Yes	Yes	020700040902	1.47682076131297
130	AC159	39.16470000000	-78.17590000000							Outfall 4	Abrams Creek	Yes	Yes	020700040902	0.671710708311332
131	AC159	39.16490000000	-78.17550000000								Abrams Creek	Yes	Yes	020700040902	0.671710708311332
132	AC160	39.16490000000	-78.17530000000								Abrams Creek	Yes	Yes	020700040902	92.4210474812173
133	AC99	39.17780000000	-78.19150000000								Abrams Creek	Yes	Yes	020700040902	66.0379847716151
134	AC100	39.17700000000	-78.19260000000	Ditch	Concrete		3	6"			Abrams Creek	Yes	Yes	020700040902	14.3483665324697
135	AC135	39.16440000000	-78.18240000000	Pipe						Approximate location based on GIS	Abrams Creek	Yes	Yes	020700040902	174.056290459517
136	AC136	39.16430000000	-78.18220000000	Pipe						Approximate location based on GIS	Abrams Creek	Yes	Yes	020700040902	0.971469044673651
137	AC137	39.16430000000	-78.18220000000	Pipe						Approximate location based on GIS	Abrams Creek	Yes	Yes	020700040902	75.6712655535848

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Length	Width	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
1	BLR21	39.15330000000	-78.18090000000	Pipe	Concrete	36"				Inflow into dry pond	Buffalo Lick Run	No	No	020700040901	108.740885605947
2	BLR20	39.15330000000	-78.18080000000	Pipe	Other	4"				Roof Drain	Buffalo Lick Run	No	No	020700040901	0.132012522217756
3	BLR18	39.15330000000	-78.17680000000	Pipe	Concrete	38 x 24					Buffalo Lick Run	No	No	020700040901	76.3168621428703
4	BLR14	39.15320000000	-78.17660000000	Pipe	Other	18"					Buffalo Lick Run	No	No	020700040901	1.81892340212186
5	BLR15	39.15310000000	-78.17640000000	Pipe	Concrete	21"					Buffalo Lick Run	No	No	020700040901	0.436555047203008
6	BLR3	39.14980000000	-78.17300000000	Pipe	CMP	36"					Buffalo Lick Run	No	No	020700040901	37.8575105107099
7	BLR4	39.14980000000	-78.17290000000	Pipe	Other	24"				Outfall for a temporary slope drain.	Buffalo Lick Run	No	No	020700040901	1.08152262115788
8	BLR1	39.14750000000	-78.16940000000	Ditch	Concrete	3'	3'	6"			Buffalo Lick Run	No	No	020700040901	30.9271745805017
9	BLR2	39.14800000000	-78.16930000000	Ditch	Other		10'	3'			Buffalo Lick Run	No	No	020700040901	25.6149692087004
10	BLR5	39.15170000000	-78.17550000000	Pipe	Other	18"				Outfall for dry pond	Buffalo Lick Run	No	No	020700040901	2.13860369450257
11	BLR6	39.15180000000	-78.17550000000	Pipe	Other	48"					Buffalo Lick Run	No	No	020700040901	1.81432797859988
12	BLR7	39.15180000000	-78.17560000000	Pipe	Other	18"				Outfall for dry pond BMP	Buffalo Lick Run	No	No	020700040901	1.24252018243779
13	BLR8	39.15180000000	-78.17570000000	Pipe	Concrete		4'	4'			Buffalo Lick Run	No	No	020700040901	0.595317639729003
14	BLR9	39.15180000000	-78.17570000000	Ditch	Other		4'	4'		Control structure for dry Pond facility	Buffalo Lick Run	No	No	020700040901	0.514694896410577
15	BLR10	39.15290000000	-78.17600000000	Curb Cut	Concrete		2'	6"			Buffalo Lick Run	No	No	020700040901	0.127348641889167
16	BLR11	39.15290000000	-78.17620000000	Pipe	Concrete	12"				In culvert under Pleasant Valley Drive	Buffalo Lick Run	No	No	020700040901	0.187312823057748
17	BLR12	39.15300000000	-78.17610000000	Pipe	Concrete	24"				Pipe located inside pleasant valley road culvert	Buffalo Lick Run	No	No	020700040901	7.29929172652423
18	BLR13	39.15310000000	-78.17630000000	Pipe	Concrete	12"				Inside culvert under pleasant valley	Buffalo Lick Run	No	No	020700040901	8.61605853404711
19	BLR16	39.15320000000	-78.17680000000	Pipe	Other	4"				Roof Drain	Buffalo Lick Run	No	No	020700040901	5.38315368640909E-02
20	BLR17	39.15320000000	-78.17680000000	Pipe	Other	4"				Roof Drain or drain from bioretention	Buffalo Lick Run	No	No	020700040901	0.213045577262989
21	BLR19	39.15320000000	-78.17680000000	Pipe	Other	4"				Drain for bioretention	Buffalo Lick Run	No	No	020700040901	0.110298261306306
22	BLR22	39.15380000000	-78.17890000000	Pipe	Concrete	18"				Inflow into dry pond	Buffalo Lick Run	No	No	020700040901	4.74989440086516
23	BLR23	39.15660000000	-78.17970000000	Pipe	Concrete	28 x 42				Inflow into dry pond	Buffalo Lick Run	No	No	020700040901	130.872798414796

OBJECTID	Unique_Ide	Latitude	Longitude	Point_of_D	Material	Diameter	Width	Length	Depth	Field_Note	Receiving_	Impaired	TMDL_Devel	HUC12	Estimated_
1	HR29	39.14100000000	-78.19070000000	Ditch	Concrete		5'				Hogue Run	No	No	020700040901	102.180733023591
2	HR31	39.14090000000	-78.19070000000	Pipe	CMP	15"				Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.332773433655738
3	HR38	39.14070000000	-78.19200000000	Pipe	Concrete	36"				Outside of Winchester Boundary	Hogue Run	No	No	020700040901	1.98481507812205E-02
4	HR27	39.14090000000	-78.19030000000	Ditch	Concrete		6'	4'		Pipe connected to concrete ditch. Remiss for in a ditch test at the outfall. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	33.7935319850913
5	HR25	39.14050000000	-78.18940000000	Pipe	Concrete	36"					Hogue Run	No	No	020700040901	10.0310171045011
6	HR18	39.13890000000	-78.18600000000	Pipe	Concrete	15"					Hogue Run	No	No	020700040901	0.414744685246967
7	HR16	39.13850000000	-78.18520000000	Curb Cut	Concrete		3			Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.466956338896855
8	HR15	39.13850000000	-78.18510000000	Pipe	Concrete	15"					Hogue Run	No	No	020700040901	0.685647405948702
9	HR1	39.13070000000	-78.18320000000	Ditch	Concrete	N/A	4'	6"		Concrete ditch adjacent to culvert under 81. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	5.56979487628887
10	HR2	39.13180000000	-78.18410000000	Pipe	Concrete	27"				27"RCP identified as SW-003 on tree property. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	29.2225688068728
11	HR4	39.13530000000	-78.18300000000	Pipe	Other	6"				6 inch PVC connected to a wet pond. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	2.75441215272757
12	HR5	39.13610000000	-78.18290000000	Ditch	Natural		5'	2'		Identified as Trex outfall for SW ΓÇô 002. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	15.0413076423608
13	HR6	39.13620000000	-78.18280000000	Pipe	CMP	18"				CMP pipe upstream of Shawnee Rd culvert. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.844734941746913
14	HR7	39.13650000000	-78.18260000000	Pipe	Other	4"				Roof drain. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	4.16223240955644E-02
15	HR8	39.13660000000	-78.18250000000	Pipe	Other	4"				Roof drain. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.133956878474378
16	HR9	39.13660000000	-78.18250000000	Pipe	Other	4"				Roof drain. Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.040915902784197
17	HR10	39.13670000000	-78.18270000000	Pipe	Other	2"				Roof drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	2.88721836271562E-02
18	HR11	39.13810000000	-78.18430000000	Curb Cut	Concrete		3.5'	6"			Hogue Run	No	No	020700040901	0.317731213522853
19	HR12	39.13800000000	-78.18450000000	Curb Cut	Concrete		3'	6"		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	1.33234646514556
20	HR13	39.13820000000	-78.18460000000	Curb Cut	Concrete		4'	6"			Hogue Run	No	No	020700040901	0.53205626633306
21	HR14	39.13840000000	-78.18500000000	Pipe	Other	6"					Hogue Run	No	No	020700040901	0.205036804086764
22	HR17	39.13910000000	-78.18620000000	Pipe	Concrete	15"				Ditch located along railroad track.	Hogue Run	No	No	020700040901	1.82859358233884
23	HR19	39.13900000000	-78.18620000000	Ditch	Natural		5'	4'		Ditch located along railroad track. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	0.551500914769099
24	HR20	39.13910000000	-78.18640000000	Ditch	Natural		5'	2'		Ditch located along railroad track. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	36.753393070851
25	HR21	39.13930000000	-78.18640000000	Ditch	Natural		5'	4'		Ditch located along railroad track.	Hogue Run	No	No	020700040901	32.0341500052752
26	HR22	39.13940000000	-78.18670000000	Pipe	Other	4"				Roof Drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	9.92769758224015E-02
27	HR23	39.13960000000	-78.18710000000	Pipe	Concrete	15"				Outside of Winchester Boundary	Hogue Run	No	No	020700040901	4.23989753349977
28	HR24	39.14030000000	-78.18910000000	Pipe	Other	4"				4 inch PVC pipe capped off at three. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	9.67473832685583E-02
29	HR26	39.14050000000	-78.18960000000	Ditch	Natural		4'	2'		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	0.39196507306179
30	HR28	39.14080000000	-78.19040000000	Ditch	Concrete	3'				Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	18.8409418047058
31	HR30	39.14090000000	-78.19120000000	Ditch	Concrete		6'	2"		Outside of Winchester Boundary	Hogue Run	No	No	020700040901	1.59111653872587
32	HR32	39.14090000000	-78.19120000000	Pipe	Other	4"				Roof Drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	3.07408355899173E-02
33	HR33	39.14090000000	-78.19120000000	Pipe	Other	4"				Roof Drain. Outside of Winchester Boundary.	Hogue Run	No	No	020700040901	4.14663937805135E-02
34	HR34	39.14090000000	-78.19180000000	Pipe	Concrete	15"					Hogue Run	No	No	020700040901	2.79668781869202
35	HR35	39.14080000000	-78.19180000000	Curb Cut			3'				Hogue Run	No	No	020700040901	0.1495673466211
36	HR36	39.14080000000	-78.19170000000	Pipe	Other	4"				Roof Drain.	Hogue Run	No	No	020700040901	2.46380542503535E-02
37	HR37	39.14070000000	-78.19170000000	Ditch	Concrete		3'	6"		Outside of WInchester Boundary	Hogue Run	No	No	020700040901	0.397139633797864
38	HR39	39.14070000000	-78.19210000000	Ditch	Concrete		3'	6"		Outside of WInchester Boundary	Hogue Run	No	No	020700040901	0.932799304268193

Attachment 3. Letter from DEQ Confirming City Yards Facility Coverage under the Virginia General Permit for Discharge of Stormwater from Industrial Activities

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
VALLEY REGIONAL OFFICE
P.O. Box 3000, Harrisonburg, Virginia 22801
(540) 574-7800 Fax (540) 574-7878
Physical Address: 4411 Early Road, Harrisonburg, VA
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

Amy Thatcher Owens
Regional Director

August 30, 2019

Perry Eisenach
City of Winchester
Sent by Email (perry.eisenach@winchesterva.gov)

RE: Coverage under the VPDES Industrial Stormwater General Permit
City Yards
Registration No. VAR050822

Mr. Eisenach:

We have reviewed the Registration Statement and have determined that stormwater discharges from the above facility are hereby covered under the referenced VPDES general permit. Your coverage under this permit is effective as of August 30, 2019. The enclosed copy of the general permit contains the applicable stormwater pollution prevention plan (SWPPP), sector specific requirements, monitoring requirements, and other conditions of coverage.

The general permit requires that you update your Stormwater Pollution Prevention Plan (SWPPP) within 90-days of your date of coverage under the permit to incorporate the SWPPP changes that the Department made for this permit reissuance.

For this reissuance, all permit discharge monitoring is semi-annual (i.e., once per six months) unless otherwise directed by the Department. Monitoring for your facility begins with the July 1, 2019 monitoring period.

A Discharge Monitoring Report (DMR) form is included in the reissuance package for reference purposes only. Monitoring results shall be reported in the department's electronic discharge monitoring report (e-DMR) system. All reports and forms submitted in compliance with this permit shall be submitted electronically by the permittee in accordance with 9VAC25-31-1020. Answers to frequently asked questions and the e-DMR registration process can be located at the following website: https://www.deq.virginia.gov/Programs/Water/PermittingCompliance/ElectronicDMRsubmissions.aspx

Monitoring results must be submitted by January 10th and July 10th each year via e-DMR. The first DMR is due January 10, 2020, for the monitoring period of July 1, 2019 through December 31, 2019.

The following discharge monitoring applies to your facility:

- Benchmark monitoring. Specific stormwater monitoring for your facility based on the industrial sectors that apply to your facility. Refer to the permit Part I.A.1.b for the benchmark monitoring requirements, and the sector specific sections for the benchmark monitoring applicable to your facility.

- Impaired Waters Monitoring – Waters With An Approved TMDL. Your facility has been identified as discharging the pollutant of concern to an impaired waterbody that has an approved Total Maximum Daily Load (TMDL) wasteload allocation. As such, you are required to modify your SWPPP to implement best management practices (BMPs) designed to meet the allocation in the TMDL. The TMDL contains a specific wasteload allocation for your facility that is equivalent to a concentration of 60 mg/L of total suspended solids in the stormwater discharge. Therefore, you are required to monitor your stormwater discharges for the TMDL pollutant of concern. Refer to the permit Part I.A.1.c(3) for TMDL monitoring requirements and permit Special Condition # 7a (permit Part I.B.7.a) regarding TMDL requirements. Copies of the TMDL Final Report are available upon request.

- Impaired Waters Monitoring – Chesapeake Bay TMDL – Special Monitoring For Facilities In The Chesapeake Bay Watershed. Your facility was to have monitored stormwater discharges during the 2014 industrial stormwater general permit term in support of the Chesapeake Bay TMDL. Our records indicate that your facility did not complete the four sampling events as required by the permit. Facilities that did not complete four sampling events for Total Suspended Solids (TSS), Total Nitrogen (TN), and Total Phosphorus (TP) during the 2014 industrial stormwater general permit term are required to complete the monitoring during the 2019 permit term.

  Data that was collected during the 2014 industrial stormwater general permit term for TSS, TN, or TP may be used to satisfy part of the required four sampling events. In accordance with the permit Part I.B.8.c(2), upon completion of the fourth sampling event your facility is required to calculate stormwater nutrient and sediment loads. Calculations are to be completed using the four completed sampling events and the acreages provided on the registration statement for the 2019 permit term. Information to assist with performing the calculations, including a Chesapeake Bay TMDL Calculation Spreadsheet is available at the following: https://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx#isw

  If the calculations indicate the facility loading rate for any of the parameters (e.g. TSS, TN, or TP) is above the loading rates identified in the permit Part I.B.8.c(1), a Chesapeake Bay TMDL action plan shall be developed and submitted to the DEQ – Valley Regional Office. The Chesapeake Bay TMDL Action Plan Form for submitting your Plan may be found at the same link noted above.

  The calculations, and Chesapeake Bay TMDL action plan if required, shall be submitted to the DEQ – Valley Regional Office within 90 days from the end of the last monitoring period that satisfies the monitoring requirement in the permit Part I.B.8.a (all four sampling events have been completed) and copies shall also be maintained with the facility's SWPPP.

Virginia's Phase I Chesapeake Bay Total Maximum Daily Load (TMDL) Watershed Implementation Plan (November 29, 2010), states that the wasteloads from any expansion of an existing permitted facility discharging stormwater in the Chesapeake Bay watershed cannot exceed the nutrient and sediment loadings that were discharged from the expanded portion of the land prior to the land being developed for the expanded industrial activity. For any industrial activity area expansions (i.e., construction activities, including clearing, grading and excavation activities) that commence on or after July 1, 2019, you must document in the SWPPP the information and calculations used to determine the nutrient and sediment loadings discharged from the expanded land area prior to the land being developed, and the measures and controls that were employed to meet the no net increase of stormwater nutrient and sediment load as a result of the expansion of the industrial activity. Any land disturbance that is not required to be permitted under the VPDES construction stormwater general permit regulation (9VAC25-880) is exempt from this requirement.

This general permit will expire on June 30, 2024. The permit requires that you submit a new registration statement at least 60 days prior to that date if you wish continued coverage under the general permit, unless permission for a later date has been granted by the Board. Permission cannot be granted to submit the registration statement after the expiration date of the permit.

If you have any questions, please contact Noel Thomas at noel.thomas@deq.virginia.gov or (540) 574-7899.

Sincerely,

Brandon D. Kiracofe

Brandon D. Kiracofe
Regional Water Permits & Compliance Manager

Enclosures
cc: ECM Water Permitting
Linda Ferguson-Davie – VRO (electronic)
Kelly Henshaw (kelly.henshaw@winchesterva.gov)
Joe Formanski (joe.formanski@winchesterva.gov)

PERMITTED FACILITY

City Yards

15 N Cameron St, Winchester VA 22601

Permit Number: VAR050822

No Discharge: ☐

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

INDUSTRIAL STORMWATER

DISCHARGE MONITORING REPORT (DMR)

	MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

RETURN TO

Department of Environmental Quality

Valley Regional Office

4411 Early Road, P.O. Box 3000, Harrisonburg VA 22801

(540) 574-7800

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM AND RETURNING IT.

Outfall Num: 001 **Reporting Frequency: Semi-Annual** **Type: BENCHMARK_MONITORING**

Run Date: Aug 29, 2019

PARAMETER		QUALITY OR CONCENTRATION				NO. EX.	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	UNITS		
004 TSS	REPORTD	*********	*********				
	REQRMNT	*********	*********	100	MG/L		GRAB

STORM EVENT INFORMATION

DATE			DURATION		RAINFALL TOTAL (IN.)	PRECEDING	
YEAR	MO	DAY	HOURS	MIN		Days	Hours

Benchmark Monitoring:

Comments:

FOR REFERENCE ONLY - DO NOT SUBMIT

PERMITTED FACILITY

City Yards

15 N Cameron St, Winchester VA 22601

Permit Number: VAR050822

No Discharge: ☐

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

INDUSTRIAL STORMWATER

DISCHARGE MONITORING REPORT (DMR)

	MONITORING PERIOD					
	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

RETURN TO

Department of Environmental Quality

Valley Regional Office

4411 Early Road, P.O. Box 3000, Harrisonburg VA 22801

(540) 574-7800

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM AND RETURNING IT.

Outfall Num: 001 **Reporting Frequency: Semi-Annual** **Type: TMDL_MONITORING**

Run Date: Aug 29, 2019

PARAMETER		QUALITY OR CONCENTRATION				NO. EX.	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	UNITS		
004 TSS	REPORTD	*********	*********				
	REQRMNT	*********	*********	60	MG/L		GRAB
929 ChesBay TMDL TSS	REPORTD	*********	*********				
	REQRMNT	*********	*********	NL	MG/L		GRAB
930 ChesBay TMDL Nitrogen, Total (as N)	REPORTD	*********	*********				
	REQRMNT	*********	*********	NL	MG/L		GRAB
931 ChesBay TMDL Phosphorus, Total (as P)	REPORTD	*********	*********				
	REQRMNT	*********	*********	NL	MG/L		GRAB

STORM EVENT INFORMATION

DATE			DURATION		RAINFALL TOTAL (IN.)	PRECEDING	
YEAR	MO	DAY	HOURS	MIN		Days	Hours

TMDL Monitoring:

Comments:

FOR REFERENCE ONLY - DO NOT SUBMIT

This report is required by your VPDES permit and by law. (See, e.g., the Code of Virginia of 1950 §62.1-44.5 and 9 VAC 25-31-50.) Failure to report or failure to report truthfully can result in civil penalties of $32,500 per violation, per day and felony prosecutions which can carry a 15 year term.

DISCHARGE MONITORING REPORT (DMR) - GENERAL INSTRUCTIONS

1. Complete this form in permanent ink or indelible pencil. The use of 'correction fluids/tape' is not allowed.
2. Enter a check mark or otherwise indicate the appropriate "Monitoring Period" when sampling occurred.
3. For those parameters where the "REQUIREMENT" spaces have a reporting requirement or limitation, provide data in the "REPORTED" spaces in accordance with your permit.
4. Enter maximum concentration and units in the "REPORTED" spaces in the appropriate column under the header of "Concentration".
5. For all parameters enter the number of samples which do not comply with the minimum or maximum permit requirement in the "REPORTED" space in the column marked "No. Ex." (Number of Exceedances). If none, enter "0". Do NOT include monthly average violations in this field.
6. You are required to sample (at a minimum) according to the Sample Frequencies and Sample Types specified in your permit. If you sample more often than the Sample Frequency specified in your permit then all data must be used when completing the DMR.
7. Enter the actual type of sample (Grab, 8HC, 24HC, etc) collected for each parameter in the "REPORTED" space in the column marked "Sample Type".
8. Storm Event Information (i.e., a "measurable storm event" is a storm event that results in an actual discharge from the site, providing the interval from the preceding measurable Storm event is at least 72 hours):
    1. Enter the date (Year/Month/Day) of the "measurable storm event"
    2. Enter the duration (hours and minutes) of "measurable storm event"
    3. Enter the rainfall total (inches) of the "measurable storm event"
    4. Enter the number of days and hours from the preceding "measurable storm event"
9. The principal executive officer then reviews the form and must sign in the space provided and provide a telephone number where he/she can be reached. Enter the date (Year/Month/Day) the DMR was signed. The final page of the DMR must have an original signature and date.
10. Send the completed form(s) with original signatures to your Department of Environmental Quality Regional Office by the 10th of month following the monitoring period.
11. You are required to retain a copy of the report for your records.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

General Permit Registration No.: VAR050822
Effective Date: July 1, 2019
Expiration Date: June 30, 2024

VPDES GENERAL PERMIT FOR STORMWATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITY

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the State Water Control Law and regulations adopted pursuant thereto, owners of facilities with stormwater discharges associated with industrial activity are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those waters specifically named in board regulation that prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, the registration statement, Part I-Effluent Limitations, Monitoring Requirements and Special Conditions, Part II-Conditions Applicable to All VPDES Permits, Part III-Stormwater Pollution Prevention Plan, and Part IV-Sector-Specific Permit Requirements, as set forth in this general permit.

Part I. Effluent Limitations, Monitoring Requirements and Special Conditions

A. Effluent limitations and monitoring requirements.

There are four individual and separate categories of monitoring requirements that a facility may be subject to under this permit: (i) quarterly visual monitoring; (ii) benchmark monitoring of discharges associated with specific industrial activities; (iii) compliance monitoring for discharges subject to numerical effluent limitations; and (iv) monitoring of discharges to impaired waters, both those with an approved TMDL and those without an approved TMDL. The monitoring requirements and numeric effluent limitations applicable to a facility depend on the types of industrial activities generating stormwater runoff from the facility, and for TMDL monitoring, the location of the facility's discharge or discharges. Part IV of the permit (9VAC25-151-90 et seq.) identifies monitoring requirements applicable to specific sectors of industrial activity. The permittee shall review Part I A 1 and Part IV of the permit to determine which monitoring requirements and numeric limitations apply to his facility. Unless otherwise specified, limitations and monitoring requirements under Part I A 1 and Part IV are additive.

Sector-specific monitoring requirements and limitations are applied discharge by discharge at facilities with colocated activities. Where stormwater from the colocated activities are commingled, the monitoring requirements and limitations are additive. Where more than one numeric limitation for a specific parameter applies to a discharge, compliance with the more restrictive limitation is required. Where benchmark, numerical effluent limitations, or TMDL monitoring requirements for a monitoring period overlap, the permittee may use a single sample to satisfy monitoring requirements.

1. Types of monitoring requirements and limitations.
   a. Quarterly visual monitoring. The requirements and procedures for quarterly visual monitoring are applicable to all facilities covered under this permit, regardless of the facility's sector of industrial activity.
      (1) The permittee shall perform and document a quarterly visual examination of a stormwater discharge associated with industrial activity from each outfall, except discharges exempted in Part I A 3 or Part I A 4. The examinations shall be made at least once in each of the following three-month periods: January through March, April through June, July through September, and October through December. The visual examination shall be made during normal working hours, where practicable, and when considerations for safety and feasibility allow. If no storm event resulted in runoff from the facility during a monitoring quarter, the permittee is excused from visual monitoring for that quarter provided that documentation is included with the monitoring records indicating that no runoff occurred. The documentation shall be signed and certified in accordance with Part II K of this permit.
      (2) Samples shall be collected in accordance with Part I A 2. Sample examination shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution. The visual examination of the sample shall be conducted in a well-lit area. No analytical tests are required to be performed on the samples.
      (3) The visual examination reports shall be maintained on-site with the SWPPP. The report shall include the outfall location, the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the stormwater discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution), and probable sources of any observed stormwater contamination.

b. Benchmark monitoring of discharges associated with specific industrial activities.

Table 70-1 identifies the specific industrial sectors subject to the benchmark monitoring requirements of this permit and the industry-specific pollutants of concern. The permittee shall refer to the tables found in the individual sectors in Part IV (9VAC25-151-90 et seq.) for benchmark monitoring concentration values. Colocated industrial activities at the facility that are described in more than one sector in Part IV shall comply with all applicable benchmark monitoring requirements from each sector.

The results of benchmark monitoring are primarily for the permittee to use to determine the overall effectiveness of the SWPPP in controlling the discharge of pollutants to receiving waters. Benchmark concentration values, included in Part IV of this permit, are not effluent limitations. Exceedance of a benchmark concentration does not constitute a violation of this permit and does not indicate that violation of a water quality standard has occurred; however, it does signal that modifications to the SWPPP are necessary, unless justification is provided in a routine facility inspection. In addition, exceedance of benchmark concentrations may identify facilities that would be more appropriately covered under an individual, or alternative general permit where more specific pollution prevention controls could be required.

TABLE 70-1
INDUSTRIAL SECTORS SUBJECT TO BENCHMARK MONITORING

Industry Sector[1]	SIC Code or Activity Code	Benchmark Monitoring Parameters
AF	4011, 4013, 4111-4173, 4212-4231, 4311, 5171	TSS.

[1] Table does not include parameters for compliance monitoring under effluent limitations guidelines.

(1) Benchmark monitoring shall be performed for all benchmark parameters specified for the industrial sector or sectors applicable to a facility's discharge. Monitoring shall be performed at least once during each of the first four, and potentially all, monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2.

Depending on the results of four consecutive monitoring periods, benchmark monitoring may not be required to be conducted in subsequent monitoring periods (see Part I A 1 b (2)).

(2) Benchmark monitoring waivers for facilities testing below benchmark concentration values. Waivers from benchmark monitoring are available to facilities whose discharges are below benchmark concentration values on an outfall by outfall basis. Sector-specific benchmark monitoring is not required to be conducted in subsequent monitoring periods during the term of this permit provided:

(a) Samples were collected in four consecutive monitoring periods, and the average of the four samples for all parameters at the outfall is below the applicable benchmark concentration value in Part IV. Facilities that were covered under the 2014 industrial stormwater general permit may use sampling data from the last two monitoring periods of that permit and the first two monitoring periods of this permit to satisfy the four consecutive monitoring periods requirement;

(b) The facility is not subject to a numeric effluent limitation established in Part I A 1 c (1) (stormwater effluent limitations), Part I A 1 c (2) (coal pile runoff), or Part IV (Sector Specific Permit Requirements) for any of the parameters at that outfall; and

(c) A waiver request is submitted to and approved by the board. The waiver request shall be sent to the appropriate DEQ regional office, along with the supporting monitoring data for four consecutive monitoring periods, and a certification that, based on current potential pollutant sources and control measures used, discharges from the facility are reasonably expected to be essentially the same (or cleaner) compared to when the benchmark monitoring for the four consecutive monitoring periods was done.

Waiver requests will be evaluated by the board based upon (i) benchmark monitoring results below the benchmark concentration values; (ii) a favorable compliance history (including inspection results); and (iii) no outstanding enforcement actions.

The monitoring waiver may be revoked by the board for cause. The permittee will be notified in writing that the monitoring waiver is revoked, and that the benchmark monitoring requirements are again in force and will remain in effect until the permit's expiration date.

(3) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C and retained in accordance with Part II B.

c. Compliance monitoring for discharges subject to numerical effluent limitations or discharges to impaired waters.

(1) Facilities subject to stormwater effluent limitation guidelines.

(a) Facilities subject to stormwater effluent limitation guidelines (see Table 70-2) are required to monitor such discharges to evaluate compliance with numerical effluent limitations. Industry-specific numerical limitations and compliance monitoring requirements are described in Part IV of the permit (9VAC25-151-90 et seq.). Permittees with colocated industrial activities at the facility that are described in more than one sector in Part IV shall comply on a discharge-by-discharge basis with all applicable effluent limitations from each sector.

(b) Permittees shall monitor the discharges for the presence of the pollutant subject to the effluent limitation at least once during each of the monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2. The substantially identical outfall monitoring provisions (Part I A 2 f) are not available for numeric effluent limits monitoring.

(c) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.

TABLE 70-2 STORMWATER-SPECIFIC EFFLUENT LIMITATION GUIDELINES
Effluent Limitation Guidelines Are Not Applicable to Sector AF

(2) Facilities subject to coal pile runoff monitoring.

(a) Facilities with discharges of stormwater from coal storage piles shall comply with the limitations and monitoring requirements of Table 70-3 for all discharges containing the coal pile runoff, regardless of the facility's sector of industrial activity.

(b) Permittees shall monitor such stormwater discharges at least once during each of the monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2. The substantially identical outfall monitoring provisions (Part I A 2 f) are not available for coal pile numeric effluent limits monitoring.
(c) The coal pile runoff shall not be diluted with other stormwater or other flows in order to meet this limitation.
(d) If a facility is designed, constructed and operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.
(e) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.

TABLE 70-3
NUMERIC LIMITATIONS FOR COAL PILE RUNOFF

Parameter	Limit	Monitoring Frequency	Sample Type
Total Suspended Solids (TSS)	50 mg/l, max.	1/6 months	Grab
pH	6.0 min. - 9.0 max.	1/6 months	Grab

(3) Facilities discharging to an impaired water with an approved TMDL wasteload allocation. Owners of facilities that are a source of the specified pollutant of concern to waters for which a TMDL wasteload allocation has been approved prior to the term of this permit will be notified as such by the department when they are approved for coverage under the general permit.
(a) Upon written notification from the department, facilities subject to TMDL wasteload allocations shall be required to monitor such discharges to evaluate compliance with the TMDL requirements.
(b) Permittees shall monitor the discharges for the pollutant subject to the TMDL wasteload allocation once every six months after coverage under the permit begins, unless otherwise determined by the department for polychlorinated biphenyls (PCBs). Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2.
(c) Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.
(d) If the pollutant subject to the TMDL wasteload allocation is below the quantitation level in all of the samples from the first four monitoring periods (i.e., the first two years of coverage under the permit), the permittee may request to the board in writing that further sampling be discontinued, unless the TMDL has specific instructions to the contrary (in which case those instructions shall be followed). The laboratory certificate of analysis shall be submitted with the request. If approved, documentation of this shall be kept with the SWPPP.

If the pollutant subject to the TMDL wasteload allocation is above the quantitation level in any of the samples from the first four monitoring periods, the permittee shall continue the scheduled TMDL monitoring throughout the term of the permit.

(4) Facilities discharging to an impaired water without an approved TMDL wasteload allocation.

Owners of facilities that discharge to waters listed as impaired in the 2016 Final 305(b)/303(d) Water Quality Assessment Integrated Report, and for which a TMDL wasteload allocation has not been approved prior to the term of this permit, will be notified as such by the department when they are approved for coverage under the general permit.

(a) Upon written notification from the department, facilities discharging to an impaired water without an approved TMDL wasteload allocation shall be required to monitor such discharges for the pollutants that caused the impairment.

(b) Permittees shall monitor the discharges for all pollutants for which the waterbody is impaired, and for which a standard analytical method exists, at least once during each of the monitoring periods after coverage under the permit begins. Monitoring commences with the first full monitoring period after the owner is granted coverage under the permit. Monitoring periods are specified in Part I A 2.

(c) If the pollutant for which the waterbody is impaired is suspended solids, turbidity, or sediment, or sedimentation, monitor for total suspended solids (TSS). If the pollutant for which the waterbody is impaired is expressed in the form of an indicator or surrogate pollutant, monitor for that indicator or surrogate pollutant. No monitoring is required when a waterbody's biological communities are impaired but no pollutant, including indicator or surrogate pollutants, is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modifications, impaired hydrology, or temperature.

Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.

(d) If the pollutant for which the water is impaired is below the quantitation level in the discharges from the facility, or it is above the quantitation level but its presence is caused solely by natural background sources, the permittee may request to the board in writing that further impaired water monitoring be discontinued. The laboratory certificate of analysis shall be submitted with the request. If approved, documentation of this shall be kept with the SWPPP.

To support a determination that the pollutant's presence is caused solely by natural background sources, the following documentation shall be submitted with the request and kept with the SWPPP: (i) an explanation of why it is believed that the presence of the impairment pollutant in the facility's discharge is not related to the activities at the facility; and (ii) data or studies that tie the presence of the impairment pollutant in the facility's discharge to natural background sources in the watershed. Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity at the facility's site, or pollutants in run-on from neighboring sources that are not naturally occurring.

2. Monitoring instructions.

a. Collection and analysis of samples. Sampling requirements shall be assessed on an outfall by outfall basis. Samples shall be collected and analyzed in accordance with the requirements of Part II A.

b. When and how to sample. A minimum of one grab sample shall be taken from the discharge associated with industrial activity resulting from a storm event that results in a discharge from the site (defined as a "measurable storm event"), providing the interval from the preceding measurable storm event is at least 72 hours. The 72-hour storm interval is waived if the permittee is able to document that less than a 72-hour interval is representative for local storm events during the sampling period. In the case of snowmelt, the monitoring shall be performed at a time when a measurable discharge occurs at the site. For discharges from a stormwater management structure, the monitoring shall be performed at a time when a measurable discharge occurs from the structure.

   The grab sample shall be taken during the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, the sample may be taken during the first three hours of the discharge, provided that the permittee explains why a grab sample during the first 30 minutes was impracticable. This information shall be submitted in the department's electronic discharge monitoring report (e-DMR) system, and maintained with the SWPPP. If the sampled discharge commingles with process or nonprocess water, the permittee shall attempt to sample the stormwater discharge before it mixes with the nonstormwater.

c. Storm event data. For each monitoring event (except snowmelt monitoring), along with the monitoring results, the permittee shall identify the date and duration (in hours) of the storm events sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event. For snowmelt monitoring, the permittee shall identify the date of the sampling event.
d. Monitoring periods.
   (1) Quarterly visual monitoring. The quarterly visual examinations shall be made at least once in each of the following three-month periods each year of permit coverage: January through March, April through June, July through September, and October through December.
   (2) Benchmark monitoring, effluent limitation monitoring, and impaired waters monitoring (for waters both with and without an approved TMDL). Monitoring shall be conducted at least once in each of the following semiannual periods each year of permit coverage: January through June, and July through December.
e. Documentation explaining a facility's inability to obtain a sample (including dates and times the outfalls were viewed or sampling was attempted), of no rain event, or of deviation from the "measurable" storm event requirements shall be maintained with the SWPPP. Acceptable documentation includes National Climatic Data Center (NCDC) weather station data, local weather station data, facility rainfall logs, and other appropriate supporting data.
f. Representative outfalls - substantially identical discharges. If the facility has two or more outfalls that discharge substantially identical effluents, based on similarities of the industrial activities, significant materials, size of drainage areas, and stormwater management practices occurring within the drainage areas of the outfalls, frequency of discharges, and stormwater management practices occurring within the drainage areas of the outfalls, the permittee may conduct monitoring on the effluent of just one of the outfalls and report that the observations also apply to the substantially identical outfall or outfalls. The substantially identical outfall monitoring provisions apply to quarterly visual monitoring, benchmark monitoring, and impaired waters monitoring (both those with and without an approved TMDL). The substantially identical outfall monitoring provisions are not available for numeric effluent limits monitoring.

The permittee shall include the following information in the SWPPP:
(1) The locations of the outfalls;
(2) An evaluation, including available monitoring data, indicating the outfalls are expected to discharge substantially identical effluents, including evaluation of monitoring data where available; and
(3) An estimate of the size of each outfall's drainage area in acres.

3. Adverse climatic conditions waiver. When adverse weather conditions prevent the collection of samples, a substitute sample may be taken during a qualifying storm event in the next monitoring period. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, and may include such things as local flooding, high winds, electrical storms, or situations that otherwise make sampling impracticable, such as drought or extended frozen conditions. Unless specifically stated otherwise, this waiver may be applied to any monitoring required under this permit. Narrative documentation of conditions necessitating the use of the waiver shall be kept with the SWPPP.

4. Inactive and unstaffed sites (including temporarily inactive sites).
   a. A waiver of the quarterly visual monitoring, routine facility inspections, and monitoring requirements (including benchmark, effluent limitation, and impaired waters monitoring) may be granted by the board at a facility that is both inactive and unstaffed, as long as the facility remains inactive and unstaffed and there are no industrial materials or activities exposed to stormwater. The owner of such a facility is only required to conduct an annual routine site inspection in accordance with the requirements in Part III B 5.
   b. An inactive and unstaffed sites waiver request shall be submitted to the board for approval and shall include the name of the facility; the facility's VPDES general permit registration number; a contact person, phone number and email address; the reason for the request; and the date the facility became or will become inactive and unstaffed. The waiver request shall be signed and certified in accordance with Part II K. If this waiver is granted, a copy of the request and the board's written approval of the waiver shall be maintained with the SWPPP.
   c. If circumstances change and industrial materials or activities become exposed to stormwater, or the facility becomes either active or staffed, the permittee shall notify the department within 30 days, and all quarterly visual monitoring, routine facility inspections, and monitoring requirements shall be resumed immediately.
   d. The board retains the right to revoke this waiver when it is determined that the discharge is causing, has a reasonable potential to cause, or contributes to a water quality standards violation.
   e. Inactive and unstaffed facilities covered under Sector G (Metal Mining) and Sector H (Coal Mines and Coal Mining-Related Facilities) are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this waiver, consistent with the conditional exemption requirements established in Part IV Sector G and Part IV Sector H.

5. Reporting monitoring results.
   a. Reporting to the department. The permittee shall follow the reporting requirements and deadlines below for the types of monitoring that apply to the facility:

TABLE 70-4
MONITORING REPORTING REQUIREMENTS

Semiannual Monitoring	Submit the results by January 10 and by July 10.
Quarterly Visual Monitoring	Retain results with SWPPP - do not submit unless requested to do so by the department.

Permittees shall submit results for each outfall associated with industrial activity according to the requirements of Part II C.

b. Significant digits. The permittee shall report at least the same number of significant digits as a numeric effluent limitation or TMDL wasteload allocation for a given parameter; otherwise, at least two significant digits shall be reported for a given parameter. Regardless of the rounding convention used by the permittee (i.e., five always rounding up or to the nearest even number), the permittee shall use the convention consistently and shall ensure that consulting laboratories employed by the permittee use the same convention.

6. Corrective actions.
   a. Data exceeding benchmark concentration values.
      (1) If the benchmark monitoring result exceeds the benchmark concentration value for that parameter, the permittee shall review the SWPPP and modify it as necessary to address any deficiencies that caused the exceedance. Revisions to the SWPPP shall be completed within 60 days after an exceedance is discovered. When control measures need to be modified or added (distinct from regular preventive maintenance of existing control measures described in Part III C), implementation shall be completed before the next anticipated storm event if possible, but no later than 60 days after the exceedance is discovered, or as otherwise provided or approved by the department. In cases where construction is necessary to implement control measures, the permittee shall include a schedule in the SWPPP that provides for the completion of the control measures as expeditiously as practicable, but no later than three years after the exceedance is discovered. Where a construction compliance schedule is included in the SWPPP, the SWPPP shall include appropriate nonstructural and temporary controls to be implemented in the affected portions of the facility prior to completion of the permanent control measure. Any control measure modifications shall be documented and dated, and retained with the SWPPP, along with the amount of time taken to modify the applicable control measures or implement additional control measures.
      (2) Natural background pollutant levels. If the concentration of a pollutant exceeds a benchmark concentration value, and the permittee determines that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, corrective action is not required provided that:
         (a) The concentration of the benchmark monitoring result is less than or equal to the concentration of that pollutant in the natural background;
         (b) The permittee documents and maintains with the SWPPP the supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. The supporting rationale shall include any data previously collected by the facility or others (including literature studies) that describe the levels of natural background pollutants in the facility's stormwater discharges; and
         (c) The permittee notifies the department on the benchmark monitoring DMR that the benchmark exceedances are attributable solely to natural background pollutant levels.

         Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on the facility's site, or pollutants in run-on from neighboring sources that are not naturally occurring.
   b. Corrective actions. The permittee shall take corrective action whenever:
      (1) Routine facility inspections, inspections by local, state or federal officials, or any other process, observation or event result in a determination that modifications to the stormwater control measures are necessary to meet the permit requirements;

(2) There is any exceedance of an effluent limitation (including coal pile runoff), TMDL wasteload allocation, or a reduction required by a local ordinance established by a municipality to meet Chesapeake Bay TMDL requirements; or
(3) The department determines, or the permittee becomes aware, that the stormwater control measures are not stringent enough for the discharge to meet applicable water quality standards.

The permittee shall review the SWPPP and modify it as necessary to address any deficiencies. Revisions to the SWPPP shall be completed within 60 days following the discovery of the deficiency. When control measures need to be modified or added (distinct from regular preventive maintenance of existing control measures described in Part III C), implementation shall be completed before the next anticipated storm event if possible, but no later than 60 days after the deficiency is discovered, or as otherwise provided or approved by the department. In cases where construction is necessary to implement control measures, the permittee shall include a schedule in the SWPPP that provides for the completion of the control measures as expeditiously as practicable, but no later than three years after the deficiency is discovered. Where a construction compliance schedule is included in the SWPPP, the SWPPP shall include appropriate nonstructural and temporary controls to be implemented in the affected portion of the facility prior to completion of the permanent control measure. The amount of time taken to modify a control measure or implement additional control measures shall be documented in the SWPPP.

Any corrective actions taken shall be documented and retained with the SWPPP. Reports of corrective actions shall be signed in accordance with Part II K.

c. Follow-up reporting. If at any time monitoring results indicate that discharges from the facility exceed an effluent limitation or a TMDL wasteload allocation, or the department determines that discharges from the facility are causing or contributing to an exceedance of a water quality standard, immediate steps shall be taken to eliminate the exceedances in accordance with the above Part I A 6 b (Corrective actions). Within 30 calendar days of implementing the relevant corrective action, an exceedance report shall be submitted to the department. The following information shall be included in the report:
(1) General permit registration number;
(2) Facility name and address;
(3) Receiving water for each outfall exceeding an effluent limitation of TMDL wasteload allocation;
(4) Monitoring data from the event being reported;
(5) A narrative description of the situation;
(6) A description of actions taken since the event was discovered and steps taken to minimize to the extent feasible pollutants in the discharge; and
(7) A local facility contact name, email address, and phone number.

B. Special conditions.

1. Authorized nonstormwater discharges. Except as provided in this section or in Part IV (9VAC25-151-90 et seq.), all discharges covered by this permit shall be composed entirely of stormwater. The following nonstormwater discharges are authorized by this permit:
a. Discharges from emergency firefighting activities;
b. Fire hydrant flushings, managed in a manner to avoid an instream impact;
c. Potable water, including water line flushings, managed in a manner to avoid an instream impact;
d. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;

e. Irrigation drainage;
f. Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
g. Routine external building washdown that does not use detergents or hazardous cleaning products;
h. Pavement wash waters where no detergents or hazardous cleaning products are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed). Pavement wash waters shall be managed in a manner to avoid an instream impact;
i. Uncontaminated groundwater or spring water;
j. Foundation or footing drains where flows are not contaminated with process materials; and
k. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

All other nonstormwater discharges are not authorized and shall either be eliminated or covered under a separate VPDES permit.

2. Releases of hazardous substances or oil in excess of reportable quantities. The discharge of hazardous substances or oil in the stormwater discharges from the facility shall be prevented or minimized in accordance with the SWPPP for the facility. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill. This permit does not relieve the permittee of the reporting requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 or § 62.1-44.34:19 of the Code of Virginia.

   Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period:
   a. The permittee is required to notify the department in accordance with the requirements of Part II G as soon as he has knowledge of the discharge;
   b. Where a release enters an MS4, the permittee shall also notify the owner of the MS4; and
   c. The SWPPP required under Part III shall be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the SWPPP shall be modified where appropriate.

3. Colocated industrial activity. If the facility has industrial activities occurring on-site which are described by any of the activities in Part IV of the permit (9VAC25-151-90 et seq.), those industrial activities are considered to be colocated industrial activities. Stormwater discharges from colocated industrial activities are authorized by this permit, provided that the permittee complies with any and all additional SWPPP and monitoring requirements from Part IV applicable to that particular colocated industrial activity. The permittee shall be responsible for additional SWPPP and monitoring requirements applicable to the colocated industrial activity by examining the narrative descriptions of all discharges covered under this section.

4. The stormwater discharges authorized by this permit may be combined with other sources of stormwater which are not required to be covered under a VPDES permit, so long as the combined discharge is in compliance with this permit.

5. There shall be no discharge of waste, garbage, or floating debris in other than trace amounts.

6. Approval for coverage under this general permit does not relieve the permittee of the responsibility to comply with any other applicable federal, state, or local statute, ordinance, or regulation.

7. Discharges to waters subject to TMDL wasteload allocations. Owners of facilities that are a source of the specified pollutant of concern to waters for which a TMDL wasteload allocation has been approved prior to the term of this permit shall incorporate measures and controls into the SWPPP required by Part III that are consistent with the assumptions and requirements of the TMDL. The department will provide written notification to the owner that a facility is subject to the TMDL requirements. The facility's SWPPP shall specifically address any conditions or requirements included in the TMDL that are applicable to discharges from the facility. If the TMDL establishes a specific numeric wasteload allocation that applies to discharges from the facility, the owner shall perform any required monitoring in accordance with Part I A 1 c (3), and implement control measures designed to meet that allocation.

8. Discharges to waters subject to the Chesapeake Bay TMDL.
   a. Owners of facilities in the Chesapeake Bay watershed shall monitor their discharges for total suspended solids (TSS), total nitrogen (TN), and total phosphorus (TP) to characterize the contributions from their facility's specific industrial sector for these parameters. Total nitrogen is the sum of total Kjeldahl nitrogen (TKN) and nitrite + nitrate and shall be derived from the results of those tests. After the facility is granted coverage under the permit, samples shall be collected during each of the first four monitoring periods (i.e., the first two years of permit coverage). Monitoring periods are specified in Part I A 2. Samples shall be collected and analyzed in accordance with Part I A 2. Monitoring results shall be reported in accordance with Part I A 5 and Part II C, and retained in accordance with Part II B.
   b. Facilities that were covered under the 2014 industrial stormwater general permit shall comply with the following:
      (1) Facilities that submitted a Chesapeake Bay TMDL action plan that was approved by the board during the 2014 industrial stormwater general permit term shall continue to implement the approved Chesapeake Bay TMDL action plan during this permit term. An annual report shall be submitted to the department by June 30 of each year describing the progress in meeting the required reductions unless this reporting requirement is waived by the department in accordance with Part I B 8 g. Monitoring in accordance with Part I B 8 a is not required for these facilities during this permit term.
      (2) Facilities that completed four samples for TSS, TN, and TP during the 2014 industrial stormwater general permit term shall utilize the procedures in Part I B 8 c (2) to calculate their facility stormwater loads. The permittee shall submit a copy of the calculations and Chesapeake Bay TMDL action plan if required under Part I B 8 f to the department within 60 days of coverage under this general permit.
      (3) Facilities that did not complete four samples for TSS, TN, and TP during the 2014 industrial stormwater general permit term shall be subject to completing the monitoring requirements in Part I B 8 a beginning with the first full monitoring period after receiving permit coverage. Calculations and a Chesapeake Bay TMDL action plan if required under Part I B 8 f shall be submitted no later than 90 days following the completion of the fourth monitoring period to the DEQ regional office serving the area where the industrial facility is located on a form provided by the department and maintained with the facility's SWPPP.
      (4) Facilities that monitored for TSS, TN, or TP may use the applicable sampling data collected during the 2014 industrial stormwater general permit term to satisfy all or part of the four monitoring periods requirement in accordance with Part I B 8 a.

c. Chesapeake Bay TMDL wasteload allocations and Chesapeake Bay TMDL action plans.

(1) EPA's Chesapeake Bay TMDL (December 29, 2010) includes wasteload allocations for VPDES permitted industrial stormwater facilities as part of the regulated stormwater aggregate load. EPA used data submitted by Virginia with the Phase I Chesapeake Bay TMDL Watershed Implementation Plan, including the number of industrial stormwater permits per county and the number of urban acres regulated by industrial stormwater permits, as part of their development of the aggregate load. Aggregate loads for industrial stormwater facilities were appropriate because actual facility loading data were not available to develop individual facility wasteload allocations.

Virginia estimated the loadings from industrial stormwater facilities using actual and estimated facility acreage information and TP, TN, and TSS loading rates from the Northern Virginia Planning District Commission (NVPDC) Guidebook for Screening Urban Nonpoint Pollution Management Strategies (Annandale, VA November 1979), prepared for the Metropolitan Washington Council of Governments. The loading rates used were as follows:

TP - High (80%) imperviousness industrial; 1.5 lb/ac/yr
TN - High (80%) imperviousness industrial; 12.3 lb/ac/yr
TSS - High (80%) imperviousness industrial; 440 lb/ac/yr

The actual facility area information and the TP, TN, and TSS data collected for this permit will be used by the board to quantify the nutrient and sediment loads from VPDES permitted industrial stormwater facilities.

(2) Calculation of facility loads. The permittee shall analyze the nutrient and sediment data collected in accordance with Part I B 8 a and 8 b to determine if pollution reductions are required for this permit term. The permittee shall average the data collected at the facility for each of the pollutants of concern (POC) (e.g., TP, TN, and TSS) and compare the results to the loading rates for TP, TN, and TSS presented in Part I B 8 c (1).

The following formula may be used to determine the loading rate:
$L = 0.226 \times P \times Pj \times (0.05 + (0.9 \times Ia)) \times C$

where:
L = the POC loading rate (lb/acre/year)
P = the annual rainfall (inches/year) - The permittee may use either actual annual average rainfall data for the facility location (in inches/year), the Virginia annual average rainfall of 44.3 inches/year, or another method approved by the board.
Pj = the fraction of annual events that produce runoff - The permittee shall use 0.9 unless the board approves another rate.
Ia = the impervious fraction of the facility impervious area of industrial activity to the facility industrial activity area
C = the POC average concentration of all facility samples (mg/L) - Facilities with multiple outfalls shall calculate a weighted average concentration for each outfall using the drainage area of each outfall.

For total phosphorus and total suspended solids, all daily concentration data below the quantitation level (QL) for the analytical method used shall be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

For total nitrogen, if none of the daily concentration data for the respective species (i.e., TKN, nitrate, or nitrite) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

d. The permittee shall submit a copy of the calculations to the department within 90 days from the end of the last monitoring period that satisfies the monitoring requirement in Part I B 8 a. Calculations shall be submitted to the DEQ regional office serving the area where the industrial facility is located, on a form provided by the department, and maintained with the facility's SWPPP.
e. Any modification to the facility's industrial acreage or impervious industrial acreage shall require the facility to recalculate facility loading rates. This may require the facility to modify the facility's Chesapeake Bay TMDL action plan or submit a Chesapeake Bay TMDL action plan as appropriate. Any recalculation of facility loading rates or modifications to a Chesapeake Bay TMDL action plan shall be submitted to the department within 90 days of the date on which the permittee completes a site modification. If previous monitoring is no longer representative of the modified facility, monitoring in accordance with Part I B 8 a shall commence within 90 days of the modification and the revised calculations and Chesapeake Bay TMDL action plan if required under Part I B 8 f shall be submitted no later than 90 days following completion of the fourth monitoring period.
f. Chesapeake Bay TMDL action plan requirements. If the calculated facility loading rate for TP, TN, or TSS is above the loading rates for TP, TN, or TSS presented in Part I B 8 c (1), then the permittee shall develop and submit a Chesapeake Bay TMDL action plan to the department.

   The Chesapeake Bay TMDL action plan shall be submitted on a form provided by the department to the regional office serving the area where the industrial facility is located within 90 days following the completion of the fourth monitoring period. A copy of the current Chesapeake Bay TMDL action plan and all facility loading rate calculations shall be maintained with the facility's SWPPP. The Chesapeake Bay TMDL action plan shall include:
   (1) A determination of the total pollutant load reductions for TP, TN, and TSS (as appropriate) necessary to reduce the annual loads from industrial activities. This shall be determined by multiplying the industrial average times the difference between the TMDL loading rates listed in Part I B 8 c (1) and the actual facility loading rates calculated in accordance with Part I B 8 c (2). The reduction applies to the total difference calculated for each pollutant of concern;
   (2) The means and methods, such as management practices and retrofit programs, that will be utilized to meet the required reductions determined in Part I B 8 f (1) and a schedule to achieve those reductions by June 30, 2024. The schedule should include annual milestones to demonstrate the ongoing progress in meeting those reductions; and
   (3) The permittee may consider utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-44.19:23 of the Code of Virginia, governing trading and offsetting, to meet the required reductions.
g. A permittee required to develop and implement a Chesapeake Bay TMDL Action Plan shall submit an annual report to the department by June 30 of each year describing the progress in meeting the required reductions.

h. Chesapeake Bay TMDL action plan annual reporting waiver. Upon implementation of the facility's Chesapeake Bay TMDL action plan, permittees may submit a waiver for the annual reporting requirements. The waiver request shall be submitted for board approval to the DEQ regional office serving the area where the industrial facility is located on a form provided by the department. Annual reporting requirements will be in effect until the permittee receives notice from the department that the waiver has been approved. A copy of the waiver approval shall be maintained with the SWPPP. The waiver may be revoked for cause by the board. A waiver request may be approved by the board once the permittee demonstrates that they have achieved all of the required pollutant reductions calculated under Part I B 8 f (1). Pollutant reductions may be achieved using a combination of the following alternatives:
   (1) Reductions provided by one or more of the BMPs from the Virginia Stormwater BMP Clearinghouse listed in 9VAC25-870-65, approved BMPs found on the Virginia Stormwater Clearinghouse website, or BMPs approved by the Chesapeake Bay Program. Any BMPs implemented to provide the required pollutant reductions shall be incorporated in the SWPPP and be permanently maintained by the permittee;
   (2) Implementation of site-specific BMPs followed by a minimum of four stormwater samples collected in accordance with sampling requirements in Part I B 8 a that demonstrate pollutant loadings have been reduced below those calculated under Part I B 8 c. Any BMPs implemented to provide the required pollutant reductions shall be incorporated in the SWPPP and be permanently maintained by the permittee; or
   (3) Acquisition of nonpoint source credits certified by the board as perpetual in accordance with § 62.1-44.19:20 of the Code of Virginia.

9. Discharges through a regulated MS4 to waters subject to the Chesapeake Bay TMDL. In addition to the requirements of this permit, any facility with industrial activity stormwater discharges through a regulated MS4 that is notified by the MS4 operator that the locality has adopted ordinances to meet the Chesapeake Bay TMDL shall incorporate measures and controls into its SWPPP to comply with applicable local TMDL ordinance requirements.

10. Expansion of facilities that discharge to waters subject to the Chesapeake Bay TMDL. Virginia's Phase I Chesapeake Bay TMDL Watershed Implementation Plan (November 29, 2010), states that the wasteloads from any expansion of an existing permitted facility discharging stormwater in the Chesapeake Bay watershed cannot exceed the nutrient and sediment loadings that were discharged from the expanded portion of the land prior to the land being developed for the expanded industrial activity.
    a. For any industrial activity area expansions (i.e., construction activities, including clearing, grading, and excavation activities) that commence on or after July 1, 2019, (the effective date of this permit), the permittee shall document in the SWPPP the information and calculations used to determine the nutrient and sediment loadings discharged from the expanded land area prior to the land being developed, and the measures and controls that were employed to meet the no net increase of stormwater nutrient and sediment load as a result of the expansion of the industrial activity. Any land disturbance that is exempt from permitting under the VPDES construction stormwater general permit regulation (9VAC25-880) is exempt from this requirement.
    b. The permittee may use the VSMP water quality design criteria to meet the requirements of Part I B 10 a. Under this criteria, the total phosphorus load shall not exceed the greater of (i) the total phosphorus load that was discharged from the expanded portion of the land prior to the land being developed for the industrial activity or (ii) 0.41 pounds per acre per year. Compliance with the water quality design criteria may be determined utilizing the Virginia Runoff Reduction Method or another equivalent methodology approved by the board. Design specifications and pollutant removal efficiencies for specific BMPs can be found on the Virginia Stormwater BMP Clearinghouse website.

c. The permittee may consider utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-44.19:23 of the Code of Virginia, governing trading and offsetting, to meet the no net increase requirement.

10. Water quality protection. The discharges authorized by this permit shall be controlled as necessary to meet applicable water quality standards. The board expects that compliance with the conditions in this permit will control discharges as necessary to meet applicable water quality standards.

11. Adding or deleting stormwater outfalls. The permittee may add new or delete existing stormwater outfalls at the facility as necessary and appropriate. The permittee shall update the SWPPP and notify the department of all outfall changes within 30 days of the change. The permittee shall submit a copy of the updated SWPPP site map with this notification.

12. Antidegradation requirements for new or increased discharges to high quality waters. Facilities that add new outfalls, or increase their discharges from existing outfalls that discharge directly to high quality waters designated under Virginia's water quality standards antidegradation policy under 9VAC25-260-30 A 2 may be notified by the department that additional control measures, or other permit conditions are necessary to comply with the applicable antidegradation requirements, or may be notified that an individual permit is required in accordance with 9VAC25-31-170 B 3.

13. Termination of permit coverage.
    a. The owner may terminate coverage under this general permit by filing a complete notice of termination with the department. The notice of termination may be filed after one or more of the following conditions have been met:
        (1) Operations have ceased at the facility and there are no longer discharges of stormwater associated with industrial activity from the facility;
        (2) A new owner has assumed responsibility for the facility. A notice of termination does not have to be submitted if a VPDES Change of Ownership Agreement Form has been submitted;
        (3) All stormwater discharges associated with industrial activity have been covered by an individual VPDES permit; or
        (4) Termination of coverage is being requested for another reason, provided the board agrees that coverage under this general permit is no longer needed.
    b. The notice of termination shall contain the following information:
        (1) Owner's name, mailing address, telephone number, and email address (if available);
        (2) Facility name and location;
        (3) VPDES industrial stormwater general permit registration number;
        (4) The basis for submitting the notice of termination, including:
            (a) A statement indicating that a new owner has assumed responsibility for the facility;
            (b) A statement indicating that operations have ceased at the facility, and there are no longer discharges of stormwater associated with industrial activity from the facility;
            (c) A statement indicating that all stormwater discharges associated with industrial activity have been covered by an individual VPDES permit; or
            (d) A statement indicating that termination of coverage is being requested for another reason and a description of the reason; and
        (5) The following certification: "I certify under penalty of law that all stormwater discharges associated with industrial activity from the identified facility that are authorized by this VPDES general permit have been eliminated, or covered under a VPDES individual permit, or that I am no longer the owner of the industrial activity, or permit coverage should be terminated for another reason listed above. I understand

that by submitting this notice of termination, that I am no longer authorized to discharge stormwater associated with industrial activity in accordance with the general permit, and that discharging pollutants in stormwater associated with industrial activity to surface waters is unlawful where the discharge is not authorized by a VPDES permit. I also understand that the submittal of this notice of termination does not release an owner from liability for any violations of this permit or the Clean Water Act."

c. The notice of termination shall be signed in accordance with Part II K.
d. The notice of termination shall be submitted to the DEQ regional office serving the area where the industrial facility is located.

Part II. Conditions Applicable To All VPDES Permits

A. Monitoring.

1. Samples and measurements taken as required by this permit shall be representative of the monitored activity.
2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this permit.
3. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.
4. Samples taken as required by this permit shall be analyzed in accordance with 1VAC30-45, (Certification for Noncommercial Environmental Laboratories), or 1VAC30-46 (Accreditation for Commercial Environmental Laboratories).

B. Records.

1. Records of monitoring information shall include:
   a. The date, exact place, and time of sampling or measurements;
   b. The individuals who performed the sampling or measurements;
   c. The dates and times analyses were performed;
   d. The individuals who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.
2. The permittee shall retain copies of the SWPPP, including any modifications made during the term of this permit, records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the registration statement for this permit, for a period of at least three years from the date that coverage under this permit expires or is terminated. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the board.

C. Reporting Monitoring Results.

1. The permittee shall submit the results of the monitoring required by this permit not later than the 10th day of the month after monitoring takes place, unless another reporting schedule is specified elsewhere in this permit. Monitoring results shall be submitted to the department's regional office.
2. Monitoring results shall be reported in the department's electronic discharge monitoring report (e-DMR) system. All reports and forms submitted in compliance with this permit shall be submitted electronically by the permittee in accordance with 9VAC25-31-1020.
3. If the permittee monitors any pollutant specifically addressed by this permit more frequently than required by this permit using test procedures approved under 40 CFR Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in e-DMR or reporting form specified by the department.
4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

D. Duty to Provide Information.

The permittee shall furnish to the Department, within a reasonable time, any information which the board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating coverage under this permit or to determine compliance with this permit. The board may require the permittee to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from the discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposes of the State Water Control Law. The permittee shall also furnish to the department upon request, copies of records required to be kept by this permit.

E. Compliance Schedule Reports.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized Discharges.

Except in compliance with this permit, or another permit issued by the Board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.

G. Reports of Unauthorized Discharges.

Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II F; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II F, shall notify the department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;
3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

Discharges reportable to the department under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of Unusual or Extraordinary Discharges.

If any unusual or extraordinary discharge including a bypass or upset should occur from a treatment works and the discharge enters or could be expected to enter state waters, the permittee shall promptly notify, in no case later than 24 hours, the department by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse affects on aquatic life and the known number of fish killed. The permittee shall reduce the report to writing and shall submit it to the department within five days of discovery of the discharge in accordance with Part II I 1 b. Unusual and extraordinary discharges include any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;
2. Breakdown of processing or accessory equipment;
3. Failure or taking out of service some or all of the treatment works; and
4. Flooding or other acts of nature.

I. Reports of Noncompliance.

1. The permittee shall report any noncompliance that may adversely affect state waters or may endanger public health.
   a. An oral report shall be provided within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which shall be reported within 24 hours under Part II I:
      (1) Any unanticipated bypass; and
      (2) Any upset which causes a discharge to surface waters.
   b. A written report shall be submitted within five days and shall contain:
      (1) A description of the noncompliance and its cause;
      (2) The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
      (3) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   The board may waive the written report on a case-by-case basis for reports of noncompliance under Part II I if the oral report has been received within 24 hours and no adverse impact on state waters has been reported.

2. The permittee shall report all instances of noncompliance not reported under Part II I 1 in writing, at the time the next monitoring reports are submitted. The reports shall contain the information listed in Part II I 1.
3. The immediate (within 24 hours) reports required in Part II G, H. and I. may be made to the department's regional office. Reports may be made by telephone, FAX, or online at http://www.deq.virginia.gov/Programs/PollutionResponsePreparedness/MakingaReport.aspx. For reports outside normal working hours, a message may be left and this shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

J. Notice of Planned Changes.

1. The permittee shall give notice to the department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
   a. The permittee plans alteration or addition to any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

(1) After promulgation of standards of performance under § 306 of Clean Water Act which are applicable to such source; or
(2) After proposal of standards of performance in accordance with § 306 of Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with § 306 within 120 days of their proposal;

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations nor to notification requirements specified elsewhere in this permit; or

c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

2. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

K. Signatory Requirements.

1. Registration Statements. All registration statements shall be signed as follows:
   a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit registration requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
   c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a public agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
2. Reports, etc. All reports required by permits, and other information requested by the board shall be signed by a person described in Part II K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   a. The authorization is made in writing by a person described in Part II K 1;
   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
   c. The written authorization is submitted to the department.
3. Changes to authorization. If an authorization under Part II K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II K 2 shall be submitted to the department prior to or together with any reports, or information to be signed by an authorized representative.

4. Certification. Any person signing a document under Part II K 1 or 2 shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to Comply.

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the State Water Control Law and the Clean Water Act, except that noncompliance with certain provisions of this permit may constitute a violation of the State Water Control Law but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for permit coverage termination or denial of a permit coverage renewal.

The permittee shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards even if this permit has not yet been modified to incorporate the requirement.

M. Duty to Reapply.

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall submit a new registration statement at least 60 days before the expiration date of the existing permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing permit.

N. Effect of a Permit.

This permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State Law.

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in permit conditions on "bypassing" (Part II U), and "upset" (Part II V) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Proper Operation and Maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

R. Disposal of Solids or Sludges.

Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.

S. Duty to Mitigate.

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to Halt or Reduce Activity not a Defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

U. Bypass

1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II U 2 and 3.
2. Notice
   a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, prior notice shall be submitted, if possible at least 10 days before the date of the bypass.
   b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II I.
3. Prohibition of bypass.
   a. Bypass is prohibited, and the board may take enforcement action against a permittee for bypass, unless:
      (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      (3) The permittee submitted notices as required under Part II U 2.
   b. The board may approve an anticipated bypass, after considering its adverse effects, if the board determines that it will meet the three conditions listed above in Part II U 3 a.

V. Upset.

1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of Part II V 2 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
2. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   a. An upset occurred and that the permittee can identify the causes of the upset;
   b. The permitted facility was at the time being properly operated;
   c. The permittee submitted notice of the upset as required in Part II I; and
   d. The permittee complied with any remedial measures required under Part II S.
3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and Entry.

The permittee shall allow the director, or an authorized representative, including an authorized contractor acting as a representative of the administrator, upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and the State Water Control Law, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

X. Permit Actions.

Permit coverages may be terminated for cause. The filing of a request by the permittee for a permit termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Y. Transfer of Permits.

1. Permits are not transferable to any person except after notice to the department.
2. Coverage under this permit may be automatically transferred to a new permittee if:
   a. The current permittee notifies the department within 30 days of the transfer of the title to the facility or property; unless permission for a later date has been granted by the board;
   b. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
   c. The board does not notify the existing permittee and the proposed new permittee of its intent to deny the new permittee coverage under the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part II Y 2 b.

Z. Severability.

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Part III. Stormwater Pollution Prevention Plan

A stormwater pollution prevention plan (SWPPP) shall be developed and implemented for the facility covered by this permit. The SWPPP is intended to document the selection, design, and installation of control measures, including BMPs, to minimize the pollutants in all stormwater discharges from the facility, and to meet applicable effluent limitations and water quality standards.

The SWPPP requirements of this general permit may be fulfilled, in part, by incorporating by reference other plans or documents such as a spill prevention control and countermeasure (SPCC) plan developed for the facility under § 311 of the Clean Water Act, or best management practices (BMP) programs otherwise required for the facility, provided that the incorporated plan meets or exceeds the plan requirements of Part III B (Contents of the SWPPP). All plans incorporated by reference into the SWPPP become enforceable under this permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP of Part III B, the permittee shall develop the missing SWPPP elements and include them in the required plan.

A. Deadlines for SWPPP preparation and compliance.

1. Facilities that were covered under the 2014 Industrial Stormwater General Permit. Owners of facilities that were covered under the 2014 Industrial Stormwater General Permit who are continuing coverage under this general permit shall update and implement any revisions to the SWPPP within 90 days of the board granting coverage under this permit.
2. New facilities, facilities previously covered by an expiring individual permit, and existing facilities not currently covered by a VPDES permit. Owners of new facilities, facilities previously covered by an expiring individual permit, and existing facilities not currently covered by a VPDES permit who elect to be covered under this general permit shall prepare and implement the SWPPP prior to submitting the registration statement.
3. New owners of existing facilities. Where the owner of an existing facility that is covered by this permit changes, the new owner of the facility shall update and implement any revisions to the SWPPP within 60 days of the ownership change.
4. Extensions. Upon a showing of good cause, the director may establish a later date in writing for the preparation and compliance with the SWPPP.

B. Contents of the SWPPP.

The contents of the SWPPP shall comply with the requirements listed below and those in the appropriate sectors of Part IV (9VAC25-151-90 et seq.). These requirements are cumulative. If a facility has colocated industrial activities that are covered in more than one sector of Part IV, that facility's SWPPP shall comply with the requirements listed in all applicable sectors. The following requirements are applicable to all SWPPPs developed under this general permit. The SWPPP shall include, at a minimum, the following items:

1. Pollution prevention team. The SWPPP shall identify the staff individuals by name or title who comprise the facility's stormwater pollution prevention team. The pollution prevention team is responsible for assisting the facility or plant manager in developing, implementing, maintaining, revising and ensuring compliance with the facility's SWPPP. Specific responsibilities of each staff individual on the team shall be identified and listed.
2. Site description. The SWPPP shall include the following:
   a. A description of the industrial activities at the facility.
   b. A site map identifying the following:
      (1) The boundaries of the property and the size of the property in acres;
      (2) The location and extent of significant structures and impervious surfaces;

(3) Locations of all stormwater conveyances, including ditches, pipes, swales, and inlets, and the directions of stormwater flow using arrows to indicate which direction stormwater will flow;
(4) Locations of all stormwater control measures, including BMPs;
(5) Locations of all surface water bodies, including wetlands;
(6) Locations of potential pollutant sources identified under Part III B 3;
(7) Locations where significant spills or leaks identified under Part III B 3 c have occurred;
(8) Locations of stormwater outfalls.
(a) An approximate outline of the area draining to each outfall;
(b) The drainage area of each outfall in acres;
(c) The longitude and latitude of each outfall;
(d) The location of any MS4 conveyance receiving discharge from the facility; and
(e) Each outfall shall be identified with a unique numerical identification code. For example: Outfall Number 001, Outfall Number 002, etc.;
(9) Location and description of all nonstormwater discharges;
(10) Location of any storage piles containing salt;
(11) Locations and sources of suspected run-on to the site from an adjacent property if the run-on is suspected of containing significant quantities of pollutants; and
(12) Locations of all stormwater monitoring points.

c. Receiving waters and wetlands. The name of all surface waters receiving discharges from the site, including intermittent streams, dry sloughs, and arroyos. Provide a description of wetland sites that may receive discharges from the facility. If the facility discharges through an MS4, identify the MS4 operator, and the receiving water to which the MS4 discharges.

3. Summary of potential pollutant sources. The SWPPP shall identify each separate area at the facility where industrial materials or activities are exposed to stormwater. Industrial materials or activities include material handling equipment or activities, industrial machinery, raw materials, industrial production and processes, intermediate products, byproducts, final products, and waste products. Material handling activities include the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For each separate area identified, the description shall include:
   a. Activities in the area. A list of the industrial activities exposed to stormwater.
   b. Pollutants. A list of the pollutants, pollutant constituents, or industrial chemicals associated with each industrial activity that could potentially be exposed to stormwater. The pollutant list shall include all significant materials handled, treated, stored or disposed that have been exposed to stormwater in the three years prior to the date this SWPPP was prepared or amended. The list shall include any hazardous substances or oil at the facility.
   c. Spills and leaks. The SWPPP shall clearly identify areas where potential spills and leaks that can contribute pollutants to stormwater discharges can occur and their corresponding outfalls. The SWPPP shall include a list of significant spills and leaks of toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance during the three-year period prior to the date this SWPPP was prepared or amended. The list shall be updated within 60 days of the incident if significant spills or leaks occur in exposed areas of the facility during the term of the permit.
   d. Sampling data. The SWPPP shall include stormwater discharge sampling data collected during the previous three years.
4. Stormwater controls.
   a. Control measures shall be implemented for all the areas identified in Part III B 3 to prevent or control pollutants in stormwater discharges from the facility. Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility. The SWPPP shall describe the type, location and implementation of all control measures for each area where industrial materials or activities are exposed to stormwater.
   Selection of control measures shall take into consideration:

(1) That preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;
(2) Control measures generally shall be used in combination with each other for most effective water quality protection;
(3) Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures;
(4) That minimizing impervious areas at the facility can reduce runoff and improve groundwater recharge and stream base flows in local streams (however, care must be taken to avoid groundwater contamination);
(5) Flow attenuation by use of open vegetated swales and natural depressions can reduce instream impacts of erosive flows;
(6) Conservation or restoration of riparian buffers will help protect streams from stormwater runoff and improve water quality; and
(7) Treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

b. Nonnumeric technology-based effluent limits. The permittee shall implement the following types of control measures to prevent and control pollutants in the stormwater discharges from the facility, unless it can be demonstrated and documented that such controls are not relevant to the discharges.
(1) Good housekeeping. The permittee shall keep clean all exposed areas of the facility that are potential sources of pollutants to stormwater discharges. The permittee shall perform the following good housekeeping measures to minimize pollutant discharges:
(a) The SWPPP shall include a schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks, and containers;
(b) As feasible, the facility shall sweep or vacuum;
(c) Store materials in containers constructed of appropriate materials;
(d) Manage all waste containers to prevent a discharge of pollutants;
(e) Minimize the potential for waste, garbage, and floatable debris to be discharged by keeping areas exposed to stormwater free of such materials or by intercepting such materials prior to discharge; and
(f) Facilities that handle pre-production plastic or plastic waste shall implement BMPs to eliminate stormwater discharges of plastics.
(2) Eliminating and minimizing exposure. To the extent practicable, manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) shall be located inside, or protected by a storm-resistant covering to prevent exposure to rain, snow, snowmelt, and runoff. Eliminating exposure at all industrial areas may make the facility eligible for the "Conditional Exclusion for No Exposure" provision of 9VAC25-31-120 E, thereby eliminating the need to have a permit. Unless infeasible, facilities shall implement the following:
(a) Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from potential sources of pollutants;
(b) Locate materials, equipment, and activities so that potential leaks and spills are contained, or able to be contained, or diverted before discharge;
(c) Clean up spills and leaks immediately, upon discovery of the spills or leaks, using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
(d) Store leaking vehicles and equipment indoors or, if stored outdoors, use drip pans and adsorbents;
(e) Utilize appropriate spill or overflow protections equipment;
(f) Perform all vehicle maintenance or equipment cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also capture any overspray; and

(g) Drain fluids from equipment and vehicles that will be decommissioned, and for any equipment and vehicles that remain unused for extended periods of time, inspect at least monthly for leaks.

(3) Preventive maintenance. The permittee shall have a preventive maintenance program that includes regular inspection, testing, maintenance and repairing of all industrial equipment and systems to avoid situations that could result in leaks, spills and other releases of pollutants in stormwater discharged from the facility. This program is in addition to the specific control measure maintenance required under Part III C (Maintenance).

(4) Spill prevention and response procedures. The SWPPP shall describe the procedures that will be followed for preventing and responding to spills and leaks, including:

(a) Preventive measures, such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

(b) Response procedures, including notification of appropriate facility personnel, emergency agencies, and regulatory agencies, and procedures for stopping, containing and cleaning up spills. Measures for cleaning up hazardous material spills or leaks shall be consistent with applicable Resource Conservation and Recovery Act regulations at 40 CFR Part 264 and 40 CFR Part 265. Employees who may cause, detect or respond to a spill or leak shall be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals shall be a member of the Pollution Prevention Team;

(c) Procedures for plainly labeling containers (e.g., "used oil," "spent solvents," "fertilizers and pesticides," etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; and

(d) Contact information for individuals and agencies that must be notified in the event of a spill shall be included in the SWPPP, and in other locations where it will be readily available.

(5) Salt storage piles or piles containing salt. Storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes shall be enclosed or covered to prevent exposure to precipitation. The permittee shall implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. All salt storage piles shall be located on an impervious surface. All runoff from the pile, and runoff that comes in contact with salt, including under drain systems, shall be collected and contained within a bermed basin lined with concrete or other impermeable materials, or within an underground storage tank or tanks, or within an above ground storage tank or tanks, or disposed of through a sanitary sewer (with the permission of the owner of the treatment facility). A combination of any or all of these methods may be used. In no case shall salt contaminated stormwater be allowed to discharge directly to the ground or to surface waters.

(6) Employee training. The permittee shall implement a stormwater employee training program for the facility. The SWPPP shall include a schedule for all types of necessary training, and shall document all training sessions and the employees who received the training. Training shall be provided at least annually for all employees who work in areas where industrial materials or activities are exposed to stormwater, and for employees who are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance personnel, etc.). The training shall cover the components and goals of the SWPPP, and include such topics as spill response, good housekeeping, material management practices, control measure operation and maintenance, etc. The SWPPP shall include a summary of any training performed.

(7) Sediment and erosion control. The SWPPP shall identify areas at the facility that, due to topography, land disturbance (e.g., construction, landscaping, site grading), or other factors, have a potential for soil erosion. The permittee shall identify and implement structural, vegetative, and stabilization control measures to prevent or control on-site and off-site erosion and sedimentation. Flow velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel if the flows would otherwise create erosive conditions.

(8) Management of runoff. The SWPPP shall describe the stormwater runoff management practices (i.e., permanent structural control measures) for the facility. These types of control measures shall be used to divert, infiltrate, reuse, or otherwise reduce pollutants in stormwater discharges from the site.

Structural control measures may require a separate permit under § 404 of the Clean Water Act and the Virginia Water Protection Permit Program Regulation (9VAC25-210) before installation begins.

(9) Dust suppression and vehicle tracking of industrial materials. The permittee shall implement control measures to minimize the generation of dust and off-site tracking of raw, final, or waste materials. Stormwater collected on-site may be used for the purposes of dust suppression or for spraying stockpiles. Potable water, well water, and uncontaminated reuse water may also be used for this purpose. There shall be no direct discharge to surface waters from dust suppression activities or as a result of spraying stockpiles.

5. Routine facility inspections. Personnel who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility and who can also evaluate the effectiveness of control measures shall regularly inspect all areas of the facility where industrial materials or activities are exposed to stormwater, areas where spills or leaks have occurred in the past three years, discharge points, and control measures. At least one member of the pollution prevention team shall participate in the routine facility inspections.

The inspection frequency shall be specified in the SWPPP based upon a consideration of the level of industrial activity at the facility, but shall be at a minimum of once per calendar quarter unless more frequent intervals are specified elsewhere in the permit or written approval is received from the department for less frequent intervals. Inspections shall be performed during operating hours. At least once each calendar year, the routine facility inspection shall be conducted during a period when a stormwater discharge is occurring.

The requirement for routine facility inspections is waived for facilities that have maintained an active VEEP E3/E4 status. Certain sectors in Part IV have additional inspection requirements. If the VEEP E3/E4 waiver language is not included for the sector specific inspections, these additional inspection requirements may not be waived.

Any deficiencies in the implementation of the SWPPP that are found shall be corrected as soon as practicable, but not later than within 60 days of the inspection, unless permission for a later date is granted in writing by the director. The results of the inspections shall be documented in the SWPPP and shall include at a minimum:

a. The inspection date;
b. The names of the inspectors;
c. Weather information and a description of any discharges occurring at the time of the inspection;
d. Any previously unidentified discharges of pollutants from the site;
e. Any control measures needing maintenance or repairs;
f. Any failed control measures that need replacement;

g. Any incidents of noncompliance observed; and
h. Any additional control measures needed to comply with the permit requirements.

C. Maintenance.

The SWPPP shall include a description of procedures and a regular schedule for preventive maintenance of all control measures, and shall include a description of the back-up practices that are in place should a runoff event occur while a control measure is off-line. The effectiveness of nonstructural control measures shall also be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

All control measures identified in the SWPPP shall be maintained in effective operating condition and shall be observed at least annually when a stormwater discharge is occurring to ensure that they are functioning correctly. Where discharge locations are inaccessible, nearby downstream locations shall be observed. The observations shall be documented in the SWPPP.

If routine facility inspections required by Part III B 5 identify control measures that are not operating effectively, repairs or maintenance shall be performed before the next anticipated storm event. If maintenance prior to the next anticipated storm event is not possible, maintenance shall be scheduled and accomplished as soon as practicable. In the interim, back-up measures shall be employed and documented in the SWPPP until repairs or maintenance is complete. Documentation shall be kept with the SWPPP of maintenance and repairs of control measures, including the dates of regular maintenance, dates of discovery of areas in need of repair or replacement, dates for repairs, dates that the control measures returned to full function, and the justification for any extended maintenance or repair schedules.

D. Nonstormwater discharges.

1. Discharges of certain sources of nonstormwater listed in Part I B 1 are allowable discharges under this permit. All other nonstormwater discharges are not authorized and shall be either eliminated or covered under a separate VPDES permit.
2. Annual outfall evaluation for unauthorized discharges.
   a. The SWPPP shall include documentation that all stormwater outfalls associated with industrial activity have been evaluated annually for the presence of unauthorized discharges. The documentation shall include:
      (1) The date of the evaluation;
      (2) A description of the evaluation criteria used;
      (3) A list of the outfalls or on-site drainage points that were directly observed during the evaluation;
      (4) A description of the results of the evaluation for the presence of unauthorized discharges; and
      (5) The actions taken to eliminate unauthorized discharges if any were identified.
   b. The permittee may request in writing to the department that the facility be allowed to conduct annual outfall evaluations at 20% of the outfalls. If approved, the permittee shall evaluate at least 20% of the facility outfalls each year on a rotating basis such that all facility outfalls will be evaluated during the period of coverage under this permit.

E. Signature and SWPPP review.

1. Signature and location. The SWPPP, including revisions to the SWPPP to document any corrective actions taken as required by Part I A 6, shall be signed in accordance with Part II K, dated, and retained on-site at the facility covered by this permit in accordance with Part II B 2. All other changes to the SWPPP, and other permit compliance documentation, shall be signed and dated by the person preparing the change or documentation. For inactive and unstaffed facilities, the plan may be kept at the nearest office of the permittee.
2. Availability. The permittee shall retain a copy of the current SWPPP required by this permit at the facility, and it shall be immediately available to the department, EPA, or the operator of an MS4 receiving discharges from the site at the time of an on-site inspection or upon request.
3. Required modifications. The permittee shall modify the SWPPP whenever necessary to address all corrective actions required by Part I A 6 a (Data exceeding benchmark concentration values) or Part I A 6 b (Corrective actions). Changes to the SWPPP shall be made in accordance with the corrective action deadlines in Part I A 6 a and Part I A 6 b, and shall be signed and dated in accordance with Part III E 1.

   The director may notify the permittee at any time that the SWPPP, control measures, or other components of the facility's stormwater program do not meet one or more of the requirements of this permit. The notification shall identify specific provisions of the permit that are not being met, and may include required modifications to the stormwater program, additional monitoring requirements, and special reporting requirements. The permittee shall make any required changes to the SWPPP within 60 days of receipt of such notification, unless permission for a later date is granted in writing by the director, and shall submit a written certification to the director that the requested changes have been made.

F. Maintaining an updated SWPPP.

1. The permittee shall review and amend the SWPPP as appropriate whenever:
   a. There is construction or a change in design, operation, or maintenance at the facility that has a significant effect on the discharge, or the potential for the discharge, of pollutants from the facility;
   b. Routine inspections or compliance evaluations determine that there are deficiencies in the control measures, including BMPs;
   c. Inspections by local, state, or federal officials determine that modifications to the SWPPP are necessary;
   d. There is a significant spill, leak, or other release at the facility;
   e. There is an unauthorized discharge from the facility; or
   f. The department notifies the permittee that a TMDL has been developed and applies to the permitted facility, consistent with Part I B.
2. SWPPP modifications shall be made within 60 calendar days after discovery, observation or event requiring a SWPPP modification. Implementation of new or modified control measures (distinct from regular preventive maintenance of existing control measures described in Part III C) shall be initiated before the next storm event if possible, but no later than 60 days after discovery, or as otherwise provided or approved by the director. The amount of time taken to modify a control measure or implement additional control measures shall be documented in the SWPPP.
3. If the SWPPP modification is based on a significant spill, leak, release, or unauthorized discharge, include a description and date of the incident, the circumstances leading to the incident, actions taken in response to the incident, and measures to prevent the recurrence of such releases. Unauthorized discharges are subject to the reporting requirements of Part II G of this permit.

Part IV. Sector Specific Permit Requirements

The permittee must only comply with the additional requirements of Part IV (9VAC25-151-90 et seq.) that apply to the sectors of industrial activity located at the facility. These sector specific requirements are in addition to the requirements specified in Parts I, II and III of this permit. All numeric effluent limitations and benchmark monitoring concentration values reflect two significant digits, unless otherwise noted.

9VAC25-151-390. Sector AF – Facilities limited to total suspended solids benchmark monitoring requirements.

A. Discharges covered under this section. The requirements listed under this section apply to stormwater discharges associated with industrial activity from facilities with SIC Codes 4011, 4013, 4111-4173, 4212-4231, 4311, and 5171.

B. Benchmark monitoring and reporting requirements. Facilities or stormwater discharges included in this sector are required to monitor their stormwater discharges for the pollutants of concern listed in Table 390.

Table 390
Sector AF- Benchmark Monitoring Requirements

Pollutants of Concern	Benchmark Concentration
Facilities Limited to Total Suspended Solids Benchmark Monitoring Requirements	
Total Suspended Solids (TSS)	100 mg/L

Attachment 4. *SWPPP for Parks Maintenance Building at Jim Barnett Park*

Stormwater Pollution Prevention Plan

for:

Winchester Parks and Recreation Maintenance Building
1001 East Cork Street
Winchester, VA 22601
540-662-4946

SWPPP Contact(s):

City of Winchester Parks and Recreation Department
Lynn Miller, Director
Lynn.Miller@winchesterva.gov

SWPPP Preparation Date:

06/ 30 / 2017

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Contents

Table of Contents

SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION.

1.1 Facility Information.

Facility Information

Name of Facility: Winchester Parks and Recreation Maintenance Building

Street: 1001 East Cork Street

City: Winchester State: VA ZIP Code: 22601

County or Similar Subdivision: City of Winchester

Latitude/Longitude

Latitude: Longitude:

3 9 . 1 6 9 1 º N (decimal degrees) - 7 8. 1 5 4 0 º W (decimal degrees)

Method for determining latitude/longitude (check one):

☐USGS topographic map (specify scale:) ☐GPS

☒Other (please specify): City of Winchester Pictometry

Horizontal Reference Datum (check one):

☐NAD 27 ☒NAD 83 ☐WGS 84

Estimated area of industrial activity at site exposed to stormwater: 0.72 (acres)

Discharge Information

Does this facility discharge stormwater into a municipal separate storm sewer system (MS4)? ☒Yes ☐No

If yes, name of MS4 operator: City of Winchester

Name(s) of surface water(s) that receive stormwater from your facility: Abrams Creek

Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2015 MSGP, Appendix A)? ☐Yes ☒No

1.2 Contact Information/Responsible Parties.

Facility Operator(s):

Name: City of Winchester Parks and Recreation Department
Address: 1001 East Cork Street
City, State, Zip Code: Winchester, VA 22601
Telephone Number: (540) 662-4946
Fax number: (540) 678-8791

Facility Owner(s):

Name: City of Winchester Virginia
Address: 15 North Cameron Street
City, State, Zip Code: Winchester, VA 22601
Telephone Number: (540) 667-1815

SWPPP Contact(s):

SWPPP Contact Name (Primary): Tommy Lambert, Parks Superintendent
Telephone number: (540) 662-4946
Email address: Thomas.Lambert@winchesterva.gov
SWPPP Contact Name (Backup): Lynn Miller, Parks Director
Telephone number: (540) 662-4946
Email address: Lynn.Miller@winchesterva.gov

1.3 Stormwater Pollution Prevention Team.

Staff Names	Individual Responsibilities
Lynn Miller	Parks Department Director
Matt Little	Parks Assistant Director
Tommy Lambert	Parks Superintendent
Robert Brown	Stormwater Engineer
Kelly Henshaw	City Engineer
[Repeat as necessary]	[Repeat as necessary]

1.4 Site Description.

The parks maintenance building area is located in the southwestern corner of Jim Barnett Park and borders Interstate 81 to the east. It is used for the storage and maintenance of a variety of grounds keeping equipment and vehicles. It also serves as a storage area for various chemicals, paints, fuels, and other potential pollutants used for park maintenance. In general, materials are stored indoors and machinery is stored outdoors with no cover. Maintenance also generally occurs indoors. There is no stormwater infrastructure in this area of the park, so all drainage is via overland sheet flow and natural swales.

This SWPPP applies only to the maintenance building and its surrounding parking areas.

1.5 General Location Map.

The general location map for this facility can be found in Attachment A.

1.6 Site Map.

The site map for this facility can be found in Attachment B.

SECTION 2: POTENTIAL POLLUTANT SOURCES.

Section 2 will describe all areas at your facility where industrial materials or activities are exposed to stormwater or from which allowable non-stormwater discharges originate. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, disposal or conveyance of any raw material, intermediate product, final product or waste product. For structures located in areas of industrial activity, you must be aware that the structures themselves are potential sources of pollutants. This could occur, for example, when metals such as aluminum or copper are leached from the structures as a result of acid rain.

For each area identified, the SWPPP must include industrial activities, potential pollutants, spills and leaks, unauthorized non-stormwater discharges, salt storage, stormwater sampling data and descriptions of control measures.

2.1 Potential Pollutants Associated with Industrial Activity.

Industrial Activity	Associated Pollutants
Vehicle storage	Motor oil, anti-freeze, hydraulic fluid, hydrocarbons
Material storage	Fertilizer, salt, de-icer, herbicide, pesticide, paint
Fueling Facility	Hydrocarbons

2.2 Spills and Leaks.

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Discharge Points
Vehicle / Material Storage Area	Outfall #1
Maintenance Garage	"
Oil / Chemical Barrels	"
Parts Cleaning Station	"

Description of Past Spills/Leaks

Date	Description	Discharge Points
Insert date of spill/leak	Insert description of spill/leak (where it occurred, what happened, types of pollutants, extent of damage)	Specify which discharge point(s) were affected
[Repeat as necessary]	[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]	[Repeat as necessary]
[Repeat as necessary]	[Repeat as necessary]	[Repeat as necessary]

2.3 Unauthorized Non-stormwater Discharges Documentation.

Description of this facility's unauthorized non-stormwater discharge evaluation:

- Date of evaluation: Insert the date(s) of your evaluation.
- Description of the evaluation criteria used: Describe the method used to conduct the evaluation and determine which non-stormwater discharges are authorized or unauthorized.
- List of the drainage points that were directly observed during the evaluation: Insert drainage points observed.
- Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a separate NPDES permit was obtained. For example, a floor drain was sealed, a sink drain was re-routed to the sanitary sewer or an NPDES permit application was submitted for an unauthorized cooling water discharge: Describe actions taken to eliminate unauthorized non-stormwater discharges and the corresponding drainage point affected.

2.4 Salt Storage.

Salt and other de-icing chemicals are stored in bags under cover

2.5 Sampling Data Summary.

No stormwater sampling has been done on the site.

SECTION 3: STORMWATER CONTROL MEASURES.

3.1 Non-numeric Technology-based Effluent Limits (BPT/BAT/BCT)

You must comply with the following non-numeric effluent limits (except where otherwise specified in Part 8) as well as any sector-specific non-numeric effluent limits in Part 8.

3.1.1 Minimize Exposure.

Vehicle Maintenance – All vehicle maintenance takes place inside the garage buildings. Used motor oil is stored in a 275-gallon tank and used antifreeze is stored in a similar 200-gallon tank. Both of these tanks are above ground tanks surrounded by secondary containment areas. Both tanks are covered to minimize the amount of stormwater that might enter the containment areas.

3.1.2 Good Housekeeping.

Trash generated on-site is collected and in a lidded dumpster and collected weekly.

Waste oil and antifreeze tanks are visually inspected for leaks and spills regularly.

Used batteries are stored inside and collected as needed for recycling by the battery vendor.

3.1.3 Maintenance.

Vehicles stored on the Parks Maintenance site are to be given regular maintenance and inspected regularly for any fluid leaks.

Floor drains in the garages are to be kept clear and functioning at all times to prevent fluids from leaving the buildings.

Waste oil and antifreeze storage tanks are to be emptied on a monthly basis, or as needed, to prevent overfilling. Containment areas area around the tanks is to be monitored and cleaned out if fluids are present.

3.1.4 Spill Prevention and Response.

- Plainly label containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides”) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;*

- Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;

- Develop training and train all staff on procedures to quickly stop, contain and clean up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;

- Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made; and

- Notify appropriate facility personnel when a leak, spill or other release occurs.

Prevention

The used oil and antifreeze tanks are labeled with their contents and each is surrounded by a secondary containment area.

Response

Dry cleanup methods are used; absorbents such as "Stay-Dri" are applied to spills. After the spill has been absorbed, the absorbent is swept up and placed in a storage drum to be recycled.

In the event that a spill occurs and sewage, industrial waste, other wastes or any noxious or deleterious substance discharges into or upon state waters in violation of Part II F; or a discharge may reasonably be expected to enter state waters in violation of Part II F, notify the Virginia DEQ of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;
3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

Discharges reportable to the department under the immediate reporting requirements of other regulations are exempted from this requirement.

Contacts:

DEQ Valley Regional Office
Pollution Response Coordinator – Jennifer Welcher
(540) 574-7800

Virginia Department of Emergency Management
1-800-468-8892

3.1.5 Erosion and Sediment Controls.

All areas of the site are stabilized, and no land disturbance activities are anticipated. If any construction occurs on site, erosion and sediment controls will be reviewed as part of the site plan approval process and implemented in accordance with the Virginia Erosion and Sediment Control Handbook.

3.1.6 Management of Runoff.

Currently, there are no controls on site to reduce the amount of stormwater runoff beyond the maintenance of vegetated areas.

3.1.7 Salt Storage Piles or Piles Containing Salt.

Salt is currently stored in the main building in individual bags.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials.

The gravel areas of the site are currently stable with low levels of dust. If dust becomes a problem, the gravel areas shall be sprayed with water or other approved non-toxic dust control material.

SECTION 4: SCHEDULES AND PROCEDURES.

4.1 Good Housekeeping.

- Roll off dumpster shall be collected when full
- All liquid materials stored in drums shall be inspected for leaks whenever used or at least weekly
- Dry material stored in containers or bags shall be inspected for leaks when they are used or moved
- Flammable material shall be stored and inspected as required by OSHA, the Winchester Fire Marshall, or other applicable agencies

4.2 Maintenance.

- Any spill containment measures shall be inspected daily and emptied as needed
- Vehicles shall be inspected before each use for fluid leaks and repaired as needed

4.3 Spill Prevention and Response Procedures.

Listed under 3.1.4 above

4.4 Erosion and Sediment Control.

Listed under 3.1.5 above

4.5 Employee Training.

Employee training is covered under the City of Winchester's MS4 Program Plan

4.6 Inspections and Assessments.

4.6.1 Routine Facility Inspections.

Routine facility inspections shall be conducted at least quarterly. At least one routine facility inspection per year should occur while runoff is discharging from the site.

For routine facility inspections to be performed at your site, your SWPPP must include a description of the following:

1. Person(s) or positions of person(s) responsible for inspection. Park Superintendent, Stormwater Engineer, City Engineer
2. Schedules for conducting inspections. Routine facility inspections shall be conducted at least quarterly. At least one routine facility inspection per year should occur while runoff is discharging from the site.
3. List areas where industrial materials or activities are exposed to stormwater. Outdoor vehicle and equipment storage
4. List areas identified in the SWPPP (section 1 of the SWPPP Template) and any others that are potential pollutant sources (see Part 5.2.3). All outdoor storage areas; fueling area; areas around buildings where indoor spills may escape the building perimeter
5. Areas where spills and leaks have occurred in the past 3 years. No spills have been documented in the past three years

SECTION 5: SWPPP CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant

penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

SECTION 6: SWPPP MODIFICATIONS.

Instructions (see 2015 MSGP Part 5.3):

Your SWPPP is a "living" document and is required to be modified and updated, as necessary, in response to corrective actions. See Part 4 of the 2015 MSGP.

- If you need to modify the SWPPP in response to a corrective action, then the certification statement in section 7 of this SWPPP template must be re-signed.
- For any other SWPPP modification, you should keep a log with a description of the modification, the name of the person making it, and the date and signature of that person.

SWPPP ATTACHMENTS

Attach the following documentation to the SWPPP:

Attachment A – General Location Map

Include a copy of your general location map in Attachment A.

Attachment B – Site Map

Include a copy of your site map(s) in Attachment B.

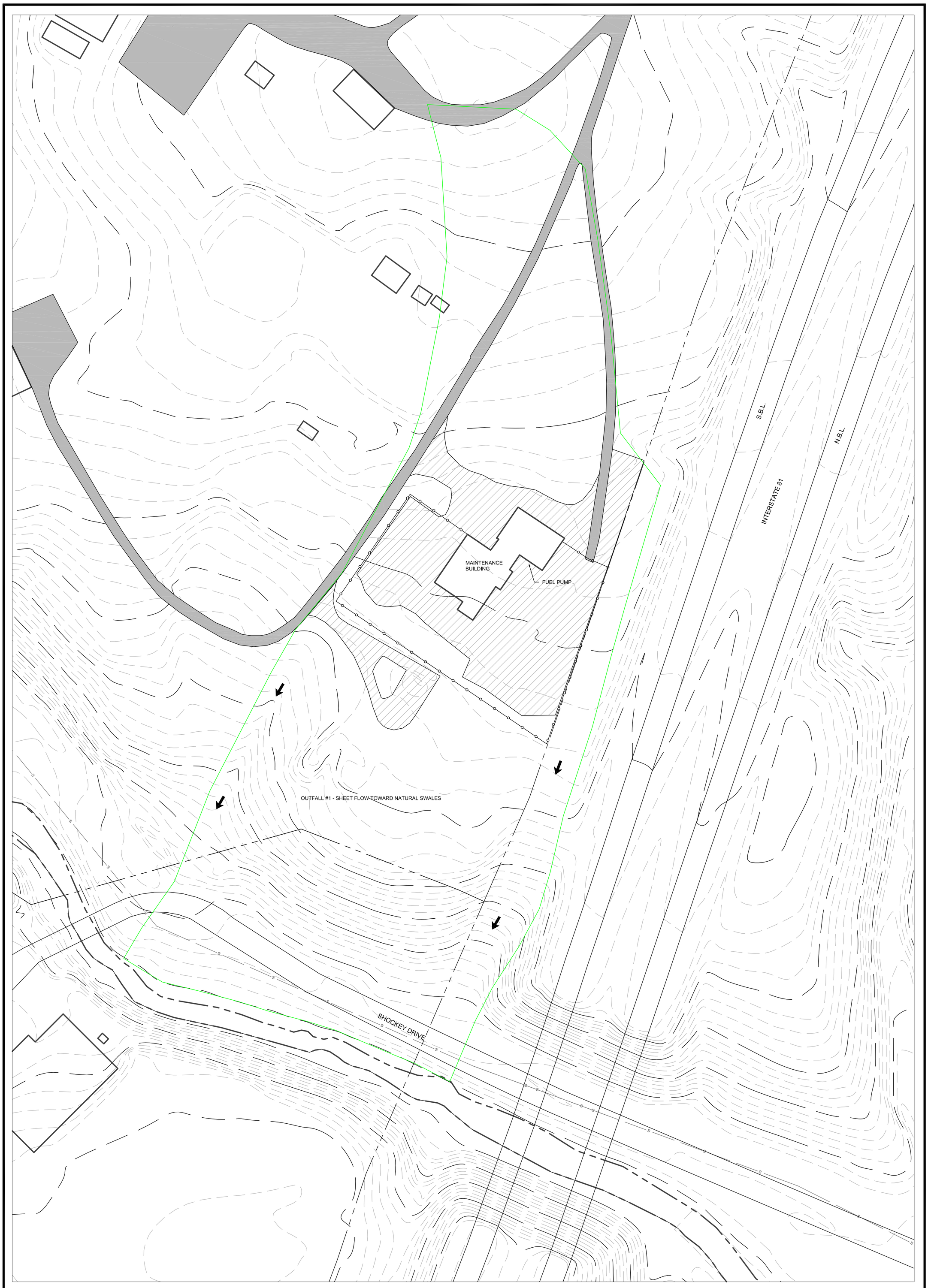
CITY OF WINCHESTER
VIRGINIA
PUBLIC SERVICES DEPARTMENT
15 N. CAMERON STREET
WINCHESTER, VA 22601
PHONE: 540-667-1815
FAX: 540-662-3351

PARKS MAINTENANCE BUILDING
LOCATION MAP

SCALE: 1"=500'

DATE: 6/30/17

SHEET 1 OF 1



= PAVED DRIVE AREAS

= GRAVEL PARKING / STORAGE AREAS

= DRAINAGE AREA AFFECTED BY MAINTENANCE BUILDING

SHEET: 1/1

SCALE: 1" =

DATE: 06/30/17

DRAWN BY: RAB

PROJECT NO:

CITY OF WINCHESTER VIRGINIA

ENGINEERING DIVISION
15 N. CAMERON STREET
WINCHESTER, VA 22601
PH: (540) 667-1815
FAX: (540)662-3351

PARKS MAINTENANCE BUILDING

SITE MAP

REVISIONS

NO.	DATE	DESCRIPTION	BY

Attachment 5. *Updated Nutrient Management Plan*

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

1001 Boulders Parkway
Suite 300
Richmond, VA 23225

P 804.200.6500
F 804.560.1016
www.timmons.com

Nutrient Management Plan

Friendship Park

Prepared For:

Tommy Lambert
City of Winchester
Rouss City Hall, 15 N. Cameron Street
Winchester, VA 22601
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
804-200-6457
Certification Code: #920
Total Managed Area Acreage: 1.2

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous 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 plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

Nutrient Management Plan For:

Friendship Park

Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-0815
Email	Thomas.lambert@winchester.gov

Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

Location Information:

Physical Address	623 North Pleasant Valley Road
City, State Zip	Winchester, Virginia 22601
Latitude	39° 11' 26.4" N
Longitude	78° 09' 02.6" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

Acreage:

Total	52,822 square feet (1.2 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature: 

Narrative

This nutrient management plan has been prepared by Timmons Group, on behalf of the City of Winchester. Friendship Park is located on North Pleasant Valley Road in Winchester, Virginia, within a residential development north of Bruce Street and south of Green Street (see Figure 1: Vicinity Map). The park has one soccer field and is relatively flat with gentle slopes on the northern and eastern sides of the soccer field. No wetlands were found to be present within the site limits during the January 31, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on Figure 2: Environmental Inventory Map. There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite and therefore, no environmentally sensitive areas were identified onsite. However, it was noted that a stream channel flows northeast through the southern portion of the park into a wetland system located east of the soccer field. Special attention should be paid to this area when applying fertilizer to avoid product being broadcast onto the surrounding slope where nutrients could runoff.

Using aerial photography and through discussions with City of Winchester staff, a 1.2-acre area (52,822 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on the soccer field (Friendship Field) is comprised of a cool season grass mixture.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Friendship Park outside of this managed area, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic field, renovating the athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Friendship Park. Management Area 1 (Friendship Field) is shown on Figure 3: Nutrient Management Areas Map. Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications on this management area should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

Every fertilizer application should be recorded in the record sheet provided. Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

Nutrient Management Worksheet

Property:	Friendship Park								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs per area**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 1: Friendship Field acreage = approximately 1.2	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.7	**87**
	6/1 - 6/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**261**
Maximum 4.2-1.5-.5	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**261**
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	**157**
	*Recommended Total Annual NPK Application						4.2 - 1.50 - 2.07		
Notes	The annual application of total nitrogen **should not exceed 4.2 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan. No liming ammendments are reccommended to correct for soil pH. Note: Do not apply more than 5 lbs of elemental suflur per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. To reduce soil pH apply 10 pounds of elemental sulfur per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.								
Comments	* Recommendations are targeted based on pH of 6.2 for optimal nutrient availability and growth of turfgrass *								

Soil Test Summary

Customer Name:	City of Winchester – Friendship Park
Testing Lab:	Waypoint Analytical
Sample Date:	January 29,2019
Planner Name	Parker Osterloh, Timmons Group
Certification Number	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Friendship Field	52,822	7.6	-	11.85	M	143.14	H+	Tall Fescue/Kentucky Bluegrass Mix

Notes: H = High, M = Medium, L = Low

Soil Test Reports

Soil samples were taken from the managed turfgrass at the soccer field at Friendship Park on January 29, 2019 . Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

A. Management Area 1 - 1.2 acres (Friendship Field)

The phosphorus level was Medium (M) for the athletic field. Applications of phosphorus are recommended, not to exceed 1.5 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium level was High Plus (H+) for the athletic field. Applications of potassium are recommended, approximately 0.5 lb/1,000 sq ft annually. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.5 lbs/1,000 sq ft (See the Nutrient Management Worksheet for additional detail).

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.

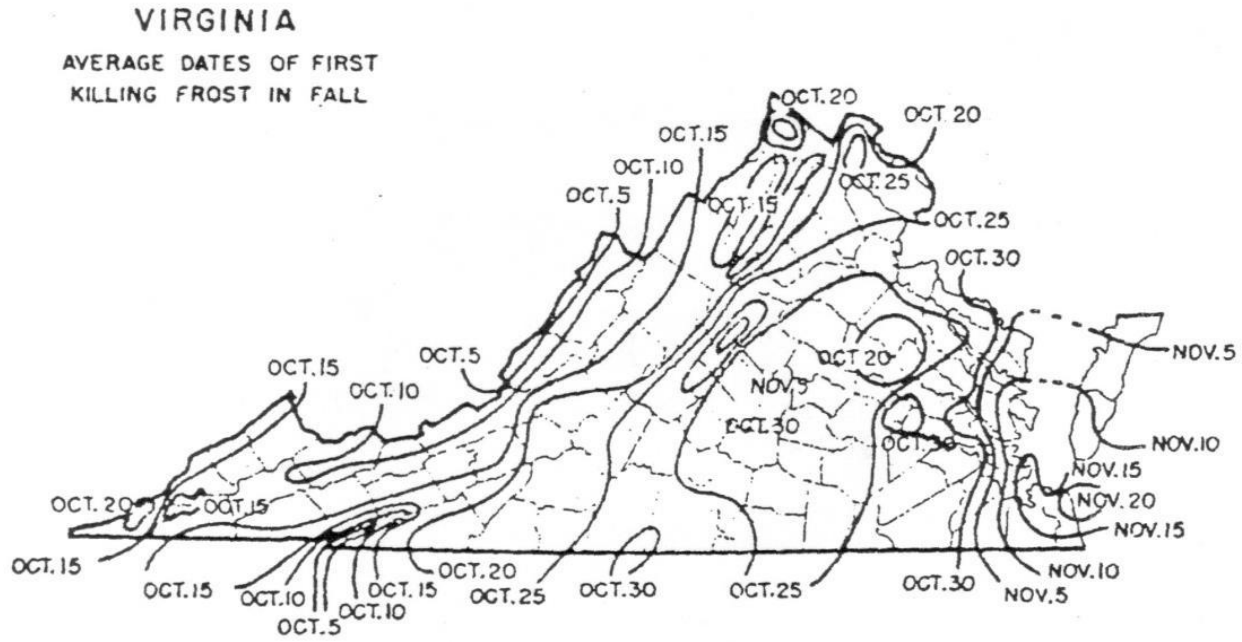
"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such 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 on next sheet).


VIRGINIA
AVERAGE DATES OF FIRST
KILLING FROST IN FALL
OCT.20
OCT 20
OCT.15
OCT.10
OCT.5
OCT.15
OCT.25
OCT.25
OCT.30
NOV.5
OCT.15
OCT.10
OCT.5
OCT 20
NOV.5
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NOV.10
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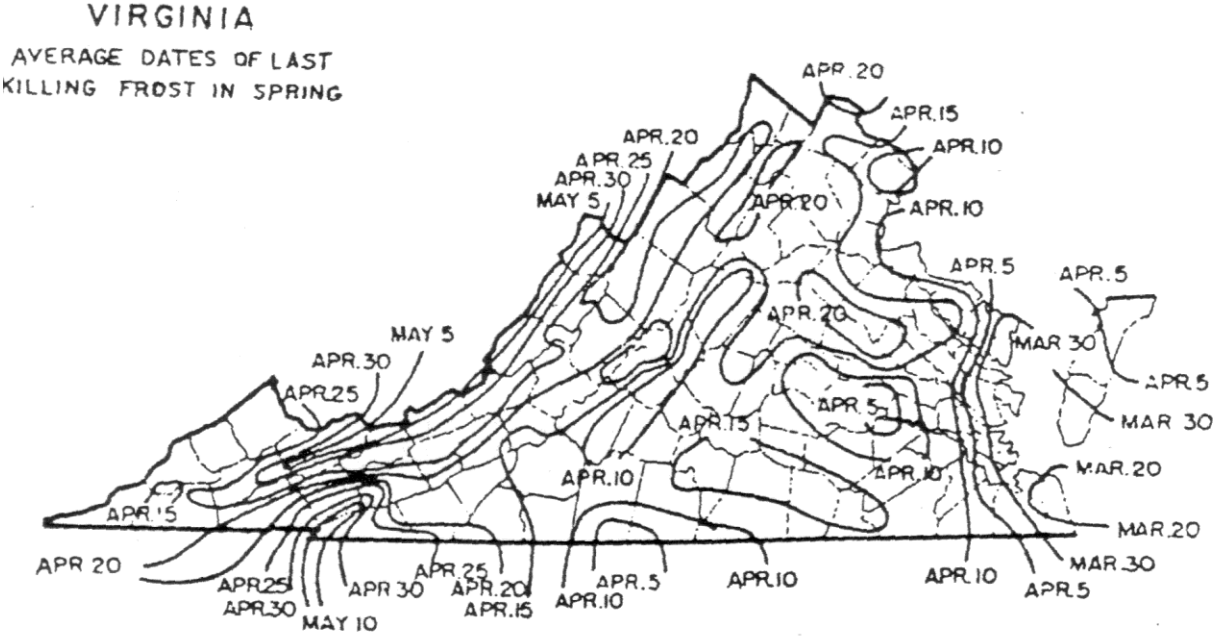
NOV.10


VIRGINIA
AVERAGE DATES OF LAST
KILLING FROST IN SPRING
APR.20
APR.15
APR.10
APR.20
APR.25
APR.30
MAY 5
APR.20
APR.10
APR.5
APR.5
APR.20
MAR 30
MAY 5
APR.30
APR.25
APR.5
MAR 30
APR.15
APR.10
APR.10
MAR.20
APR.15
MAR.20
APR 20
APR.25
APR.30
APR 30
APR.25
APR.20
APR.15
APR.5
APR.10
APR.10
APR.10
APR.5
MAR.30
MAY 10

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.

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:

* 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 phosph

orus 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

* 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.

Notes:

• Soluble nitrogen rates of 0.25 pounds per 1,000 ft2 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 nitrogen 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 ft2 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 nitrogen 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.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft2 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 ft2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft2 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 ft2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Reference Materials and Notes

Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation

ESRI Aerial Photography

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester	Management Area ID:	Friendship Field
Address:	623 North Pleasant Valley Road	Management Area Size:	52,822 sq ft
	Winchester, VA 22601	Plant Species:	Tall Fescue/Bluegrass Mixture
		Notes:	
Phone #:	540-667-1815		

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

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

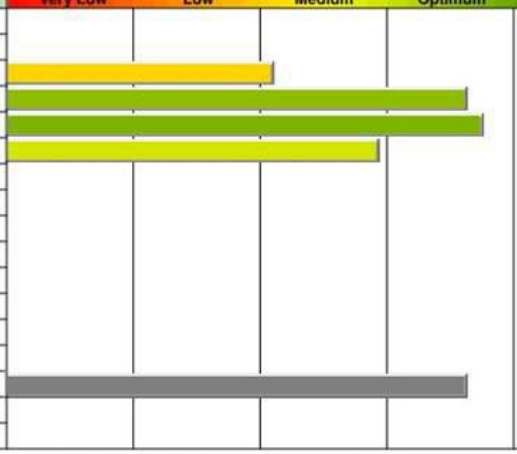
SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received 01/31/2019 Date Analysis : 02/01/2019 Page : 15 of 30

Lab Number : 08487 **Field Id :** **Sample Id :** Friendship

Test	Results
Soil pH	7.6
Buffer pH	
Phosphorus (P)	33 ppm
Potassium (K)	202 ppm
Calcium (Ca)	2718 ppm
Magnesium (Mg)	296 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	6.4 % ENR 150
Nitrate Nitrogen	

SOIL TEST RATINGS: Very Low | Low | Medium | Optimum | Very High



Calculated Cation Exchange Capacity	
16.6 meq/100g	
Calculated Cation Saturation	
%K	3.1
%Ca	81.9
%Mg	14.9
%H	0.0
Hmeq	0.0
K : Mg Ratio	
0.20	
Ca : Mg Ratio	
5.50	

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	0	0						
Crop :							**Rec Units:**			

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 16 of 30

Lab Number : 08487 **Field Id :** **Sample Id :** Friendship

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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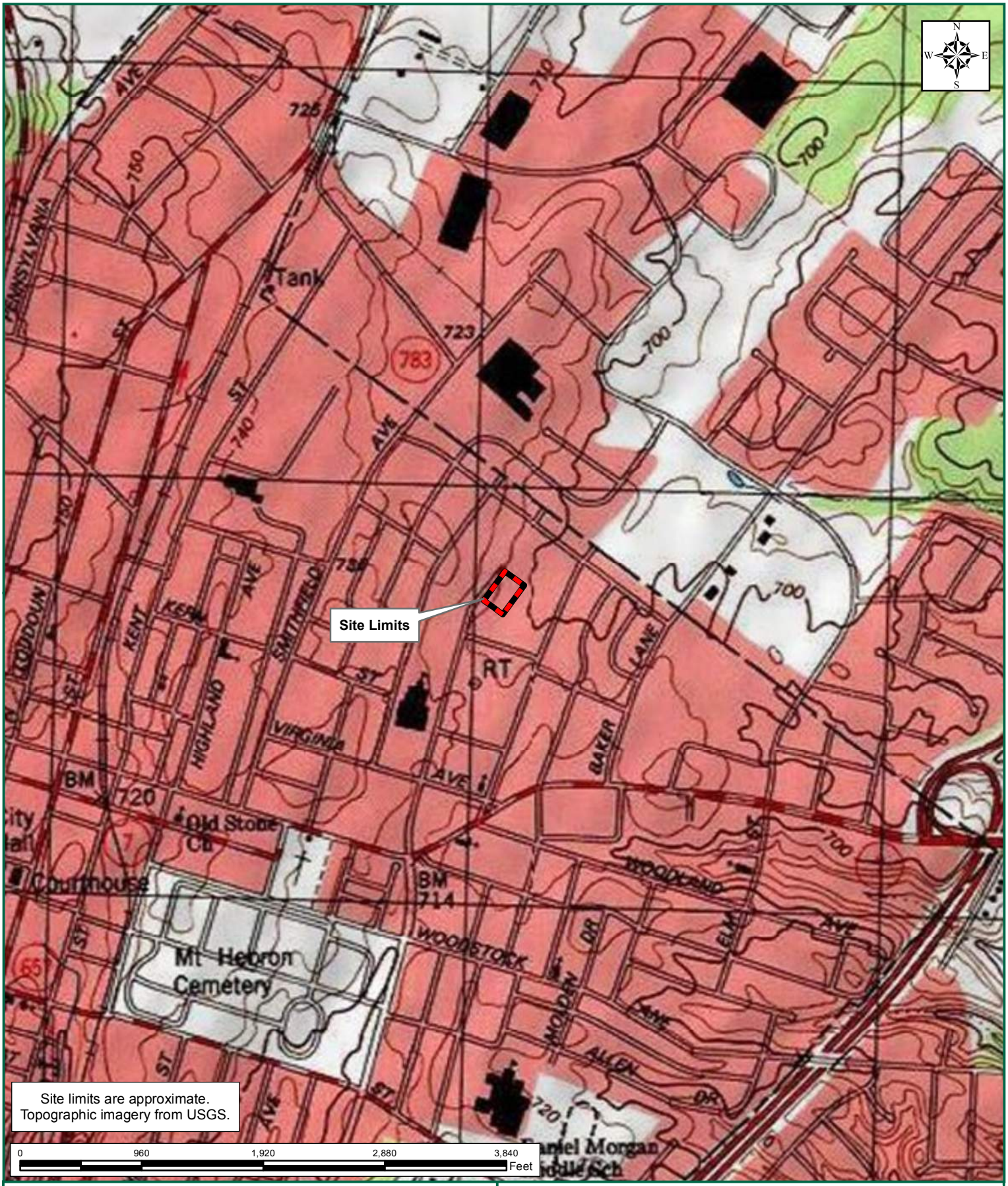

WINCHESTER NUTRIENT MANAGEMENT PLANS - FRIENDSHIP PARK
CITY OF WINCHESTER, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *36284.007*
PROJECT STUDY LIMITS: *1.2 ACRES*
LATITUDE: *39° 11' 26.4" N*
LONGITUDE: *78° 09' 02.6" W*

U.S.G.S. QUADRANGLE(S): *WINCHESTER*
DATE(S): *2013*
WATERSHED(S): *CONOCOCHEAGUE-OPEQUON*
HYDROLOGIC UNIT CODE(S): *02070004*

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THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
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YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/11/2016
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - FRIENDSHIP PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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Path: Y:\80436284.007-Winchester_NMP\s\GIS\Common Shared Exhibits\Friendship Park\NMA.mxd

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YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/30/2016

DRAWN BY B. NORRIS

DESIGNED BY B. NORRIS

CHECKED BY E. VIRTS

SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - FRIENDSHIP PARK

CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

JOB NUMBER 36284.007

SHEET NO. 1 OF 1

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

Mr. Lambert
Rouss City Hall, 15 N Cameron St.
Winchester VA, 22601

4/17/2019

Subject: Friendship Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Friendship Park	Parker Osterloh	1.2	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

Nick Yakish
Urban Nutrient Management Coordinator
Department of Conservation and Recreation
600 East Main St., 24th Floor
Richmond, Virginia 23219
(804) 389-5439
nicholas.yakish@dcr.virginia.gov

TIMMONS GROUP
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Nutrient Management Plan

Harvest Ridge Park

Prepared For:

Tommy Lambert
City of Winchester
Rouss City Hall, 15 N. Cameron Street
Winchester, Virginia 22601
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
804-200-6457
Certification Code: #920
Total Managed Area Acreage: 1.0

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous 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 plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

Nutrient Management Plan For:

Harvest Ridge Park

Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, Virginia 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

Location Information:

Physical Address	805 Crestview Terrace
City, State Zip	Winchester, VA 22601
Latitude	39° 09’ 32.5”
Longitude	-77° 11’ 33.1”
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

Acreage:

Total	43,560 square feet (1 acres)

Plan Start Date	3/15/19
Plan End Date	3/15/2022

Planner Signature: 

Narrative

This nutrient management plan has been prepared by Timmons Group, on behalf of the City of Winchester. Harvest Ridge Park is located on Crestview Terrace in Winchester, Virginia, within a residential development between Stoneridge Road and Windwood Drive (see Figure 1: Vicinity Map). The park has one soccer field and is relatively flat except for a small area with steeper slopes of less than 15% along the southwest park border. No wetlands were found to be present within the nutrient management area (Area) during the January 29, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on Figure 2: Environmental Inventory Map. There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed within the Area and therefore, no environmentally sensitive areas were identified.

Using aerial photography and through discussions with City of Winchester staff, a 1.0-acre area (43,560 sq ft) was identified as turf where fertilizer could be applied, although this field has never been fertilized in the past. The turf on the soccer field (Harvest Ridge Field) at Harvest Ridge Park is comprised of a cool season grass.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Harvest Ridge Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Harvest Ridge Park. Management Area 1 (Harvest Ridge Field) is shown on Figure 3: Nutrient Management Areas Map. Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications on this management area should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

Every fertilizer application should be recorded in the record sheet provided. Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

Nutrient Management Worksheet

Property:	Harvest Ridge Park								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs per area**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 1: Harvest Ridge Field acreage = approximately 1.0	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.7	**73**
	6/1 - 6/15	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.00	5.0	**218**
Maximum									
4.2-1-0	8/15 - 8/31	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.00	5.0	**218**
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	**131**
						*Recommended Total Annual NPK Application	4.2 - 1.00 - 1.07		
Notes	The annual application of total nitrogen **should not exceed 4.2 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.								
Sulfur Recommendations	* Recommendations are targeted based on a soil pH of 6.2 for optimal nutrient availability and growth of turfgrass * Use sulfer coated urea to reduce soil pH.								

Soil Test Summary

Soil Test Summary								
Customer Name:	City of Winchester - Harvest Ridge Park							
Testing Lab:	Waypoint Analytical							
Sample Date:	Juanuary 29, 2019							
Planner Name	Marjorie Siwy, Timmons Group							
Certification Number	#844							
Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Harvest Ridge Field	43,560	7.0	-	16.8	M+	164.7	VH	Tall Fescue
Notes:	VH = Very High, H = High, M = Medium, and L = Low							

Soil Test Reports

Soil samples were taken from the turfgrass at the athletic field at Harvest Ridge Park on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

A. Management Area 1 - 1.0 acre (Harvest Ridge Field)

The phosphorus level was Medium+ (M+) for the athletic field. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium level was Very High (VH) for the athletic field. Maximum applications of potassium are recommended 0 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.2 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

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.

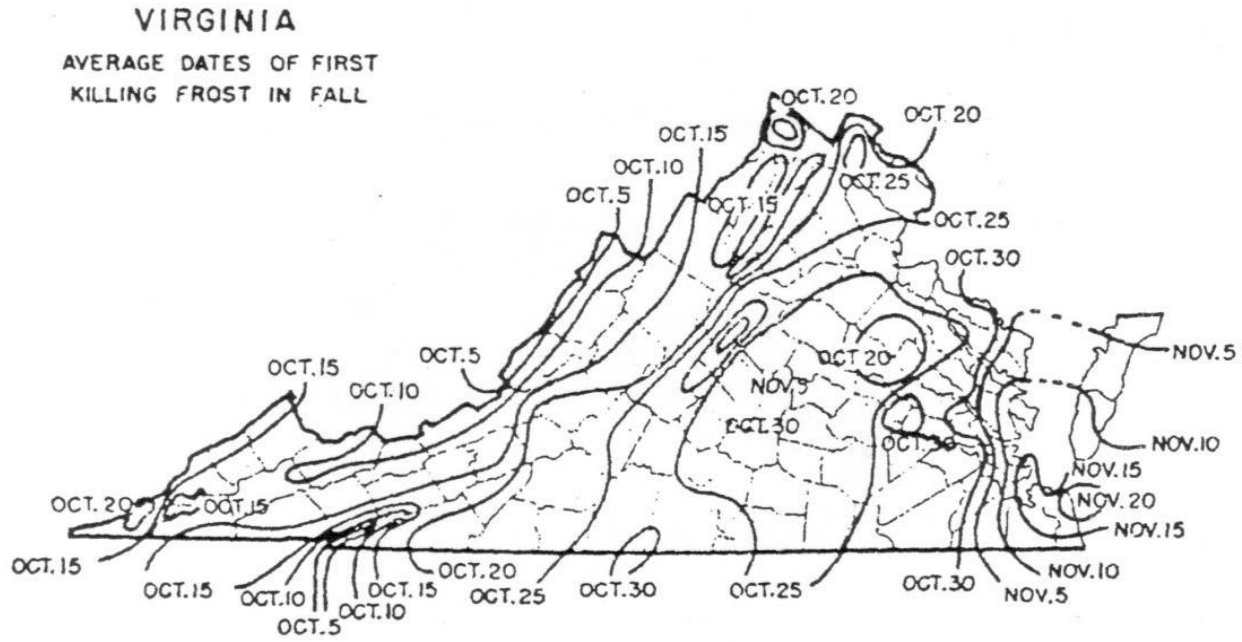
"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such 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 on next sheet).


VIRGINIA
AVERAGE DATES OF FIRST
KILLING FROST IN FALL
OCT.20
OCT 20
OCT.15
OCT.10
OCT.5
OCT.15
OCT.25
OCT.25
OCT.30
NOV.5
OCT.15
OCT.10
OCT.5
OCT 20
NOV.5
OCT.30
OCT.30
NOV.10
NOV.15
NOV.20
NOV.15
OCT.20
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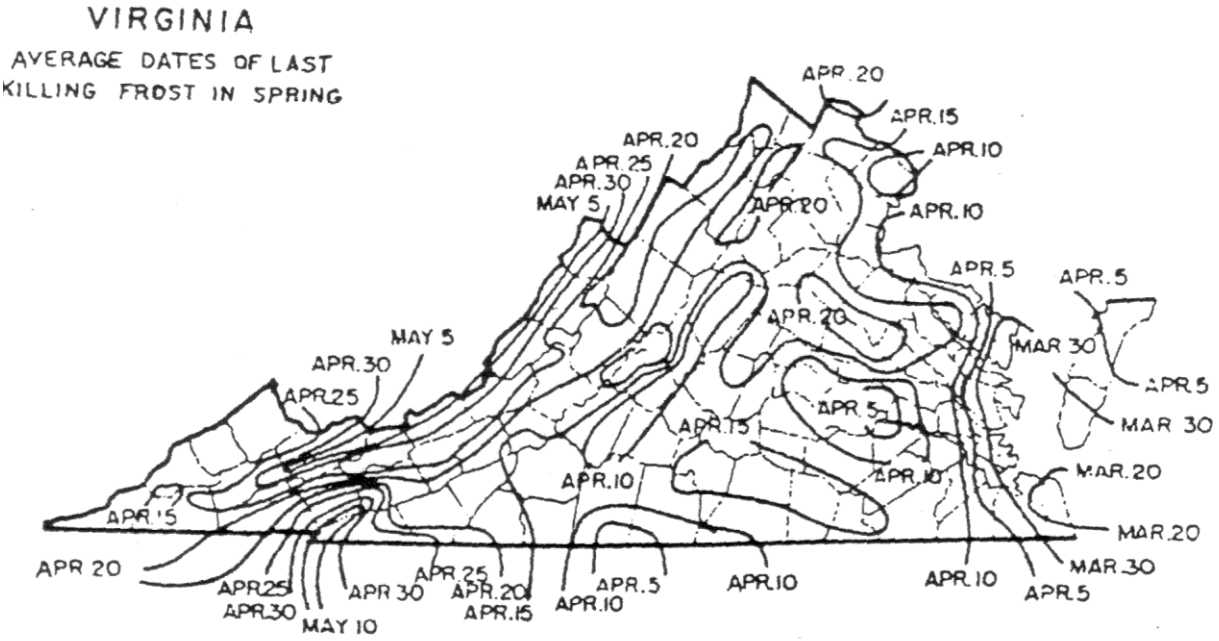
OCT.25
OCT.30
NOV.5
NOV.10


VIRGINIA
AVERAGE DATES OF LAST
KILLING FROST IN SPRING
APR.20
APR.15
APR.20
APR.10
APR.25
APR.30
MAY 5
APR.20
APR.10
APR.5
APR.5
APR.20
MAY 5
MAR 30
APR.30
APR.25
APR.5
APR.5
MAR 30
APR.15
APR.10
APR.10
MAR.20
APR.15
MAR.20
APR 20
APR.25
APR.30
APR 30
APR.25
APR.20
APR.15
APR.5
APR.10
APR.10
APR.10
APR.5
MAR.30
MAY 10

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.

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:

* 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 phosph

orus 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

* 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.

Notes:

• Soluble nitrogen rates of 0.25 pounds per 1,000 ft2 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 nitrogen 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 ft2 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 nitrogen 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.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft2 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 ft2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft2 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 ft2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Reference Materials and Notes

Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation

ESRI Aerial Photography

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester	Management Area ID:	Harvest Ridge Field
Address:	805 Crestview Terrace	Management Area Size:	43,560 sq ft
	Winchester, VA 22601	Plant Species:	Tall Fescue
		Notes:	
Phone #:	703-777-0343		

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

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 29 of 30

Lab Number : 08494 **Field Id :** **Sample Id :** Harvest Ridge

Test	Results	SOIL TEST RATINGS (Very Low / Low / Medium / Optimum / Very High)
Soil pH	7.0	
Buffer pH		
Phosphorus (P)	44 ppm	
Potassium (K)	232 ppm	
Calcium (Ca)	2007 ppm	
Magnesium (Mg)	144 ppm	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	5.6 % ENR 145	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity

11.8
meq/100g

Calculated Cation Saturation

%K	5.0
%Ca	85.0
%Mg	10.2
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.50

Ca : Mg Ratio
8.33

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 30 of 30

Lab Number : 08494 **Field Id :** **Sample Id :** Harvest Ridge

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

Lawn

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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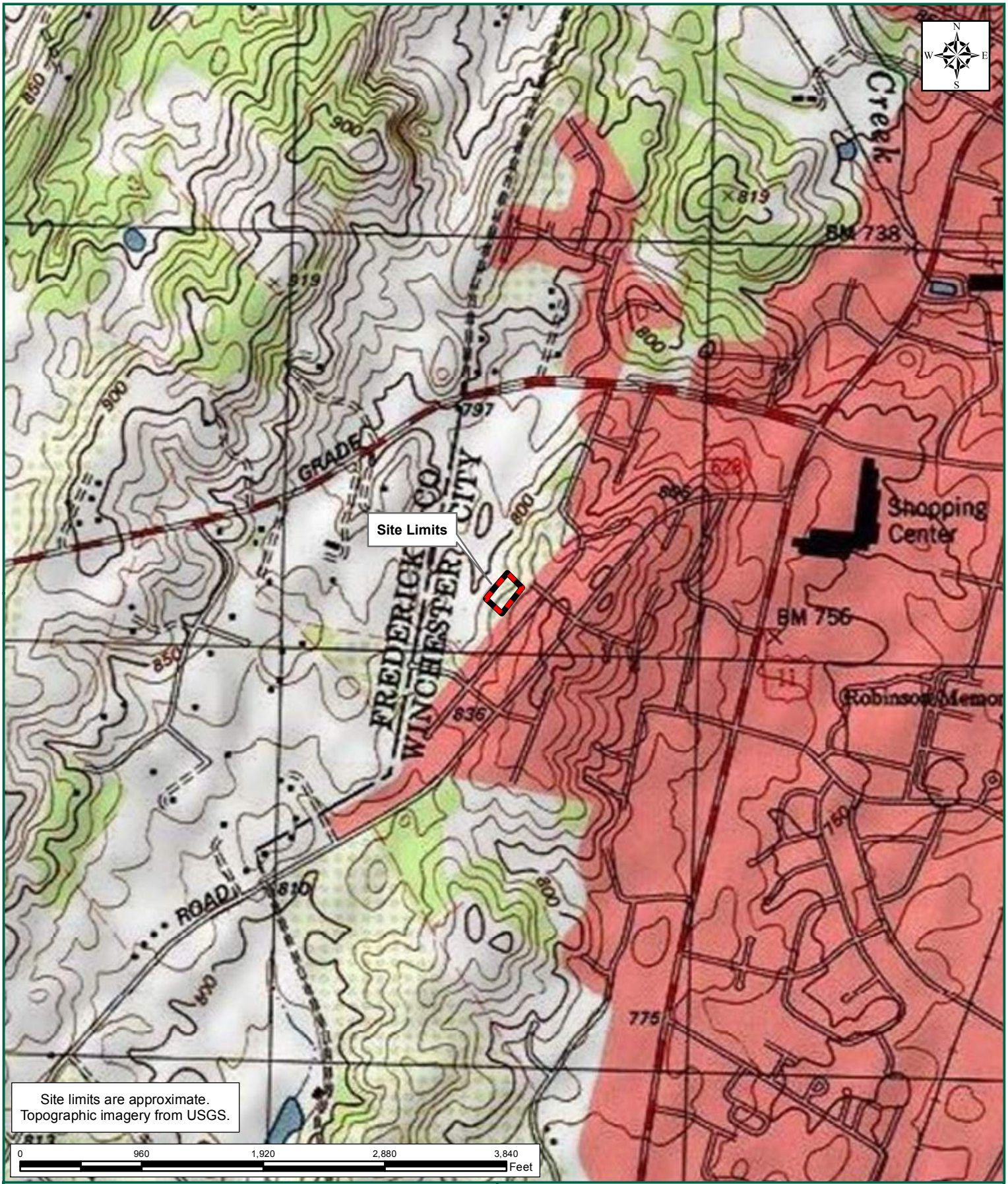

WINCHESTER NUTRIENT MANAGEMENT PLANS - HARVEST RIDGE PARK
CITY OF WINCHESTER, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *36284.007*
PROJECT STUDY LIMITS: *1.0 ACRES*
LATITUDE: *39° 09' 32.5" N*
LONGITUDE: *78° 11' 33.1" W*

U.S.G.S. QUADRANGLE(S): *WINCHESTER*
DATE(S): *2013*
WATERSHED(S): *CONOCOCHEAGUE-OPEQUON*
HYDROLOGIC UNIT CODE(S): *02070004*

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THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
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TEL 804.200.6500 FAX 804.560.1648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/10/2016

DRAWN BY B. NORRIS

DESIGNED BY B. NORRIS

CHECKED BY E. VIRTS

SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - HARVEST RIDGE PARK

CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

JOB NUMBER 36284.007

SHEET NO. 1 OF 1

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Harvest Ridge Field

Legend

Project Study Limits - 1.0 Acres

Management Area 1 - 1.0 Acres

0 50 100 200 Feet

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

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Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/30/2016

DRAWN BY B. NORRIS

DESIGNED BY B. NORRIS

CHECKED BY E. VIRTS

SCALE 1" = 100'

WINCHESTER NUTRIENT MANAGEMENT PLANS - HARVEST RIDGE PARK

CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

JOB NUMBER 36284.007

SHEET NO. 1 OF 1

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

Mr. Lambert
Rouss City Hall, 15 N Cameron St.
Winchester VA, 22601

4/17/2019

Subject: Harvest Ridge Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Harvest Ridge Park	Parker Osterloh	1.0	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

Nick Yakish
Urban Nutrient Management Coordinator
Department of Conservation and Recreation
600 East Main St., 24th Floor
Richmond, Virginia 23219
(804) 389-5439
nicholas.yakish@dcr.virginia.gov

TIMMONS GROUP
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Nutrient Management Plan

Jim Barnett Park

Prepared For:

Tommy Lambert
City of Winchester
Rouss City Hall, 15 N. Cameron Street
Winchester, VA 22601
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
804-200-6457
Certification Code: #920
Total Managed Area Acreage: 13.1

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous 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 plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

Nutrient Management Plan For:

Jim Barnett Park

Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

Location Information:

Physical Address	1001 East Cork Street
City, State Zip	Winchester, VA 22601
Latitude	39° 10' 27.9" N
Longitude	78° 09' 06.2" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

Acreage:

Total	570,636 square feet (13.1 acres)
Management Area 1	383,328 square feet (8.8 acres)
Management Area 2	141,134 square feet (3.24 acres)
Management Area 3	41,817 square feet (0.96 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature: 

Narrative

This nutrient management plan has been prepared by Timmons Group, on behalf of the City of Winchester. Jim Barnett Park is located on East Cork Street in Winchester, Virginia, east of South Pleasant Valley Road and west of Interstate I-81 (see Figure 1: Vicinity Map). The park has eight athletic fields for softball, baseball, and multi-purpose uses such as soccer and football. The site is relatively flat with a few areas gently sloping towards the central portion of the park. No wetlands were found to be present within the site limits during the January 31, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on Figure 2: Environmental Inventory Map. There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite. Therefore, no environmentally sensitive areas were identified onsite. However, it was noted that a stream channel runs behind the northeast side of Eagles Field and therefore, special attention should be paid to this area when applying fertilizer to avoid product being broadcast onto the surrounding slope where nutrients could runoff.

Using aerial photography and through discussions with City of Winchester staff, a 13.1-acre area (568,378 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on Bridgeforth Field, Preston Multi-Purpose Field, Henkel Harris Field, T-Ball Field, Eagles Field, and the infield of Yost Field is comprised of cool season grasses. Managed turf on Bodie Grim Field, Rotary Field, and the outfield of Yost Field is comprised of a warm season grass.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Jim Barnett Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

Three management areas were determined for Jim Barnett Park. Management Area 1 (Bridgeforth, Yost Infield, Preston Multi-purpose, Henkel Harris, T-Ball, and Eagles fields), Management Area 2 (Bodie Grim and Rotary fields), and Management Area 3 (Yost Outfield) are shown on Figure 3: Nutrient Management Areas Map. Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified in Management Area 1, fertilizer applications on this management area should occur within the Cool Season Application Period of March 4th to November 26th. Based on those same killing frost dates and the warm season turf

identified in Management Area 2 and Management Area 3, fertilizer applications on these management areas should occur within the warm season application period of April 15th to September 15th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

Every fertilizer application should be recorded in the record sheet provided. Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

Nutrient Management Worksheets

Property:	Jim Barnett Park (Bridgeforth, Yost Infield, Preston, Henkel Harris, T-Ball, and Eagles fields)								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs of fertilizer product in Management Area 1**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 1: T-Ball and Preston fields acreage = approximately	4/15 - 5/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.00	**1917**
	6/1 - 6/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.67	**639**
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.00 - 0.50	5.00	**1917**
8.8									
Maximum 4.2-0.75-1	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.00	**1150**
	***Recommended Total Annual NPK Application**						**4.2 - 0.75 - 2.07**		
Management Area 2: Bridgeforth, Yost Infield, Henkel Harris, and Eagles fields acreage = approximately	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.67	**235**
	6/1 - 6/15	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.00	**706**
	8/15 - 8/31	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.00	**706**
3.24									
Maximum 4.5-1-1	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.00	**423**
	***Recommended Total Annual NPK Application**						**4.2 - 1.00 - 2.07**		

The annual application of total nitrogen **should not exceed 4.5 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.

Sulfur Recommendations

Note: Do not apply more than 5 lbs per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH.

Preston: To reduce soil pH apply **12.5 pounds of elemental sulfur per 1000 sq ft**. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.

Yost Infield: To reduce soil pH apply **17.5 pounds of elemental sulfur per 1000 sq ft**. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.

Henkel Harris: To reduce soil pH apply **10 pounds of elemental sulfur per 1000 sq ft.** Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.

T-Ball Field: To reduce soil pH apply **2.5 pounds of elemental sulfur per 1000 sq ft.** Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.

Bridgeforth: To reduce soil pH apply **2.5 pounds of elemental sulfur per 1000 sq ft.** Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.

Eagles: require no sulfur at this time.

Property:	Jim Barnett Park (Bodie Grim, Rotary, and Yost Outfield)								
Prepared:	3/15/19						Species:	Warm Season	
Expires:	3/15/22								
Management Area	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs of fertilizer product in Management Area 1**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 3: Bodie Grim Field approximate acerage: 0.96	4/15 - 5/15	2	> 15 days	custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.00 - 0.50	5.00	**209**
	6/1-6/30	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.67	**70**
Maximum									
4-0-1	7/1-8/31	2	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	1.00 - 0.00 - 0.33	3.33	**139**
	*Recommended Total Annual NPK Application						3.5 - 0.00 - 1.83		
Notes	The annual application of total nitrogen **should not exceed 4.0 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the								
Sulfur Recommendations	* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass * Note: Do not apply more than 5 lbs of elemental suflur per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. Rotary:To reduce soil pH apply **7.5 pounds of elemental sulfur** per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is Yost Outfield: To reduce soil pH apply 10 pounds of elemental sulfur per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation. Bodie Grim: To reduce soil pH apply 7.5 pounds of elemental sulfur per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.								

Soil Test Summary

Customer Name:	City of Winchester
Testing Lab:	Waypoint Analytical
Sample Date:	January 29, 2019
Planner Name	Parker Osterloh, Timmons Group
Certification Number	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Bridgeforth Field	103,215	7.1	-	19	H-	96	H-	Tall Fescue/Kentucky Bluegrass mixture
Rotary Field	41,626	7.5	-	22	H-	83	M+	Bermudagrass
Yost Field - Infield	15,681	7.9	-	32	H	60	M	Tall Fescue/Kentucky Bluegrass mixture
Yost Field -Outfield	25,954	7.6	-	36	H	95	H-	Bermudagrass
Bodie Grim Field	115,380	7.5	-	12	M	116	H	Bermudagrass
Preston Multi-Purpose Field	124,045	7.7	-	15	M	86	M+	Tall Fescue/Kentucky Bluegrass mixture
Henkel Harris Field	48,948	7.6	-	17	M+	100	H-	Tall Fescue
T-Ball Field	15,552	7.3	-	10	M-	78	M+	Tall Fescue
Eagles Field	77,977	6.7	-	21	H-	100	H-	Tall Fescue

Notes:	H = High, M = Medium, L = Low

Soil Test Reports

Soil samples were taken from the managed turfgrass at each of the athletic fields at Jim Barnett Park on January 31, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

A. Management Area 1 - 8.8 acres (Bridgeforth, Yost Infield, Preston, Henkel Harris, T-Ball, and Eagles fields)

Phosphorus levels ranged between High- (H-) and High (H) for all athletic fields. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. Potassium levels ranged from Medium (M) to High- (H-) for all athletic fields. Applications of potassium are recommended, at approximately 1.0 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.2 lbs/1,000 sq ft (see the Nutrient Management and Individual Field Application Worksheets for additional detail).

B. Management Area 2 - 3.24 acres (Bodie Grim and Rotary fields)

Phosphorus levels were High- (H-) for both athletic fields. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. Potassium levels were High- (H-) for both athletic fields. Applications of potassium are recommended, at approximately 1.0 lb/1,000 sq ft annually. Nitrogen applications are recommended as 4.0 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for warm season grasses on intensively managed athletic fields is 4.0 lbs/1,000 sq ft (see the Nutrient Management and Individual Field Application Worksheets for additional detail).

C. Management Area 3 - 0.96 acres (Yost Outfield)

The phosphorus level was Very High (VH) for the athletic field. Applications of phosphorus are not recommended. See additional notes on the nutrient application worksheet. The potassium level was High- (H-) for the athletic field. Applications of potassium are recommended, at approximately 1.0 lb/1,000 sq ft annually. Nitrogen applications are recommended as 3.5 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum

nitrogen application rate for warm season grasses on intensively managed athletic fields is 4.0 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

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.

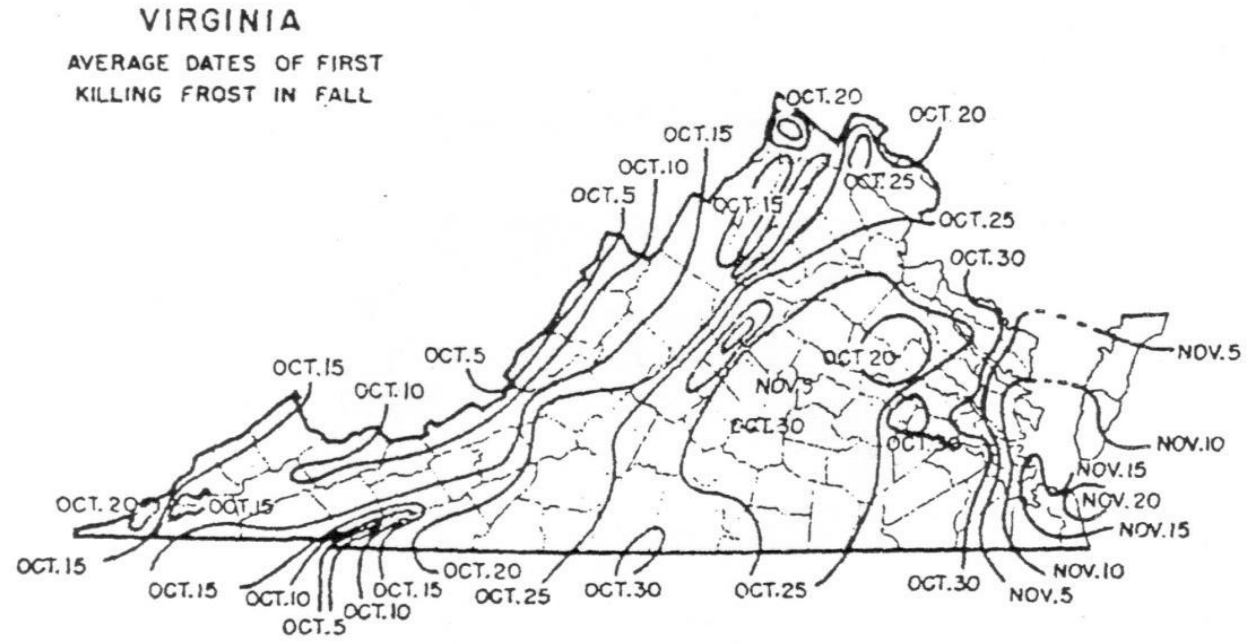
"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such 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.

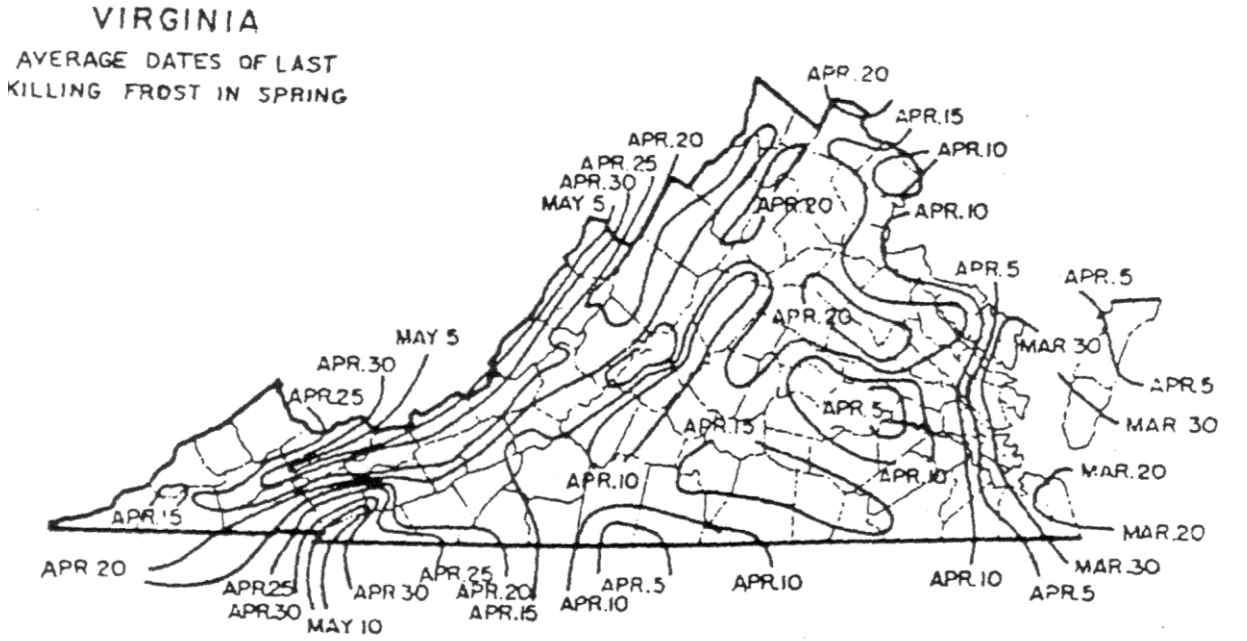
"Water soluble nitrogen", "WSN" and "readily available nitrogen" means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

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 on next sheet).


VIRGINIA
AVERAGE DATES OF FIRST
KILLING FROST IN FALL
OCT.20
OCT 20
OCT.15
OCT.10
OCT.5
OCT.15
OCT.25
OCT.25
OCT.30
NOV.5
OCT.15
OCT.10
OCT.5
OCT 20
NOV.5
OCT.30
OCT.30
NOV.10
NOV.15
NOV.20
NOV.15
OCT.20
OCT.15
OCT.15
OCT.15
OCT.10
OCT.5
OCT.10
OCT.20
OCT.25
OCT.30
OCT.25
OCT.30
NOV.5
NOV.10


VIRGINIA
AVERAGE DATES OF LAST
KILLING FROST IN SPRING
APR.20
APR.15
APR.20
APR.10
APR.25
APR.30
MAY 5
APR.20
APR.10
APR.5
APR.5
MAY 5
APR.20
MAR 30
APR.30
APR.25
APR.5
APR.5
MAR 30
APR.15
APR.10
APR.10
MAR.20
APR.15
MAR.20
APR 20
APR.25
APR.30
APR 30
APR.25
APR.20
APR.15
APR.5
APR.10
APR.10
APR.10
APR.5
MAR.30
MAY 10

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.

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:

* 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 phosph

orus 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

* 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.

Notes:

• Soluble nitrogen rates of 0.25 pounds per 1,000 ft2 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 nitrogen 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 ft2 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 nitrogen 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.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft2 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 ft2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft2 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 ft2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Reference Materials and Notes

Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation

ESRI Aerial Photography

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Bridgeforth Field
Address:	1001 East Cork Street	Management Area Size:	103,215 sq ft
	Winchester, Virginia 22601	Plant Species:	Tall Fescue/Kentucky Bluegrass mixture
		Notes:	Baseball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Rotary Field
Address:	1001 East Cork Street	Management Area Size:	41,626 sq ft
	Winchester, Virginia 22601	Plant Species:	Bermudagrass
		Notes:	Softball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Yost Infield
Address:	1001 East Cork Street	Management Area Size:	15,681
	Winchester, Virginia 22601	Plant Species:	Tall Fescue/Kentucky Bluegrass mixture
		Notes:	Softball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Yost Outfield
Address:	1001 East Cork Street	Management Area Size:	25,954 sq ft
	Winchester, Virginia 22601	Plant Species:	Bermudagrass
		Notes:	Softball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Preston Multi-Purpose Field
Address:	1001 East Cork Street	Management Area Size:	124,045 sq ft
	Winchester, Virginia 22601	Plant Species:	Tall Fescue/Kentucky Bluegrass mixture
		Notes:	Multi-purpose athletic field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Henkel Harris Field
Address:	1001 East Cork Street	Management Area Size:	48,948 sq ft
	Winchester, Virginia 22601	Plant Species:	Tall Fescue
		Notes:	Softball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	T-Ball Field
Address:	1001 East Cork Street	Management Area Size:	15,552 sq ft
	Winchester, Virginia 22601	Plant Species:	Tall Fescue
		Notes:	T-Ball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Eagles Field
Address:	1001 East Cork Street	Management Area Size:	77,977 sq ft
	Winchester, Virginia 22601	Plant Species:	Tall Fescue
		Notes:	Softball field
Phone #:	540-667-1815		

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

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester - Jim Barnett Park	Management Area ID:	Bodie Grim Field
Address:	1001 East Cork Street	Management Area Size:	115,380 sq ft
	Winchester, Virginia 22601	Plant Species:	Bermudagrass
		Notes:	Baseball field
Phone #:	540-667-1815		

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

Waypoint ANALYTICAL

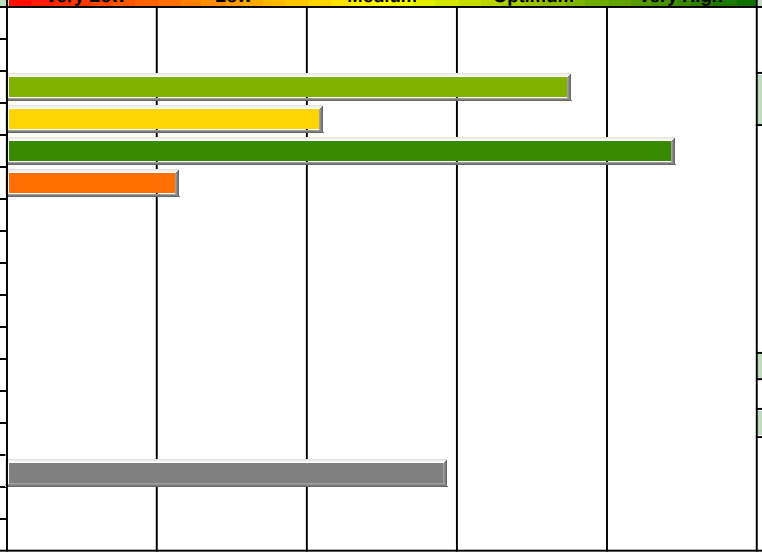
7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 3 of 30

Lab Number : 08480 **Field Id :** **Sample Id :** Yost Outfield

Test	Results
Soil pH	7.6
Buffer pH	
Phosphorus (P)	87 ppm
Potassium (K)	134 ppm
Calcium (Ca)	4003 ppm
Magnesium (Mg)	160 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	4.8 % ENR 122
Nitrate Nitrogen	



Calculated Cation Exchange Capacity: **21.7** meq/100g

Calculated Cation Saturation

%K	1.6
%Ca	92.2
%Mg	6.1
%H	0.0
Hmeq	0.0

K : Mg Ratio 0.23

Ca : Mg Ratio 15.11

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 4 of 30

Lab Number : 08480 **Field Id :** **Sample Id :** Yost Outfield

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

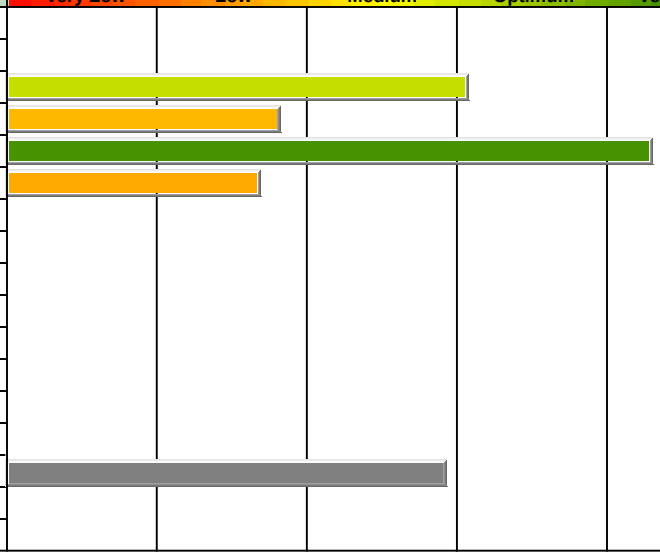
Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 5 of 30

Lab Number : 08481 **Field Id :** **Sample Id :** Rotary Field

Test	Results
Soil pH	7.5
Buffer pH	
Phosphorus (P)	57 ppm
Potassium (K)	117 ppm
Calcium (Ca)	3280 ppm
Magnesium (Mg)	185 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	4.7 % ENR 120
Nitrate Nitrogen	

SOIL TEST RATINGS

Very Low | Low | Medium | Optimum | Very High



Calculated Cation Exchange Capacity

18.2
meq/100g

Calculated Cation Saturation

%K	1.6
%Ca	90.1
%Mg	8.5
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.20

Ca : Mg Ratio
10.60

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0	2.0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL
7621 Whitepine Road, Richmond, VA 23237
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www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 6 of 30

Lab Number : 08481 **Field Id :** **Sample Id :** Rotary Field

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

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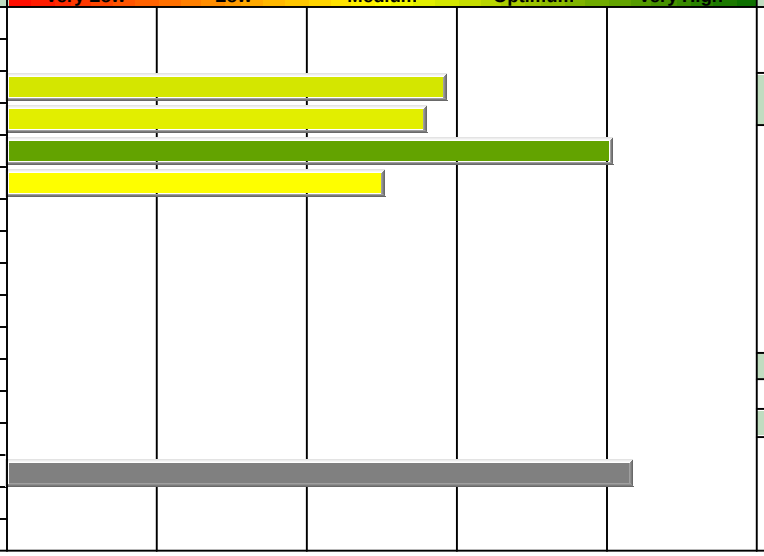
SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 9 of 30

Lab Number : 08483 **Field Id :** **Sample Id :** Bridgeforth

Test	Results
Soil pH	7.1
Buffer pH	
Phosphorus (P)	49 ppm
Potassium (K)	136 ppm
Calcium (Ca)	2285 ppm
Magnesium (Mg)	200 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	8.2 % ENR 150
Nitrate Nitrogen	



Calculated Cation Exchange Capacity

13.4
meq/100g

Calculated Cation Saturation

%K	2.6
%Ca	85.3
%Mg	12.4
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.18

Ca : Mg Ratio
6.88

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 10 of 30

Lab Number : 08483 **Field Id :** **Sample Id :** Bridgeforth

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

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Pauric McGroary

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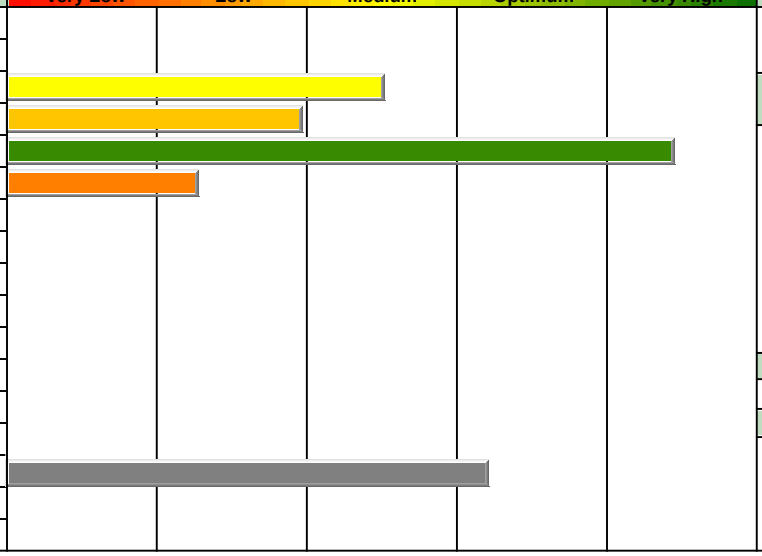
SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 11 of 30

Lab Number : 08485 **Field Id :** **Sample Id :** Preston Multi-Purpose

Test	Results
Soil pH	7.7
Buffer pH	
Phosphorus (P)	41 ppm
Potassium (K)	122 ppm
Calcium (Ca)	3519 ppm
Magnesium (Mg)	156 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	5.3 % ENR 132
Nitrate Nitrogen	



Calculated Cation Exchange Capacity

19.2
meq/100g

Calculated Cation Saturation

%K	1.6
%Ca	91.6
%Mg	6.8
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.23

Ca : Mg Ratio
13.47

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	2.0	0						
Crop :							**Rec Units:**			

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 12 of 30

Lab Number : 08485 **Field Id :** **Sample Id :** Preston Multi-Purpose

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

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· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

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SOIL ANALYSIS

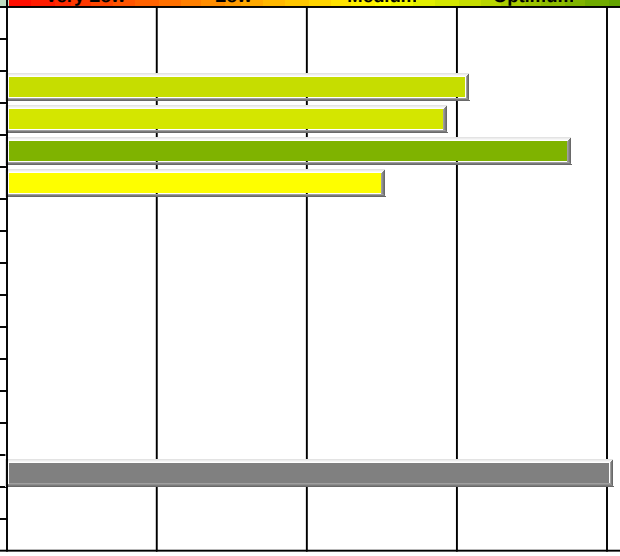
Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 13 of 30

Lab Number : 08486 **Field Id :** **Sample Id :** Eagles Field

Test	Results
Soil pH	6.7
Buffer pH	
Phosphorus (P)	55 ppm
Potassium (K)	141 ppm
Calcium (Ca)	1958 ppm
Magnesium (Mg)	178 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	7.5 % ENR 150
Nitrate Nitrogen	

SOIL TEST RATINGS

Very Low | Low | Medium | Optimum | Very High



Calculated Cation Exchange Capacity

12.1
meq/100g

Calculated Cation Saturation

%K	3.0
%Ca	80.9
%Mg	12.3
%H	4.1
Hmeq	0.5

K : Mg Ratio
0.27

Ca : Mg Ratio
6.58

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0	0	0						
Crop :							**Rec Units:**			

Comment :

Pauric McGroary

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Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 14 of 30

Lab Number : 08486 **Field Id :** **Sample Id :** Eagles Field

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

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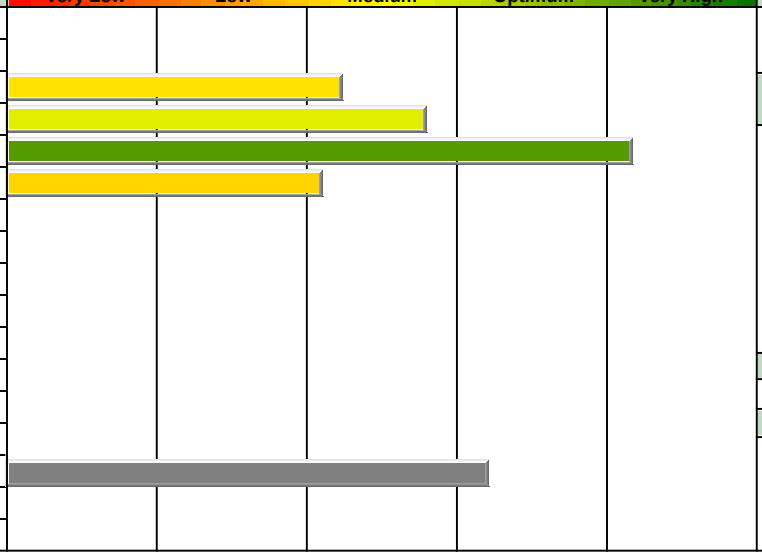
SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 17 of 30

Lab Number : 08488 **Field Id :** **Sample Id :** Bodie Grimm

Test	Results
Soil pH	7.5
Buffer pH	
Phosphorus (P)	35 ppm
Potassium (K)	164 ppm
Calcium (Ca)	3482 ppm
Magnesium (Mg)	242 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	5.4 % ENR 134
Nitrate Nitrogen	



Calculated Cation Exchange Capacity: **19.8** meq/100g

Calculated Cation Saturation	
%K	2.1
%Ca	87.9
%Mg	10.2
%H	0.0
Hmeq	0.0

K : Mg Ratio	Ca : Mg Ratio
0.20	8.62

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 18 of 30

Lab Number : 08488 **Field Id :** **Sample Id :** Bodie Grimm

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

Lawn

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· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc. Pauric McGroary

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SOIL ANALYSIS

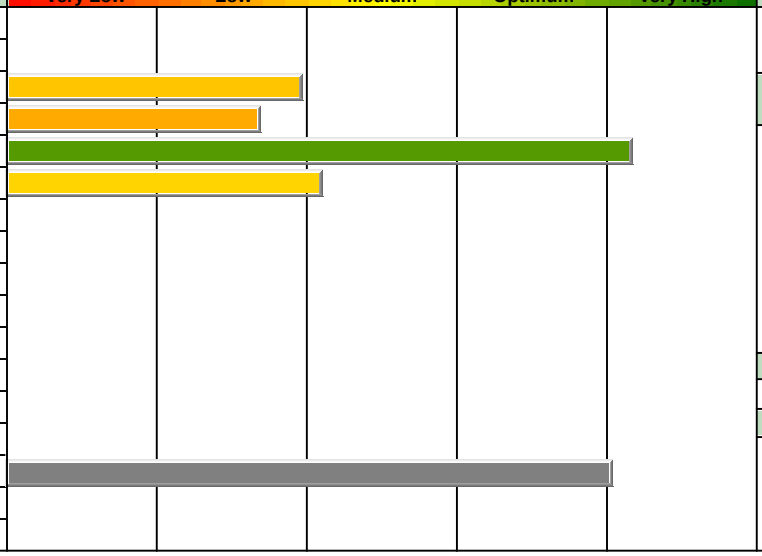
Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 19 of 30

Lab Number : 08489 **Field Id :** **Sample Id :** T-ball Field

Test	Results
Soil pH	7.3
Buffer pH	
Phosphorus (P)	29 ppm
Potassium (K)	111 ppm
Calcium (Ca)	3009 ppm
Magnesium (Mg)	220 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	7.8 % ENR 150
Nitrate Nitrogen	

SOIL TEST RATINGS

Very Low | Low | Medium | Optimum | Very High



Calculated Cation Exchange Capacity

17.2
meq/100g

Calculated Cation Saturation

%K	1.7
%Ca	87.5
%Mg	10.7
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.17

Ca : Mg Ratio
8.18

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	1.0	2.0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 20 of 30

Lab Number : 08489 **Field Id :** **Sample Id :** T-ball Field

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**
12	10-20-15	12	10-0-20	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

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· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

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Pauric McGroary

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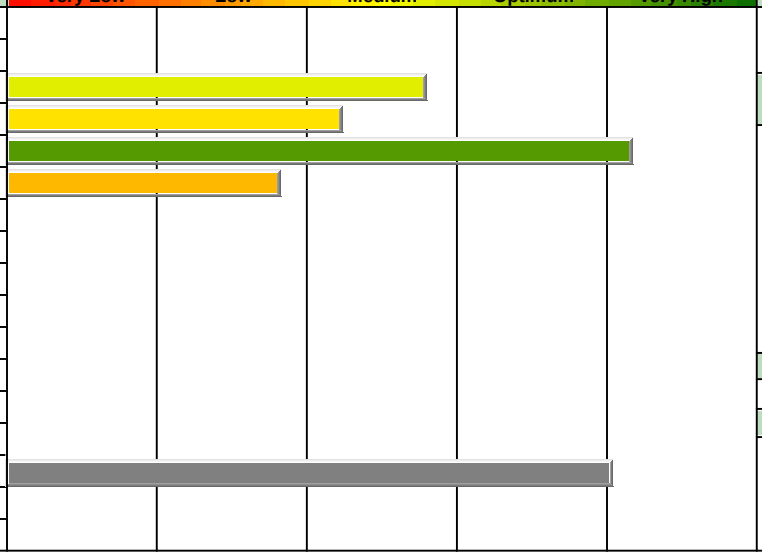
SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 21 of 30

Lab Number : 08490 **Field Id :** **Sample Id :** Henkel Harris

Test	Results
Soil pH	7.6
Buffer pH	
Phosphorus (P)	46 ppm
Potassium (K)	141 ppm
Calcium (Ca)	3616 ppm
Magnesium (Mg)	227 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	7.2 % ENR 150
Nitrate Nitrogen	



Calculated Cation Exchange Capacity: **20.3** meq/100g

Calculated Cation Saturation

%K	1.8
%Ca	89.1
%Mg	9.3
%H	0.0
Hmeq	0.0

K : Mg Ratio 0.21

Ca : Mg Ratio 9.58

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL
7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 22 of 30

Lab Number : 08490 **Field Id :** **Sample Id :** Henkel Harris

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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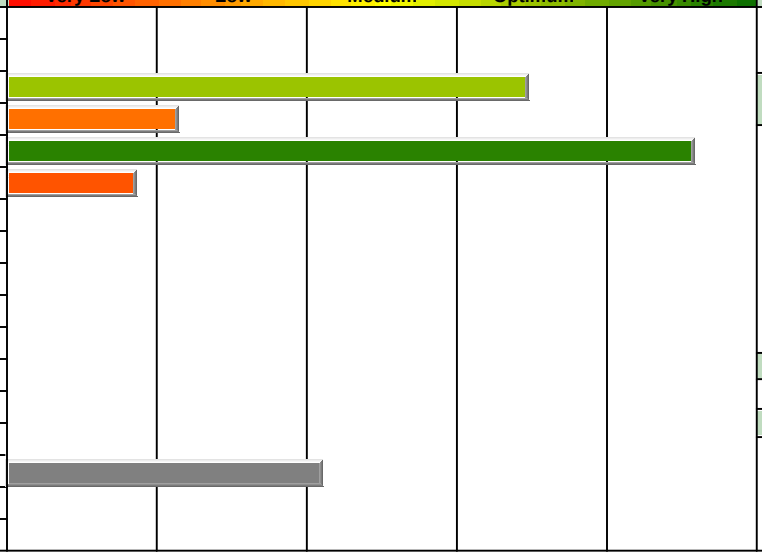
SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 1 of 30

Lab Number : 08479 **Field Id :** **Sample Id :** Yost Infield

Test	Results
Soil pH	7.9
Buffer pH	
Phosphorus (P)	77 ppm
Potassium (K)	85 ppm
Calcium (Ca)	3892 ppm
Magnesium (Mg)	113 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.7 % ENR 80
Nitrate Nitrogen	



Calculated Cation Exchange Capacity: **20.6** meq/100g

Calculated Cation Saturation	
%K	1.1
%Ca	94.5
%Mg	4.6
%H	0.0
Hmeq	0.0

K : Mg Ratio	Ca : Mg Ratio
0.22	20.54

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0	3.0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 2 of 30

Lab Number : 08479 **Field Id :** **Sample Id :** Yost Infield

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-0-20	8	16-4-8	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 29 of 30

Lab Number : 08494 **Field Id :** **Sample Id :** Harvest Ridge

Test	Results	SOIL TEST RATINGS (Very Low / Low / Medium / Optimum / Very High)
Soil pH	7.0	
Buffer pH		
Phosphorus (P)	44 ppm	
Potassium (K)	232 ppm	
Calcium (Ca)	2007 ppm	
Magnesium (Mg)	144 ppm	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	5.6 % ENR 145	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity

11.8
meq/100g

Calculated Cation Saturation

%K	5.0
%Ca	85.0
%Mg	10.2
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.50

Ca : Mg Ratio
8.33

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	0.5	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

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Main 804-743-9401 ° Fax 804-271-6446
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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 30 of 30

Lab Number : 08494 **Field Id :** **Sample Id :** Harvest Ridge

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

Lawn

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Path: Y:\804\36284.007-Winchester_NMPs\GIS\Common Shared Exhibits\Jim Barnett Park\VIC.mxd

WINCHESTER NUTRIENT MANAGEMENT PLANS - JIM BARNETT PARK
CITY OF WINCHESTER, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *36284.007*
PROJECT STUDY LIMITS: *13.1 ACRES*
LATITUDE: *39° 10' 27.9" N*
LONGITUDE: *78° 09' 06.2" W*

U.S.G.S. QUADRANGLE(S): *WINCHESTER*
DATE(S): *2013*
WATERSHED(S): *CONOCOCHEAGUE-OPEQUON*
HYDROLOGIC UNIT CODE(S): *02070004*

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N
W E
S

Maple St
925
E Cork St
Opequon Ave
201
301
S Pleasant Valley Rd
Maple St
Bridgeforth Dr
1051
E Cork St
Rifleman Ln
1071
1100
201
S Pleasant Valley Rd
Maple St
Bridgeforth Dr
I-81 S
I-81 N
81
81

Legend

- Project Study Limits - 13.1 Acres
- NHD Streams
- National Wetland Inventory

0 100 200 400 Feet

Project Limits are approximate.
NWI from US Fish and Wildlife Service.
National Hydrography Dataset from USGS.
Aerial imagery from ESRI online.

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

Path: Y:\804\36284.007-Winchester_NMPs\GIS\Common Shared Exhibits\Jim Barnett Park\EIM.mxd

THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/10/2016
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 200'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - JIM BARNETT PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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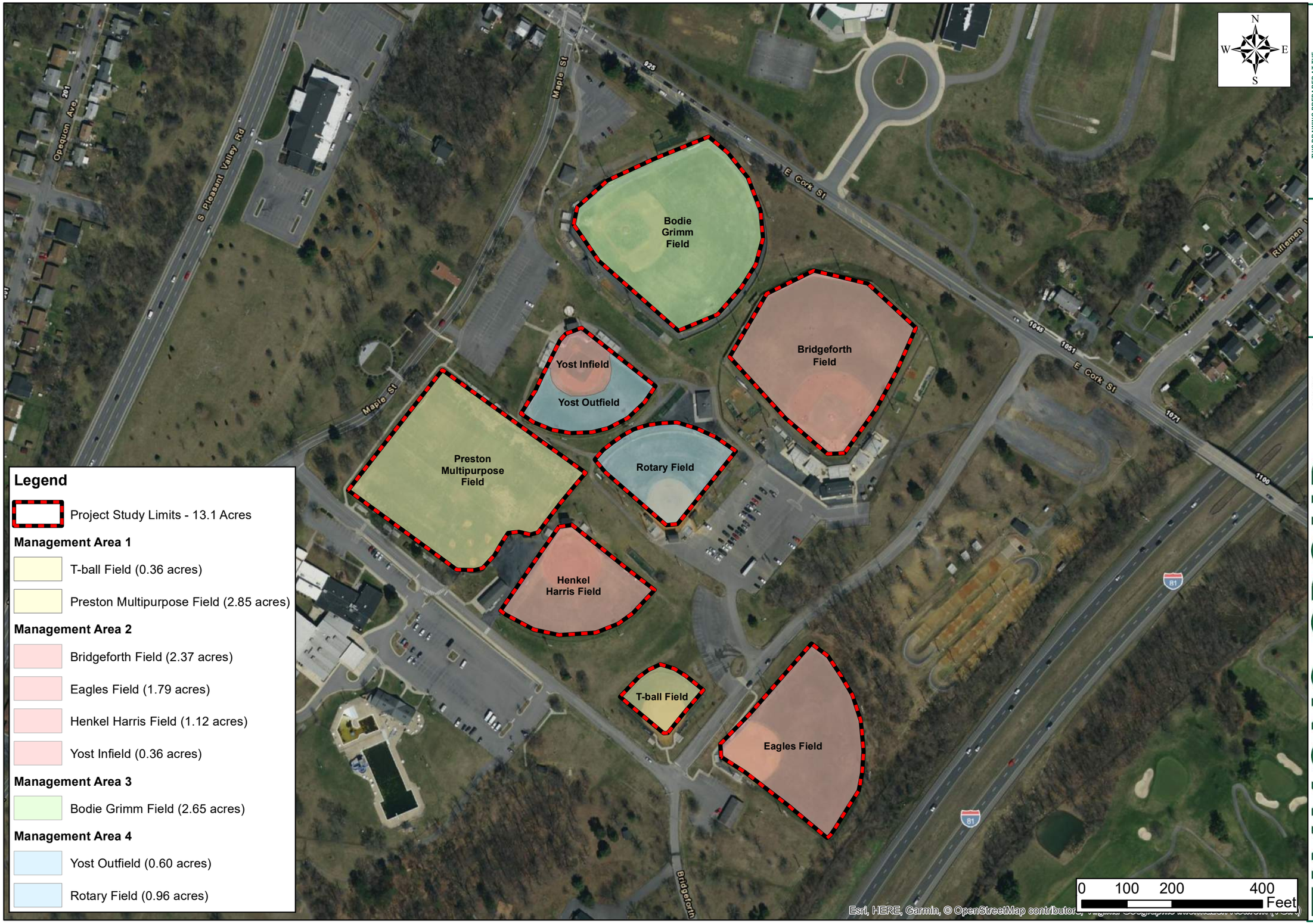

Legend

- Project Study Limits - 13.1 Acres

Management Area 1

- T-ball Field (0.36 acres)
- Preston Multipurpose Field (2.85 acres)

Management Area 2

- Bridgeforth Field (2.37 acres)
- Eagles Field (1.79 acres)
- Henkel Harris Field (1.12 acres)
- Yost Infield (0.36 acres)

Management Area 3

- Bodie Grimm Field (2.65 acres)

Management Area 4

- Yost Outfield (0.60 acres)
- Rotary Field (0.96 acres)

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YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 02/21/2019
DRAWN BY P.OSTERLOH
DESIGNED BY P.OSTERLOH
CHECKED BY R.HUNTER
SCALE 1" = 200'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - JIM BARNETT PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

JOB NUMBER 36284.015
SHEET NO. 1 OF 1

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

Mr. Lambert
Rouss City Hall, 15 N Cameron St.
Winchester VA, 22601

4/17/2019

Subject: Jim Barnett Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Jim Barnett Park	Parker Osterloh	13.1	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

Nick Yakish
Urban Nutrient Management Coordinator
Department of Conservation and Recreation
600 East Main St., 24th Floor
Richmond, Virginia 23219
(804) 389-5439
nicholas.yakish@dcr.virginia.gov

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1001 Boulders Parkway
Suite 300
Richmond, VA 23225

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F 804.560.1016
www.timmons.com

Nutrient Management Plan

Park Place

Prepared For:

Tommy Lambert
City of Winchester
Rouss City Hall, 15 N. Cameron Street
Winchester, VA 22601
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
804-200-6457
Certification Code: #920
Total Managed Area Acreage: 1.54

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous 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 plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

Nutrient Management Plan For:

Park Place

Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterve.gov

Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

Location Information:

Physical Address	2024 Harvest Drive
City, State Zip	Winchester, VA 22601
Latitude	39° 09' 59.8" N
Longitude	78° 11' 20.8" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

Acreage:

Total	67,082 square feet (1.54 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature: 

Narrative

This Nutrient Management Plan has been prepared by Timmons Group, on behalf of the City of Winchester. Park Place Park is located on Harvest Drive in Winchester, Virginia, north of Cedar Creek Grade and west of Taylor Grace Court (see Figure 1: Vicinity Map). The park has one multi-purpose athletic field and a playground. The site is relatively flat with a gentle slope on the eastern side of the athletic field. No wetlands were found to be present within the site limits during the January 29, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on Figure 2: Environmental Inventory Map. There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite. Therefore, no environmentally sensitive areas were identified.

Using aerial photography during a previous site visit and through discussions with City of Winchester staff, a 1.54-acre area (67,082 sq ft) was identified as turf where fertilizer could be applied. The turf on the athletic field (Park Place Field) is comprised of a mixture of cool season grasses.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Park Place Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Park Place Park. Management Area 1 (Park Place Field) is shown on Figure 3: Nutrient Management Areas Map. Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications on this management area should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

Every fertilizer application should be recorded in the record sheet provided. Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

Nutrient Management Worksheet

Property:	Park Place Park								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs per area**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 1: Park Place Field acreage = approximately 1.54 Maximum 4.2-2-2	4/15 - 5/15	1		custom blend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.0	**335**
	6/1 - 6/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**335**
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**335**
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	**201**
	*Recommended Total Annual NPK Application						4.2 - 2.00 - 2.40		
Notes	The annual application of total nitrogen **should not exceed 4.2 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.								
Lime/Sulfur Recommendations	* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass.* No lime or sulfer ammemdments are necessary at this time.								

Soil Test Summary

Customer Name:	City of Winchester
Testing Lab:	Waypoint Analytical
Sample Date:	January 29, 2019
Planner Name	Parker Osterloh, Timmons Group
Certification Number	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Park Place Field	67,082	6.2	6.82	5.9	L+	102.9	H-	Tall Fescue/Kentucky Bluegrass Mixture

Notes: H = High, M = Medium, L = Low

Soil Test Reports

Soil samples were taken from the turfgrass at the Park Place Park athletic field on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

A. Management Area 1 - 1.5 acres (Park Place Field)

The phosphorus level was Low+ (L+) for the athletic field. Applications of phosphorus are recommended, not to exceed 2.0 lbs/1,000 sq ft annually. See additional notes on the nutrient application worksheet. Potassium levels were High- (H-) for the athletic field. Maximum applications of potassium are recommended at 1.0 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximun nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.2 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

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.

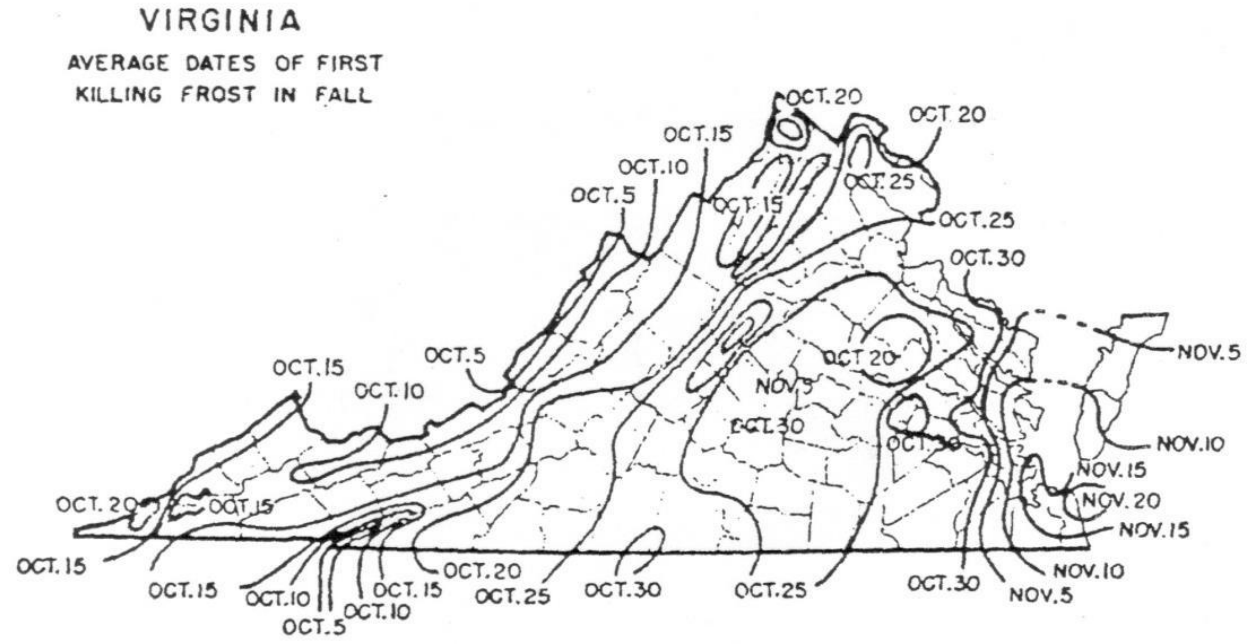
"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such 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 on next sheet).


VIRGINIA
AVERAGE DATES OF FIRST
KILLING FROST IN FALL
OCT.20
OCT 20
OCT.15
OCT.10
OCT.5
OCT.15
OCT.25
OCT.25
OCT.30
NOV.5
OCT.15
OCT.10
OCT.5
OCT 20
NOV.5
OCT.30
OCT.30
NOV.10
NOV.15
NOV.20
NOV.15
OCT.20
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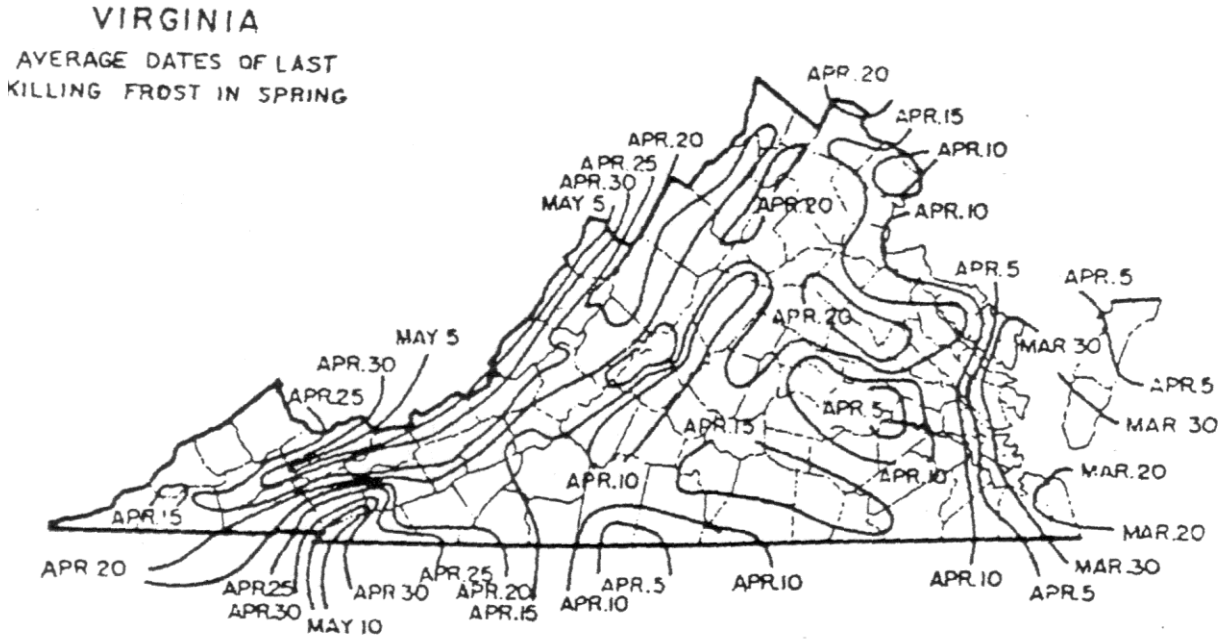
NOV.5
NOV.10


VIRGINIA
AVERAGE DATES OF LAST
KILLING FROST IN SPRING
APR.20
APR.15
APR.20
APR.10
APR.25
APR.30
MAY 5
APR.20
APR.10
APR.5
APR.5
APR.20
MAY 5
MAR 30
APR.30
APR.25
APR.5
APR.5
MAR 30
APR.15
APR.10
APR.10
MAR.20
APR.15
MAR.20
APR 20
APR.25
APR.30
APR 30
APR.25
APR.20
APR.15
APR.5
APR.10
APR.10
APR.10
APR.5
MAR.30
MAY 10

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.

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:

* 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 phosph

orus 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

* 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.

Notes:

• Soluble nitrogen rates of 0.25 pounds per 1,000 ft2 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 nitrogen 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 ft2 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 nitrogen 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.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft2 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 ft2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft2 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 ft2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Reference Materials and Notes

Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation

ESRI Aerial Photography

Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester – Park Place				Management Area ID:	Park Place Field		
Address:	2024 Harvest Drive				Management Area Size:	67,082 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue/Kentucky Bluegrass Mixture		
					Notes:			
Phone #:	540-667-1815							

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

Waypoint ANALYTICAL
7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 23 of 30

Lab Number : 08491 **Field Id :** **Sample Id :** Park Place

Test	Results
Soil pH	6.2
Buffer pH	6.82
Phosphorus (P)	20 ppm
Potassium (K)	145 ppm
Calcium (Ca)	1286 ppm
Magnesium (Mg)	116 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	5.1 % ENR 139
Nitrate Nitrogen	

Calculated Cation Exchange Capacity: **8.9** meq/100g

Calculated Cation Saturation	
%K	4.2
%Ca	72.2
%Mg	10.9
%H	12.4
Hmeq	1.1

K : Mg Ratio	Ca : Mg Ratio
0.40	6.62

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
40	4.0	1.0	0	0						
Crop :							**Rec Units:**			

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL
7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 24 of 30

Lab Number : 08491 **Field Id :** **Sample Id :** Park Place

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
12	10-20-15	12	10-0-20	8	16-4-8		

Comments:

Lawn

Limestone application is targeted to bring soil pH to 6.5.

- Apply dolomitic lime to raise pH and improve the magnesium level.
- Apply the amount of lime recommended in first page to raise pH
- The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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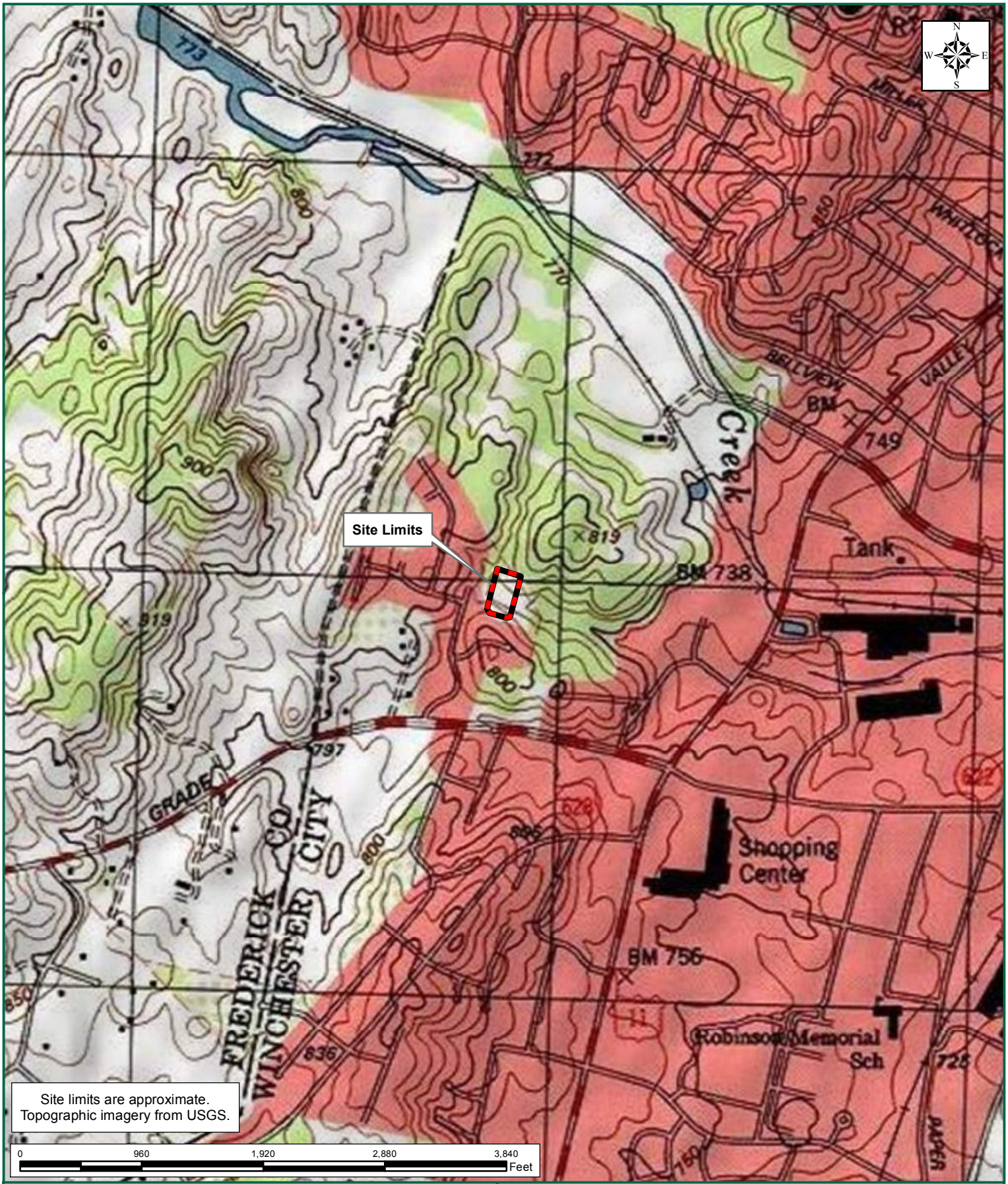

WINCHESTER NUTRIENT MANAGEMENT PLANS - PARK PLACE PARK
CITY OF WINCHESTER, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *36284.007*
PROJECT STUDY LIMITS: *1.54 ACRES*
LATITUDE: *39° 09' 59.8" N*
LONGITUDE: *78° 11' 20.8" W*

U.S.G.S. QUADRANGLE(S): *WINCHESTER*
DATE(S): *2013*
WATERSHED(S): *CONOCOCHEAGUE-OPEQUON*
HYDROLOGIC UNIT CODE(S): *02070004*

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N
W E
S

Beehive Way
Harvest Dr
Chelsea Dr
Cidermill Ln
Orchard Hill Dr
Appleseed Ct
Taylor Grace Ct

Legend

- Project Study Limits - 1.54 Acres
- NHD Streams
- National Wetland Inventory

0 50 100 200 Feet

Project Limits are approximate.
NWI from US Fish and Wildlife Service.
National Hydrography Dataset from USGS.
Aerial imagery from ESRI online.

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

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THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/10/2106
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - PARK PLACE
CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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Path: Y:\804\36284.007-Winchester_NMPs\GIS\Common Shared Exhibits\Park Place Park\NMA.mxd

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Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/30/2106
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - PARK PLACE PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

Mr. Lambert
Rouss City Hall, 15 N Cameron St.
Winchester VA, 22601

4/17/2019

Subject: Park Place Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Park Place	Parker Osterloh	1.54	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

Nick Yakish
Urban Nutrient Management Coordinator
Department of Conservation and Recreation
600 East Main St., 24th Floor
Richmond, Virginia 23219
(804) 389-5439
nicholas.yakish@dcr.virginia.gov

TIMMONS GROUP
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1001 Boulders Parkway
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Nutrient Management Plan

Weaver Park

Prepared For:

Tommy Lambert
City of Winchester
Rouss City Hall, 15 N. Cameron Street
Winchester, VA 22601
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
804-200-6457
Certification Code: #920
Total Managed Area Acreage: 1.28

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous 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 plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

Nutrient Management Plan For:

Weaver Park

Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

Location Information:

Physical Address	167 Bruce Drive
City, State Zip	Winchester, VA 22601
Latitude	39° 08' 58.9" N
Longitude	78° 10' 30.9" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

Acreage:

Total	55,756 square feet (1.28 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature: 

Narrative

This Nutrient Management Plan has been prepared by Timmons Group, on behalf of the City of Winchester. Weaver Park is located on Bruce Drive in Winchester, Virginia, east of South Pleasant Valley Road and west of Baldwin Street (see Figure 1: Vicinity Map). The park has one athletic field, a basketball court, and a gravel parking lot. The site is relatively flat with slopes less than 2%. No wetlands were found to be present within the site limits during the January 29, 2019 site visit and no wetlands or streams were depicted within the site limits as shown on Figure 2: Environmental Inventory Map. There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite. Therefore, no environmentally sensitive areas were identified within the nutrient management areas.

Using aerial photography and through discussions with City of Winchester staff, a 1.28-acre area (55,756 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on the athletic field (Weaver Field) at Weaver Park is comprised of a cool season grass.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Weaver Park outside of these managed areas, this Nutrient Management Plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Weaver Park. Management Area 1 (Weaver Field) is shown on Figure 3: Nutrient Management Areas Map. Based on the Frederick County, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified onsite, fertilizer applications at management area 1 should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrients should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

Every fertilizer application should be recorded in the record sheet provided. Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

Nutrient Management Worksheet

Property:	Weaver Park								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Area	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs per area**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 1: Weaver Field acreage = approximately 1.28 Maximum 4.2-1.5-2.0	4/15 - 5/15	1		SCU (30-0-10)	50%	30 - 0 - 10	0.50 - 0.00 - 0.17	1.7	**93**
	6/1 - 6/15	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**279**
	8/15 - 8/31	1		custom blend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**279**
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	**167**
						*Recommended Total Annual NPK Application	4.2 - 1.50 - 2.07		
Notes	The annual application of total nitrogen **should not exceed 4.5 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.								
Lime Recommendations	* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass * No lime or sulfer ammendments are necessary at this time.								

Soil Test Summary

Customer Name:	City of Winchester
Testing Lab:	Waypoint Analytical
Sample Date:	January 29, 2019
Planner Name	Parker Osterloh, Timmons Group
Certification Number	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Weaver Field	55,756	6.2	6.79	14.6	M	117.8	H	Tall Fescue

Notes:	H = High, M = Medium, L = Low

Soil Test Reports

Soil samples were taken from the managed turfgrass at the Weaver Park athletic field on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

A. Management Area 1 - 1.28 acres (Weaver Field)

The phosphorus level was Medium (M) for the athletic field. Applications of phosphorus are recommended, not to exceed 1.5 lbs/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium level was High (H) for the athletic field. Applications of potassium are recommended, at approximately 0.75 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields 4.2 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

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.

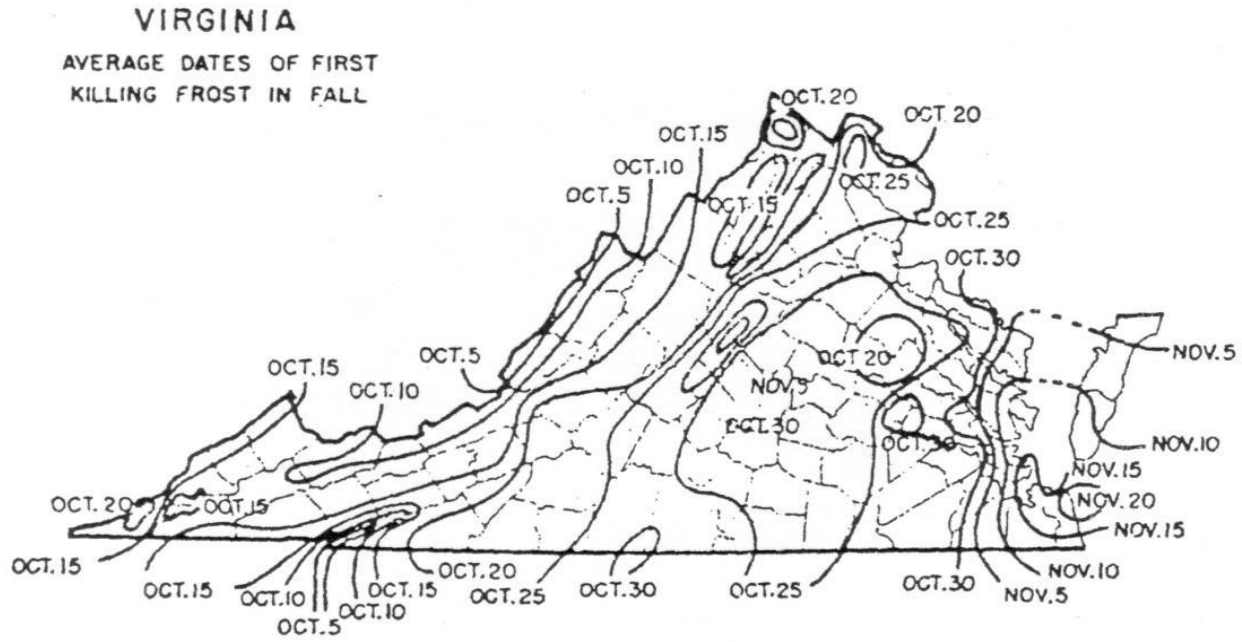
"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such 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 on next sheet).


VIRGINIA
AVERAGE DATES OF FIRST
KILLING FROST IN FALL
OCT.20
OCT 20
OCT.15
OCT.10
OCT.5
OCT.15
OCT.25
OCT.25
OCT.30
NOV.5
OCT.15
OCT.10
OCT.5
OCT 20
NOV.5
OCT.30
OCT.30
NOV.10
NOV.15
NOV.20
NOV.15
OCT.20
OCT.15
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OCT.15
OCT.10
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OCT.10
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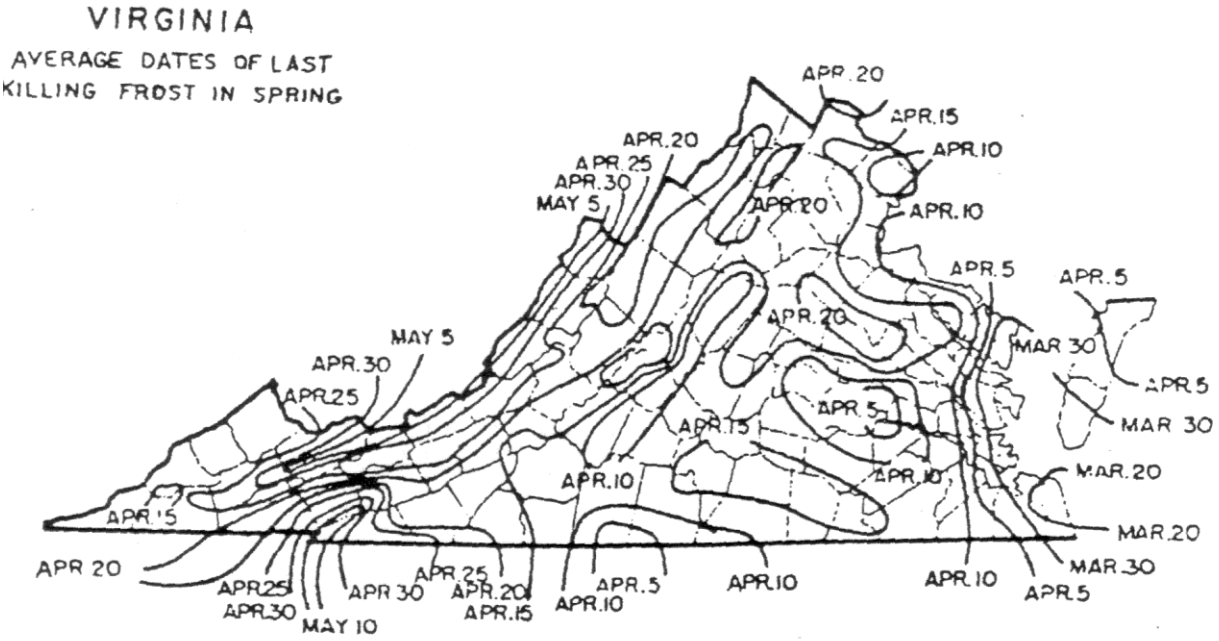
OCT.25
OCT.30
OCT.25
OCT.30
NOV.5
NOV.10


VIRGINIA
AVERAGE DATES OF LAST
KILLING FROST IN SPRING
APR.20
APR.15
APR.20
APR.10
APR.25
APR.30
MAY 5
APR.20
APR.10
APR.5
APR.5
APR.20
MAY 5
MAR 30
APR.30
APR.25
APR.5
APR.5
MAR 30
APR.15
APR.10
APR.10
MAR.20
APR.15
MAR.20
APR 20
APR.25
APR.30
APR 30
APR.25
APR.20
APR.15
APR.5
APR.10
APR.10
APR.10
APR.5
MAR.30
MAY 10

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.

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:

* 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 phosph

orus 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

* 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.

Notes:

• Soluble nitrogen rates of 0.25 pounds per 1,000 ft2 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 nitrogen 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 ft2 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 nitrogen 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.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft2 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 ft2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft2 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 ft2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Reference Materials and Notes

Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation

ESRI Aerial Photography

Fertilizer Application Records

Customer Information					Management Area Information			
Name:	City of Winchester - Weaver Park				Management Area ID:	Weaver Field		
Address:	167 Bruce Drive				Management Area Size:	55,756 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue		
					Notes:			
Phone #:	540-667-1815							

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

Waypoint ANALYTICAL

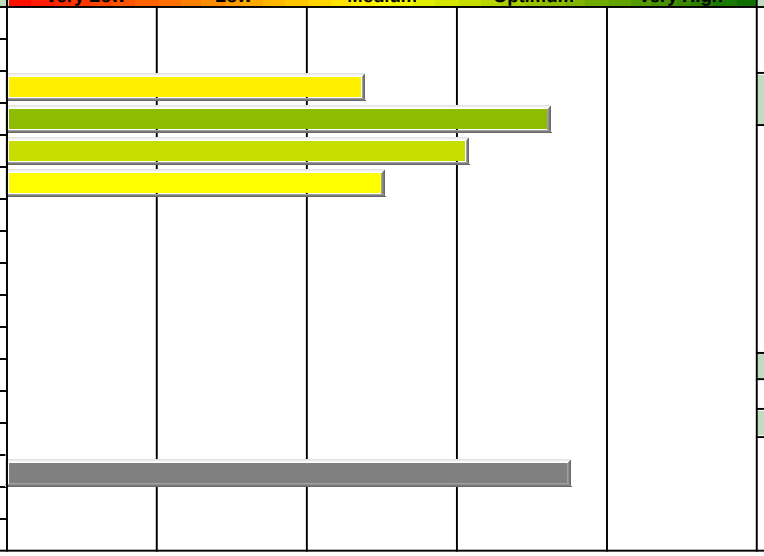
7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 7 of 30

Lab Number : 08482 **Field Id :** **Sample Id :** Weaver

Test	Results
Soil pH	6.2
Buffer pH	6.79
Phosphorus (P)	39 ppm
Potassium (K)	166 ppm
Calcium (Ca)	1628 ppm
Magnesium (Mg)	170 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	6.6 % ENR 150
Nitrate Nitrogen	



Calculated Cation Exchange Capacity

11.4
meq/100g

Calculated Cation Saturation

%K	3.7
%Ca	71.4
%Mg	12.4
%H	12.3
Hmeq	1.4

K : Mg Ratio
0.29

Ca : Mg Ratio
5.76

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
50	4.0	0.5	0	0						

Crop : **Rec Units:**

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 8 of 30

Lab Number : 08482 **Field Id :** **Sample Id :** Weaver

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
8	16-4-8	8	16-4-8	6	21-3-7		

Comments:

Lawn

Limestone application is targeted to bring soil pH to 6.5.

· Apply the amount of lime recommended in first page to raise pH

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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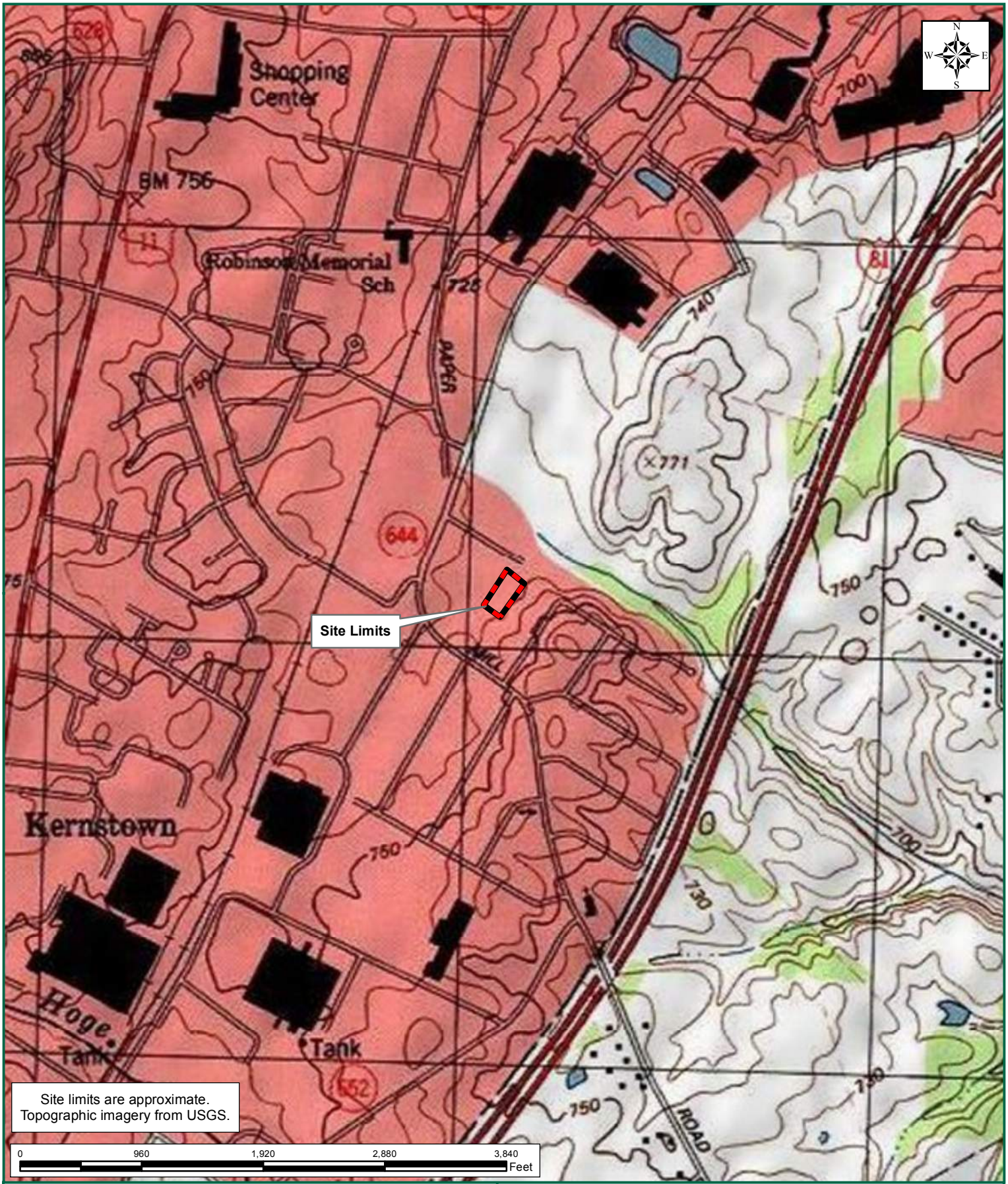

WINCHESTER NUTRIENT MANAGEMENT PLANS - WEAVER PARK
CITY OF WINCHESTER, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *36284.007*
PROJECT STUDY LIMITS: *1.28 ACRES*
LATITUDE: *39° 08' 58.9" N*
LONGITUDE: *78° 10' 30.9" W*

U.S.G.S. QUADRANGLE(S): *WINCHESTER*
DATE(S): *2013*
WATERSHED(S): *CONOCOCHEAGUE-OPEQUON*
HYDROLOGIC UNIT CODE(S): *02070004*

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CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/10/2016
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WEAVER PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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Path: Y:\804\36284.007-Winchester_NMPs\GIS\Common Shared Exhibits\Weaver Park\NMA.mxd

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Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/30/2016
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WEAVER PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

Mr. Lambert
Rouss City Hall, 15 N Cameron St.
Winchester VA, 22601

4/17/2019

Subject: Weaver Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Weaver Park	Parker Osterloh	1.28	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

Nick Yakish
Urban Nutrient Management Coordinator
Department of Conservation and Recreation
600 East Main St., 24th Floor
Richmond, Virginia 23219
(804) 389-5439
nicholas.yakish@dcr.virginia.gov

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Nutrient Management Plan

Whittier Park

Prepared For:

Tommy Lambert
City of Winchester
Rouss City Hall, 15 N. Cameron Street
Winchester, VA 22601
540-667-1815

Prepared By:

Parker Osterloh, Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
804-200-6457
Certification Code: #920
Total Managed Area Acreage: 1.27

The purpose of this Nutrient Management Plan is to ensure minimum movement of Nitrogen and phosphorous 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 plants have optimum soil nutrient availability for maximum productivity and quality. By following this soil test based plan you are helping to protect waters of the Chesapeake Bay.

If you have any questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

Nutrient Management Plan For:

Whittier Park

Landowner Information:

Company Name	City of Winchester
Customer Name	Tommy Lambert
Mailing Address	Rouss City Hall, 15 N. Cameron Street
City, State Zip	Winchester, VA 22601
Phone	540-667-1815
Email	Thomas.lambert@winchesterva.gov

Planner Information:

Planner Name	Parker Osterloh
Mailing Address	1001 Boulders Parkway, Suite 300
City, State Zip	Richmond, VA 23225
Phone	804-200-6457
Fax	804-560-1016
Email	Parker.osterloh@timmons.com
Certification Code	#920

Location Information:

Physical Address	900 Whittier Avenue
City, State Zip	Winchester, VA 22601
Latitude	39° 11' 30.2" N
Longitude	78° 10' 39.8" W
VAHU6 Watershed Code	PU17 Abrams Creek
County	City of Winchester

Acreage:

Total	55,321 square feet (1.27 acres)
Whittier Field 1	27,312 square feet (0.63acres)
Whittier Field 2	27,747 square feet (0.64 acres)

Plan Start Date	3/15/2019
Plan End Date	3/15/2022

Planner Signature: 

Narrative

This Nutrient Management Plan has been prepared by Timmons Group, on behalf of the City of Winchester. Whittier Park is located on Whittier Avenue in Winchester, Virginia, within a residential development north of Whittier Avenue and south of Isaac Street (see Figure 1: Vicinity Map). The park has two soccer fields, a basketball court, and a playground. The site is relatively flat with slopes less than 2%. No wetlands were found to be present within the site limits during the March 24, 2016 site visit and no wetlands or streams were depicted within the site limits as shown on Figure 2: Environmental Inventory Map. There were no wells, subsurface tile drains, springs, sinkholes, rock outcrops, land with slopes steeper than 15%, or qualifying soil types observed onsite and therefore, no environmentally sensitive areas were identified within the nutrient management areas.

Using aerial photography and through discussions with City of Winchester staff, a 1.27-acre area (55,059 sq ft) was identified as managed turf where fertilizer is applied. Managed turf on both soccer fields (Whittier Field 1 and Whittier Field 2) at Whittier Park is comprised of a cool season grass mixture.

This plan is effective for three years (until March 15, 2022) or until significant changes to maintenance practices occur. Should the City of Winchester decide to fertilize any locations within Whittier Park outside of these managed areas, this nutrient management plan should be updated with recommendations for the additional area(s). Other significant changes would include: changing turf species in the athletic fields, renovating an athletic field and the existing underlying soil, creation of an additional athletic field, expansion of the area to be included under this nutrient management plan, or other changes that could alter nutrient recommendations and timing.

One management area was determined for Whittier Park. Management Area 1 (Whittier Field 1 & Whittier Field 2) are shown on Figure 3: Nutrient Management Areas Map. Based on the City of Winchester, Virginia average first killing frost date of October 15th (Fall), the average last killing frost date of April 15th (Spring), and the cool season turf identified on both athletic fields, fertilizer applications on these management areas should occur within the cool season application period of March 4th to November 26th. Nutrient application instructions are identified in the nutrient management worksheet of this plan.

Applications of nutrient should not occur on frozen or snow-covered ground. Any fertilizer that makes its way onto impervious surfaces should be swept or blown back into pervious turfgrass-covered areas. Do not use fertilizers as ice melt. Nutrient applications should not be completed when significant runoff producing events are anticipated.

Every fertilizer application should be recorded in the record sheet provided. Any questions or concerns with fertilizer products or record keeping should be brought to the plan writer's attention.

Nutrient Management Worksheet

Property:	Whittier Park (Whittier Field 1 and Whittier Field 2)								
Prepared:	3/15/19						Species:	Cool Season	
Expires:	3/15/22								
Management Areas	**Application Month/Day**	**# of Apps**	**Application Interval**	**Fertilizer Product**	**% Slow Release N**	**NPK Value of Fertilizer Product**	**Total NPK lbs/1,000 square feet**	**Required lbs/1,000 ft^2 of Fertilizer Product to Meet Target Application Rate**	**Total Required lbs per area**
						N - P_2O_5 - K_2O	N - P_2O_5 - K_2O		
Management Area 1: Whittier Field 1, Whittier Field 2 acreage = approx. 1.27	4/15 - 5/15	1		custom bend SCU (10-10-10)	25%	10 - 10 - 10	0.50 - 0.50 - 0.50	5.0	**277**
	6/1 - 6/15	1		custom bend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**277**
Maximum 4.2-2-2	8/15 - 8/31	1		custom bend SCU (10-15-10)	25%	10 - 15 - 10	0.50 - 0.75 - 0.50	5.0	**277**
	9/15 - 11/30	3	> 30 days	SCU (30-0-10)	50%	30 - 0 - 10	0.90 - 0.00 - 0.30	3.0	**166**
	*Recommended Total Annual NPK Application						4.2 - 2.00 - 2.40		
Notes	The annual application of total nitrogen **should not exceed 4.2 lbs N per 1000 sq ft** (maximum for intensively managed cool season athletic fields). During the months of September, October, and November, total nitrogen should not exceed 0.9 lbs per 1000 sq ft of slow or controlled release fertilizer sources or 0.7 lbs per 1000 sq ft of water soluble nitrogen (WSN) per application, with a minimum of 30 days between applications. During the months of April, May, June, and August, total nitrogen should not exceed 0.5 lbs per 1000 sq ft per application, with a minimum of 30 days between applications. Applications should fall within the cool season application window identified in the narrative of this plan.								
Lime/Sulfur Recommendations	* Recommendations are targeted to bring soil pH to 6.2 for optimal growth of turfgrass * Note: Do not apply more than 5 lbs of elemental suflur per 1000 sq ft per application or more than 10 lbs of elemental sulfur per 1000 sq ft per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. Whittier Field 1: To reduce soil pH apply **5 pounds of elemental sulfur** per 1000 sq ft. Soil tests can be conducted annually to determine if additional sulfur or lime is needed to maintain the soil pH during years 2 and 3 of this nutrient management plan implementation.								

Soil Test Summary

Customer Name:	City of Winchester – Whittier Park
Testing Lab:	Waypoint Analytical
Sample Date:	January 29,2019
Planner Name	Parker Osterloh, Timmons Group
Certification Number	#920

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P (ppm)	VT (H/M/L)	Lab Test K (ppm)	VT (H/M/L)	Species
Whittier Field 1	27,312	7.4	-	6.8	M-	108	H	Tall Fescue/Kentucky Bluegrass
Whittier Field 2	27,747	7.3	-	8.6	M-	89	H-	Tall Fescue/Kentucky Bluegrass

Notes:	H = High, M = Medium, L = Low

Soil Test Reports

Soil samples were taken from the managed turfgrass at each of the soccer fields at Whittier Park on January 29, 2019. Soil samples were analyzed by Waypoint Analytical (formerly A&L Eastern Laboratories). Standard soil test results provide values for pH, phosphorus, calcium, magnesium, potassium, cation exchange capacity, and organic matter. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the park, whichever occurs sooner.

A. Management Area 1 - 1.27 acres (Whittier Field 1 & Whittier Field 2)

The phosphorus level was Medium- (M-) for both athletic fields. Applications of phosphorus are recommended, not to exceed 1.0 lb/1,000 sq ft annually. See additional notes on the nutrient application worksheet. The potassium levels ranged between High- (H-) and High (H) for both athletic fields. Applications of potassium are recommended, at approximately 0.75 lb/1,000 sq ft annually. This potassium recommendation exceeds that derived from the soil analysis. However, potassium is not an environmentally regulated nutrient and application of surplus potassium will only increase strength and vigor of turfgrass roots. Nitrogen applications are recommended as 4.2 lbs/1,000 sq ft annually based on maximum nitrogen per application rates. The annual maximum nitrogen application rate for cool season grasses on intensively managed athletic fields is 4.5 lbs/1,000 sq ft (see the Nutrient Management Worksheet for additional detail).

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.

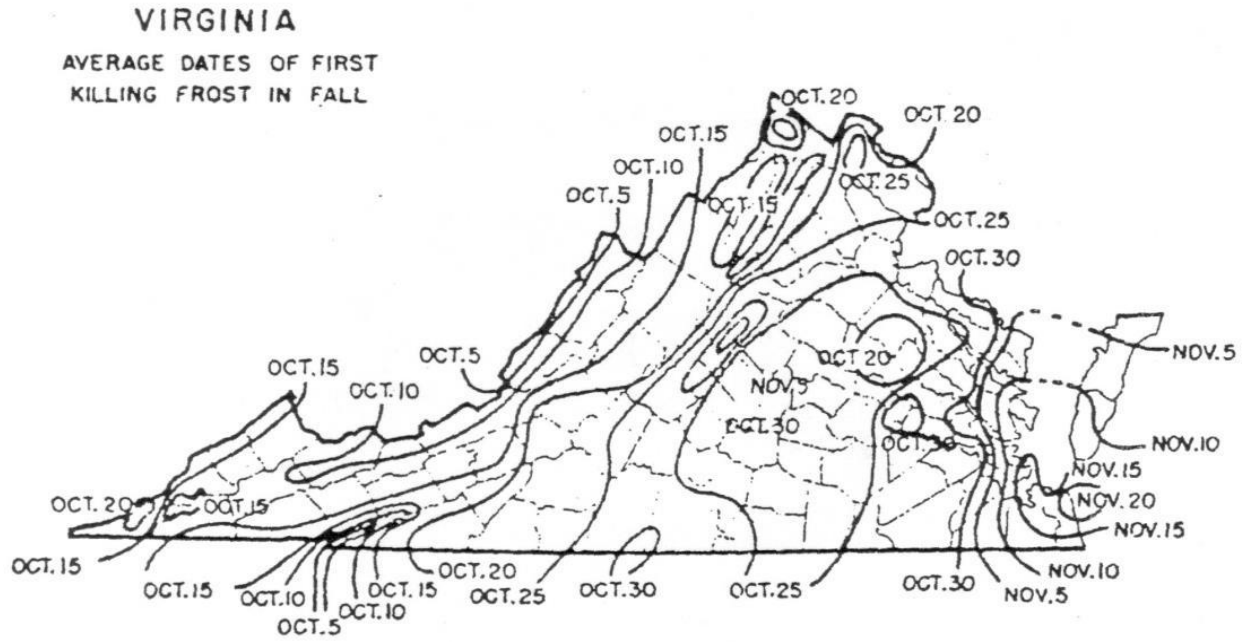
"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such 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 on next sheet).


VIRGINIA
AVERAGE DATES OF FIRST
KILLING FROST IN FALL
OCT.20
OCT 20
OCT.15
OCT.10
OCT.5
OCT.15
OCT.25
OCT.25
OCT.30
NOV.5
OCT.15
OCT.10
OCT.5
OCT 20
NOV.5
OCT.30
OCT.30
NOV.10
NOV.15
NOV.20
NOV.15
OCT.20
OCT.15
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OCT.30
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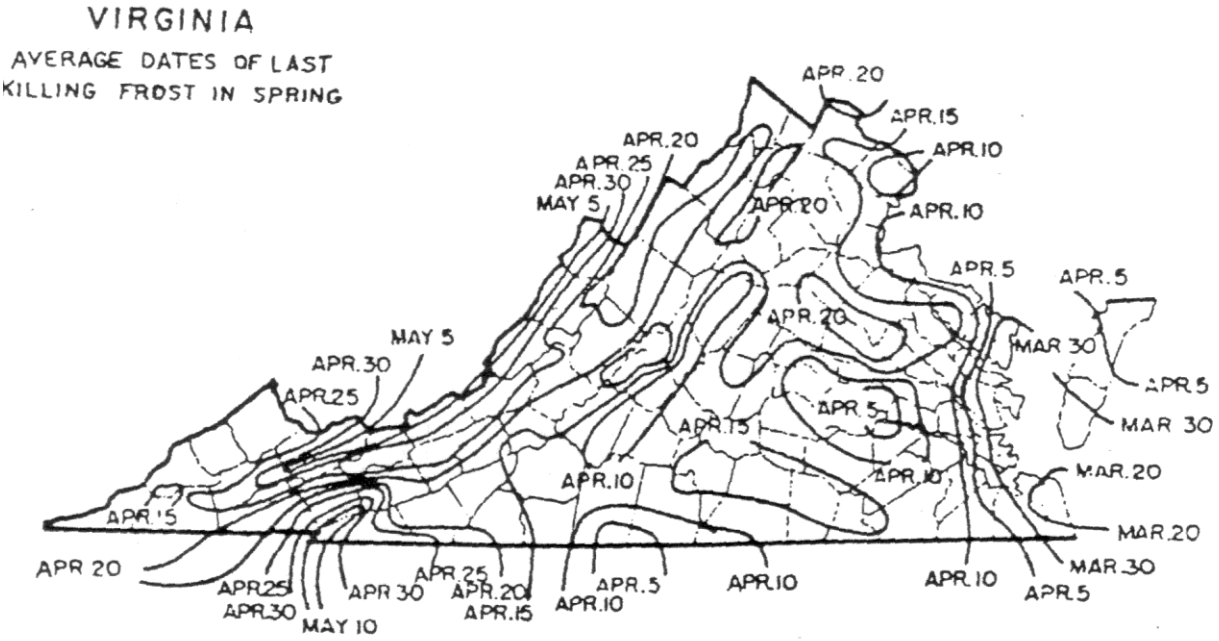
OCT.30
NOV.5
NOV.10


VIRGINIA
AVERAGE DATES OF LAST
KILLING FROST IN SPRING
APR.20
APR.15
APR.20
APR.10
APR.25
APR.30
MAY 5
APR.20
APR.10
APR.5
APR.5
APR.20
MAY 5
MAR 30
APR.30
APR.25
APR.5
APR.5
MAR 30
APR.15
APR.10
APR.10
MAR.20
APR.15
MAR.20
APR 20
APR.25
APR.30
APR 30
APR.25
APR.20
APR.15
APR.5
APR.10
APR.10
APR.10
APR.5
MAR.30
MAY 10

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.

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:

* 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 phosph

orus 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

* 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.

Notes:

• Soluble nitrogen rates of 0.25 pounds per 1,000 ft2 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 nitrogen 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 ft2 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 nitrogen 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.

For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft2 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 ft2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft2 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 ft2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Reference Materials and Notes

Virginia Nutrient Management Standards and Criteria, Revised July 2014, Department of Conservation and Recreation, Division of Soil and Water Conservation

ESRI Aerial Photography

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	City of Winchester	Management Area ID:	Whittier Field 1
Address:	900 Whittier Avenue	Management Area Size:	27, 312 sq ft
	Winchester, VA 22601	Plant Species:	Tall Fescue/Kentucky Bluegrass
		Notes:	
Phone #:	540-667-1815		

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

Customer Information					Management Area Information			
Name:	City of Winchester				Management Area ID:	Whittier Field 2		
Address:	900 Whittier Avenue				Management Area Size:	27, 747 sq ft		
	Winchester, VA 22601				Plant Species:	Tall Fescue/Kentucky Bluegrass		
					Notes:			
Phone #:	540-667-1815							
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

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 25 of 30

Lab Number : 08492 **Field Id :** **Sample Id :** Whittier Park 1

Test	Results
Soil pH	7.4
Buffer pH	
Phosphorus (P)	22 ppm
Potassium (K)	153 ppm
Calcium (Ca)	1634 ppm
Magnesium (Mg)	314 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	4.3 % ENR 120
Nitrate Nitrogen	

SOIL TEST RATINGS

Very Low | Low | Medium | Optimum | Very High

Calculated Cation Exchange Capacity

11.2
meq/100g

Calculated Cation Saturation

%K	3.5
%Ca	72.9
%Mg	23.4
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.15

Ca : Mg Ratio
3.12

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	1.0	0	0						
Crop :							**Rec Units:**			

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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SOIL ANALYSIS

Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 26 of 30

Lab Number : 08492 **Field Id :** **Sample Id :** Whittier Park 1

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer	#/1000 Sq. Ft.	Fertilizer
10	10-20-15	10	10-20-15	8	16-4-8		

Comments:

Lawn

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

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www.waypointanalytical.com

SOIL ANALYSIS

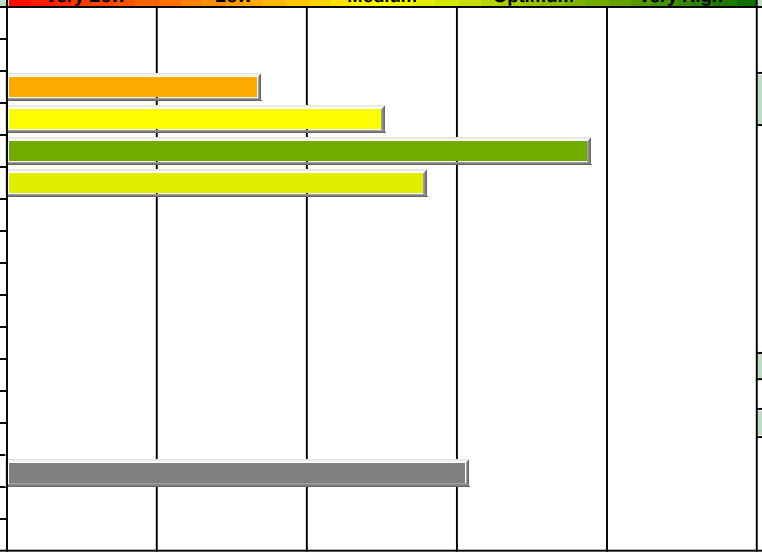
Client :	Grower :	
TIMMONS GROUP Marjorie Siwy 1001 Boulders Pkwy Suite 300 Richmond VA 23225	City of Winchester NMPs PO:	Report No: 19-031-0642 Cust No: 70627 Date Printed: 02/04/2019 Date Received : 01/31/2019 Date Analysis : 02/01/2019 Page : 27 of 30

Lab Number : 08493 **Field Id :** **Sample Id :** Whittier Park 2

Test	Results
Soil pH	7.3
Buffer pH	
Phosphorus (P)	26 ppm
Potassium (K)	126 ppm
Calcium (Ca)	2239 ppm
Magnesium (Mg)	223 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	5.2 % ENR 135
Nitrate Nitrogen	

SOIL TEST RATINGS

Very Low | Low | Medium | Optimum | Very High



Calculated Cation Exchange Capacity

13.4
meq/100g

Calculated Cation Saturation

%K	2.4
%Ca	83.5
%Mg	13.9
%H	0.0
Hmeq	0.0

K : Mg Ratio
0.16

Ca : Mg Ratio
6.01

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0	4.0	1.0	0	0						
Crop :							**Rec Units:**			

Comment :

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc.

Pauric McGroary

Waypoint ANALYTICAL

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Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

SOIL ANALYSIS

Client :	Grower :	Report No: 19-031-0642
TIMMONS GROUP	City of Winchester NMPs	Cust No: 70627
Marjorie Siwy		Date Printed: 02/04/2019
1001 Boulders Pkwy		Date Received : 01/31/2019
Suite 300		Date Analysis : 02/01/2019
Richmond VA 23225	PO:	Page : 28 of 30

Lab Number : 08493 **Field Id :** **Sample Id :** Whittier Park 2

SUGGESTED FERTILIZATION PROGRAM

First Application		Second Application		Third Application		Fourth Application	
#/1000 Sq. Ft.	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**	**#/1000 Sq. Ft.**	**Fertilizer**
12	10-20-15	12	10-0-20	8	16-4-8		

Comments:

Lawn

· Cation Exchange Capacity may be over-estimated due to high pH and free lime in the soil.

· The amount of fertilizer recommended on the first page is the total amount needed for the entire growing season. Split into 3-4 applications to keep the lawn green and prevent fertilizer loss. You should not apply more than 0.7 lbs of soluble nitrogen per 1000 square feet in a 30 day period. Or more than 0.9 lbs of nitrogen per 1000 square feet if you are using a slow or controlled release product in a 30 day period.Custom blend is best to meet exactly the requirement, if this is impossible, the above specific fertilizer application is a general guideline, if the specified grades can not be found, replace with fertilizer having similar N:P:K ratio. The best time to apply fertilizer for cool season grass (bluegrass, fescue, ryegrass) is in the Fall when the grass is growing. For Mid-Atlantic region the time is from late August to November. For Northeast region the time is from mid August to October. Fall application should start as soon as the day time high temperature is below 80-85F, apply with the interval of one month. If you start application late in the Fall and do not finish all three applications, repeat the same applications in the Fall of next year. Spring application is recommended when exceptional fertilizer loss due to heavy spring rain leaching and the grasses look pale green. Spring application can start as soon as the grass starts to grow in April. In the case of exceptional warm spring, the application can be made earlier.

· To reduce soil pH apply 2.5 pounds of elemental sulfur per 1000 square feet for every 0.1 of pH unit above 7.2. For example, a soil pH of 7.4 requires 5 pounds of elemental sulfur (0.2 * 2.5). Do not apply more than 5 lbs per 1000 square feet per application or more than 10 lbs of elemental sulfur per 1000 square feet per year. Timing between applications should be minimum of 3 months. Warm temperature and moist soil are needed for sulfur to reduce soil pH. If sulfur is applied in winter or under drought conditions, it will take longer for the the soil pH to be lowered.

· Use ammonium sulfate as all or portion of the N requirement to reduce pH.

·

Pauric McGroary

Analysis prepared by: Waypoint Analytical Virginia, Inc. Pauric McGroary

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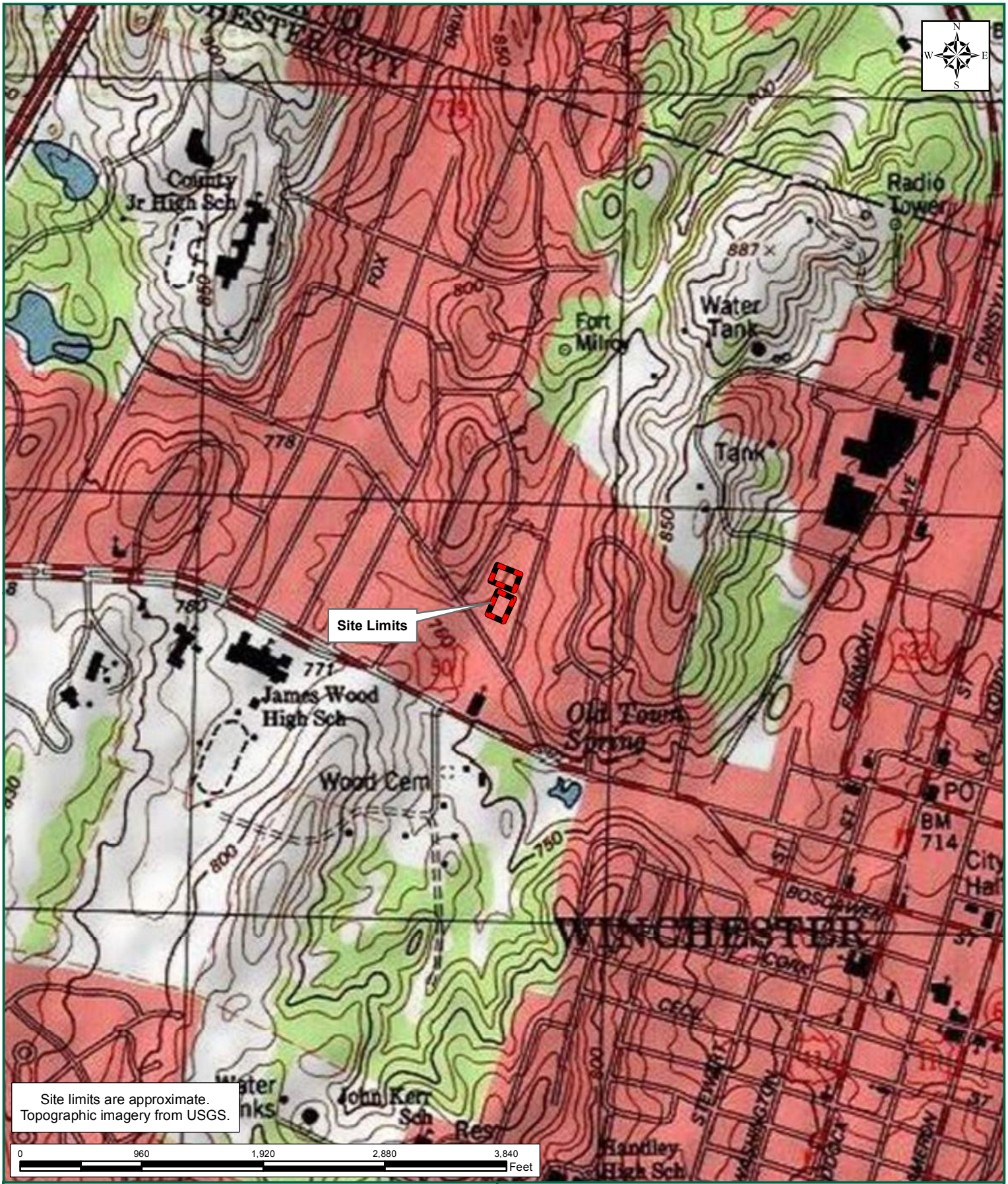

WINCHESTER NUTRIENT MANAGEMENT PLANS - WHITTIER PARK
CITY OF WINCHESTER, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *36284.007*
PROJECT STUDY LIMITS: *1.27 ACRES*
LATITUDE: *39° 11' 30.2" N*
LONGITUDE: *78° 10' 39.8" W*

U.S.G.S. QUADRANGLE(S): *WINCHESTER*
DATE(S): *2013*
WATERSHED(S): *CONOCOCHEAGUE-OPEQUON*
HYDROLOGIC UNIT CODE(S): *02070004*

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Ridge Ave
Branner Ave
Isaac St
Walker St
Hawthorne Dr
Whittier Ave
299
999
146

N
W
E
S

Legend

- Project Study Limits - 1.27 Acres
- NHD Streams
- National Wetland Inventory

0 50 100 200 Feet

Project Limits are approximate.
NWI from US Fish and Wildlife Service.
National Hydrography Dataset from USGS.
Aerial imagery from ESRI online.

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

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CORPORATE OFFICE
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TEL 804.200.6500 FAX 804.560.1648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 03/10/2016
DRAWN BY B. NORRIS
DESIGNED BY B. NORRIS
CHECKED BY E. VIRTS
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WHITTIER PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 2: ENVIRONMENTAL INVENTORY MAP

JOB NUMBER 36284.007
SHEET NO. 1 OF 1

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Site Development | Residential | Infrastructure | Technology | Environmental

DATE	REVISION DESCRIPTION

DATE 02/20/2019
DRAWN BY P.OSTERLOH
DESIGNED BY P.OSTERLOH
CHECKED BY R. HUNTER
SCALE 1" = 100'

TIMMONS GROUP

WINCHESTER NUTRIENT MANAGEMENT PLANS - WHITTIER PARK
CITY OF WINCHESTER, VIRGINIA

FIGURE 3: NUTRIENT MANAGEMENT AREAS MAP

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SHEET NO. 1 OF 1

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

Mr. Lambert
Rouss City Hall, 15 N Cameron St.
Winchester VA, 22601

4/17/2019

Subject: Whittier Park Nutrient Management Plan Review

The following nutrient management plan has been reviewed by Nick Yakish and confirmed by the Virginia Department of Conservation & Recreation to be developed in accordance with the Code of Virginia 10.1-104.2. Please note that this plan has not been reviewed for compliance with more restrictive requirements from other specific legislative, regulatory or incentive programs.

Plan Name	Planner	Acres	Start Date	Expiration Date
Whittier Park	Parker Osterloh	1.27	3/15/2019	3/15/2022

A copy of this letter should be kept with your nutrient management plan. Initiation of plan revision is recommended by the Department to occur at least six months prior to the expiration date. If you have any questions concerning this letter or reviews, please contact me via phone or email.

Sincerely,

Nick Yakish
Urban Nutrient Management Coordinator
Department of Conservation and Recreation
600 East Main St., 24th Floor
Richmond, Virginia 23219
(804) 389-5439
nicholas.yakish@dcr.virginia.gov