October 2023

Annual MS4 Report – FY23
VSMP Permit No. VA0088595

Cover Photo: Hylbrook Park Stream Restoration

Submitted by:
Prince William County
Department of Public Works

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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."

Benjamin Eib
Senior Environmental Program Manager

9/28/23
Date

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
	A. DISCHARGES AUTHORIZED UNDER THIS STATE PERMIT				
	A.1. Authorized Discharges				
A.1.a.	*This state permit authorizes the discharge of stormwater from all existing and new municipal separate stormwater point source discharges to surface waters from the Municipal Separate Storm Sewer System (MS4) owned or operated by the County of Prince William in Virginia.*				
A.1.b.	*The following discharges, whether discharged separately or commingled with municipal stormwater, are also authorized by this state permit for discharge through the MS4:*				
A.1.b.1.	*Non-stormwater discharges and stormwater discharges associated with industrial activity (defined at 9VAC25-31-10) that are authorized by a separate Virginia Pollutant Discharge Elimination System (VPDES) permit;*				
A.1.b.2.	*Discharges from construction activities that are regulated under the Virginia Stormwater Management Program (VSMP) (9VAC25-870-10 et seq.) and authorized by a separate VSMP authority permit or state permit; and*				
A.1.b.3.	*The following non-stormwater discharges unless the State Water Control Board or the permittee determines the discharge to be a significant source of pollutants to surface waters:* *(a) water line flushing;* *(b) landscape irrigation;* *(c) diverted stream flows;* *(d) rising ground waters;* *(e) uncontaminated ground water infiltration (as defined at 40 CFR Part 35.2005(20));* *(f) uncontaminated pumped ground water;* *(g) discharges from potable water sources;* *(h)foundation drains;* *(i) air conditioning condensation;* *(j) irrigation water;* *(k) springs;* *(l) water from crawl space pumps;* *(m) footing drains;* *(n)lawn watering;* *(o)individual residential car washing; Permit No. VA0088595 Page 2 of 38* *(p)flows from riparian habitats and wetlands;* *(q) dechlorinated swimming pool discharges;* *(r) street wash water;* *(s)discharges or flows from fire fighting activities; and,* *(t) other activities generating discharges identified by the Department as not requiring VPDES authorization*	DPW, EMD, COD	• Non-stormwater discharges are tracked as part of the Illicit Discharge Detection and Elimination program. • See MS4 Action ID B.2.e.1.		

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	authorization.				
A.1.b.4.	*Materials from a spill are not authorized unless the discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage. The permittee shall take, or require the responsible party to take, all reasonable steps to minimize or prevent any adverse effect on human health or the environment in accordance with the permittee's program under Part I.B.2.f). (Spill Prevention and Response). This state permit does not transfer liability for a spill itself from the party(ies) responsible for the spill to the permittee nor relieve the party(ies) responsible for a spill from the reporting requirements of 40 CFR Part 117 and 40 CFR Part 302. The permittee is responsible for any reporting requirement listed under Part II.G of this state permit.*				
	A.2. Permittee Responsabilities				
A.2.	*This state permit establishes the specific requirements applicable to the permittee for the term of this state permit. The permittee is responsible for compliance with this state permit. The permittee shall implement and update the MS4 Program Plan (as set forth in Part I.B) to ensure compliance with this state permit. The Department has determined that implementation of the MS4 Program Plan reduces the discharge of pollutants to the maximum extent practicable. Where wasteloads have been allocated for pollutant(s) of concern in an approved Total Maximum Daily Load (TMDL), the permittee shall implement the special conditions as set forth in Part I.D of this state permit. Compliance with the requirements of this state permit shall also constitute adequate progress for this permit term towards complying with the assumptions and requirements of the applicable TMDL wasteload allocations such that the discharge does not cause or contribute to violations of the water quality standards.*				

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A.2-1.	*The permittee shall clearly define the roles and responsibilities of each of the permittee's departments, divisions or subdivisions in maintaining permit compliance. If the permittee relies on another party to implement portions of the MS4 Program Plan, both parties must document the agreement in writing. The agreement shall be retained by the permittee with the MS4 Program Plan. Roles and responsibilities shall be updated as necessary. Where the permittee relies on another party to implement a portion of this state permit, responsibility for compliance with this state permit shall remain with the permittee.*	DPW, EMD, COD	• Roles and responsibilities are provided as part of the County's MS4 program plan. Roles and responsibilities can be reviewed as part of each BMP section within the MS4 Program Plan. • The county has written agreements with the following organizations to support implementation of portions of the MS4 Program Plan: o Prince William County Soil and Water Conservation District (PWCSWCD) o Keep Prince William Beautiful (KPWB) o Northern Virginia Regional Commission (NVRC) Clean Water Partners o Prince William County Service Authority (PWCSA) o Virginia American Water o Upper Occoquan Service Authority (UOSA)	*Each annual report shall include a current list of roles and responsibilities*	• A detailed list of roles and responsibilites is included as Appendix U.
A.2-2.	*In the event the permittee is unable to meet conditions of this state permit due to circumstances beyond the permittee's control, a written explanation of the circumstances that prevented permit compliance shall be submitted to the Department in the annual report. Circumstances beyond the permittee's control may include abnormal climatic conditions; weather conditions that make certain requirements unsafe or impracticable; or unavoidable equipment failures caused by weather conditions or other conditions beyond the reasonable control of the permittee (operator error and failure to properly maintain equipment are not conditions beyond the control of the permittee). The failure to provide adequate program funding, staffing or equipment maintenance shall not be an acceptable explanation for failure to meet permit conditions. The Board will determine, at its sole discretion, whether the reported information will result in an enforcement action. In addition, the permittee must report noncompliance which may adversely affect surface waters or endanger public health in accordance with Part II.I.*	DPW, EMD, COD	If Prince William County is unable to meet the conditions of this permit due to circumstances beyond its control, the county will provide a list of circumstances that prevented permit compliance.	*Each annual report shall include a list of those circumstances of non-compliance outside of the permittee's control.*	There were no circumstances of non-compliance beyond the county's control during the reporting period.
	A.3. Legal Authority				
A.3.	*The permittee shall maintain and utilize its legal authority authorized by the Commonwealth of Virginia to control discharges to and from the MS4 in the manner established by the specific requirements of this state permit. The legal authority shall enable the permittee to:*				

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A.3.a.	*Control the contribution of pollutants to the MS4;*	DPW, EMD, COD	• These regulations are contained in section 700 of the County's Design & Construction Manual Standards Manual (DCSM), and Chapter 23.2, Article IV - Stormwater Management in Prince William County Code, which is available at the following link: https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR		
A.3.b.	*Prohibit illicit discharges to the MS4;*	DPW, EMD, COD	• These regulations are contained in section 700 of the County's Design & Construction Manual Standards Manual (DCSM), and Chapter 23.2, Article IV - Stormwater Management in Prince William County Code, which is available at the following link: https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR		
A.3.c.	*Control the discharge of spills and the dumping or disposal of materials other than stormwater (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;*	DPW, EMD, COD	• These regulations are contained in section 700 of the County's Design & Construction Manual Standards Manual (DCSM), and Chapter 23.2, Article IV - Stormwater Management in Prince William County Code, which is available at the following link: https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR		
A.3.d.	*Require compliance with conditions in ordinances, permits, contracts, inter-jurisdictional agreements, or orders; and,*	DPW, EMD, COD	The county has the authority to require compliance related to implementing the permit requirements, including but not limited to: • Conditions in ordinances (including permits and orders issued under ordinances): The county has authority as authorized by state law and as stated in local ordinances, including options for escalating enforcement steps as appropriate in the county's exercise of its enforcement discretion as the regulator of covered third party activities.		
A.3.e.	*Carry out all inspections, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4.*	DPW, EMD, COD	The county has authority to conduct inspections/monitoring etc. related to implementing the permit requirements.		

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A.3-1.	*The permittee shall review and update its ordinances and other legal authorities such as permits, orders, contracts and inter-jurisdictional agreements as necessary to continue providing adequate legal authority to control discharges to and from the MS4.*	DPW, EMD, COD	Prince William County's current ordinances and other legal authorities provide adequate legal authority to control discharges to and from the MS4. Ordinances and other legal authorities will be reviewed annually as part of the Program Plan review.		
	A.4. MS4 Program Resources				
A.4.	*The permittee shall submit to the Department a copy of each fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit. The permittee shall describe its method of funding the stormwater program with the copy of the fiscal year budget.*	DPW, EMD, COD	The fiscal year's budget will be provided as required.	*A copy of the fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit shall be submitted with each annual report.*	The Annual Program Budget can be found in Appendix V. Below is a FY23 Annual Budget Summary by activity. Stormwater Infrastructure Management $ 4,666,580 Site Development $ 4,648,387 Watershed Improvement $ 5,280,974 **Total FY23 Expenditure Budget $ 14,595,641**
	A.5. Permit Maintanence Fees				
A.5.	*Permit maintenance fees shall be paid in accordance with Part XIII of the VSMP regulations (9VAC25-870- 700 et seq.).*	DPW, EMD, COD	The permit fees have been paid as required.	*A statement regarding payment of the applicable MS4 permit maintenance fee, including check date and check number shall be included with each annual report. Note: Please do not include copies of checks or other bank records.*	Prince William County's MS4 permit maintenance fee was paid with check number 102264 dated 9/7/23.
	A.6. MS4 Program Plan				

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A.6.	*The permittee shall maintain, implement and enforce an MS4 Program Plan accurately documenting the MS4 Program including all additions, changes and modifications. For the purposes of this state permit, the MS4 Program Plan is considered a single document, but may actually consist of separate documents (e.g., dry weather screening plans, wet weather monitoring plans, TMDL Action Plans, annual reports). Policies, ordinances, strategies, checklists, watershed plans and other documents may be incorporated by reference provided the latest revision date is included in the MS4 Program Plan and all documents are available upon request. Specific reference shall be made to any ordinance more stringent than the Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq) and VSMP regulations (9VAC25-870 et. seq.), the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq.) and Regulations (9VAC25-840 et seq.) and the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) and Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830 et seq).. The MS4 Program Plan is an enforceable part of this state permit.* *Updates to the MS4 program plan shall be submitted to the Department for review and approval in accordance with the due dates established by this state permit. Updates to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department.* *The most recent MS4 Program Plan shall be posted on the permittee's website or provided in another location easily accessible to the public.*	DPW, EMD, COD	• This document is Prince William County's MS4 Program Plan, which has been developed to document the county's MS4 Program as it exists. • After submission to DEQ with the county's 2023 Annual Report, the MS4 Program Plan will be posted to the county's website. • See MS4 Action ID B.2.j.4	•Utilizing the last annual report prior to this state permit effective date as a baseline, the permittee's first annual report submitted under this state permit (Initial Report) shall include the necessary updates to describe implementation of this MS4 Program Plan and meet the conditions described in this section. •NOTE: For purposes of the next permit cycle, the fourth annual report submitted under this state permit will be considered the updated MS4 Program Plan to be reviewed as part of permit reissuance.	• This document is Prince William County's MS4 Program Plan, which has been developed to document the county's MS4 Program as it exists. • After submission to DEQ with the county's 2023 Annual Report, the MS4 Program Plan will be posted to the county's website. • See MS4 Action ID B.2.j.4
	A.7. MS4 Program Review and Updates				
A.7.	*MS4 Program Review: The permittee will review the current MS4 Program Plan annually, in conjunction with the preparation of the annual report required under Part I.E of this state permit.*	DPW, EMD, COD	The MS4 Program Plan will be reviewed annually and updated as needed.	All modifications and proposed modifications shall be reported in accordance with this section of the permit.	Prince William County has reviewed the MS4 Program Plan in accordance with the requirements of the renewed permit.

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A.7.a.	*MS4 Program Updates and Modifications: Modifications to the MS4 Program Plan are expected throughout the life of this state permit as part of the iterative process to reduce pollutant loading and protect water quality. As such, modifications made in accordance with this state permit as a result of the iterative process do not require modification of this state permit unless the Department determines the changes meet the criteria referenced in 9VAC25- 870-630 or 9VAC25-870-650. Updates and modifications to the MS4 Program Plan may be made during the life of the permit in accordance with the following procedures:*				
A.7.a.1.	*Adding (but not eliminating or replacing) components, controls, or requirements to the MS4 Program Plan may be made by the permittee at any time. Additions shall be reported as part of the annual report.*				
A.7.a.2.	*Updates and modifications to specific standards and specifications, schedules, operating procedures, ordinances, manuals, checklists and other documents routinely evaluated and modified are authorized under this state permit provided that the updates and modifications are performed in a manner (i) that is consistent with the conditions of this state permit, (ii) that ensure public notice and participation requirements established in this state permit are followed, and (iii) that the updates and modifications are documented in the annual report.*				

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A.7.a.3.	*Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies and Best Management Practices (BMPs) specifically identified in this state permit with alternate strategies, policies, and BMPs may be requested at any time. Such requests shall include the following:* *(a) An analysis of how and/or why the BMPs, strategies, or policies are ineffective or infeasible including information on whether the BMPs, strategies, or policies are cost prohibitive;* *(b) Expectations on the effectiveness of the replacement BMPs, strategies, or policies;* *(c) An analysis of how the replacement BMPs are expected to achieve the goals of the BMPs to be replaced;* *(d) A schedule for implementing the replacement BMPs, strategies, and policies; and* *(e) An analysis of how the replacement strategies and policies are expected to improve the permittee's ability to meet the goals of the strategies and policies being replaced.* *Requests or notifications shall be made in writing to the Department and signed in accordance with 9VAC25-870-370 of the VSMP regulations. Modification to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department. Major modifications to the MS4 Program Plan as defined in 9VAC25-870-10 may require that the permit be reopened and modified pursuant to 9VAC25-870-630.*				

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A.7.b.	*MS4 Program Updates Requested by the Department: In a manner and following procedures in accordance with the Virginia Administrative Processes Act, the VSMP regulations and other applicable State laws, statutes and regulations, the Department may request changes to the MS4 Program Plan to assure compliance with the statutory requirements of the Virginia Stormwater Management Act and associated regulations and to:* *1) Address impacts on receiving water quality caused by discharges from the MS4;* *2) Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or 3) Include such other conditions necessary to comply with State or Federal statutory or regulatory requirements. Proposed changes requested by the Department shall be made in writing and set forth the basis for and objective of the modification as well as the proposed time schedule for the permittee to develop and implement the modification. The permittee may propose alternative program modifications and/or time schedules to meet the objective of the requested modification, but any such modifications are at the discretion of the Department.*			*All modifications and proposed modifications shall be reported in accordance with this section of the permit.*	
	B. STORMWATER MANAGEMENT *The following subparts describe the requirements for the permittee to implement in its MS4 Program Plan during this state permit term:*				
	B.1. Planning				
B.1-1.	*No later than 12-months after the effective date of this state permit, the permittee shall submit to the Department, a cost benefit analysis of the stormwater pollutant reduction utilized to select priority projects from the conceptual stormwater projects including those identified in the permittee's completed watershed studies. The permittee shall include in their development of the cost benefit analysis the number of BMP acres treated, impervious area draining into BMP, condition of the downstream channel, amount of pollutant reduction, feasibility for implementation, the unit costs for pollutant reduction and other benefits from the proposed BMP. The cost benefit analysis shall include a prioritized list of the identified conceptual projects for consideration of implementation.*	DPW, EMD, COD			

<table>
<tr><th>MS4 Action ID</th><th>Permit Requirement</th><th>Responsible Party</th><th>2023 Program Plan Elements
(July 1, 2022 through June 30, 2023)</th><th>Specific Reporting Requirement</th><th>2023 Annual Report
(July 1, 2022 through June 30, 2023)</th></tr>
<tr><td>B.1-2.</td><td>The permittee shall continue to seek public comment in development of the plan. A copy of the completed plan shall be placed on the permittee's website no later than 30 days after it is submitted to the Department.</td><td>DPW, EMD, COD</td><td>All of the watershed management plans have been completed and links to the completed plans are provided on the county's website: https://www.pwcva.gov/department/environmental-services/community-ms-4-program</td><td>The permittee shall provide the Department a current web link to the watershed management plan no later than 12 months after the effective date of this state permit.</td><td>The web link to the county's watershed management plans was submitted to DEQ on December 16, 2015.</td></tr>
<tr><td></td><td>B.2. MS4 Program Implementation</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>B.2.a. Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands</td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.2.a.1.</td><td>The permittee shall implement a local erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq. and a stormwater management program consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq.</td><td>DPW, EMD, COD</td><td>• The county's erosion and sediment control program and stormwater management program have been approved by DEQ as consistent with the Virginia Erosion and Sediment Control Law, the Virginia Stormwater Management Act, and their attendant regulations.
• The county uses 2,500 square feet, which is the threshold for land disturbing activities to be regulated under the county's erosion and sediment control program, as the threshold for reporting the number of regulated land disturbing activities and the total number of acres disturbed.</td><td>• Each annual report shall contain the number of regulated land disturbing activities approved and the total number of acres disturbed.
• Each annual report shall contain the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken.</td><td>• For the period July 1, 2022 thru June 30, 2023, Prince William County approved a total of 140 land development plans with a cumulative land disturbance of 6,319.6 acres. Refer to Appendix B for a list of land disturbance permits issued during the period.
• FY 23 Erosion and Sediment Control Program Summary
<table>
<tr><th>FY23</th><th>Site Inspections</th><th>Violations</th><th>Notices to Comply</th><th>Stop Work Orders</th></tr>
<tr><td>Total</td><td>18,514</td><td>68</td><td>2</td><td>0</td></tr>
</table></td></tr>
<tr><td>B.2.a.2.</td><td>The permittee shall identify in the MS4 Program Plan all legal authorities for erosion and sediment control and stormwater management that are more stringent than those required under 9VAC25-840 et seq. and/or 9VAC25-870 et seq. that have been adopted in accordance with § 62.1-44.15:65 and/or § 62.1-44.15:33 of the Code of Virginia.</td><td>DPW, EMD, COD</td><td>The county has identified current county requirements that are more stringent than state law/regulations.</td><td>•Each annual report shall include a summary of actions taken by the permittee to implement Part I.B.2.a)1) and 2) of this state permit.</td><td>Refer to Appendix W for a Summary of the County's Virginia Stormwater and Erosion & Sediment Control Programs.</td></tr>
<tr><td></td><td>B.2.b. Retrofitting on Prior Developed Lands</td><td></td><td></td><td></td><td></td></tr>
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<tr><th>MS4 Action ID</th><th>Permit Requirement</th><th>Responsible Party</th><th>2023 Program Plan Elements
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(July 1, 2022 through June 30, 2023)</th></tr>
<tr><td>B.2.b.</td><td>From the prioritized list of conceptual projects required in Part I.B.1, the permittee shall select at least seven conceptual projects for completion no later than 54 months after the effective date of this state permit. Projects implemented to meet the requirements of Part I.D of this state permit (TMDL Action Plan and Implementation for the Chesapeake Bay Special Condition or TMDL Action Plans other than the Chesapeake Bay TMDL) may be used to meet the requirements of this special condition. For retrofit projects that do not serve to meet the requirements of Part I.D, the permittee shall submit a summary of projects implemented during the reporting period with each annual report including type of land use being retrofitted, retrofit performed, completion date or anticipated completion date, total acreage retrofitted, total impervious and pervious acreage, and location by latitude and longitude (decimal degrees).</td><td>DPW, EMD, COD</td><td>The county will implement at least seven projects from the list of projects required in Part I.B.1 no later than the expiration date of this permit.</td><td>Each annual report shall include a status update for those projects for which implementation began during the reporting period.</td><td>See section D.1 for information on non-priority projects completed during the reporting period.
<table><tr><th>Number</th><th>Project Name</th><th>Completion Year</th></tr><tr><td>1</td><td>SWM Facility No. 99 – Water Quality Retrofit</td><td>FY16</td></tr><tr><td>2</td><td>Hylbrook Park</td><td>FY16</td></tr><tr><td>3</td><td>SWM Facility No. 28 – Water Quality Retrofit</td><td>FY17</td></tr><tr><td>4</td><td>Reach 5 Stream Restoration</td><td>FY17</td></tr><tr><td>5</td><td>Dewey's Creek Reach 4</td><td>FY17</td></tr><tr><td>6</td><td>East Longview</td><td>FY17</td></tr><tr><td>7</td><td>SWM Facility No. 489</td><td>FY18</td></tr></table></td></tr>
<tr><td></td><td>B.2.c. Roadways</td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.2.c.</td><td>Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.</td><td>DFFM</td><td>The county meets this requirement through implementation of the actions described below.</td><td></td><td></td></tr>
<tr><td>B.2.c.1.</td><td>No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets, and parking lots that includes the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs.</td><td>DFFM</td><td>• The majority of public roads in the county (interstate, primary, secondary, and residential) are maintained and operated by the Virginia Department of Transportation (VDOT), which is covered by a separate Phase II MS4 permit. Prince William County is responsible for maintaining 13 miles of impervious roadway.
• The county currently operates and maintains 87 parcels with impervious parking lots associated with county facilities totaling 132.5 acres.</td><td></td><td>A list of county-maintained roads and parking lots can be found in Appendix C.</td></tr>
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B.2.c.2.	*No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained roads, streets and parking lot maintenance, equipment maintenance, and material storage designed to minimize pollutant discharge*	DFFM	Prince William County Buildings and Grounds is responsible for snow removal at all county facilities maintained by Buildings and Grounds. Snow removal activities are not performed on any other County-maintained roads, streets, or parking lots. Salt, sand, and calcium chloride are the specified materials used in snow removal activities. Any materials used for deicing and sanding activites are stored and maintained in a manner to prevent runoff from precipitation. Prince William County established a county-wide IDE policy to promote good housekeeping practices across all municipal facilities.	*The permittee shall include a copy of the written protocols identified in Part I.B.2.c)(2) with the next annual report that is due after development of the protocols.*	During FY18, the County developed Outdoor Material Storage; Parking Lot and Street Sweeping; Roadway and Parking Lot Construction and Maintenance; and Vehicle and Equipment Repair and Maintenance Procedures as required by the permit. The procedures can be found on the County website at the following link: https://ourteams.pwcgov.org/publicworks/SOPS/SitePages/Home.aspx
B.2.c.3.	*Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*	DFFM	Prince William County Buildings and Grounds is responsible for snow removal at all county facilities maintained by Buildings and Grounds. Snow removal activities are not performed on any other County-maintained roads, streets, or parking lots. Salt, sand, and calcium chloride are the specified materials used in snow removal activities. Any materials used for deicing and sanding activites are stored and maintained in a manner to prevent runoff from precipitation. Prince William County established a county-wide IDE policy to promote good housekeeping practices across all municipal facilities.		
B.2.c.4.	*The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.*	DFFM	The County uses salt, sand, and calcium chloride as specified snow removal materials. No deicing agent containing nitrogen or phosphorus is used by the County.		
	B.2.d. Pesticide, Herbicide, and Fertilizer Application				
B.2.d.	*The permittee shall continue to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied to permittee rights of way, parks, and other permittee property, as follows:*	DFFM, DPRT	The county meets this requirement through implementation of the actions described below.		
B.2.d.1.	*The permittee shall develop and implement turf and landscape nutrient management plans that have been developed by a certified nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the MS4 permittee where nutrients are applied to a contiguous area greater than one acre in accordance with the following schedule:*	DFFM, DPRT			

<table>
<tr><th>MS4 Action ID</th><th>Permit Requirement</th><th>Responsible Party</th><th>2023 Program Plan Elements
(July 1, 2022 through June 30, 2023)</th><th>Specific Reporting Requirement</th><th>2023 Annual Report
(July 1, 2022 through June 30, 2023)</th></tr>
<tr><td>B.2.d.1.a.</td><td>No later than 12-months after the effective date of this state permit the permittee shall identify all permittee lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of permittee land.</td><td>DFFM, DPRT</td><td>County staff has identified all county lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude have been provided for each area.</td><td>The initial report shall contain a list of all permittee lands and applicable acreage on which nutrients are applied to more than one contiguous acre.</td><td></td></tr>
<tr><td>B.2.d.1.b.</td><td>The permittee shall develop and implement turf and landscape nutrient management plans on all permittee lands where nutrients are applied to a contiguous area of more than one acre. The following measurable goals are established for the development and implementation of turf and landscape nutrient management plans.
(1) No later than 24-months after the effective date of this state permit, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans.
(2) No later than 36-months after the effective date of this state permit, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans.
(3) No later than 48-months after the effective date of this state permit, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans</td><td>DFFM, DPRT</td><td>The County has urban nutrient management plans for all County lands where nutrients are applied to greater than one contiguous acre.</td><td>Each annual report shall report on compliance with the turf and landscape nutrient management plan implementation schedule and include a list of the permittee properties for which turf and landscape nutrient management plans have been implemented during the reporting year and the cumulative total of acreage under turf and landscape nutrient management plans.</td><td>
<table>
<tr><th>Plan Name</th><th>Area (Acres)</th><th>Plan Area (Acres)</th><th>Initial Plan Date</th><th>Current Plan Expiration Date</th></tr>
<tr><td>Braemar</td><td>2.46</td><td>2.46</td><td>9/1/2017</td><td>8/31/2026</td></tr>
<tr><td>Fairmont</td><td>4.01</td><td>4.01</td><td>10/1/2018</td><td>9/30/2024</td></tr>
<tr><td>Howison</td><td>9.82</td><td>9.82</td><td>4/1/2017</td><td>3/31/2026</td></tr>
<tr><td>Western PD</td><td>7.27</td><td>7.27</td><td>4/1/2015</td><td>2/27/2025</td></tr>
<tr><td>Total</td><td>23.56</td><td>23.56</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>B.2.d.1.c.</td><td>The permittee shall annually track the following:
(1) The total acreage of permittee lands upon which nutrients are applied and controlled using general permittee guidelines or standard operating procedures;
(2) The acreage of permittee lands where turf and landscape nutrient management plans are required; and,
(3) The acreage of permittee lands covered by turf and landscape nutrient management plans have been implemented.</td><td>DFFM, DPRT</td><td>• County staff will track the total acreage where nutrients are applied on identified county lands with a contiguous area greater than one acre.
• County staff will track the acreage where turf and landscape nutrient management plans are required.
• County staff will track the acreage of county lands covered by turf and landscape nutrient management plans.</td><td>See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.</td><td></td></tr>
</table>

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.d.2.	*The permittee shall continue to employ good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers.*	DFFM, DPRT	• Prince William County Public Works will promote and encourage the proper use, application, and disposal of pesticides , herbicides, and fertilizers by public, commercial, and private applicators and distributors. • The Virginia Cooperative Extension Service help support Prince William County applicators and distributors with proper training and coordination with the Virginia Department of Agriculture and Consumer Services (VDACS). • VDACS provides ongoing communication with all certified applicators and distributors. • The Virginia Cooperative Extension Service provides training and education on the use, application, and disposal of pesticides, herbicides, and fertilizers.		
B.2.d.3.	*The permittee may regulate the use, application, or storage of fertilizers pursuant to §3.2-3602 of the Code of Virginia.*	DFFM, DPRT	No additional local fertilizer requirements are in place at this time beyond state requirements.		
B.2.d.4.	*The permittee shall track the acreage of county lands managed under Integrated Pest Management Plans.*	DFFM, DPRT	Prince William County tracks the acreage of county lands managed under Integrated Pest Management Plans.	*Each annual report shall include the number of acres managed under Integrated Pest Management Plans.*	There are two golf courses owned by the County that are under an Integrated Pest Management Plan. Neither course is located within the County's MS4 services area. The following table identifies the acreage under an IPM. **County Land** / **Acres** Forest Greens GC — 105.42 Prince William GC — 114.33
	B.2.e. Illicit Discharges and Improper Disposal				
B.2.e.	*Discharges to the MS4 not authorized by this state permit shall be effectively prohibited.*	DPW, EMD, COD	Prince William County's Illicit Discharge Detection and Elimination (IDDE) Program consists of elements designed to identify, mitigate, and prevent the release of non-stormwater discharges into its storm sewer system, and thus into State and Federal waters. Through development of County Fire Protection, Zoning, Building Development, and Stormwater Management Ordinances. Prince William County has prohibited the discharge of any non-stormwater element determined to be contributing significant amounts of pollutants to its storm sewer system.		

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.e.1.	*In accordance with Part I.A.1.b), certain non-stormwater discharges to the MS4 need not be addressed as illicit discharges or improper disposal. The MS4 Program Plan shall identify any nonstormwater discharges listed under Part I.A.1.b), where the permittee has imposed any conditions on the discharges to the MS4. The permittee shall prohibit, on a case-by-case basis, any individual nonstormwater discharge (or class of non-stormwater discharges) otherwise allowed under this paragraph that is determined to be contributing significant amounts of pollutants to the MS4.*	DPW, EMD, COD	Prince William County has prohibited the discharge of any non-stormwater element determined to be contributing significant amounts of pollutants to its storm sewer system. The County defines all discharges categorized as non-stormwater discharges, as well as those discharges not addressed as illicit discharges in accordance with Part I.A.1.b) of the permit in Article II sec. 23.2-4.1 of Prince William County's Code of Ordinances.		
B.2.e.2.	*The permittee shall minimize exfiltration from sanitary sewers into the MS4 by reporting to the Prince William County Service Authority (PWCSA) areas in the system where maintenance and/or repair may be needed when identified by County staff.The permittee shall continue to follow-up with the PWCSA to identify the efforts taken to limit the exfiltration of sanitary sewage into the MS4 including maintenance and repair activities.*	DPW, EMD, COD	The identification and correction of deficiencies is aided by PWC through its Dry Weather Monitoring, Storm Sewer Maintenance, General Stormwater Discharge, and Stream Restoration Programs. Cross connections, leaks, and other maintenance issues are discovered through the County's Dry Weather Monitoring and Storm Sewer Maintenance Programs. PWC continues to identify and report concerns to the PWCSA when sanitary sewer system maintenance and repairs are needed.		No known maintenance or repairs were identified by County staff.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.e.3.	*The permittee will continue to implement a program to reduce the discharge of floatables (e.g. litter and other human-generated solid refuse) in accordance with Part I.C.3.*	DPW, EMD, COD	Prince William County participates in the following programs to help reduce the discharge of floatables: • Adopt-A-Spot Program: litter cleanup and recycling program sponsored by the Virginia Dept. of Waste Management • Adopt-A-Stream Program: stream cleanup program managed by the Prince William County Soil & Water Conservation District (SWCD) • Floatables Monitoring Program: program admisinistered by PWC SWCD, designed to assess refuse loading to 5 selected stream sites throughout the County • Keep Prince William Beautiful Storm Drain Labeling Program: identify storm drains as draining into the Chesapeake Bay, as well as remind citizens not to dump items/fluids into them • Public Works Litter Control Crew: team established by PWC Public Works to pick up highly traveled roadways, handle cleanups of illegal dumpsites, and haul material from community cleanup events		
B.2.e.4.	*The permittee shall prohibit the dumping or disposal of used motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes into the MS4. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids (such as oil and antifreeze) for recycling, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycling, reuse, or proper disposal. Such programs shall be readily available to all private residents and shall be publicized and promoted on a regular basis but not less than twice per year.*	DPW, EMD, COD	• Prince William County has prohibited the discharge of any non-stormwater element determined to be contributing significant amounts of pollutants, including the dumping or improper disposal of motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes. • Working with our partners, Prince William County Public Works will promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous waste. Public Works has created and maintains a robust management program for the collection and disposal of household hazardous waste and collection and recycling of used oil.		More information on oil and hazardous waste disposal can be found in Appendix E.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.e.5.	*The permittee shall continue to implement a program to locate and eliminate illicit discharges and improper disposal into the MS4. This program shall include dry weather screening activities to locate portions of the MS4 with suspected illicit discharges and improper disposal, as described in Part I.B.2.l)(1) of this state permit.*	DPW, EMD, COD	Prince William County hosts several programs under its IDDE program dedicated to the detection, identification, and elimination of unauthorized discharges to its MS-4 system. These programs include the Dry Weathering Monitoring, General Discharge, Wet Weather Monitoring, Service Authority's Inflow and Infiltration Program, and Industrial and High Risk Monitoring Programs.		
B.2.e.6.	*The permittee shall require the elimination of illicit discharges and improper disposal practices within 30-days of discovery. Where elimination of an illicit discharge within 30-days is not possible, the permittee shall require an expeditious schedule for removal of the discharge. In the interim, the permittee shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.*	DPW, EMD, COD	By issuance of a Notice of Violation, iilicit discharges are required to be eliminated within 30 days of discovery, unless removal is not possible within that timeframe. In these instances, reasonable and prudent measures to minimize discharge will be taken and an action plan for mitigation/removal will be required.	*Each annual report shall include a list of illicit discharges identified, the source, a description of follow-up activities and whether the illicit discharge has been eliminated.*	During the reporting period, a total of 48 cases of illicit discharge were created, all of which have been closed. A summary of illicit discharge inspections and actions taken can be found in Appendix D.
	B.2.f. Spill Prevention and Response				
B.2.f.	*The permittee shall continue to implement a program that coordinates with the fire department and other County Departments resources to prevent, contain, and respond to spills that may discharge into the MS4. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's jurisdiction.*	DFR, RMD	The County has designated a full-time Hazardous Materials Officer. Prince William County participates in the Commonwealth Department of Emergency Management Services' regional Hazardous Materials response programs and maintains a National Incident Management System Type I HAZMAT Team for emergency response. The County's Fire and Rescue System responds to all complaints of hazardous spills and hazardous illicit discharge. If the complaints relate to sewage, the appropriate agency, such as, Prince William County Service Authority or Virginia American Water will be contacted. The complaints on the failing septic systems and drain fields are referred to the County's Health Department. The County staff makes every effort to direct complaints to the appropriate agency as expeditiously as possible.	*Each annual report shall include a list of spills, the source (identified to the best of the permittee's ability), and a description of follow-up activities taken.*	• For this reporting period, there were 37 instances of discharges impacting the MS-4 that were responded to by Prince William County's Department of Fire and Rescue out of a total of 57 incident responses. There are 106 Hazmat Technicians and Specialists, 702 career personnel, and over 300 volunteer personnel who are required to be current in this training, including annual refresher training. All required personnel were in Emergency Spill Response training during the reporting period. • The County's Risk Management Division captures spills within County facilities. For FY23, 29 spills were reported. • The Spill Response Summary Report can be found in Appendix F.
	B.2.g. Industrial & High Risk Runoff				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.g.	*The permittee shall implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities (e.g., municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313) and any other industrial or commercial discharges the permittee determines are contributing a significant pollutant loading to the MS4.*	DPW, EMD, COD	High Risk and Industrial VPDES permitted facilities that are found to be contributing significant pollutants to the storm sewer system will be referred to DEQ for compliance review.		
B.2.g.1.	*The permittee shall maintain, and update as necessary, a list of all known industrial and high-risk dischargers to the MS4. This list shall include VPDES industrial stormwater permits.*	DPW, EMD, COD	In FY16, the County performed used GIS to analyze and generate a list of potential High Risk outfalls according to a probability of pollutant discharge. This probability takes in to account an assumed potential for discharge to occur, possible pollutant discharge effect according to the type of facility and its operations, and the potential for environmental damage according to the facilities proximity to environmentally sensitive areas. From this analysis, 518 outfalls were deemed as potentially high risk. In addition, any outfalls found to be contributing a significant source of pollutants during routine Dry Weather Monitoring inspections will be added to this list and updated annually.	*The initial annual report shall include a list of all known industrial and high risk dischargers including any non-VPDES regulated industrial and commercial stormwater dischargers determined by the permittee as contributing a significant pollutant load and that discharge to the MS4 system, a schedule of inspections and procedures for inspecting outfalls.*	A list of Industrial and High Risk Runoff Sites can be found in Appendix G.
B.2.g.2.	*No later than 12-months after the effective date of this state permit, the permittee shall develop and implement a prioritized schedule and procedure to inspect outfalls of facilities with VPDES industrial stormwater permits at the point of connection to the MS4. Prioritization may be based on historical discharges, local water quality impairments, industrial category, or other methods selected by the permittee. The permittee shall inspect all VPDES industrial stormwater permitted outfalls connected to its MS4 a minimum of once every five years.*	DPW, EMD, COD	Outfalls identified as VPDES and High Risk non-VPDES are inspected according to specific protocols outlined in Prince William County's IDDE Program. Outfall prioritization follows an iterative process that incorporates in-field observations. As outfalls are monitored under the County's Dr Weather Monitoring program, those which are determined to have high potential for pollutant discharge are identified as High Risk and added to the prioritzied schedule the next time it is updated.	*Each annual report shall report on implementation of the inspection schedule and include a list of the facilities and/or facility outfalls inspected during the reporting period.*	A summary of illicit discharge inspections conducted during this reporting period can be found in Appendix D.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.g.3.	*The permittee shall review copies of discharge monitoring reports (DMRs) submitted to the permittee by VPDES industrial stormwater permitted facilities as part of the permittee's investigations of significant pollutant loadings. The permittee may conduct additional monitoring, or may require the facility to conduct additional monitoring, of any stormwater discharges it believes may be a source of significant pollutant loadings.*	DPW, EMD, COD	PWC receives Discharge Monitoring Reports (DMR's) from applicable (non-exempt) VPDES permitted facilities that discharge into the County's MS-4.		
B.2.g.4.	*The permittee shall coordinate with the Department to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the MS4 system. Inspections of facilities for which the permittee has evidence of significant pollutant loading may be carried out in conjunction with other county programs.*	DPW, EMD, COD	Outfalls are monitored in accordance with the County's Dry Weather Monitoring Protocols. Facilities whose outfalls are found to discharge significant pollutant flows within 3 consecutive inspections are referred to DEQ for compliance review. Follow-up inspections are scheduled according to IDDE protocols. Outfalls of VPDES permitted facilities are inspected once a year, while High Risk outfalls are inspected once a permit cycle.		
B.2.g.5.	*The permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for DEQ compliance review under the Virginia State Water Control Law:* *(a) Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit;* *(b) Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.* *(c) Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4. (d) Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES industrial stormwater permit.*	DPW, EMD, COD	Prince William County will report these facilities to the DEQ for compliance review under the Virginia State Water Control Law.	*Each annual report shall include a list of referrals to the Department.*	During the reporting period, no facilities were deemed necessary to report to DEQ for compliance review.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.g.6.	*The permittee shall maintain a list of any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the MS4. This list may be individual discharges or categories of discharges. (a) Outfalls from these facilities shall be included in the prioritized inspection schedule.* *(b) The list shall include, but shall not be limited to: major automotive facilities such as repair shops, body shops, auto detailers, tire repair shops and service stations.* *(c) The permittee shall require control measures as necessary and/or appropriate for stormwater discharges from these dischargers.*	DPW, EMD, COD	As outfalls for facilities determined to have a high risk for pollutant discharge are inspected, those which do not fall under VPDES permitting requirements or Virginia State Water Control Law are included under the County's Non-VPDES High Risk Designation. Potential Non-VPDES High Risk facilities are identified, along with associated outfalls, through GIS desktop analysis. Using County land-use information land-uses that are identified to have ahigh potential for the discharge of pollutants are isolated. As with VPDES permitted facilities, a buffer is placed around a high risk parcel and the containing outfalls are identified. These outfalls are considered to be potentially High Risk outfalls. During Dry Weather Monitoring activities, outfalls determined to potentially contribute a significant source of pollutants to the storm sewer system are identified and added to the list of high risk discharges.		
	B.2.h. Storm Sewer Infrastructure				
B.2.h.	*The permittee shall continue to maintain and implement programs to maintain the permittee's stormwater infrastructure and to update the accuracy and inventory of the storm sewer system.*	DPW, EMD, COD	Prince William County conducts routine inspection of its storm drainage system, inspecting the entire system within the permit term. Storm sewer is inspected using visual inspection techniques, as well as using CCTV. The County continues to implement a program to inspect all new drainage systems (eligible for County maintenance) using video cameras, prior to accepting the systems into the County's maintenance program.		As of June 30, 2023, there are 659 miles of storm sewer system owned and/or operated within the County. During FY23, the County inspected 516 miles of storm sewer system.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.h.1.	*For stormwater management (SWM) facilities maintained by the permittee and residential properties where SWM facilities, BMP and Storm Drainage Systems qualify for permittee maintenance (excluding apartments and mobile home parks), the following conditions apply:* *(a) The permittee shall provide for adequate long-term operation and maintenance of its SWM facilities in accordance with written inspection and maintenance procedures included in the MS4 Program Plan.* *(b) The permittee shall, at a minimum, inspect annually all SWM facilities. The permittee may choose to implement an alternative schedule to inspect these SWM facilities based on a risk assessment that includes facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan in accordance with plan modifications as listed in Part I.A.7.a) of this state permit.* *(c) The permittee shall conduct maintenance on SWM facilities as necessary.* *(d) The permittee shall continue its stormwater system inspection program and shall inspect no less than 20% of the MS4 annually.* *(e) The permittee shall dispose of all wastes and wastewaters collected during stormwater system cleaning in accordance with appropriate law and regulations.* *(f) The permittee shall obtain any required state or federal permit necessary to complete maintenance activities.*	DPW, EMD, COD	Prince William County continues a program for the inspection and maintenance of SWM facilities maintained by the County. County-maintained facilities include those owned by HOA's and residential communities or by the County Board of Supervisors, and where basic maintenance responsibilities are performed by the owners. County-maintained SWM/BMP facilities are typically inspected under two scenarios: under the general inspection program which occurs once a year, or as requested by an impacted property-owner. Maintenance is prioritized by the severity of maintenance needs for the facility. Maintenance of publicly maintained SWM facilities is performed by the County's Construction and Operations Division, as necessary. All applicable permitting requirements will be met during maintenance activities.	•*The permittee shall submit with the initial annual report the written inspection and maintenance procedures.* •*Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.hi)1) including the total number of stormwater structures operated by the permittee, the type and number of structures inspected and maintained; the total miles of storm sewer system owner and/or operated by the permittee, and the miles of storm sewer system inspected.* •*Each annual report shall include the mileage of stormwater system and easement inspected each year that is operated by the permittee.*	As of June 30, 2023, the County is responsible for the maintenance of approximately 1,038 facilities, including dry ponds, wet ponds, infiltration trenches, sand filters, bioretention and proprietary BMP facilities. A list of these facilities and their inspection date are included in Appendix H. During the reporting period, the County staff conducted 1,133 routine inspections, 8 complaint-based inspections and 36 re-inspections of county-maintained facilities.
B.2.h.2.	*For SWM facilities not maintained by the permittee and that discharge into the MS4, the following conditions apply:*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
B.2.h.2.a.	*The permittee shall continue to implement a program to ensure proper maintenance of each privately maintained SWM facility that discharges into the MS4 system as documented in the MS4 Program Plan.*	DPW, EMD, COD	The County has a program in place to inspect all privately-maintained facilities within the term of the permit and to pursue enforcement actions in instances where maintenance is needed. These facilities are comprised of dry ponds, wet ponds, constructed wetlands, bioretention facilities, proprietary stormwater inlet BMP facilities, underground storage facilities, and infiltration trenches.		

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.h.2.a.1.	*Beginning with the effective date of this state permit, maintenance agreements may be used but are not required for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located provided that the permittee has developed and implemented a strategy to address maintenance of such stormwater management controls. Should the permittee choose a strategy other than a maintenance agreement, such a strategy shall be provided in writing no later than 12 months after the effective date of this state permit and shall include periodic inspections, homeowner outreach and education, or other methods targeted at promoting the long term maintenance of such facilities.*	DPW, EMD, COD	Before a privately maintained facility can be removed from bond, maintenance agreement must be recorded to ensure the proper upkeep of the facility. A majority of the privately maintained SWM facilities have duly recorded Maintenance Agreements that require the owner to perform the inspection and maintenance at a frequency identified in the Agreement.		
B.2.h.2.a.2.	*For SWM facilities that are privately maintained and for which maintenance agreements have been established between the permittee and the owner, the permittee shall:* *(i) Inspect privately maintained SWM facility no later than three years after certification of proper design is submitted to the permittee.* *(ii) Inspect all privately maintained facilities no less than one time during the term of this state permit; and,* *(iii) Conduct follow-up inspections to ensure that required maintenance has been completed.*	DPW, EMD, COD	Facilities in compliance with maintenance requirements are scheduled for re-inspection during the following permit cycle. For facilities with deficiencies, the owner is provided with a detailed report outlining those deficiencies. If the deficiencies are not corrected within the time given, a second notice is given, and additional time is provided for repairs. If the facility is still not repaired, Prince William County Construction Services conducts maintenance on the facility and the facility owner is required to reimburse the County for expenses. Follow-up inspections are performed to ensure maintenance requirements are followed. Facility owners are urged to self-report maintenance activities to the County in the form of a detailed engineering report.	•*Each annual report shall include a list of activities including inspections performed and notifications of needed maintenance and repair of stormwater facilities not operated by the permittee as required by Part I.B.2.h)2).* •*Each annual report shall provide a summary of actions taken by the permittee to address failure of privately maintained SWM facilities owners to abide by maintenance agreements.*	As of June 30, 2023, there are 1,177 privately maintained facilities within the County. A table describing inspection, maintenance, and enforcement of privately maintained facilities for the reporting period can be found in Appendix I. **Privately-maintained SWM Facilities Inspection and Maintenance Summary** **FY23** Inventory of privately-maintained SWM facilities at start of FY23 1177 Number of SWM facilities inspected 246 Notifications of needed maintenance and repair 150 Actions taken by County to address failure of owners to abide by maintenance agreements 1

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.h.a.3.	*For SWM facilities that are privately maintained and for which maintenance agreements have been not established between the permittee and the owner, the permittee shall implement a pilot program consisting of the following:* *(i) No later than 12-months after the effective date of the permit, the permittee shall develop draft procedures and policies that are designed to ensure that inspection and maintenance of privately maintained SWM facilities are being conducted. The draft procedures and policies should identify any expected limitations to the permittee's ability to implement these procedures and policies and should propose options to overcome these limitations;* *(ii) No later than 15-months after the effective date of the permit, the permittee shall implement these draft procedures and policies including the proposed options identified in subsection Part I.B.2.h)2)a)(3)(i) above; and,* *(iii) No later than 36-months after the effective date of the permit, the permittee shall modify the draft policy and procedures required by Part I.B.2.h)2)a)(3)(i) for the inspection of privately maintained SWM facilities based on the findings of Part I.B.2.h)2)a)(3)(ii)and finalize the inspection procedures.*	DPW, EMD, COD	For those facilities that do not have Maintenance Agreements, our County Attorney has determined that the maintenance note on the plan is still enforceable.		
B.2.h.3.	*No later than 18 months after the effective date of this state permit, the permittee shall map the MS4 service area and each MS4 outfall. The following information shall be tracked for each MS4 outfall:* *(a) An individual identification number, local watershed, sixth order HUC and receiving water;* *(b) The latitude and longitude in decimal degrees;* *(c) New outfalls shall be tracked upon their inclusion into the MS4.*	DPW, EMD, COD	• Prince William County has identified all outfalls owned or operated by Prince William County that discharge to surface waters (i.e. MS4 outfalls). • Each MS4 outfall has an individual identification number, the local watershed, HUC and receiving water in which it is located are identified, and its latitude and longitude are provided in in decimal degrees. • The county has delineated the drainage area to each of its MS4 outfalls (i.e. the MS4 service area). • The county updates the mapping layers to incorporate new outfalls once as-built plans are provided by the party responsible for constructing the new outfall.	*The MS4 service area map including outfalls and information included in Part I.B.2.h)3) shall be submitted no later than 18 months after the effective date of this state permit. The information shall be submitted as an electronic file in one of the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.*	

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.h.4.	*No later than 24 months after the effective date of this state permit, the permittee shall identify the following for each local watershed, sixth order HUC, and Chesapeake Bay Segment:* *(a) The number of impervious, pervious, and total acres served by the MS4 as of June 30, 2009.* *(b) The number of impervious, pervious, and total acres treated by stormwater controls as of June 30, 2009,*	DPW, EMD, COD		*The second annual report submitted under this state permit shall include the information included in Part I.B.2.h) 4). The information shall be submitted in a format specified by the Department.*	
B.2.h.5.	*No later than 54 months after the effective of this state permit, the permittee shall update each of the following: (a) The number of impervious, pervious, and total acres served by the MS4 for each Prince William County local watershed, sixth order HUC and Chesapeake Bay segment.* *(b) The number of impervious, pervious and total acres treated by stormwater controls.*	DPW, EMD, COD	Prince William County maintains an inventory of all SWM/BMP facilities in the County.	*The fourth annual report shall include an updated list of all information requested in Part I.B.2.h)5).*	A total of 7 facilities were added to the County's inventory during the reporting period. A list of new facilities is provided as Appendix J. This list includes the facility number, type, total acres treated, impervious acres treated, HUC code, State FIPS, and latitude/longitude and is included in an electronic form submitted with this document.
	B.2.i. County Facilities				
B.2.i.	*County facilities shall be operated and maintained as follows:*	DFFM, DPRT, DPW, SWD	The county meets this requirement through implementation of the actions described below.		
B.2.i.1.	*Good Housekeeping* *(a) The discharge of permittee vehicle wash water into the MS4 at permittee facilities without authorization from a separate VPDES permit shall be prohibited.* *(b) The discharge of wastewater into the MS4 at permittee facilities without authorization by a separate VPDES permit shall be prohibited.* *(c) The dumping of collected yard waste and grass clippings into the MS4 shall be prohibited.* *(d) Fluids leaked from permittee vehicles shall be prevented from entering the storm sewer system. Leaked fluids shall be cleaned up and disposed of properly, as soon as possible but no later than 24-hours after discovery.* *(e) No later than 54-months after the effective date of this state permit, the permittee shall install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F, and on permittee properties with greater than 2-acres of impervious surface.*	DFFM, DPRT	• Prince William County promotes good housekeeping practices throughout all its municipal facilities through its Environmental Management System (EMS) program and other methods. The EMS program promotes consistency and accountability in the method for addressing environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures, and processes. This program emphasizes objectives such as the identification and prevention of spills, hazardous material storage and removal, storage tank inspection and maintenance, waste disposal and recycling, proper equipment and material storage, and many other environmental good housekeeping practices. • PWC Parks and Rec facilities are inspected biennially, to ensure good housekeeping practices are being followed. This includes properly managing yard waste and grass clippings. Police and fire vehicles are required to be washed in an environmentally safe manner, allowing no wash water to enter storm drain systems. Most vehicles are washed in commercial car washing facilities. PWC Fleet Management has worked closely with Risk Management and Watershed Management to set up a system to prevent the leaking or spilling of vehicles on site waiting for maintenance. • Prince William County's storm drain labeling		

<table>
<tr><th>MS4 Action ID</th><th>Permit Requirement</th><th>Responsible Party</th><th>2023 Program Plan Elements
(July 1, 2022 through June 30, 2023)</th><th>Specific Reporting Requirement</th><th>2023 Annual Report
(July 1, 2022 through June 30, 2023)</th></tr>
<tr><td></td><td></td><td></td><td>• Prince William County's storm drain labeling program targets high priority municipal facilities to maintain markings on storm drain inlets. This program not only labels inlets at high priority municipal facilities, but in multiple areas of the county including high-risk shopping centers and residential neighborhoods.</td><td></td><td></td></tr>
<tr><td>B.2.i.2.</td><td>High Priority Municipal Facilities :</td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.2.i.2.a.</td><td>The permittee shall identify high priority municipal facilities that do not require a separate VPDES industrial stormwater permit no later than 12-months after the effective date of this state permit;</td><td>DFFM, DPRT</td><td>The County operates several municipal facilities. Some, like the PWC landfill facility, are covered under their own VPDES permit for stormwater discharges. During FY17, the County assessed all municipal facilities within its MS4 service area and evaluated their need for a SWPPP. High risk facilities included composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.</td><td>The initial annual report shall include a list of all high priority municipal facilities.</td><td>The following four facilities have been identified as being high risk, and are currently maintaining a SWPPP:
<table><tr><th>Facility Name</th></tr><tr><td>Fleet Administration</td></tr><tr><td>Ben Lomond Maintenance Building</td></tr><tr><td>Hellwig Maintenance Building</td></tr><tr><td>PWC Stadium Maintenance Building</td></tr></table></td></tr>
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MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.i.2.b.	*The permittee shall develop and/or update and implement individual stormwater pollution prevention plans for each high priority municipal facility identified under Part I.B.2.i)2)(a) no later than 36-months after the effective date of this state permit. Stormwater pollution prevention plans (SWPPP) shall include:* *(1) A site description that includes a site map identifying all outfalls, direction of flows, existing source controls, and receiving water bodies;* *(2) A discussion and checklist of potential pollutants and pollutant sources;* *(3) A discussion of all potential non-stormwater discharges;* *(4) A maintenance schedule for all existing source controls;* *(5) All policies and procedures implemented at the facility to ensure source reduction;* *(6) An inspection schedule and checklist to ensure that all source reductions are continually implemented and all source controls are appropriately maintained. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP;* *(7) Appropriate training as required in Part I.B.2.k);* *(8) Procedures to conduct an annual comprehensive site compliance evaluation;* *(9) Procedures to conduct dry weather screening; and* *(10) All modifications made as the result of any release or spill.*	DFFM, DPRT	SWPPPs will include a site description that includes site map showing all outfalls, direction of flows, existing source controls, and receiving water bodies; a checklist of potential pollutants and pollutant sources; all potential non-stormwater discharges; a maintenance schedule for all source controls; policies and procedures implemented at the facility for source reduction; an inspection schedule to ensure source reduction controls are implemented and maintained properly; training schedules for facility employees; procedures for annual evaluations of the facility; dry weather monitoring procedures; and all modifications made as a result of a spill or release of pollutant.		The status of SWPPP development at High Priority Municipal Facilities is presented in the table located in the above section.
B.2.i.2.c.	*A copy of each SWPPP shall be kept at each high priority municipal facility and be kept updated.*	DFFM, DPRT	A copy of the high priority municipal facility SWPPP will be kept at each facility requiring one. Where the SWPPP cannot be physically kept on site, a copy of the high priority municipal facility SWPPP will be kept on file by the department that manages the site.		
	B.2.j. Public Education/Participation				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.j.	*The permittee shall implement a public education program with the goal of increasing the stormwater knowledge of target audiences and changing behavior to result in pollutant reductions. The permittee may fulfill all or part of the requirements of this state permit through regional outreach programs involving two or more MS4 localities.*	DPW, EMD, COD	Prince William County strives to share relevant and useful information with our community to help protect our local waterways and natural environment. We undertake several projects and special events to provide citizens with the opportunity to help in these goals. Public Works also partners with residents, businesses, other government agencies and organizations to advance our goals to protect and preserve natural resources.		.
B.2.j.1.	*The permittee shall identify, schedule, implement, evaluate and modify, as necessary, public outreach activities designed to meet the following public education and outreach goals:* *(a) Promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials into the MS4;* *(b) Continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement;* *(c) Continue outreach programs with public and private golf courses located within the county that discharge to the permittee's MS4 that would encourage implementation of integrated management practice (IMP) plans and techniques to reduce runoff of fertilizer and pesticides;* *(d) Promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes;* *(e) Promote and publicize the proper disposal of pet waste and household yard waste;* *(f) Promote and publicize the use of the permittee's litter prevention program;* *(g) Promote and publicize methods for residential car washing that minimize water quality impacts;* *(h) Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors;* *(i) Encourage private property owners to implement voluntary stormwater management techniquest and/or retrofits; and* *(j) Target strategies towards local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts.*	DPRT, DPW, EMD, COD, SWD	The public education and outreach program is reviewed on an annual basis to determine the effectiveness of the program and to identify future efforts to improve the program. Due to the nature of some of the education and outreach elements, a determination of effectiveness is more qualitative in nature and based on the number of individuals reached through the activities, as well as feedback from the staff involved with those activities. Each activity is reviewed and discussed, and recommendations for future improvements are identified in the annual report. For other program elements, included in the annual report, effectiveness is based on the results of the activity such as pounds of trash removed or percent of participants adopting recommended practices for example.	•*Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.* •*Each annual report shall provide a summary of voluntary retrofits completed on private property used to demonstrate pollutant reduction requirements. Note that any voluntary project for which the permittee seeks to use for pollutant reduction requirements must be tracked and reported.* •*Each annual report shall provide a summary of voluntary stormwater management techniques encouraged on private property.*	•During FY23, Prince William County supported the Northern Virginia Clean Water Partners campaign. The campaign uses radio, online, and television advertising to educate the public about preventing water pollution. The campaign utilized several advertisements to inform residents about water pollution, stormwater management systems, pet waste, motor oil and fertilizers. Included as Appendix K is the annual report on the Clean Water Partners campaign in FY23. •Public Outreach Summary can be found in Appendix X.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.j.2.	*The permittee shall post a copy of this state permit on its web page no later than 30-days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.*	DPW, EMD, COD	• The county's MS4 permit (VA0088595), effective December 17, 2014, and was posted to the county website. • The permit is available at: https://www.pwcva.gov/department/environmental-services/community-ms-4-program		
B.2.j.3.	*The permittee shall post copies of each annual report on its website no later than 30 days after the report submittal to the Department and continue to retain copies of the annual reports online for the duration of this state permit.*	DPW, EMD, COD	• Annual reports are posted to the county website within 30 days of submittal to DEQ. • Annual reports are available at: https://www.pwcva.gov/department/environmental-services/community-ms-4-program		
B.2.j.4.	*The permittee shall post the most current MS4 Program Plan on its website no later than 30 days after the effective date of this permit and maintain a current copy on the website. If the MS4 Program Plan is modified or revised, the updated plan shall be posted within 30 days of the revision(s). Copies of the most current MS4 Program Plan shall be made available for public review upon request of interested parties in compliance with all applicable open records requirements.*	DPW, EMD, COD	• The county's most current MS4 Program Plan was posted to the county website. • Updates to the MS4 Program Plan will be posted to the county's website within 30 days of submittal to DEQ. • The MS4 Program Plan is available at: https://www.pwcva.gov/department/environmental-services/community-ms-4-program		
	B.2.k. Training				
B.2.k.	*The permittee shall conduct stormwater training for permittee employees. The training requirement may be fulfilled all or in part through regional training programs involving two or more MS4 localities; provided, however, that the permittee shall remain individually liable for its failure to comply with the training requirements in this state permit. The permittee shall determine the appropriate employees to receive the following types of training based on the specific topic for which training is to be provided:*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
B.2.k.1.	*The permittee shall provide biennial training to appropriate field personnel in the recognition and reporting of illicit discharges.*	DPW, EMD, COD	Prince William County Staff are trained in the recognition and reporting of Illicit Discharges as well as implementation of good housekeeping practices. Currently, appropriate staff are trained in basic good housekeeping, spill prevention, and illicit discharge prevention practices through EMS training. This training is conducted biennially and is required for all staff including full-time Parks and Rec staff.	*Each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.*	A list of training courses offered in FY23 and the number of participants can be found in appendix L.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.k.2.	*The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance.*	DFFM, DPRT, DPW, SWD		See MS4 Action ID B.2.k.1.	A list of training courses offered in FY23 and the number of participants can be found in appendix L.
B.2.k.3.	*The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed in and around permittee maintenance and public works facilities.*	DFFM, DPW, SWD		See MS4 Action ID B.2.k.1.	A list of training courses offered in FY23 and the number of participants can be found in appendix L.
B.2.k.4.	*The permittee shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). The requirements of the Virginia Pesticide Control Act are established by the Virginia Pesticide Control Board.*	DFFM, DPRT	Appropriate County staff and contractors receive appropriate training in pesticide and herbicide application. Appropriate staff are required to stay current in applicable training and certifications.		
B.2.k.5.	*The permittee shall have a program to ensure that County plan reviewers, inspectors, program administrators and construction site operators (e.g. responsible land disturber) are trained and obtain the appropriate certifications to the extent required under the Virginia Erosion and Sediment Control Law and attendant regulations.*	DPW, EMD, COD	Engineering staff who review E&S, SWM and VSMP plans have certifications. Site inspectors and stormwater management facility inspectors have erosion and sediment control inspector and stormwater management inspector certifications.		For a list of inspector and plan reviewer certifications, see appendix A.
B.2.k.6.	*The permittee shall have a program to ensure that the applicable County employees obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations to implement the modified stormwater management design criteria.*	DPW, EMD, COD	Appropriate employees have been certified as program administrators, inspectors, plan reviewers or combined administrators as required under the Virginia Stormwater Management Act and its attendant regulations.		For a list of inspector and plan reviewer certifications, see appendix A.
B.2.k.7.	*The permittee shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around county recreation facilities.*	DPRT	Applicable employees who conduct maintenance, repair, and custodial work at county recreational facilities receive biennial training.	See MS4 Action ID B.2.k.1.	A list of training courses offered in FY23 and the number of participants can be found in appendix L.
B.2.k.8.	*The appropriate emergency response employees shall have training in spill response. A summary of the training and/or certification program provided to emergency response employees shall be included in the first annual report.*	DFR	All uniform personnel are trained to the hazmat first responder operations level. This training teaches spill control as a defensive manner. This training is regulated by 29 CFR 1910.120(q) and NFPA 472. Staff are required to be current in this training, including annual refresher training. During the reporting period, all required personnel were current in Emergency Spill Response training.	*The initial report shall include documentation of employee emergency spill response training and/or certification.*	

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.k.9.	*Documentation shall be kept of all training events including the training date, number of employees attending the training, and the objective of the training event for a period of three years after each training event. Additionally, all events shall be listed in the annual report for the year in which the training event occurred.*	DF, RMD	Training documentation is kept on file by the appropriate office. A list of training events will be provided in the MS4 Annual Reports.	See MS4 Action ID B.2.k.1. and B.2.k.8.	A list of training courses offered in FY23 and the number of participants can be found in appendix L.
	B.2.l. Water Quality Screening Programs				
B.2.l.	*The following screening programs shall be implemented in addition to the monitoring required by Part I.C:*				
B.2.l.1.	*Dry Weather Screening Program: The permittee shall continue ongoing efforts to detect the presence of illicit connections and unauthorized discharges to the permittee's MS4.*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
B.2.l.1.a.	*The permittee shall continue to implement a program of dry weather screening in areas of concern as identified by the permittee including but not limited to: commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. The permittee shall screen at a minimum, 25% of the outfalls discharging to the County's MS4 within the permit cycle.*	DPW, EMD, COD		*Each annual report shall include a list of locations upon which dry weather screening was conducted, the results and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the dry weather screening.*	During the reporting period, Prince William County inspected 888 stormwater outfalls as part of the dry weather screening program. There were no outfalls identified as needing maintenance during dry weather screening activities. A total of 109 outfalls were found to be flowing during dry weather, but only four were determined to be illicit discharges. Descriptions of these discharges and follow-up activities can be found below in Appendix M.
B.2.l.1.b.	*Criteria for selection of outfalls to be screened as required by Part I.B.2.l)1)(a) above shall include but is not limited to the following:* *(1) List of sites requiring further investigation, as previously identified;* *(2) Age and density of development with the likelihood of illicit connections such as older residential, commercial and industrial areas;* *(3) Outfalls representing the general land uses of the County;* *(4) Poorly maintained gas stations, service stations, and shopping centers;* *(5) Presence of environmentally sensitive features downstream; and* *(6) History of complaints received on illicit discharges.*	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.l.1.c.	*The screening as required by Part I.B.2.l)1)(a) may be replaced with the use of closed circuit television (CCTV) to inspect, at a minimum, 25% of total piped stormwater systems no later than 54 months after the effective date of this state permit. If the permittee chooses to use CCTV in lieu of outfall inspections, then the permittee shall develop a program for implementation using the criteria listed in Part I.B.2.l)1)(b) prior to implementation. The program shall include the calculation of total miles piped.*	DPW, EMD, COD	Prince William County conducts routine inspection of its storm drainage system, inspecting the entire system within the permit term. Storm sewer is inspected using visual inspection techniques, as well as using CCTV. The County continues to implement a program to inspect all new drainage systems (eligible for County maintenance) using video cameras, prior to accepting the systems into the County's maintenance program.		As of June 30, 2023, there are 659 miles of storm sewer system owned and/or operated within the County. During FY23, the County inspected 516 miles of storm sewer system.
B.2.l.2.	*Wet Weather Screening Program: In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedures to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.*	DPW, EMD, COD	Prince William County's Wet Weather Screening Program began at the end of FY16, with first the sample occurring in September of 2017.	•*No later than 12 months after the effective date of the state permit, the permittee shall submit to the Department the written procedures for wet weather screening.* •*Each annual report following the initial annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.*	Two sites were selected for sampling and sampling occurs during qualifying storm events. The quarterly Wet Weather Monitoring reports are included as Appendix N.
	B.2.m. Infrastructure Coordination				
B.2.m.	*The permittee shall coordinate with the Virginia Department of Transportation (VDOT) regarding issues of MS4 physical-interconnectivity as described below:*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.m.1.	*Annual Coordination Meeting – The permittee shall meet annually with VDOT for purposes of overall coordination on priority issues for the permittee's MS4 program plan (including operations and maintenance elements) and TMDL action planning relevant to the interconnectivity of the MS4s.*	DPW, EMD, COD	Prince William County will meet annually with VDOT as required.		Prince William County met with VDOT on May 12, 2023. A list of the meeting participants is included as Appendix O.
B.2.m.2.	*Mapping – The permittee shall inform VDOT of the status of its mapping program, identifying any uncertainty regarding ownership or actual location of MS4 components associated with the physically-interconnected MS4s, and working to resolve such uncertainty. The permittee shall coordinate with VDOT to identify any areas within the permittee's municipal boundaries that drain to the VDOT MS4.*	DPW, EMD, COD	• At the annual meeting (MS4 Action ID B.2.m.1), VDOT will be informed of the status of the county's mapping program. • The county will work with VDOT to resolve ownership and location uncertainties.		
B.2.m.3.	*Chesapeake Bay TMDL Action Plans – The permittee shall inform VDOT of the means, methods, and schedule by which the permittee will implement the reductions required by the Chesapeake Bay TMDL Special Condition (Part I.D.1) when those means and methods may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of best management practices (BMPs) may be accelerated or otherwise improved by mutual cooperation. The permittee shall coordinate with VDOT to identify any areas within the permittee's municipal boundaries that drain to the VDOT MS4 and are unaccounted for in the Chesapeake Bay TMDL Action Plan developed by VDOT or the permittee. The unaccounted areas shall be quantified (acres) in the Chesapeake Bay TMDL Action Plan submitted by the permittee.*	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.m.4.	*Other TMDL Action Plans – The permittee shall inform VDOT of TMDL Action Plans and major milestones implemented for other (i.e., non-Chesapeake Bay) TMDLs when those plans may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of BMPs may be accelerated or improved by mutual cooperation.*	DPW, EMD, COD			
B.2.m.5.	*Credit for TMDL Implementation – Permit specific BMP retrofit requirements shall not be doublecounted in the calculation of load reductions. If the permittee undertakes the project, the permittee shall be entitled to full credit for the project, but may share credit with VDOT on mutually agreeable terms, which shall be in writing.*	DPW, EMD, COD			
B.2.m.6.	*Illicit Discharge Detection & Elimination – The permittee shall continue to be responsible for implementing a program for illicit discharge detection and elimination, including dry weather field screening, for the permittee's portion of the physically-interconnected MS4. As part of the annual coordination meeting, described in item (1) above, the permittee shall coordinate with VDOT on the identification of high risk industrial facilities. The permittee shall establish procedures for notifying VDOT when an illicit discharge is identified in the VDOT MS4.*	DPW, EMD, COD			
B.2.m.7.	*Water Quality Monitoring – The permittee shall conduct water quality monitoring as required by Part I.B.2.l) and Part I.C of this state permit. The permittee shall make available to VDOT all monitoring data collected from areas where the physically-interconnected MS4 discharges to the VDOT MS4 or received flow from the VDOT MS4. The permittee and VDOT are encouraged to cooperate with one another to establish a joint monitoring network.*	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
B.2.m.8.	*Annual Reports – As part of its Annual Report, the permittee shall document coordination efforts with VDOT that occurred during the reporting year pursuant to requirements (1) through (7) above.*	DPW, EMD, COD			During the annual meetings with VDOT the following items were discussed: • Mapping (MS4 Service Areas) • Chesapeake Bay TMDL Action Plan updates • Other TMDL Action Plans • Credit for TMDL Implementation • Illicit Discharge Detection & Elimination • Water Quality Monitoring • Other Issues
	C. MONITORING REQUIREMENTS				
	C.1. Biological Stream Monitoring				
C.1.	*The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within the county as follows:*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
C.1.a.	Five (5) stream sites within the county shall be selected for monitoring during the term of this permit	DPW, EMD, COD		*The initial annual report shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*	Sample collection occurred at five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch.
C.1.b.	*Monitoring shall be conducted twice per year at each selected stream site.*	DPW, EMD, COD		*Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends*	Prince William County continued its Biological Monitoring Program in FY23 with its monitoring taking place in the Fall of 2022 and Spring of 2023. A copy of the Biological Monitoring Report is included as Appendix P.
C.1.c.	*The permittee shall use a biological stream monitoring approach based on the "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.*	DPW, EMD, COD	Benthic sampling was conducted in accordance with the Sampling Plan.		
	C.2. In-Stream Monitoring				
C.2..	*The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within the county as follows:*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
C.2.a.	*Five (5) stream sites within the county shall be selected for monitoring during the term of this permit.*	DPW, EMD, COD		*The initial annual report shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*	There are five stream monitoring stations for this reporting period: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch.
C.2.b.	*Monitoring shall be conducted once per two months between January 1 st and December 31st at each monitoring location*	DPW, EMD, COD	The county will conduct monitoring once per two months between January 1st and December 31st at each monitoring location.	*Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*	Refer to Appendix Q for the data summary for the in-stream monitoring.
C.2.c.	*Monitoring shall be performed for the following parameters:* *1) pH* *2) Dissolved Oxygen* *3) Temperature* *4) Total Suspended Solids* *5) Ammonia as Nitrogen* *6) Nitrate plus Nitrite Nitrogen* *7) Total Kjeldahl Nitrogen* *8) Total Nitrogen (calculated)* *9) Dissolved Phosphorus* *10) Total Phosphorus* *11) Escherichia Coli*	DPW, EMD, COD			
C.2.d.	*Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part II.A. of this state permit.*	DPW, EMD, COD			
C.2.e.	*The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.*	DPW, EMD, COD			There were no changes to the sampling locations during the FY23 reporting period.
	C.3. Floatables Solids Monitoring				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
C.3.	*No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within the county. The permittee will implement the floatables monitoring program as follows:*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
C.3.a.	*Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.*	DPW, EMD, COD	Monitoring occurred quarterly at five locations.	*The initial annual report shall include an update on the development of the floatables monitoring program.*	
C.3.b.	*Monitoring shall be conducted once per quarter after program implementation.*	DPW, EMD, COD	Monitoring occurred quarterly at five locations.	*The second annual report shall include the monitoring protocols for the floatables monitoring program.*	
C.3.c.	*The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.*	DPW, EMD, COD	Plastic wrappers, plastic bags and plastic bottles continue to be the top three types of trash observed with disposable cups and cutlery slightly increasing for the period.	*Each following annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.*	Please refer to Appendix R for the FY23 Floatables Monitoring Summary.
	C.4. Structural and Source Controls Compliance Monitoring and Tracking				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
C.4.a.	*a) The permittee shall maintain an updated electronic database of all known permittee and privately maintained stormwater management (SWM) facilities. The database shall include the following:* *1) The SWM facility type, address, and latitude, and longitude (in decimal degrees);* *2) The total pervious and impervious acres treated;* *3) The date brought online (MMYYYY). If the date is unknown, the permittee shall use June 2005 as the date brought online for all previously existing SWM facilities;* *4) The hydrologic unit code (HUC 6) in which the SWM facility is located;* *5) The name of any impaired water segments within each HUC listed on the most recent 305(b)/303(d) Water Quality Assessment Integrated Report to which the SWM facility discharges;* *6) Whether the SWM facility is permitttee or privately maintained;* *7) Whether the SWM facility discharges into the permittee's MS4;* *8) Whether a maintenance agreement exists if the SWM is privately maintained; and* *9) The date of last inspection by permittee authorities. All known SWM facilities brought online during each reporting year shall be submitted with the appropriate annual report as an electronic file in one or the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department. No later than 36-months of the effective date of this state permit, the list shall be updated to include the required information for SWM facilities known to exist prior to the effective date of this state permit. The updated information shall be submitted with the fourth annual report.*	EMD	An electronic database containing all BMP/SWM facilities within Prince William County will be provided with this document when submitted. The database contains information on a facilities type, latitude and longitude, impervious and total acres treated, installation date, HUC 12, privately or permittee-maintained status, discharging MS-4 and dates of inspection and maintenance for all new facilities since July 2016.	•*Each annual report shall include a copy of the updated database in electronic format.* •*Each annual report shall include a summary of the program to ensure maintenance of private stormwater management facilities.* •*Each annual report shall include a summary of the program to ensure maintenance of stormwater management facilities maintained by the permittee.*	See Appendices H and I.
C.4.b.	*Facilities that solely provide peak flow control as required by the Chesterfield County Code are excluded from the requirements of this section. Inspection and maintenance requirements for these facilities shall be in accordance with all applicable state and local ordinances, regulations, and statutes.*	EMD		*The fourth annual report submitted under this permit shall include an updated list of stormwater management facilities existing prior to the effective date of this permit.*	
	D. TMDL ACTION PLAN AND IMPLEMENTATION				
	D.1. Chesapeake Bay Special Condition				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.1.	*The Commonwealth in its Phase I and Phase II Chesapeake Bay TMDL Watershed Implementation Plans (WIP) committed to a phased approach for MS4s permittees to implement necessary reductions. This state permit is consistent with the Chesapeake Bay TMDL and the Virginia Phase I and II WIPs to meet the Level 2 (L2) scoping run for existing developed lands as it represents an implementation of 5% of L2 as specified in the 2010 Phase I WIP. Conditions of future permits will be consistent with the TMDL or WIP conditions in place at the time of permit issuance.*				
D.1.a.	*Definitions* *The following definitions apply to this state permit for the purpose of the Special Condition for Discharges in the Chesapeake Bay Watershed:* *1) "Existing Sources" means pervious and impervious urban land uses served by the MS4 as of June 30, 2009.* *2) "New Sources" means pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009.* *3) "Transitional Sources" means regulated land disturbing activities which are temporary in nature and discharge through the MS4.* *4) "Pollutants of concern" or "POC" means total nitrogen, total phosphorus and total suspended solids.*				
D.1.b.	***Chesapeake Bay Watershed TMDL Planning***				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
	No later than 24-months after the effective date of this state permit, the permittee shall develop and submit to the Department for its review and acceptance an approvable phased Chesapeake Bay TMDL Action Plan that includes: *(a) A review of the current MS4 Program Plan including existing legal authorities and the permittee's ability to ensure compliance with this special condition;* *(b) Identifies any new or modified legal authorities, such as ordinances, permits, orders, contracts and inter-jurisdictional agreements, implemented or needing to be implemented to meet the requirements of this special condition;* *(c) The means and methods utilized to address discharges into the MS4 from new sources.* *(d) An estimate of the annual POC loads discharged from the existing sources as of June 30, 2009 based on the 2009 progress run. The permittee shall utilize Table 1 and multiply the total existing acres served by the MS4 on June 30, 2009 and the 2009 Edge of Stream (EOS)* *Loading Rate.* *(e) A determination of the total pollutant load reductions necessary to reduce the annual POC existing loads using Table 2 by multiplying the Total Existing Acres Served by MS4 by the First* *Permit Cycle Reduction in Loading Rate.* *(f) The means and methods, such as the*		• The Chesapeake Bay TMDL Action Plan was submitted to DEQ on November 22, 2016. • The Chesapeake Bay TMDL Action Plan became effective and enforceable on June 28,2017, when DEQ approved the plan.	*In accordance with PartI D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan no later than 24 months after the permit effective date.*	

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.1.b.1.	*(f) The means and methods, such as the management practices and retrofit programs that will be utilized to meet the required reductions identified in Part I.D.1.b)(1)(e) and a schedule to achieve those reductions. The schedule should include annual benchmarks to demonstrate the on-going progress in meeting the reductions. The means and methods implemented prior to July 1, 2009 shall not be credited towards meeting the required reductions identified in Part I.D.1.b)1)(e).* *(g) The means and methods to offset the increased loads from new sources initiating construction between July 1, 2009 and June 30, 2014 that disturb one acre or greater as a result of the utilization of an average land cover condition greater than 16% impervious cover for the design of post development stormwater management facilities. The permittee shall utilize Table 3 to develop the equivalent pollutant load for nitrogen and total suspended solids. The permittee shall offset 5% of the calculated increased load from these new sources during the permit cycle.* *(h) The means and methods to offset the increased loads from grandfathered projects in accordance with 9VAC25-870-48, that disturb one acre or greater that begin construction after July 1, 2014 where the project utilized an average land cover condition greater than 16% impervious cover in the design of post development stormwater management facilities. The permittee shall utilize Table 3 to develop the equivalent pollutant load for nitrogen and total suspended solids.* *(i) A list of future projects and associated acreage that qualify as grandfathered in accordance with 9VAC25-870-48.* *(j) An estimate of the expected cost to implement the necessary reductions during the permit cycle;* *(k) An opportunity for receipt and consideration of public comment on the draft Chesapeake Bay TMDL Action Plan; and,* *(l) A list of all comments received as a result of public comment and any modifications made to the draft Chesapeake Bay TMDL Action Plan as a result of the public comments.*	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.1.b.2.	*As part of development of the Chesapeake Bay TMDL Action Plan, the permittee shall consider use of the following:* *(a) Implementation of BMPs on unregulated lands provided the baseline reduction is subtracted from the total reduction prior to application of the reduction towards meeting the required reductions.* *(b) Utilization of stream restoration projects provided the baseline reduction from the unregulated acreage treated by the stream restoration project is subtracted from the total reduction prior to application of the reduction towards meeting the required reductions.* *(c) Establishment of a memorandum of understanding (MOU) with other MS4 permittees that discharge to the same or adjacent eight digit hydrologic unit within the same basin to implement BMPs collectively. The MOU shall include a mechanism for dividing the POC reductions created by BMP implementation between the cooperative MS4s.* *(d) Utilization of any pollutant trading or offset program in accordance with § 62.1-44. 19:20 through 62.1-44.19:23 et seq. of the Code of Virginia governing trading and offsetting;* *(e) A more stringent average land cover condition based on less than 16% impervious cover for new sources initiating construction between July 1, 2009, and June 30, 2014, and all grandfathered projects where allowed by law; and* *(f) Any BMPs installed after June 30, 2009, as part of a retrofit program may be applied towards meeting the required load reductions provided any necessary baseline reductions are not included.*				
D.1.b.3.	*The permittee shall address any modification to the TMDL or watershed implementation plan that occurs during the term of this state permit as part of its permit reapplication as required in Part II.M of this state permit.*				
D.1.b.4.	*The Chesapeake Bay TMDL Action Plan shall become effective and enforceable upon written approval from the Department.*				
D.1.c.	***Chesapeake Bay TMDL Action Plan Implementation***				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.1.c.1.	*The permittee shall implement the TMDL action required in Part I.D.1.b)1) of this state permit according to the schedule therein. Compliance with this requirement represents adequate progress for this state permit term towards achieving TMDL wasteload allocations consistent with the assumptions and requirements of the TMDL.*				
D.1.c.2.	*For the purposes of this state permit, the implementation of the following represents implementation to the maximum extent practicable and demonstrates adequate progress:* *(a) Implementation of turf and landscape nutrient management plans in accordance Part I.B.2.d);* *(b) Implementation of construction site runoff controls in Part I.B.2.a) in accordance with this state permit shall address discharges from transitional sources;* *(c) Implementation of the means and methods to address discharges from new sources in accordance with requirements in Part I.B.2.a) for post-construction runoff from areas of new development and development on prior developed lands to offset 5% of the total increase in POC loads between July 1, 2009 and June 30, 2014 required in Part I.D.1.b)1)(g) and to offset increases in the POC load from grandfathered projects initiating construction after July 1, 2014 prior to completion of the project as required in Part I.D.1.b)1)(h);; and, (d) Implementation of means and methods sufficient to meet 5% required reductions of POC loads from existing sources defined in this state permit in accordance with the Chesapeake Bay TMDL Watershed Implementation Plan as required in Part I.D.1.b)1)(e).*				
D.1.d.	***Annual Reporting Requirements***				
D.1.d.1.	*In accordance with Part I D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan.*	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.1.d.2.	*Each subsequent annual report shall included a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended soils.*	DPW, EMD, COD		*Each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.*	See Appendix S for the Chesapeake Bay TMDL Reductions Summary.
D.1.d.3.	*Each subsequent annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.*	DPW, EMD, COD		*Each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.*	See Appendix S for the Chesapeake Bay TMDL Reductions Summary.
D.1.d.4.	*Each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.*	DPW, EMD, COD			See Appendix S for the Chesapeake Bay TMDL Reductions Summary.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.1.d.5.	*The permittee shall include the following as part of its reapplication package due in accordance with Part II.M:* *(a) Documentation that sufficient control measures have been implemented (or documentation detailing that implementation will be complete by the expiration date of this state permit) to meet the compliance target identified in this Special Condition. If temporary credits or offsets have been purchased in order to meet the compliance target, the list of temporary reductions utilized to meet the 5% reduction in this state permit and a schedule of implementation to ensure a permanent 5% reduction shall be provided;* *(b) A draft second phase Chesapeake Bay TMDL Action Plan designed to reduce the existing POC loads by an additional seven times the required reductions in loading rates using Table 2 of Part I.D.1.b) of this state permit unless alternative calculations have been provided by the Commonwealth;* *(c) An additional 35% reduction in new sources developed between 2009 and 2014 and for which the land use cover condition was greater than 16%; and* *(d) Accounting for any modification to the applicable loading rate provided to the permittee as a result of TMDL modification.*	DPW, EMD, COD		*Each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.*	See Appendix S for the Chesapeake Bay TMDL Reductions Summary.
	D.2. TMDL Action Plans other than the Chesapeake Bay TMDL				

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.2.a.	*TMDL Action Plan Development* *The permittee shall maintain an updated MS4 Program Plan that includes TMDL Action Plans for pollutants in which wasteloads have been allocated to the MS4 in approved TMDLs. Approved TMDLs as of the effective date of this state permit are included in Attachment A of this state permit. TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is made to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL. Progress shall be demonstrated by representative and adequate monitoring or other methods (e.g. modeling) as described in Part I.D.2.b)5) below. These TMDL Actions Plans shall identify the best management practices and other interim milestone activities to be implemented during the remaining term of this state permit. The plan shall include an estimated end date for achieving the applicable wasteload allocations and, for planning purposes, a projection of BMPs and other implementation steps expected to address the WLA, outside of the permit term, as applicable.*	DPW, EMD, COD			
D.2.a.1.	*No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.*	DPW, EMD, COD	•TMDL Action Plans other than the Chesapeake Bay TMDL Action Plan were submitted to DEQ in December of 2016. • The TMDL Action Plans will become effective and enforceable upon written approval from DEQ.	*No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.*	
D.2.a.2.	*The TMDL Action Plans shall become effective and enforceable upon written notification from the Department.*	DPW, EMD, COD			
D.2.a.3.	*The TMDL Action Plans shall be incorporated by reference into this state permit.*	DPW, EMD, COD			
D.2.b.	*TMDL Action Plan content* *The permittee shall:*	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.2.b.1.	*Develop and maintain a list of its legal authorities such as ordinances, permits, order, specific contract language, and inter-jurisdictional agreements applicable to reducing the pollutant identified in a WLA;*	DPW, EMD, COD			
D.2.b.2.	*Identify and maintain an updated list of all additional management practices, control techniques and system design and engineering methods, beyond those identified in Part I.B of this state permit, that have been implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA;*	DPW, EMD, COD			
D.2.b.3.	*Enhance the public education and outreach and employee training programs to also promote methods to eliminate and reduce discharges of the pollutants identified in the WLA;*	DPW, EMD, COD			
D.2.b.4.	*Assess all significant sources of pollutant(s) from facilities of concern owned or operated by the MS4 operator that are not covered under a separate VPDES industrial stormwater permit and identify all municipal facilities that may be a significant source of the identified pollutant. For the purpose of this assessment, a significant source of pollutant(s) from a facility of concern means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL. (For example, a significant source of pollutant from a facility of concern for a bacterial TMDL would be expected to be greater at a dog park than at other recreational facilities where dogs are prohibited);*	DPW, EMD, COD			
D.2.b.5.	*Develop and implement a method to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs. The evaluation shall use any newly available information, representative and adequate water quality monitoring results, or modeling tools to estimate pollutant reductions for the pollutant(s) of concern from implementation of the MS4 Program Plan. Monitoring may include BMP, outfall, or in-stream monitoring, as appropriate, to estimate pollutant reductions. The permittee may conduct monitoring, utilize existing data, establish partnerships, or collaborate with other MS4 permittees or other third parties, as appropriate. This evaluation shall include assessment of the facilities identified in Part I.D.2.b.4) above. The methodology used for assessment shall be described in the TMDL Action Plan.*	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.2.b.6.	*Solicit public input on the draft TMDL Action Plan and consider public comments in development of the final TMDL Action Plan that is submitted to the Department for review and approval.*	DPW, EMD, COD			
D.2.c.	*This state permit shall be modified or alternatively revoked and reissued if any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the treatment works that are not consistent with the permit requirements*	DPW, EMD, COD			
D.2.d.	*Analytical methods for any monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the Environmental Protection Agency (EPA). Where an approved 40 CFR Part 136 method does not exist, the permittee shall use a method consistent with the TMDL.*	DPW, EMD, COD			
D.2.e.	*The permittee is encouraged to participate as a stakeholder in the development of any TMDL implementation plans applicable to their discharge. The permittee may incorporate applicable best management practices identified in the TMDL implementation plan in the MS4 Program Plan.*	DPW, EMD, COD			
	D.3. Annual Reporting Requirements.				
D.3.a.	*The permittee shall submit the required TMDL Action Plans to the Department for review and acceptance with the appropriate annual report associated schedule identified in this permit.*	EMD			
D.3.b.	*The permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.*	EMD		*The permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.*	See Appendix T for a summary of the implementation of the TMDL Action Plans.

MS4 Action ID	Permit Requirement	Responsible Party	2023 Program Plan Elements (July 1, 2022 through June 30, 2023)	Specific Reporting Requirement	2023 Annual Report (July 1, 2022 through June 30, 2023)
D.4.	*The permittee shall identify the best management practices and other steps that will be implemented during the next permit term as part of the permittee's reapplication for coverage as required under Part II.M. The permittee shall also evaluate and modify the estimated end date for achieving the applicable wasteload based on information acquired during the permit cycle.*	EMD			See Appendix T for a summary of the implementation of the TMDL Action Plans.
	E. ANNUAL REPORTING				
E.	*The permittee shall submit the annual report to the Department, no later than March 31 st of each year. The report shall cover the previous fiscal year from July 1st to June 30th and include the following separate sections:*		The annual reports will be submitted in accordance with the schedule laid out in the permit.		
E.1.	*Background Information* *a) The permittee and permit number of the program submitting the annual report;* *b) Any modifications to the MS4 Program Plan as a result of the annual report;* *c) The reporting dates for which the annual report is being submitted; and,* *d) Certification as per Part II.K.*		All annual reports will include the required background information.	*Each annual report shall include the required background information.*	
E.2.	*A summary of the implementation of each of the components established under Part I.B. and an evaluation of the effectiveness of each component. The permittee should attempt to limit any component's narrative summary to no longer than two-pages plus any necessary tables and figures.*		The annual reports will include a summary of components implemented and an evaluation of the effectiveness of each component.	*Each annual report shall include a summary of components implemented and an evaluation of the effectiveness of each component.*	See Section B above.
E.3.	*A summary report of the monitoring programs listed under Part I.C.*		The annual reports will include a summary of the monitoring programs listed under Part I.C.	*Each annual report shall include a summary report of the monitoring programs listed under Part I.C.*	See Appendix P.
E.4.	*A summary of the implementation of each component listed under Part I.D.*		The annual reports will include a summary of the implementation of components under Part I.D.	*Each annual report shall include a summary of the implementation of each component listed under Part I.D.*	See Appendix T for a summary of the implementation of the TMDL Action Plans.
E.5.	*The Specific Reporting Requirements identified in this state permit.*		The annual reports will include the Specific Reporting Requirements.	*Each annual report shall include the Specific Reporting Requirements identified in this state permit.*	The Specific Reporting Requirements identified in the permit are contained in the Specific Reporting Requirement column of this table.

Appendix A

Site Inspector and Plan Reviewer Certifications

Name	Certification	Number	Exp. Date
Vijay Dindigal	Professional Engineer	402048764	6/30/2025
	Land Surveyor	403002810	6/30/2024
	GISP	67810	2/25/2025
	DEQ-Dual Combined Adminstrator	DCA 0563	11/12/2025
Robert Cook	DEQ Dual Inspector	DIN0533	7/11/2025
	DEQ E/S Program Admin	374	5/31/2025
	VDOT Asphalt I	n/a	12/31/2027
	VDOT Asphalt II	n/a	12/31/2028
Shawn Wray	Dual Inspector	DIN0927	10/15/2024
	Program Admin E&S	ESPA0257	4/14/2025
	Nassco Cert	U-0319-070305018	2/7/2025
Jalal Qaradaghi	DEQ Dual inspector	DIN0536	11/30/2025
	VDOT Asphalt I	n/a	5/31/2027
Stefan Gitchev	DEQ Dual Inspector	DIN0535	10/3/2025
	DEQ Dual Program Admin	DPA0172	7/29/2027
	VDOT Soils & Aggregate	n/a	12/31/2028
	VDOT Asphalt I	n/a	12/31/2026
	VDOT Asphalt II	n/a	12/31/2027
Michael “Mick” Tilley	DEQ Dual Inspector	DIN1234	11/4/2027
	VDOT Soils & Aggregate	n/a	12/31/2027
	VDOT Asphalt I	n/a	12/31/2027
	VDOT Asphalt II	n/a	12/31/2028
Roger Barnes	DEQ Dual Inspector	DIN0220	10/27/2024
Philip Darko	DEQ Dual Inspetor	DIN0538	1/28/2025
	DEQ Dual Program Admin	DPA0154	11/7/2023
	VDOT Asphalt II	n/a	6/1/2027
	VDOT Asphalt I	n/a	6/1/2027
Adnan Manzoor	DEQ E&S Inspector	none	
	DEQ SWM Inspector	none	
	VDOT Asphalt I	n/a	12/31/2027
	VDOT Soils & Aggregate	n/a	12/31/2026
	ACI Concrete Field	2159575	2/11/2027
Thomas French	DEQ E&S Control Inspector	ESIN2395	10/1/2025
	DEQ SWM Inspector	SWIN2531	10/25/2025
Amadu Jalloh-Jamboria	DEQ E&S Cert	ESIN2371	8/27/2025
	VDOT Work Zone Cert	60923316	6/30/2027

	VDOT GR Cert	N/A	
	OSHA 10-hour Cert	N/A	
	Nuclear Gauge Cert	23011-168-667-1388	6/13/2026
	DEQ SWM Cert	SWIN2754	7/28/2026

COMMONWEALTH OF VIRGINIA

State Water Control Board

1111 East Main Street, Richmond, Virginia 23219

Stormwater Management

Plan Reviewer

Youssef Djebbari

CERTIFICATE NUMBER
SWPR0217

EXPIRATION DATE
4/18/2025

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

This certificate is for your records and should be kept in a safe location. Please detach the above certificate and the two wallet size cards below. It is your responsibility to ensure that your certification is kept current and that you meet the requirements for re-certification before the expiration date.

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Program Administrator

Youssef Djebbari

CERTIFICATE NUMBER
SWPA0165

EXPIRATION DATE
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DEQ
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Expiration Date
9/3/2025

COMMONWEALTH OF VIRGINIA

Department of Environmental Quality

Stormwater Management

Plan Reviewer

Michael Kheir EL-Hage

CERTIFICATE NUMBER
SWPR0213

EXPIRATION DATE
4/2/2025

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Stormwater Management
Plan Reviewer

Michael Kheir EL-Hage

Certificate Number	Expiration Date
SWPR0213	4/2/2025

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Stormwater Management
Plan Reviewer

Michael Kheir EL-Hage

Certificate Number	Expiration Date
SWPR0213	4/2/2025

COMMONWEALTH OF VIRGINIA

Department of Environmental Quality

Erosion and Sediment Control

Combined Administrator

Michael Kheir EL-Hage

CERTIFICATE NUMBER
304

EXPIRATION DATE
11/30/2026

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Erosion and Sediment Control

Combined Administrator

Michael Kheir EL-Hage

Certificate Number	**Expiration Date**
304	11/30/2026

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Erosion and Sediment Control

Combined Administrator

Michael Kheir EL-Hage

Certificate Number	**Expiration Date**
304	11/30/2026

Appendix B

Land Disturbance Permits Issued

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
BRADLEY FOREST SEC 3 A SDR2017-00039 LND2023-00325	7793-49-3821 11720 SMITHFIELD RD MANASSAS, VA 20112	LIBERIA INVESTMENTS LLC		16.700	03/22/2023
BRIAR PATCH ESTATES - EROSION & SEDIMENT CONTROL SDR2021-00071 LND2023-00048	7394-66-0674 10666 LONESOME RD NOKESVILLE, VA 20181	COWNE, BARTON & DENISE		6.410	07/12/2022
PRESERVE AT LONG BRANCH SEC 1 SDR2022-00022 LND2023-00174	7792-99-5798 12775 CLASSIC SPRINGS DR NOKESVILLE, VA 20181	STANLEY MARTIN HOMES, LLC		46.760	12/05/2022
OLD DOMINION MEADOWS SDR2022-00026 LND2023-00299	7393-38-7954 12000 GORE MEADOW DR NOKESVILLE, VA 20181	SCHOOLS & TOWNSEND	7039945776	2.330	02/15/2023
DARBYDALE SDR2022-00034 LND2023-00026	8191-27-8052 14373 NORTH PARK CT WOODBRIDGE, VA 22193	DISE CONSTRUCTION, INC		14.280	07/21/2022
PRESERVE AT LONG BRANCH SEC 2 SDR2022-00035 LND2024-00040	7792-99-5798 12775 CLASSIC SPRINGS DR NOKESVILLE, VA 20181	LAND DESIGN CONSULTANTS	7036804585	18.470	06/16/2023
POTOMAC SHORES LANDBAY 4 SEC 3 SDR2022-00064 LND2023-00216	8388-39-0912 18100 COCKPIT POINT RD DUMFRIES, VA 22026	J2 ENGINEERS, INC.		44.380	01/31/2023
BRADLEY SQUARE SEC 10 AMENITY REVISION SDR2022-00067 LND2023-00166 LND2023-00112	7794-79-4604 8907 OLD DOMINION DR MANASSAS, VA 20110	STANLEY MARTIN HOMES, LLC		0.120	09/14/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
DVCC - GATEHOUSE RESIDENTIAL SDR2022-00068 LND2023-00236	7298-49-3467 5530 VELTRI TER HAYMARKET, VA 20169	TOLL BROS., INC	2159388000	2.600	01/20/2023
POTOMAC SHORES LANDBAY 9 BLOCK 2 SDR2022-00069 LND2023-00094	8389-44-9146 1800 POTOMAC SHORES PKWY DUMFRIES, VA 22026	J2 ENGINEERS, INC.		11.460	09/26/2022
WHISPERING DOVE ESTATES SDR2022-00070 LND2023-00209	7994-82-7717 11450 WHISPERING DOVE PL MANASSAS, VA 20112	GSB LAND LLC		17.200	01/30/2023
RICHMOND STATION LANDBAY C SDR2023-00001 LND2023-00342	7895-29-6637 8275 KNIGHT STATION WAY MANASSAS, VA 20110	RICHMOND STATION VENTURES LC		1.050	06/12/2023
BARRON HEIGHTS SDR2023-00005 LND2023-00312	8189-52-2251 17570 BARRON HEIGHTS RD DUMFRIES, VA 22025	LAND DESIGN CONSULTANTS	7036804585	0.240	10/25/2022
BRADLEY SQUARE SEC 11A SDR2023-00013 LND2023-00149	7794-78-3796 10500 HINTON WAY MANASSAS, VA 20110	STANLEY MARTIN HOMES LLC	7033467005	1.910	11/04/2022
WILLIAMS PROPERTY SDR2023-00016 LND2024-00024	7297-27-9016 6702 SOMERSET CROSSING DR HAYMARKET, VA 20169	THE ENGINEERING GROUPE, INC.		16.660	05/04/2023
CARTERS MILL PH 4 SDR2023-00025 LND2023-00280	7298-32-7324 15605 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE HOME COMPANY, LLC	7032510258	19.090	04/05/2023
CARTERS MILL PH 5 SDR2023-00026	7298-32-7324 15605 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE HOME COMPANY, LLC	7032510258	5.730	04/05/2023

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2023-00281					
CARTERS MILL PH 3 SDR2023-00034 LND2024-00022	7298-30-6082 6579 PETUNIA TER HAYMARKET, VA 20169	PLUTE HOME COMPANY, LLC	7039282393	17.900	06/13/2023
BRICKYARD LOT 1 BUILDING 1 SPR2018-00197 LND2023-00295	7695-53-7917 10000 BRICKYARD WAY MANASSAS, VA 20110	URBAN LTD	7036428080	53.100	02/02/2023
UNIVERSITY BLVD EXT EDMONSTON DR TO SUDLEY MANOR SPR2020-00067 LND2023-00080 LND2021-00171	7596-41-1290 12000 SUDLEY MANOR DR MANASSAS, VA 20109	PRINCE WILLIAM COUNTY TRANSPORTATION	7037925276	12.950	08/25/2022
PARK VALLEY CHURCH EXPANSION PH III SPR2020-00354 LND2023-00168	7299-77-8335 4500 WAVERLY FARM DR HAYMARKET, VA 20169	PARK VALLEY CHURCH	5712612136	9.320	08/03/2022
POTOMAC SHORES BLOCK 8 - PARCEL V SPR2021-00037 LND2024-00048	8389-42-8163 1725 THOROUGHGOOD DR DUMFRIES, VA 22026	POTOMAC SHORES RESIDENTIAL ASSOCIATION	7034931447	3.720	04/24/2023
PAGE LANE RIDGHT TURN LANE - PI PLAN SPR2021-00134 LND2023-00335	7499-84-1172 4804 SUDLEY RD CATHARPIN, VA 20143	PWC DEPT OF TRANSPORTATION		1.470	04/06/2023
YORKSHIRE VILLAGE, BLOCK 4, LOT 25, 16 & 17 SPR2021-00141 LND2023-00306	7897-21-3391 7614 CENTREVILLE RD MANASSAS, VA 20111	AUTO GIANTS - MITSUBISHI MOTORS	5707193715	1.240	12/05/2022
LATSIOS PROPERTY PH 1 SPR2021-00254 LND2023-00062	7497-26-9610 13701 UNIVERSITY BLVD GAINESVILLE, VA 20155	GAINESVILLE GGP TRUST		17.360	08/17/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
REDSTONE INDUSTRIAL PARK SPR2021-00339 LND2023-00060	7595-79-5266 9232 HORNBAKER RD MANASSAS, VA 20109	MATAN COMPANIES	3016949200	22.520	08/02/2022
PW PARKWAY INTERCHANGE @ BALLS FORD ROAD SPR2022-00008 LND2023-00067	7496-87-7828 8106 DEVLIN RD BRISTOW, VA 20136	RINKER DESIGN ASSOCIATES, PC	7033349288	33.700	09/08/2022
TRACTOR SUPPLY COMPANY SPR2022-00012 LND2023-00240 LND2023-00331	8091-66-4308 14700 SILVERDALE DR WOODBRIDGE, VA 22193	BL COMPANIES	7048517102	4.450	02/24/2023
POTOMAC SHORE TOWN CENTER BLOCK 5 MULTIFAMILY SPR2022-00020 LND2024-00011	8389-63-0024 1542 CHERRY HILL RD DUMFRIES, VA 22026	HARBOR STATION COMMUNITIES, LLC	9148752738	4.650	10/20/2022
PRINCE WILLIAM COMMERCE CENTER SPR2022-00061 LND2023-00111	7895-24-5376 9845 LIBERIA AVE MANASSAS, VA 20110	PROGRESSIVE INVESTMENTS LLC	7033356060	16.100	08/05/2022
VILLAGE PLACE TECHNOLOGY PARK SPR2022-00071 LND2023-00073	7397-36-4911 14403 JOHN MARSHALL HWY GAINESVILLE, VA 20155	CTP-I, LLC	3477560879	45.420	08/06/2022
PARK VALLEY CHURCH SPR2022-00106 LND2023-00069	7299-77-8335 4500 WAVERLY FARM DR	PARK VALLEY CHURCH	5712612136	0.500	08/04/2022
HOLY FAMILY ACADEMY PH II SPR2022-00121 LND2023-00233	7894-88-4786 10580 PINEVIEW RD MANASSAS, VA 20111	HOLY FAMILY ACADEMY	7033685679	0.970	07/19/2022
BRISTOW SHOPPING CENTER PAR A-1C SPR2022-00126	7595-40-4899 10501 BRISTOW CENTER DR BRISTOW, VA 20136	BRISTOW PADS A-1C, LLC	5713821230	1.050	07/07/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2023-00027					
ROUTE 55 - PUBLIC IMPROVEMENTS SPR2022-00133 LND2023-00322	7397-18-0859 14700 GAP WAY GAINESVILLE, VA 20155	CTP-I, LLC	3477560879	0.560	04/19/2023
ST. KATHARINE DREXEL CHURCH PH 1A SPR2022-00150 LND2023-00222	7200-81-4177 15000 WATERFALL RD HAYMARKET, VA 20169	IMEG CORP.		6.570	01/16/2023
GAINESVILLE CROSSING DATA CENTER SPR2022-00152 LND2023-00262	7497-56-0118 13700 UNIVERSITY BLVD GAINESVILLE, VA 20155	BOWMAN CONSULTING GROUP, LTD. MANASSAS PETTY CASH		17.500	09/03/2022
GAINESVILLE TECH PARK SPR2022-00161 LND2023-00196	7496-68-8840 8125 PINEY BRANCH LN BRISTOW, VA 20136	ST.JOHN ESCROW CO INC		20.750	10/25/2022
DABNEY DISTRIBUTION CENTER SPR2022-00192 LND2023-00103	8492-04-2305 13600 DABNEY RD WOODBRIDGE, VA 22191	DABNEY ROAD OWNER LLC	2017873353	7.900	09/16/2022
FOUR SEASONS AT VIRGINIA CROSSING SPR2022-00193 LND2023-00148	8192-91-1573 13950 ENGLEFIELD DR 303 WOODBRIDGE, VA 22193	KHOVNANIAN HOMES		18.070	10/17/2022
CAMBRIA LEXINGTON VALLEY SPR2022-00208 LND2023-00253	7596-35-9200 11975 LEXINGTON VALLEY DR MANASSAS, VA 20109	CAMBRIA DC HOLDINGS, LLC	9528734865	4.250	12/14/2022
NEPALI AMERICAN COMMUNITY CENTER SPR2022-00214 LND2023-00043	7697-45-6391 10501 BALLS FORD RD MANASSAS, VA 20109	NEPALI AMERICAN COMMUNITY CENTER	2408212137	0.101	08/04/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
COSTCO AT MANASSAS - ADA IMPROVEMENT SPR2022-00221 LND2024-00031	7697-30-2206 10701 SUDLEY MANOR DR MANASSAS, VA 20109	COSTCO WHOLESALE C/O MG2 CORPORATION	2069626830	0.350	07/20/2022
MCDONALDS AT JEFFERSON PLAZA SPR2022-00222 LND2023-00223	8392-83-5814 13761 JEFFERSON DAVIS HWY WOODBRIDGE, VA 22191	KIMLEY-HORN AND ASSOCIATES	7036741317	1.130	07/28/2022
ENVIRONMENTAL REMEDIATION PLAN GAINESVILLE ASSOC SPR2022-00226 LND2023-00118	7497-32-5206 5845 WELLINGTON RD GAINESVILLE, VA 20155	GAINESVILLE ASSOCIATES, LLC	2029652424	185.500	07/26/2022
POTOMAC SHORES - VRE STATION SPR2022-00228 LND2023-00190	8389-54-2488 1600 RIVERBLUFF AVE DUMFRIES, VA 22026	HARBOR STATION COMMUNITIES	7034931747	8.300	01/05/2023
POTOMAC SHORES TOWN CENTER BLOCK 3 SPR2022-00237 LND2023-00126	8389-44-9959 1707 DUNNINGTON PL DUMFRIES, VA 22026	HARBOR STATION COMMUNITIES LLC	7039671572	11.200	09/29/2022
BRENTSVILLE DISTRICT HIGH SCHOOL SPR2022-00245 LND2023-00057	7493-86-8825 12109 ADEN RD NOKESVILLE, VA 20181	PRINCE WILLIAM COUNTY PUBLIC SHOOLS	5717199313	7.140	08/04/2022
POPEYE'S LOUISIANA KITCHEN SPR2022-00254 LND2023-00095	8189-68-5008 16840 DUMFRIES RD DUMFRIES, VA 22025	REJNAJ OF DUMFRIES LLC	3016255920	0.670	07/26/2022
NEABSCO COMMON SPR2022-00260 LND2023-00054	8291-82-1098.00 2570 NEABSCO COMMON PL WOODBRIDGE, VA 22191	DREES HOMES		2.630	08/19/2022
INNOVATION EXECUTIVE CENTER - MANASSAS DC-2 & DC-3 SPR2022-00267	7695-48-5745 9420 GODWIN DR MANASSAS, VA 20110	QTS INVESTMENT PROPERTIES MANASSAS II LLC	2144708874	24.090	09/13/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2023-00072					
9308 DEVLINS GROVE PLACE SPR2022-00276 LND2023-00089	7495-68-3591 9308 DEVLINS GROVE PL BRISTOW, VA 20136	EXIHOMES, LLC	7038610966	0.180	08/25/2022
POWELLS CREEK STREAM RESTORATION SPR2022-00281 LND2023-00165	8190-94-4678 16200 TIMID CREEK CT DUMFRIES, VA 22025	PWC ENVIRONMENTAL SERVICES	7037925534	15.500	11/04/2022
BENEDICTINE SISTERS OF VIRGINIA - COLUMBARIUM ADD SPR2022-00291 LND2023-00179	7495-98-0459 9535 LINTON HALL RD BRISTOW, VA 20136	BENEDICTINE SISTERS OF VA INC	5714282502	0.100	09/16/2022
PRINCE WILLIAM RENEWABLE NATURAL GAS SPR2022-00292 LND2023-00044	7991-09-6721 14811 DUMFRIES RD MANASSAS, VA 20112	PRINCE WILLIAM RNG LLC	3464359756	3.170	07/27/2022
SOUTH POINT PHASE 2 SPR2022-00295 LND2023-00250	7596-17-7737 8300 BUCKEYE TIMBER DR MANASSAS, VA 20109	SOUTH POINT PHASE II LLC	4432855501	21.590	01/26/2023
CHICK-FIL-A PRINCETON WOODS SPR2022-00300 LND2023-00336	8289-27-6909 3350 PINE BLUFF DR DUMFRIES, VA 22026	BOHLER	5403494500	2.230	04/21/2023
BRENTSVILLE HIGH SCHOOL STADIUM TOILET BUILDING SPR2022-00302 LND2023-00055	7493-86-8825 12109 ADEN RD NOKESVILLE, VA 20181	PRINCE WILLIAM COUNTY PUBLIC SHOOLS	5717199313	0.930	08/17/2022
PROJECT MANGO PH 1 - REVISION FOR A STAGING AREA SPR2022-00303 LND2023-00051	7496-47-2202 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC	5417055257	27.020	07/21/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
BETHLEHEM ROAD - STORAGE YARD REVISION DECANT ADD SPR2022-00307 LND2023-00139	7597-72-7231 7512 BETHLEHEM RD MANASSAS, VA 20109	EURO GROUP LLC	5712200185	0.300	10/27/2022
TACKETT'S MILL CAR WASH - MINOR SPR2022-00326 LND2023-00146	8393-10-4281 12831 HARBOR DR WOODBRIDGE, VA 22192	SHAD HOLDING LLC		0.100	07/11/2022
LATSIOS INDUSTRIAL - REVISION SPR2022-00333 LND2023-00061	7497-54-1947 12875 RANDOLPH RIDGE LN MANASSAS, VA 20109	BUCHANAN PARTNERS, LLC	3014170510	10.250	08/11/2022
SUBURBAN PROPANE OFFICE RENOVATION SPR2022-00337 LND2023-00084	7397-64-1571 14111 DAVES STORE LN GAINESVILLE, VA 20155	CLAY CONSTRUCTION	5712518955	0.030	09/13/2022
MONTCLAIR/FOUR SEASONS WATER IMP PROJ SPR2022-00340 LND2023-00206	8189-98-1630 17361 FOUR SEASONS DR DUMFRIES, VA 22025	PRINCE WILLIAM COUNTY SERVICE AUTHORITY	7033934474	0.940	02/02/2023
BROAD RUN INDUSTRIAL PARK LOT1B SPR2022-00341 LND2023-00204	7595-69-4800 11138 INDUSTRIAL RD MANASSAS, VA 20109	ALBRITE III, CLEIL	7039301625	3.690	12/05/2022
NOKESVILLE SEWAGE PUMP STATION REPLACEMENT SPR2022-00345 LND2023-00076	7493-68-2025 12825 FITZWATER DR NOKESVILLE, VA 20181	PWC SERVICE AUTHORITY		0.170	08/10/2022
GAINESVILLE CROSSING DATA CENTER PH 1 SPR2022-00346 LND2023-00277	7497-56-0118 13700 UNIVERSITY BLVD GAINESVILLE, VA 20155	BOWMAN	7035308093	65.650	12/14/2022
PRINCEDALE APARTMENTS SPR2022-00363	8092-27-5422 13362 PRINCEDALE DR WOODBRIDGE, VA 22193	THE FRANKLIN JOHNSTON GROUP	7577934397	10.370	02/27/2023

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2023-00239					
PROJECT GAINESVILLE SPR2022-00364 LND2023-00272	7497-41-7199 7751 DEACON FALLS DR GAINESVILLE, VA 20155	EE REED EAST COAST, LLC	5713401494	46.710	11/04/2022
NVA13 SPR2022-00386 LND2023-00297	7696-31-7330 9101 FREEDOM CENTER BLVD MANASSAS, VA 20110	SI NVA13 LLC	6304300338	12.290	04/25/2023
POTOMAC SHORES FISHING PIER AND MARINA PARK SPR2022-00390 LND2023-00189	8388-79-8558 1285 CHERRY HILL RD DUMFRIES, VA 22026	BIDDLE REAL ESTATE VENTURES		8.770	01/10/2023
PARKWAY 66 REVISION 3 SPR2022-00393 LND2023-00038	7597-03-6373 7413 CUSHING RD MANASSAS, VA 20109	RETAIL BUSINESS SERVICES	3043418946	12.560	07/27/2022
WOODBINE CHURCH & CEMETERY SPR2022-00397 LND2023-00263	7892-49-9992 12914 CANOVA DR MANASSAS, VA 20112	EASTERN MEMORIALS, LLC	7033930999	0.270	09/06/2022
MY CRAVINGZ 720 SQUARE FOOT RESTAURANT ADDITION SPR2022-00399 LND2023-00071	7697-34-2573 7381 SUDLEY RD MANASSAS, VA 20109	MY CRAVINGZ LLC		0.017	09/16/2022
NORTH WOODBRIDGE MOBILITY IMPROVEMENTS SPR2022-00402 LND2023-00349	8492-08-2272 1051 RIVER MILL LOOP WOODBRIDGE, VA 22191	PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION	7037926822	3.670	06/20/2023
ANNAPOLIS WAY PI PLAN - POND GRADING REVISION SPR2022-00414 LND2023-00137	8492-08-4286 13021 DESTINATION PL WOODBRIDGE, VA 22191	PWC DEPARTMENT OF TRANSPORTATION	7037926825	6.000	10/25/2022

PUBLIC WORKS - ENVIRONMENTAL SERVICES

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
TRANQUILITY GARDEN AT PARKSIDE MIDDLE SCHOOL SPR2022-00415 LND2023-00022	7896-05-3215 8602 MATHIS AVE MANASSAS, VA 20110	PRINCE WILLIAM COUNTY PUBLIC SHOOLS	5717199313	0.038	07/14/2022
INNOVATION EXECUTIVE CENTER - MANASSAS DC 6 SPR2022-00421 LND2023-00163	7695-47-4075 9540 GODWIN DR MANASSAS, VA 20110	QTS INVESTMENTS PROPERTIES MANASSAS LLC		7.330	10/07/2022
CABELA'S OUTPARCEL PARKING LOT SPR2022-00432 LND2023-00227	7397-94-5516 5351 WELLINGTON BRANCH DR GAINESVILLE, VA 20155	PETERSON DEVELOPMENT COMPANIES LC		1.630	02/10/2023
PROJECT MANGO PH 1 SPR2022-00439 LND2023-00035	7496-47-2202 8227 LINTON HALL RD BRISTOW, VA 20136	NOVA MANGO FARMS, LLC	8046971314	96.100	07/28/2022
VIRGINIA MEADOWS LOTS 16A AND 17A SPR2023-00003 LND2023-00186	7596-26-8037 8461 VIRGINIA MEADOWS DR MANASSAS, VA 20109	BECKNELL INDUSTRIAL	7083751367	1.590	11/28/2022
PRINCE WILLIAM COMMERCE CENTER SPR2023-00004 LND2023-00041	7895-24-5376 9845 LIBERIA AV	CARE INVESTMENTS GROUP, LLC	7033356060	0.600	08/15/2022
PROJECT MANGO PHASE 2 SPR2023-00007 LND2023-00224	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	96.940	02/06/2023
KOONS HYUNDAI EXPANSION SPR2023-00022 LND2023-00123	8391-36-6375 1880 OPITZ BLVD WOODBRIDGE, VA 22191	KOONS AUTOMOTOTIVE COMPANY	7036746492	2.090	10/12/2022
8900 FREEDOM SPAN 1 - YELLOW ROUTE FIBER CONDUIT SPR2023-00025 LND2023-00266	7696-32-1228 8900 FREEDOM CENTER BLVD MANASSAS, VA 20110	METRODUCT SYSTEMS VA LLC	7579693607	0.072	12/21/2022

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Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
PRINCE WILLIAM COMMERCE CENTER SPR2023-00026 LND2023-00293	7895-24-5376 9845 LIBERIA AV	PROGRESSIVE INVESTMENTS LLC		15.265	02/28/2023
JAYSE WAY ACCESS ROAD SPR2023-00029 LND2023-00256	7593-14-5905 12451 JAYSE WAY NOKESVILLE, VA 20181	M&F CONCRETE INC		5.330	03/20/2023
LOMOND VILLAGE - PI PLAN SPR2023-00034 LND2023-00346	7696-59-5040 8050 WILLIAMSON BLVD MANASSAS, VA 20109	ATAPCO LOMOND LLC	5713342067	8.330	06/08/2023
NEABSCO POTOMAC COMMUTOR PARKING GARAGE SPR2023-00040 LND2023-00311	8291-96-6718 2501 OPITZ BLVD WOODBRIDGE, VA 22191	PRINCE WILLIAM COUNTY TRANSPORTATION	7037925537	10.440	05/19/2023
FIRESTONE PARK CENTER SPR2023-00041 LND2023-00278	7596-27-4830 8501 BUCKEYE TIMBER DR	BOWMAN	7033028701	5.860	03/14/2023
LANDING AT MASON'S BRIDGE SPR2023-00044 LND2023-00332	8492-08-2272 13150 MASONS BRIDGE RD WOODBRIDGE, VA 22191	LAWSON COMPANIES	7579658744	12.120	05/09/2023
12905 FITZWATER DRIVE SPR2023-00054 LND2023-00065	7493-58-6856 12905 FITZWATER DR NOKESVILLE, VA 20181	LAUREN M SIMON REALTY LLC	2177141229	0.987	09/06/2022
PAT WHITE COMMUNITY CENTER SPR2023-00062 LND2023-00063	7697-62-2419 10501 COPELAND DR MANASSAS, VA 20109	PWC PARKS & RECREATION	571-233-0211	0.046	09/07/2022
LEXINGTON VALLEY DRIVE - PARCEL B3A SPR2023-00068 LND2024-00020	7596-45-1974 11875 LEXINGTON VALLEY DR MANASSAS, VA 20109	ASIDD LLC	8773857785	4.100	06/14/2023

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
RAISING CANE'S MANASSAS SPR2023-00069 LND2024-00012	7895-27-8091 9501 LIBERIA AVE MANASSAS, VA 20110	KIMLEY-HORN AND ASSOCIATES	7036741317	0.990	06/26/2023
COVANCE SPR2023-00073 LND2023-00178	7695-36-6111 10675 UNIVERSITY BLVD MANASSAS, VA 20110	STACK INFRASTRUCTURE, LLC	5712634119	80.730	12/30/2022
INNOVATION TOWN CENTER SPR2023-00081 LND2023-00182	7596-92-6825 8226 WELLINGTON RD MANASSAS, VA 20109	STANLEY MARTIN HOMES, LLC		31.760	11/08/2022
234 BRENTSVILLE INTERCHANGE - PI PEDESTRIAN BRIDGE SPR2023-00082 LND2023-00197	7794-76-1613 10804 DUMFRIES RD MANASSAS, VA 20112	PWC DOT	7037928469	80.380	01/24/2023
DUNKIN BAKERY SPR2023-00083 LND2023-00220	7596-46-3410 11825 LEXINGTON VALLEY DR MANASSAS, VA 20109	VIGARIO MANAGEMENT CORP	2404815441	2.540	12/01/2022
PROJECT MANGO PH 1 SPR2023-00101 LND2023-00091	7496-47-2202 8227 LINTON HALL RD BRISTOW, VA 20136	NOVA MANGO FARMS, LLC	8046971314	96.100	09/21/2022
PROJECT MANGO PHASE 3 SPR2023-00103 LND2023-00208	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	BOHLER ENGINEERING VA LLC		35.170	01/23/2023
MOUNTCASTLE TURCH FUNERAL HOME CREMATORY SPR2023-00110 LND2023-00101	8392-86-8761 13318 OCCOQUAN RD WOODBRIDGE, VA 22191	MOUNTCASTLE TURCH FUNERAL HOME & CREMATORY, INC	70368012334	0.310	10/05/2022
MERRITT I-66 BUSINESS PARK SPR2023-00114	7597-34-3769 11900 BALLS FORD RD	MERRITT LI LLC	7038582725	43.500	02/06/2023

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07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2023-00303					
NVA13 SPR2023-00116 LND2023-00157	7696-31-7330 9101 FREEDOM CENTER BLVD MANASSAS, VA 20110	STACK INFRASTRUCTURE	7038877376	11.170	11/08/2022
PROJECT MANGO PH 1 SPR2023-00124 LND2023-00144	7496-47-2202 8227 LINTON HALL RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	96.100	10/31/2022
KESSINGER HUNTER BLDG VA3, VA4 & VA5 SPR2023-00149 LND2023-00321	7596-66-0725 11560 HAYDEN RD MANASSAS, VA 20109	IRON MOUNTAIN	4016365689	67.440	06/01/2023
BROAD RUN INDUSTRIAL PARK - LOT 1C SPR2023-00154 LND2023-00183	7595-68-7096 11132 INDUSTRIAL RD MANASSAS, VA 20109	11132 INDUSTRIAL ROAD ASSOCIATES, LLC	5712925333	2.060	12/30/2022
VIRGINIA GATEWAY SOUTH STORAGE SPR2023-00158 LND2023-00237	7397-52-1183 14240 CHARIS AVE GAINESVILLE, VA 20155	GATEWAY SOUTH LC	7036317552	5.050	03/03/2023
PROJECT MANGO PH 1 SPR2023-00166 LND2023-00154	7496-47-2405 13005 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS, LLC	8046971314	96.100	11/01/2022
LATSIOS PROPERTY PH 1 SPR2023-00170 LND2023-00330	7497-26-9610 13701 UNIVERSITY BLVD GAINESVILLE, VA 20155	GAINESVILLE GGP	3014710510	17.180	05/11/2023
PROJECT MANGO PHASE 2 - OSP TELECOM P.I. PLAN SPR2023-00191 LND2023-00225	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	0.580	12/06/2022

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Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
AUTOZONE AT REGENCY BRAEMAR PH II SPR2023-00192 LND2023-00214	7495-78-8127 9410 LINTON HALL RD BRISTOW, VA 20136	AUTOZONE DEVELOPMENT LLC	9014957625	0.970	02/13/2023
POTOMAC SHORES LANDBAY 5 SEC 1 & 2 - REC CTR SPR2023-00193 LND2023-00246	8389-40-1677 1780 AUTUMN MAPLE LEAF DR DUMFRIES, VA 22026	POTOMAC SHORES RESIDENTIAL ASSOCIATION	7034931447	1.600	03/09/2023
COVANCE - TRAILER PERMITS SPR2023-00199 LND2023-00193	7695-17-9607 9680 INNOVATION DR MANASSAS, VA 20110	STACK INFRASTRUCTURE	7039948551	79.990	12/06/2022
JPM CHASE BRISTOW EXISTING BANK REMODEL SPR2023-00205 LND2023-00284	7595-41-1679 10260 BRISTOW CENTER DR BRISTOW, VA 20136	BOHLER	5403494500	0.035	12/27/2022
AVANTI INNOVATION PH 2 SPR2023-00210 LND2023-00252	7595-76-2307 9590 HORNBAKER RD MANASSAS, VA 20109	SI NVA02 LLC	8084647844	25.260	02/09/2023
HAYDEN ROAD ABANDONMENT PI PLAN - EGP SPR2023-00212 LND2024-00010	7596-65-1421 7729 WELLINGTON RD MANASSAS, VA 20109	IRON MOUNTAIN DATA CENTERS, LLC	5183895738	10.500	02/14/2023
NTT GLOBAL DATA CENTER VA10 SPR2023-00224 LND2023-00260	7397-65-0198 14300 JOHN MARSHALL HWY GAINESVILLE, VA 20155	NTT GLOBAL DATA CENTER VA10, LLC	3479464736	76.300	03/04/2023
MANASSAS CORPORATE CENTER DATA CENTER BLDG 2 SPR2023-00226 LND2023-00313	7694-87-3694 10100 HARRY J PARRISH BLVD MANASSAS, VA 20110	LAND DESIGN INC	5404543190	5.900	02/06/2023
PWCPS - WOODBRIDGE AREA ELEMENTARY SCHOOL SPR2023-00234	8392-62-6845 1550 PRINCE WILLIAM PKWY WOODBRIDGE, VA 22191	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037918717	11.000	01/21/2023

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Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2023-00205					
FLOOR AND DECOR - MANASSAS MALL SPR2023-00235 LND2023-00347	7696-66-3688 8200 SUDLEY RD MANASSAS, VA 20109	KIMLEY-HORN AND ASSOCIATES, INC.		0.510	03/09/2023
REDSTONE INDUSTRIAL PARK SPR2023-00258 LND2023-00337	7595-79-9352 11400 UNIVERSITY BLVD MANASSAS, VA 20109	MATAN COMPANIES	3016949200	22.520	04/04/2023
FARM BREW LIVE EXPANSION DEVELOPMENT PROJECT SPR2023-00263 LND2023-00301	7695-04-7374 9349 HORNBAKER RD MANASSAS, VA 20109	K2 CONTRACTING GROUP	703-436-9628	4.850	03/27/2023
BUILDING VA2B1 SPR2023-00273 LND2023-00248	7596-57-0222 11650 HAYDEN RD MANASSAS, VA 20109	JCL CONSULTING LLC	7034889877	30.920	03/15/2023
SWANS CREEK ELEMENTARY SCHOOL RENOVATIONS SPR2023-00274 LND2023-00296	8289-41-1336 17700 WAYSIDE DR DUMFRIES, VA 22026	PRINCE WILLIAM COUNTY PUBLIC SHOOLS	5717199313	0.520	05/01/2023
MANASSAS LOGISTICS CENTER SPR2023-00289 LND2023-00323	7595-82-0501 10201 GOLF ACADEMY DR BRISTOW, VA 20136	MANASSAS LOGISTICS CENTER, LLC	3018730029	20.960	05/31/2023
INNOVATION - MANASSAS DC2 & DC3 SPR2023-00290 LND2023-00309	7695-48-5745 9420 GODWIN DR MANASSAS, VA 20110	CHRISTOPHER CONSULTANTS / IMEG	7033939887	2,381.000	02/08/2023
GARFIELD HIGH SCHOOL TRACK SPR2023-00293 LND2023-00343	8292-40-2562 14000 SMOKETOWN RD WOODBRIDGE, VA 22192	PRINCE WILLIAM COUNTY SCHOOL BOARD	7037918717	3.540	06/06/2023

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Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
OSBOURN PARK HIGH SCHOOL SPR2023-00294 LND2023-00344	7896-33-2693 8909 EUCLID AVE MANASSAS, VA 20111	PRINCE WILLIAM COUNTY SCHOOL BOARD	7037918717	4.190	06/06/2023
HEATHCOTE MARKETPLACE WATER AND SEWER - EGP SPR2023-00303 LND2023-00218	7298-93-9607 14890 HEATHCOTE BLVD HAYMARKET, VA 20169	HAYMARKET INVESTMENT, LLC	3016743803	4.570	02/16/2023
YOUTH FOR TOMORROW SPR2023-00304 LND2024-00015	7595-44-4815 11835 HAZEL CIRCLE DR BRISTOW, VA 20136	YOUTH FOR TOMORROW	5712550961	0.410	06/26/2023
GAR-FIELD HIGH SCHOOL SPR2023-00318 LND2024-00004	8292-40-2562 14000 SMOKETOWN RD WOODBRIDGE, VA 22192	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037918717	0.420	06/06/2023
OSBOURN PARK HIGH SCHOOL - CONCESSION BUILDING SPR2023-00333 LND2024-00002	7896-33-2693 8909 EUCLID AVE MANASSAS, VA 20111	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037918717	0.680	06/27/2023
CTP-I OFFSITE ESC PLAN SPR2023-00341 LND2023-00327	7397-46-4050 14372 JOHN MARSHALL HWY GAINESVILLE, VA 20155	CTP-1, LLC	3477560879	3.080	05/16/2023
PROJECT MANGO PH 1 SPR2023-00345 LND2024-00001	7496-47-2202 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	27.020	06/28/2023
BMX STAGING COVER SPR2023-00355 LND2023-00305	8193-04-9341 7 COUNTY COMPLEX CT WOODBRIDGE, VA 22192	SNL CONSTRUCTION	5712591571	1,600.000	04/14/2023
POTOMAC SHORES - VRE STATION SPR2023-00370	8389-54-9553 17390 POTOMAC STATION WAY DUMFRIES, VA 22026	ARGENT MANAGEMENT, LLC	5719316265	8.300	06/28/2023

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Land Plans with Disturbed Area that have Land Permits Issued

07/01/2022 Through 06/30/2023

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2024-00041					

Total Number of Land Plans: 140

Total Number of Disturbed Acres: 6,319.621

END OF REPORT

Appendix C

List of County-Maintained Roadways and Parking Lots

Table 3 – County Maintained Roadways, Streets, and Parking lots

ST NO	ST NAME	ST TYPE	DEED ACRES	DESCRIPTION	Impervious Parking Lot? (Yes=1; No=0)	Area of Imp. Parking Lot (Acres)	Impervious Road? (Yes=1; No=0)	Imp. Road (Linear Ft)	Imp. Road (Acres)	Site BMPs (Yes=1; No=0)	Parking Lots Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Miles)	Imp. Roads Not Treated by BMPs (Miles)
4925	CATHARPIN	RD	1.216	LAWNVALE ESTATES SEC 2 R/W PRIVATE ROAD	0		1	880	0.38	0	0	0	0	0.17
13001	CHINN PARK	DR	77.003	CHINN PARK	0		1	97	0.05	1	0	0.05	0.02	0
13131	PUBLIC SAFETY	DR	12.081	PUBLIC SAFETY FACILITY - ACREAGE	0		1	585	0.15	1	0	0.15	0.11	0
5049	WATERWAY	DR	8.21	MONTCLAIR LIBRARY (UNDER CONSTRUCTION)	0		1	716	0.801	1	0	0.801	0.14	0
8636	WELLINGTON	RD	0.857	PWC JUVENILE CTR	0		1	284	0.16	1	0	0.16	0.05	0
1040	EXPRESS	DR	2.538	VRE TRAIN STATION WOODBRIDGE	0		1	483	0.65	1	0	0.65	0.09	0
7625	AARON	LN	15.264	ELLIS L BARRON PARK	1	0.29	0			1	0.29	0	0	0
12560	ADEN	RD	97.074	NOKESVILLE COMMUNITY PARK	1	1.87	1	4393	1.4	1	1.87	1.4	0.83	0
5901	ANTIOCH	RD	3.8	FIRE STATION ANTIOCH ROAD/ DOMINION VALLEY	1	1.17	1	897	0.62	1	1.17	0.62	0.17	0
8051	ASHTON	AV	4.177	BULL RUN LIBRARY	1	1.94	1	231	0.15	1	1.94	0.15	0.04	0
7500	BEN LOMOND PARK	DR	240.607	BEN LOMOND PARK	1	1.92	1	1010	0.86	1	1.92	0.86	0.19	0
14730	BIRCHDALE	AV	8.656	BIRCHDALE PARK	1	0.77	0			0	0	0	0	0
14998	BIRCHDALE	AV	0.836	VFD FIRE STATION	1	0.33	1	58	0.038	0	0	0	0	0.01
15011	BIRCHDALE	AV	4.146	BIRCHDALE PARK	1	0.165	0			0	0	0	0	0
15520	BLACKBURN	RD	42.452	RIPPON LODGE	1	0.48	1	1050	0.58	1	0.48	0.58	0.2	0
12401	BRAEMAR	PY	15.172	BRAEMAR PARK	1	0.55	0			1	0.55	0	0	0
14418	BRISTOW	RD	132.734	HELWIG PARK & LIBRARY	1	6.5	1	3,800	2.18	1	6.5	2.18	0.72	0
13065	CHINN PARK	DR	14.647	CHINN PARK COMPLEX (Library, Aquatic Center)	1	4.86	1	509	0.29	1	4.86	0.29	0.1	0
13850	CHURCH HILL	DR	5.086	COMMUNITY CENTER	1	0.49	1	547	0.25	0	0	0	0	0.1
15150	CLOVERDALE	RD	30.19	CLOVERDALE PARK	1	1.57	1	1122	0.49	0	0	0	0	0.21
10501	COPELAND	DR	2.974	SUDLEY MANOR COMMUNITY CENTER	1	0.74	0			0	0	0	0	0
12380	COTTON MILL	DR	4.77	LAKE RIDGE MARINA	0		1	1163	0.65	1	1.02	0.65	0.22	0
12371	COTTON MILL	DR	67.064	LAKE RIDGE PARK, GOLF COURSE	1	2.01	1	1179	0.66	1	2.01	0.66	0.22	0
12390	COTTON MILL	DR	4.675	LAKE RIDGE PARK	1	1.15	1	2430	1.16	1	1.15	1.16	0.46	0
7	COUNTY COMPLEX	CT	65.547	STADIUM COMPLEX	1	4.88	1	950	0.54	1	4.88	0.54	0.18	0
1	COUNTY COMPLEX	CT	40.676	McCOURT & DEVELOPMENT SERVICES BUILDINGS	1	7.03	1	5085	4.8	1	7.03	4.8	0.96	0
5180	DALE	BL	7.161	PARKS SKATE NATION	1	1.48	0			1	1.48	0	0	0
5070	DALE	BL	6.179	BOYS AND GIRLS CLUB	1	0.38	0			1	0.38	0	0	0

5100	DALE	BL	3.5	BOYS/ GIRLS CLUB/COMMUTER PARKING LOT	1	2.61	1	338	0.24	1	2.61	0.24	0.06	0
5301	DALE	BL	218.234	ANDREW LEITCH PARK	1	1.95	1	933	0.46	1	1.95	0.46	0.18	0
4249	DALE	BL	0.478	DALE CITY LIBRARY	1	0.1	0			0	0	0	0	0
14012	DAWSON BEACH	RD	6.23	COMMUNITY CENTER	1	0.16	1	1444	0.47	0	0	0	0	0.27
15941	DONALD CURTIS	DR	17.091	FERLAZZO BLDG	1	4.9	1	600	0.5	1	4.9	0.5	0.11	0
13712	DUMFRIES	RD	9.54	COLES FIRE STATION	1	0.98	1	925	0.5	1	0.98	0	0	0
4100	EXETER	DR	5.688	BRITTANY PARK	1	0.96	1	334	0.16	1	0.96	0.16	0.06	0
15611	FARM CREEK	DR	2.427	FARM CREEK VRE COMMUTER LOT	1	1.22	0			1	1.22	0	0	0
15601	FARM CREEK	DR	4.413	FARM CREEK VRE COMMUTER LOT	1	2.65	1	762	0.88	1	2.65	0.88	0.14	0
12993	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 1	1	0.09	0			1	0.09	0	0	0
12983	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 2	1	0.1	0			1	0.05	0	0	0
8900	FREEDOM CENTER	BL	15.398	WESTERN POLICE STATION	1	4.15	1	1453	1.03	1	4.15	1.03	0.28	0
18809	FULLER HEIGHTS	RD	42.26	FULLER HEIGHTS PARK	1	0.86	1	1137	0.52	1	0.86	0.52	0.22	0
13030	HARBOR	DR	2.293	COMMUTER LOT - TACKETTS MILL	1	1.47	0			1	1.47	0	0	0
13509	HILLENDALE	DR	3.426	COMMUTER LOT - HILLENDALE RD	1	2.23	0			1	2.23	0	0	0
13499	HILLENDALE	DR	21.901	JOHN JENKINS PARK	1	0.16	1	413	0.26	1	0.16	0.26	0.08	0
12940	HUNTING	CO	2.52	BROAD RUN PARK	1	0.31	0			1	0.31	0	0	0
4603	JAMES MADISON	HY	163.633	JAMES LONG PARK	1	3.55	1	3025	2.02	1	3.55	2.02	0.57	0
15904	RICHMOND	HY	0.96	EASTERN FUELING STATION	1	0.74	0			1	0.74	0	0	0
14945	RICHMOND	HY	5.065	HILDA BARG HOMELESS CENTER	1	0.3	1	468	0.25	1	0.3	0.25	0.09	0
14450	JOHN MARSHALL	HY	3.847	FIRE STATION	1	0.86	1	435	0.26	1	0.86	0.26	0.08	0
9250	LEE	AV	2.307	OLD COURTHOUSE/PARKING	1	0.67	0			1	0.67	0	0	0
9254	LEE	AV	0.201	OLD COURTHOUSE/PARKING	1	0.07	0			1	0.07	0	0	0
9252	LEE	AV	0.186	OLD COURTHOUSE/PARKING	1	0.05	0			1	0.05	0	0	0
9256	LEE	AV	0.154	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0	0
9258	LEE	AV	0.163	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0	0
9300	LEE	AV	8.502	OLD COURTHOUSE/PARKING	1	2.2	0			1	2.2	0	0	0
9301	LEE	AV	4.68	OLD COURTHOUSE/PARKING	1	2.03	0			1	2.03	0	0	0
14870	LIGHTNER	RD	4.248	GAINESVILLE LIBRARY	1	1.1	1	160	0.15	1	1.1	0	0	0
4701	LOCUST SHADE	DR	642.151	LOCUST SHADE PARK AND FOREST GREEN GOLF	1	3.9	1	7170	3.95	1	3.9	3.95	1.36	0
8460	MAPLEWOOD	DR	27.478	JOSEPH READING PARK	1	0.4	1	1162	0.62	1	0.4	0.62	0.22	0
8601	MATHIS	AV	2.748	CENTRAL LIBRARY MANASSAS	1	1.35	0			0	0	0	0	0
14716	MINNIEVILLE	RD	26.333	HOWISON HOMESTEAD PARK	1	1.3	1	899	0.53	1	1.3	0.53	0.17	0
14400	MINNIEVILLE	RD	0.367	DALE CITY RECREATION CENTER PARKING LOT	1	0.23	0			1	0.23	0	0	0
14300	MINNIEVILLE	RD	30.862	DALE CITY RECREATION CENTER	1	1.4	1	164	0.31	1	1.4	0.31	0.03	0
9320	MOSBY	ST	4.759	COURTHOUSE PARKING	1	1.85	0			1	1.85	0	0	0
9350	MOSBY	ST	9.452	COURTHOUSE PARKING	1	0.05	0			1	0.05	0	0	0
2081	OLD BRIDGE	RD	0.7	OLD BRIDGE COMMUTER LOT	1	0.39	0			1	0.39	0	0	0
2095	OLD BRIDGE	RD	1.138	OLD BRIDGE COMMUTER LOT	1	1.12	0			1	1.12	0	0	0
2201	OPITZ	BL	3.778	POTOMAC REGIONAL LIBRARY	1	0.93	1	53	0.038	0	0	0	0	0.01
9212	PEABODY	ST	3.74	COURTHOUSE PARKING	1	1.51	0			1	1.51	0	0	0
9307	PEABODY	ST	0.228	COURTHOUSE PARKING	1	0.18	0			0	0	0	0	0

9305	PEABODY	ST	0.151	COURTHOUSE PARKING	1	0.15	0			0	0	0	0	0
9303	PEABODY	ST	0.276	COURTHOUSE PARKING	1	0.12	0			0	0	0	0	0
10699	PIPER	LN	40.33	AIRPORT VRE STATION & COMMUTER LOT	1	4.44	1	1902	1.3	1	4.44	1.3	0.36	0
13800	POP MOUBRY	PL	20.88	LANCASTER PARK	1	0.17	1	258	0.13	1	0.17	0.13	0.05	0
14700	POTOMAC MILLS	RD	3.58	PRTC POTOMAC MILLS	1	1.78	1	419	0.34	1	1.78	0.34	0.08	0
14730	POTOMAC MILLS	RD	0.787	PRTC - HOMELESS SHELTER	1	0.35	0			1	0.35	0	0	0
14716	POTOMAC MILLS	RD	5.507	PRTC POTOMAC MILLS	1	1.9	0			1	1.9	0	0	0
13161	PUBLIC SAFETY	DR	8.276	PUBLIC SAFETY TRAINING FACILITY - PCL B	1	0.4	0			1	0.4	0	0	0
13101	PUBLIC SAFETY	DR	25.052	PUBLIC SAFETY TRAINING FACILITY - PCL A	1	2.29	1	2581	1.8	1	2.29	1.8	0.49	0
12731	RIDGEFIELD VILLAGE	DR	4.4	EARL CUNARD PARK	1	0.18	0			1	0.18	0	0	0
17301	RIVER RIDGE	BL	6.262	LACEY COMPTON PARK - WAYSIDE VILLAGE	1	0.35	1	310	0.15	1	0.35	0.15	0	0
16530	RIVER RIDGE	BL	5.656	RIVER OAKS FIRE STATION	1	1.03	1	854	0.57	1	1.03	0.57	0.16	0
16198	SILVER LAKE	RD	43.753	SILVER LAKE - EQUESTRIAN CENTER	1	0.8	0			1	0.8	0	0	0
15960	SINDLINGER	WY	4.4	FERLAZZO CENTER	1	1.42	0			1	1.42	0	0	0
13455	TELEGRAPH	RD	24.609	HORNER RD COMMUTER PARKING LOT	1	10.9	1	1531	2.3	1	10.9	2.3	0.29	0
12051	TYGART LAKE	DR	42.074	BROAD RUN LINEAR PARK - PUMP STATION	1	0.38	0			1	0.38	0	0	0
11930	VALLEY VIEW	DR	125.626	VALLEY VIEW PARK	1	5.4	1	3644	2.8	1	5.4	2.8	0.69	0
14300	VETERANS	DR	78.114	VETERANS MEMORIAL PARK	1	3.21	1	4221	2.3	1	3.21	2.3	0.8	0
14631	VINT HILL	RD	165	PRINCE WILLIAM GOLF COURSE	1	0.8	1	1736	0.804	1	0.8	0.804	0.33	0
4450	WATERWAY	DR	13.802	ANN MONCURE WALL PARK	1	1	1	1373	0.66	1	1	0.66	0.26	0
8642	WELLINGTON	RD	1.263	PWC JUVENILE CENTER	1	0.17	1	357	0.204	1	0.17	0.204	0.07	0
2430	WEST LONGVIEW	DR	4.156	HYLBROOK PARK	1	0.59	0			0	0	0	0	0
14811	DUMFRIES	RD	1061.984	FLEET BUILDING PARKING LOT ONLY	1	2.09	0			0	0	0	0	0
				TOTALS	87	132.5	52	68,530	43.365	78	122.9	41.2	12	0.8

Appendix D

Illicit Discharge Summary

Reported/Observed Discharges - FY2020														
Complaintant Information					Discharge Information				Case Inspection and Enforcement					
S.No	Citizen/County Staff	Date	Name	Contact	Suspected Discharger	Discharge Description	Discharge Location	Type	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspectic	Comments/Notes	Status	Date of Closure
1	Citizen	7/7/2022	Anonymous	(703) 969-6625	15416 Bald Eagle Ln	Pool Water	Neighbouring Property	Chlorinated Water	7/11/2022	NA	7/11/2022	Upon arrival, the discharge found to be ceased. Homeowner said the pool water was dechlorinated and discharged slowly on the ground which ultimately goes to the stormwater drop inlet without passing through the private properties. The County staff educated the homeowner about pool discharge protocal and hand over the eduction materials.	Closed	7/11/2022
2	Citizen	7/12/2022	Anonymous	NA	Sherbrook Condominium HOA	Pool Water	Surrounding Community	Chlorinated Water	7/14/2022	NA	7/14/2022	Upon arrival, the ground was almost moist with no adverse effect. Inspection was made at the downstream pond. There was no any sign of illicit discharge.	Closed	7/14/2022
3	Citizen	7/19/2022	William Flannagan	(703) 863-5843	TBD	Petroleum smell near by manhole	Stormwater System	Hazmat Spill	7/19/2022	Yes, NA	7/19/2022	Upon arrivel met a police officer. According to him, the PWC Hazmat team already towed the moter boat parked on the street leaking oil to the street. The spill did not approach to stormwater system.	Closed	7/19/2022
4	Citizen	7/27/2022	Paul Bolinger	(509) 951-2459	TBD	Algae Bloom on pond due to sewage contamination	CSWMP ID: 5911	Algae Bloom	8/1/2022	NA	8/1/2022	Upon arrival, excessive algae was observed on pond. Stormwater system was tracked and county staff did not find the sewage discharge at all. The algae could be produced due to excessive fertilizer or nutrients applied on adjacent golf course. Golf course is a private entity regulated by state. County will coordinate the line agencies to resolve the problem.	Closed	8/1/2022
5	DEQ	7/28/2022	Steven Fontenot	(703) 583-3815	Wendey's Restaurant 4461 Cheshire Station Plaza	Discharge of Dumpster Flushing water	CSWMP ID: 4516	Soap and chemicals with food waste	8/1/2022	Yes, NA	8/4/2022	County staff did follow up inspection and made interaction with The manager. The flushing dumpster and debris and alowing flow into stormwater system is the violation of County's Code. Education materials were hand overed to the Manager. Second step conference call made to corporate staff of Wendy's asking them to stop repetation of same activities and follow the law.	Closed	8/4/2022
6	County Staff	7/29/2022	Rosie Clark	(703) 792-8799	5595 Websters Way	Discharge of oil and other fluids, blowing yard debris, cigarette butts, tile dust into storm drains.	Stormwater System	Various household Pollutant	8/1/2022	Yes, NA	8/1/2022	Upon arrival, the white cement stain was observed on certain portion of road curb and gutter. Interaction made with the property owner of 5595 Websters Way. The cementeous white stain could be produced due to uncovered home improvement works during rainfall. The impact found. County staff educated and handover the education materials on visit.	Closed	8/1/2022
7	Citizen	8/1/2022	Ashley People	(571) 969-0201	Cloverdale X Dale Blvd	Concrete Washout	Stormwater System	Concrete washout discharge	8/1/2022	Yes, NA	8/1/2022	Upon arrival, side walk of Dale Blvd and cross walk of Cloverdale Blvd was found to be repaired at the intersection. The construction crews could wash their tools and ready mix truck during construction and allow to flow along curb and gutter upto downhill valley but not all the way to storm drain . Cementeous stains was dry.	Closed	8/1/2022
8	County Staff	8/10/2022	Amanda Fink Senior Aide Neabsco District Supervisor	(703) 792-4667	TBD	Oil spill into storm drain	14119 Minnieville Rd	Oil Spill	8/10/2022	Yes, NA	9/15/2022	The County Staff inspected the Cheshire Station Plaza and observed petroleum stains on parking lot at multiple locations. Dumping oil directly into stormwater system did not find as reported. Stormwater system was tracked, and discharge was seemed without colorful surfactant at outfall and pond. . Oil change or vehicle service on parking lot is the violation of zoning ordinance as well. Impact was minimum and not affected the County's water. Follow up made [9/15], the stains were seemed fade out.	closed	9/15/2022
9	Citizen	8/26/2022	C/O, Mary Beth	703-792-5745	Mr. Patrick Marroum/ High Performance Motors Inc	Possible runoff contamination	12904 Marsteller Dr	Oil and Grease	8/30/2022	NA	8/30/2022	Upon arrival, observed some grease and oil stains on asphalt pavement without flowing into the channel. I requested to adopt precautionary action putting hydrocarbon absorbent booms across the flow path of surface runoff from his property. He agreed and decided to employ booms very soon.	Closed	8/31/2022
10	Citizen	9/12/2022	Anonymous	NA	13497 Keynote Rd	Dump Yard Waste	Channel Behind 13497 Keynote Rd	Yard & fence renovated waste	9/15/2022	NA	9/15/2022	Upon arrival, the fence of 13497 Keynote Rd and there was no dump yard waste at the channel located inbetween church and this house.	Closed	9/15/2022

11	Citizen	9/19/2022	Mr. Doug Mccabe	(703)-380 4034	13650 Kelly Green Way, Nokesville	Septic Discharge from Septic Tank	Open ground of 13650 Kelly Green Way	Sanitary Sewage	9/20/2022	Yes, NA	9/20/2022	County received a citizen complaint regarding septic water discharge on ground near by drain filled areas of 13650 Kelley Green Way Nokesville. The contractor was Settle Excavating and Plumbing (Bob Settle- 703-772-4040) and home owner is Ms. Sheila Marie (267-994-2105). The case has forwarded to VDH for furter actions.	Closed	9/20/2022
12	Citizen	10/3/2022	Ms. Wendi Gruninger	(703) 753-0959	Neighbor	Discharge of Pool water	4386 Canterbury Ln	Pool Water	NA	TBD,	NA	Phone conversation was made with complainant about County's protocal about pool water discharge. The brochure made with County's pool protocal has sent to Wendi at wrguva@yahoo.com. Inspection is withheld now on request of Wendi. Once see received the case again, she will report to the County.	Closed	10/3/2022
13	Citizen	10/14/2022	Peter Josendale	freelancepete@aol.com	Rivera Alverado Jose Alexander	Discharge of Commercial truck wash	15567 Three Otters Place	Washwater Discharge	10/17/2022	Yes, NA	12/23/2022	Both resident and Ashland Conservancy HOA were made complaint about commercial Truck wash and discharge washwater into storm water system at the residential park. The truck owner was reported to be Rivera Alverado Jose Alexander of 15567 Three Otters Place. County staff did follow up inspection and left education materials at the door as the Alexander family out of home. Next follow up inspection will continue within three month. Follw up inspection made [12/23], the incidents did not find to be repeated.	closed	12/23/2022
14	Citizen	10/19/2022	Gregg Fields	gandmfields@aol.com	BJ's Gas Station	Oil spill potential to flow into storm drain	14123 Noblewood Plaza	Oil Spill	10/20/2022	NA	10/20/2022	Oil stains were observed as usual in gas station. County staff talked with attainded staff and the store Manager about citizen complaint, and also requested them to maintain spill kits at easily accessible locations.	Closed	10/20/2022
15	Citizen	10/20/2022	Anonymous	(703) 730-0100	Exxon Gas Station	Oil spill potential to flow into storm drain	14675 Lee Hwy	Oil Spill	10/21/2022	Yes, NA	10/21/2022	County staff diled 911, and mentioned about the citizen complaint. The emergency respond team was deployed to handle the case.	Closed	10/21/2022
16	Citizen	10/30/2022	Dennis Washington	(571) 969-0928	4906 Dashiell , Pl	Oil leake through parked Vehicle	Infront of 4906 Dashiell Place	Oil Spread on parking	10/31/2022	Yes, NA	11/21/2022	Upon arrival Fresh oil stains were observed but there was no leaking vehicle. I knock the door and one lady came out and said I am driving Volvo but my car is not leaking but county staff discovered the car leaking in a new place.The case has forwarded to PWC Hazmat officers for follow up. The oil spots are far from the storm water inlet but spill could be directed towards drain if continued. Follow up made [11/21], spots were found fade-out. Particulor violator could not find.	Closed	11/21/2022
17	Citizen	10/31/2022	Margaret Mayers	(571) 260-8026	4101 Hemingway Drive	Blow leaves from their yard to the street	Street Hoffman Drive	Leaves blow to the street	10/31/2022	NA	10/31/2022	Upon arrival the person whom complaining about was found sincere to collect leaves in a pile and had a plan to bag up. During collection by blowing some of the leaves may blow out to the street, is very natural. The street Hoffman Drive is a VDOT facility. The email has sent to complaint suggesting her to contact VDOT if she got ice trap due to leaves on the street.	Closed	10/31/2022
18	Citizen	11/7/2022	Glady Kepler	(703) 946-2623	15430 Silvan Glen Drive	Discharge leaves into storm water inlet	Curb and Gutter inlet of the street near by 15430 Silvan Glen Drive	Raking leaves into road curb & gutter	11/7/2022	Yes, NA	11/9/2022	County staff received a video of raking leaves and pushing into road curb and gutter by the neighbour of 15428, Mr. Hailu Birhan. Upon arrival, Mr Birhan was not at home. Left the education materials at the door. He made a call and I informed him about the violation. He said, I innocently did it but he promoised not to repeat again. The impact was like a normal. The case has closed.	Closed	11/10/2022
19	Citizen	11/10/2022	Ms. Elizabeth White	(704) 650-9151	12343 Cold Stream Guard Ct	Discharge leaves into storm water inlet	TBD	Leaves blow into storm drain	11/14/2022	Yes, NA	11/18/2022	County staff observed some leaves into storm water curb and gutter inlet infront of 12343 Cold Stream Guard Ct though homeowner bagged up leaves on 6 bags and was left for pick up at curb side. Home owner was not at home. Education Materials were left over at the door requesting to contact county. Home owner called and said, he will do immediately. Follow up inspection was made [11/18], the case was resolved as requested.	Closed	11/18/2022
20	Citizen	11/15/2022	Ms. Janne Lookabill	(540) 845-3949	1624 Maryland Ave	Discharge leaves into storm water inlet	Linda Houck	Leaves blow into storm drain	11/16/2022	NA	11/16/2022	Upon arrival, insignificant leaves was observed into curb and gutter inlet. County staff met to the husbend of Linda Houck. Education materials were handovered. He said, we saw someone had taken our photos. He denied the complaint made to her.	Closed	11/16/2022

21	Citizen	11/21/2022	Mr. Jason Karluk	(570) 351-2936	2305 Harmsworth Dr	Oil Spill on Cul-De-Sack	Street close to storm water inlet	Oil Spill	11/22/2022	Yes, NA	11/25/2022	It was reported that, Crystal Water delivery truck had an issue with engine failure/oil discharge which resulted in its need to get towed on 18 Nov 22. The delivery truck discharged oil throughout the neighborhood and left a sizable puddle in front of the storm drain. Finally, outreach made to the crystal water and their dispatch vender will do clean up untill November 23. Follow up inspection made [11/25], clean up was complited.	Closed	11/25/2022
23	Citizen	11/23/2022	Mr. Willard Andrew	wgandrewsiv@gmail.com	8112 Rugby Rd	Commercial Truck wash discharge into stream	Street infront of 8112 Rugby Rd	Commertial Car wash	11/23/2022	NA	11/23/2022	Upon arrival, County staff did not see the noticeable illicit discharge. The eveidence shows that the truck was washed with clean water at once and very light moist street was observed infront of 8112 Rugby Rd. The citizen concerned was communicated with Super Inc. Ready Mix. The staff said, it was happend once with clean water and we will never repeat though it was washed with clean water.	Closed	11/23/2022
24	Citizen	11/29/2022	Carol O'Brien	jcobrien45@gmail.com	1629 Whistling Swan Way	Discharge leaves into storm water inlet	Street Curb and Gutter Inlet	Leaves discharge	11/29/2022	Yes, NA	12/16/2022	The county got a complaint from a resident, a neighbor of 1629 Whistling Swan Way,is always putting his leaves down the storm drain. Upon arrival, curb and gutter inlet found to fill out with yard waste. Education material was left at the door requesting to remove clippings from drain. Follow up inspection was made on 11/16/2022. The home owner did the work as requested. the case has closed.	Closed	12/16/2022
25	Citizen	11/30/2022	Michael Blake	(703) 595-5360	13510 Woodvale Ct	Milky discharge from home renovation	Stormwater System	Milky discharge	11/30/2022	Yes, NA	12/15/2022	County Staff observed the milky brown discharge ponding at downstream road side of the house complaining about. County staff met the construction crews and asked them to remove construction debris from driveway. Made follow up [12/15], removed debris.	Closed	12/15/2022
26	Citizen	12/2/2022	NA	(719) 232-3999	133330 Paramount Ln	Discharge of Paint	Stormwater Curb and Gutter Inlet	Paint Discharge	12/5/2022	Yes, NA	12/8/2022	Upon arrival, white stain was observed at stormwater curb and gutter inlet. The United Services Contractor Inc has been working to rennovate the house and clean their painting stuff at the inlet and dump a bucket of water during clean up. County staff did not observe the flow track on next manhole across the street. White paint was found to be localized and contractor promoised to clean up the white stain untill tomorrow. Follow up made [12/8], the case has closed.	Closed	
27	Staff	12/20/2022	Brenettsville Board of County Supervisor Ms. Jeanine M. Lawson	(703) 792-6190	12801 Clipper Dr	Dumping salt near by stormdrain	Parking lot of 12801 Clipper Dr	Salt exposed to runoff	12/20/2022	Yes, NOV# 1-2023	1/11/2023	Prince William County Environment Management received a resident complaint from Supervisor Lawson regarding dumping salt on parking lot near a storm drain. The County staff inspected and forwarded the case to the Property Manager Ms. Crystal at Crystal@burkecmc.com and made call at (703) 801-1355. She already ordered to the vender to complay the deficiencies. Follow up made[1/11], the case has closed.	Closed	1/11/2023
28	Staff	12/30/2022	Prem Poudel	(703) 792-8155	AMCB Manassas PromenadeLLC	Open salt pile	7301 Stream Walk Ln	Salt exposed to runoff	12/30/2022	Yes NOV# 2-2023	1/11/2023	Upon arrival, the County staff observed the pile open and leaching out with rain and runoff. The concentrative salty flow was found to discharge into stormwater system. Follow up made[1/11], the case has closed.	Closed	1/11/2023
29	Citizen	1/20/2023	Michael Troutman	(703) 565-4801	TBD	Oil spill	9990 Suheil Rd.	Oil stain on street was reported	1/20/2023	Yes, NA	1/20/2023	Upon arrivel, the oil stain couldn't observe. It could be dissappeared due to evaporation. The moving vehicle should drop down the oil due to leakage of oil tank. The violator could not identify. The impact was seemed negligible.	Closed	1/20/2023
30	Citizen	1/30/2023	Craig Evan Alderman	(571) 359-3964	8871 Yellow Hammer Dr	Paint Discharge	Discharge paint into SWMP 863	Flushing paint into stormwater system	1/30/2023	Yes, NA	2/15/2023	Prince William County Environment Management received a resident complaint regarding paint discharge into stormwater pond ID: 863. Upon arrival white paint contained discharge was flowing towards the pond. Discharge was tracked and violator was discovered Mr. Haitham Abu-Ghannam of 8871 Yellow Hammer Drive. As per him, the paint had been accidently spilled on his drive way which was flushed into storm sewer system. Verble notice was given to the violator to hire the cleaning contractor to cease the discharge. Made follow up inspectin on 2/15/2023 and found complited the clean up.	Closed	2/15/2023

31	Citizen	1/30/2023	Mr. Carlus W Breland	Anonymous	Curb and Gutter inlet of shopping center near by 12601 Galveston Ct	Automotive oil discharge	Curb and Gutter inlet ID: 64828	Automotive oil discharge	1/30/2023	Yes, NA	1/30/2023	Prince William County Haz Mat received a phone call who responded out to a 5 gallon oil pan and 3 empty quart containers of 15W-40 oil at road curb and gutter. Complainant requested to hazmat officer to come someone and check on the situation, someone had been there yesterday doing work on vehicle in road and left the contents. The oil pan had overflowed with a small amount of oil but undetermined amount of oil on roadway and in road water drain. The facility belongs to VDOT so that VDOT officer was seen to take over the case.	Closed	1/30/2023
32	Citizen	2/9/2023	Mr. Teddy	(703) 850-1511	Nissan Dealer	Paint Discharge	14777 Richmond Hwy	Body Repair/ Minor denting painting	2/9/2023	NA	2/9/2023	Upon arrival, very minor car painting works was observed inside the private property. The property was closed by the fence. There was no discharge of paint into stormwater system. The dealer has its own car wash facility. The case has closed for now.	Closed	2/9/2023
33	Citizen	2/14/2023	Mr. Jorze Duran Carrillo	(571) 343-9675	Belmont Bay Rehabilitation & Healthcare Center	Sewage Discharge	14906 Richmond Hwy	Overflow sewage through inspection vent	2/14/2023	Yes, NOV# 3-2023	3/13/2023	On February 13th, County staff discovered the sewage overflow from the Belmont Bay Rehabilitation & Healthcare Center facility and discharge was flowing towards private property and formed a pool. The Environmental Engineer Mr. Tom Dombrowski reported the case to Prince William County Service Authority and DEQ for investigation from their side. On February 14th, the owner of 2003 Mellot Rd, Mr. Jorze Duran Carrillo had complained the same case. The County has issued notice of violation to Belmont Bay for immediate action. Follow up inspection made on 3/13/2023. The deficiencies were resolved.	Closed	3/13/2023
34	Citizen	2/23/2023	Anonymous	NA	Ms. Chu Tammy, The homeowner of 8851 Calbera Ct	Oil Discharge	8851 Calbera Ct	Dumping waste cooking oil into storm drain	2/24/2023	Yes, NA	2/24/2023	On arrival, waste cooking oil stain observed on storm water curb and gutter. The volume should not be big as the stains limited at top inlet surface only. Complainant reported the case without strong eveidence. The education materials were left at the side of mail box. The case has closed for now.	Closed	2/24/2023
35	Citizen	2/2/2023	Anonymous	NA	TBD	Oil Discharge/ Auto Repair at Road Side	Opposite side of 14405 Gemston Drive	The roade side ground was contaminated with oil and grease. Oil change of one vehicle was in progress without attaindents	2/3/2023	Yes, NA	3/6/2023	A resident reported a concerns of illicit discharge in their neighborhood. The residents who live in the adjacent apartment complex are using the cul-de-sac on Gemstone Drive for various automotive repairs. He stated he often sees that aftermath of various liquids on the street following these repairs. County staff catched up someone changing oil and repair vehicle. Requested them to stop maintenance in public road side. Follow up inspection made after a month. Automotive repair or service did not find.	Closed	3/6/2023
36	Citizen	2/5/2023	Ms. Rebekah Locklear	(571) 458-0871	TBD	Dead fish/Degrade water quality in SWMP #207, 208	12830 Harbor Drive	Pond Contamination	3/6/2023	NA	3/6/2023	Environmental Management Division received a complaint about dead fish and turtles in the Tackett Mills SWM ponds. The geese wont go into the water anymore. The County staff did follow up inspection and did not find any dead fish and turtles. Goose were enjoing into the pond.	Closed	3/7/2023
37	Citizen	2/6/2023	Ms. Marilyn Conrad	(571) 251-6280	Bristow Shopping Center	Petrolium discharge	10331 Bristow Center Dr	Petrolium discharge into stormwater system	3/7/2023	Yes, NOV#4-2023	5/18/2023	Upon arrival, colorful discharge, petroleum debris and scum were observed at the facility. Fish were dying and floating on the surface. Strong petroleum spill was noticed at the next manhole of inlet pipe located in between Chipotle and new development site. The vender ECS has complited the clean up work on 05/16/2023. Case closed after follow up inspection.	Closed	5/18/2023
38	Citizen	3/24/2023	Mr. Paul Gunning	(703) 606-6068	Haymarket, VA	Quarry for Gray Water Discharge	Asked the discharge protocal only	Gray water	3/24/2023	NA	3/24/2023	Mr. Paul Gunning asked about the discharge protocal of gray water discharge as he is planning trash can clean up business. County staff educated him that stormwater system is only for runoff discharge and rest of all polluted discharge belongs to Prince William County Service Authority (PWCSA) and gave him the contact info of PWCSA.	Closed	3/24/2023

39	County Staff	3/23/2023	Mr. Jeremy A. Crowley	(703) 405-8397, Carla Stone (HOA Board Member)	TBD	Discharge of Paint	SWMP- 649	Paint Discharge received through pond inlet	3/24/2023	Yes, NA	3/24/2023	The County Staff observed white paint at outfall holding with leaves and the paint stain limited upto inflow pipe. Discharge tracked and found to be generated from 15801 Kensington Place Ct. Meeting made with HOA Board Member Ms. Carla stone (7034058397) and her husbend. She made call to the home owner and he replied being regrated as his haired painter poured some residual paint and washed their tools on drop inlet unknowingly. Education meterials handover to Ms. Stone for giving the responsible home owner. Latex paint was dry out on pipe's surface and reached upto pond inflow only. Hence the case closed.	Closed	3/24/2023
40	County Staff	3/28/2023	Tim Hughes	(703) 792-7073	TBD	Trash and possible discharge of vehicle services	Parrellel to Flannery Ct right after the Livingston Rd	Trash and byproducts of Vehicle Services	3/29/2023	Yes, NA	3/29/2023	Upon arrival, the vehicles were seemed to be repaired at Flannery Ct Road. Trash related with vehicle services were found within VDOT easement. VDOT property extends 20 feet into the parcel and all the trash is on VDOT property. Neiborhod service	Closed	3/29/2023
41	Citizen	3/29/2023	Elizabeth Higgins	(703) 501-8665	TBD	Discarge Antifreetz	Stormwater inlet of Forester Rd attached with 9911 Botsford Rd	Discovered antifreetz spill on streat covered with dirt	3/29/2023	Yes, NA	3/29/2023	Upon arrival, Anti-Freeze on street about 2 feet from sewer leading to creek on. Forester, between Sudley Manor and Botsford. County staff could not find the violator.	Closed	3/29/2023
43	Citizen	3/30/2023	Anonymous	NA	TBD	Discarge yard waste	13024 Gorham Way	Discarge yard waste into storm drain	3/30/2023	NA	3/30/2023	Also, less hazardous, lots of trash. There is a fan a large metal framed piece and other stuff. I pulled some of the beer cases out to the sidewalk and picked up lots of empty bottles. This area really needs cleaned up. As I walk my 3 pups I carry a bag and a pick up stick and pick up several bags full a day. However , I do not go into trees and vines and stuff because I have my dogs with me	Closed	3/30/2023
44	Citizen	4/3/2023	Ms. Tara Taylor	703-753-1901	Discharge of Milky white substance in drain	Gasoline discharge	7512 Old Carolina Rd	Old gas tank stored behind the house was leaking	4/11/2023	Yes, NA		Upon arrival, the stagnant water at side drain of road infront of house 7514 Old Carolina Rd was colorful with gas smell. Source was tracked and found from the immediate nighbour's house Source of discharge was identified a old gas tank stored behind the house 7512 Old Carolina Rd. Discharge should percolate and reached to sump pump and pumped out to side drain of the road. The amount of discharge should be residual gasoline from non used old rusted tank. Impact was in limited surface areas and the homeowner removed the tank.	Closed	4/14/2023
45	Citizen	4/29/2023	Ms. Tamala Thompson	tamala71@yahoo.com	4500 Ellery Court	Oil discharge	4500 Ellery Court	Dumping waste cooking oil into storm drain	5/2/2023	Yes, NA	5/24/2023	Upon arrival, oil stain patches were observed at the top of the drop inlet but there was nothing at the bottom. The stormwater system was tracked and found very insignificant impact on downstream creek. The incident was confirmed a minor spill of waste cooking oil into drop manhole.Interaction was made with home owner and educated her about unlawful discharge. The education materials were handover. She promised to stop unpermitted discharge into storm water system in future. The case has been closed for now.	Closed	5/2/2023
46	Citizen	5/24/2023	Ms. Ashley Peoples	(703) 268-6337	TBD	Sediment & Washout Discharge	4001 Forestdale Ave	Discharge from sidewalk repair	5/24/2023	NA	5/24/2023	Upon arrival, sidewalk repair was continude. Doischarge of sediment and washout concrete into storm water system did not find. The minor dust and noise can not avoid in repair. The County staff met the HOA president and talked with complainant in cellphone. The repair work belongs to VDOT.	Closed	5/25/2023
47	Staff	6/12/2023	Daniel Gillespie	(703) 792-5636	TBD	Possible illicit discharge	Creek between Dubline Drive and Roxbury Ave	Contaminated Creek	6/14/2023	NA	6/14/2023	Upon arrival stagnant water was observed at the outfall. The drainage system was dry with no footprint of illicit discharge. The stagnant water seemed to be contaminated with natural process.	Closed	6/14/2023
48	Citizen	6/13/2023	Ms. Pam Nepphews	(937) 470-4912	11801 Mente Rd	Discharge from burnt out vehicle	11871 Mente Rd	Discharge exposed to contaminate runoff	6/14/2023	Yes, NA		Upon arrival, small spot of gasoline discharge observe from property 11801 Mente Rd flowing toward 11871 Mente Rd. Discharge was found to be directed from the gravel parking lot to the landscape of neighbouring property. Had an interaction with Mr. Juan to restablish grass by removing ground contaminated with gasoline spill. Mr. Juan took the responsibility to fix the problem follow up inspection will be done next month.	Running	

Appendix E

Oil and Household Hazardous Waste Disposal Summary

FY23 Oil and Hazardous Waste Disposal Summary

Prince William County owns and operates the Prince William County Landfill, a permitted municipal sanitary landfill located at 14811 Dumfries Road in Manassas, Virginia. The landfill serves all residents, businesses, and institutions within Prince William County. A household hazardous waste (HHW) collection facility is located on the landfill property, which is owned by the County and operated by a vendor, currently Clean Harbors of Laurel, Maryland. The HHW facility is open two days a week, year-round (Wednesdays and Saturdays), from 10:00 a.m. to 5:00 p.m. Clean Harbors is responsible for proper packaging and safe recycling or disposal of all HHW collected at the facility. In fiscal year 2023, the program collected over 103 tons of HHW from County residents. The landfill also has collection locations for other wastes, including vegetative wastes, used motor oil, and other vehicle fluids. Information about the County landfill and acceptable wastes is published on the County's website at https://www.pwcva.gov/department/solid-waste-management. Specific information about the HHW program is located at https://www.pwcva.gov/department/solid-waste-management/household-hazardous-waste.

- **Residents**
  - Offer twice a week collection of household hazardous waste and electronics year-round at the County Landfill and once a month at the Balls Ford Road Compost Facility.
  - Maintain a safe building for residents to drop off household hazardous waste and electronics with proper storage as needed.
  - Offer daily collection of used motor oil, antifreeze, and car batteries.
  - Provide useful signs to direct residents on how to properly dispose of these materials when they arrive at the landfill and compost facility.
  - Provide clear and complete information about management, storage and delivery of household hazardous waste to the County landfill and compost facility through brochures and instruction sheets, web pages, public service announcements and newsletters
- **County Government**
  - Provide extensive training on the proper handling and disposal of chemicals and potentially hazardous materials
  - Provide extensive training on how to respond to and report a chemical spill.
  - Established an effective program for handling motor oil, antifreeze and other vehicle fluids at the Fleet Maintenance Shop
  - Conducted an inventory of chemicals in use by County agencies and arranged a collection of no longer used products with a licensed handler.
  - Piloted a program to collect chemicals from agencies and work with County contractor to accept them at designated intervals throughout the year.
  - Produced a preferred chemical list to reduce the use of potentially hazardous and harsh products.

Appendix F

Spill Response Summary

Incident #	Date	Location	Source	Incident Narrative	Status
FD220026147	7/9/2022	9998 Wakeman Dr Manassas	Airplane	Dispatched by PSCC to the Manassas Airport for a reported fuel leak of approx. 50 gallons of jet fuel. E507B AOS and determined that the leaks was actively being contained by airport personnel and that they estimated approx. 10 gallons of jet fuel. BC581 had command, but held the call with E507B and RE521. Company 6 units cleared the call. After returning to the station, the PSCC supervisor contacted me at the station and wanted me to contact BC581. BC581 (Franzello) requested the number for VA DEQ to make sure all notifications were made regarding the spill. Due to the rain, he was unsure if the fuel had traveled anywhere else. I gave him Alan Lacy's contact (DEQ), as well as the phone number for the VAEOC. BC Franzello advised that the airport operations crew were actively cleaning the spill and no other hazards were noted.	Closed
FD220026398	7/11/2022	8017 Rocky Run	Trash Truck	E504 aos to find a trash truck with a fluid leak of approximately 30 gallons that was about 200 feet long in the middle of a residential road. The fluid was found to be radiator coolant. By the time K506 arrived the responsible party, American Disposal, had been contacted by the driver and a maintenance crew was already enroute with absorbant for fluid leak mitigation. The fluid leak did not go into any storm drains or waterways and was containined to the middle of the roadway. Company information and pictures obtained by K506. No department resources were utilized. K506 had a phone consult with HMO 502 about utilizing LEPC companies for clean up.	Closed
FD22071700035966	7/17/2022	I-95N MM148.5	automobile	Phone Consult with BC 507 involving an auto accident with a small gasoline leak. BC 507 advised a passenger vehicle leaked 10-20 gallons of gasoline into the ditch on the side of I-95. Fuel was contained with booms and absorbent. He was advised to have tow company clean it up or issue a LEPC form to responsible party. VA EOC Notified Report # VDEM -2022-07-17-0078	Closed
FD220027915	7/21/2022	5776 Bencrest Way Haymarket	Trash Truck	On 7/21/2022 at approximately 1440 hours company 506 units were alerted to a Hazmat spill at 5776 Bencrest Way, Haymarket VA 20169. E504M reported that approximately 30 gallons of hydraulic fluid had been released from a trash truck on a roadway within a gated community. Hazmat complement responded emergent to the scene. Upon arrival found a Republic Waste Service trash truck at the end of the cul-de-sac, hydraulic fluid had leaked out of a broken/damaged hydraulic line, under the cab compartment, into the roadway and subsequently flowed away from the truck in the curb drainage system toward an open storm drain. The trash truck driver had applied absorbent pads and E504 applied absorbent to dam the spill in order to slow/retain hydraulic fluids. E504 reported that a few drops of fluid had penetrated past the the damming but had already been covered and dried in the corner of the storm drain. Hazmat personnel investigated the spill containment and confirmed that no additional leaking was present, and the storm drain was relatively clean. None of the spill entered the waterway.	Closed
FD220028621	7/26/2022	12521 Nokesville Road	Tractor Trailer	Duty hazmat technician was contacted for a phone consult from E525. E525 had a tractor trailer that was on fire and was leaking approximately ¾ of a tank of diesel fuel along with hydraulic fluid and oil that was getting into the storm drain. R506 and HM506 responded to assess the situation. Upon arrival HM506 was met by E525 driver and updated on the situation. E525 took dirt from a yard and tried to divert the product away from the drain. Unknown how much product went into the drain, but a sheen was noted in the storm drain. Manhole covers were checked for a mile downhill with the sheen being less in each one. One mile from the incident location the storm drain emptied to a retention pond at the intersection of Aden Road and Nokesville Road. No product noted at this location. The owner of the truck contacted Waggys towing to remove the truck from the road. The owner was given an LEPC and it was explained to him that he would need to contact a clean up company that could do environmental cleanup. Atlas was contacted by the owner. Technician Budkiewicz spoke to Paul from Atlas to explain the situation and what was needed. Representative from VDOT arrived and was briefed of the situation. VDOT representative stated he would follow up with Atlas and remain on scene to make sure clean up was done properly.	Closed
N/A	8/1/2022	14809 Dumfries Rd	transmission fluid	Crashed Vehicle with severe front end damage. multiple fluid lines broken.	Closed
FD220031528	8/16/2022	Lee HWY/Pageland Ln	vehicle accident	Hazmat consult fielded by Lt. Lind (On Duty Hazmat Technician) for fluids leaked onto the shoulder of the roadway as a result of a motor vehicle collision. E522's OIC was the reporting party. E522's OIC stated that approx. 2-3 quarts of oil had spilled into a puddle on the shoulder of the roadway after a motor vehicle accident. Initially, I advised them to place absorbent around the site and contact VDOT to enforce the cleanup efforts. They advised that the puddle/oil was contained and not moving. The spill also did not spill into any waterways. After VDOT was requested and VDOT denied a response, Hazmat resources responded to assist E522. Company 506 units AOS and began using oil absorbing pads on the spill site. Oil was absorbed as much as possible and the soaked pads were taken by the tow company. No other hazards were present, and all units cleared the scene and turned it over to PWC PD. Approximately 30 oil absorbing pads were used. Photos: #1 is from E522 OIC #2 is post clean up by HM506	Closed
N/A	8/16/2022	8416 Cabin Branch Ct	hydraulic fluid	When the employee hooked the Grapple to the Bobcat skid loader and hooked up the hydraulic lines he noticed 2 small pin holes in the hoses. He shout the machine down and we we pulled the lines off and replaced them. Absorbent pads where placed under the control valve while this was done and the pads where placed in our Hazmat barrel at the OPs building at 14877 Dumfries rd.	Closed
FD220031667	8/17/2022	Lake Jackson Drive/Dumfries Rd	truck	Hazmat units were requested to the scene of a snooper truck that was overturned on the side of a bridge. R506 was already dispatched and committed for the accident. E506 and K506 crews responded with HM506 and HS506. Upon arrival, face-to-face performed with command and E506's officer was assigned hazmat group with an alternate channel. Hazmat group was comprised of E507, E506, HM506, HS506, R522, and RE521. Hydraulic fluid had leaked from the overturned vehicle and was falling below to a stream. R522's crew was below assessing, and booms were lowered to them for placement. 8 booms were placed, and testing was performed with oil finder paper. No positive responses were noted past where the booms were placed. Hazmat units remained on scene until the snooper was up righted and it was confirmed that the fuel tank had not been compromised. The owner of the company identified ECC as the clean up contractor. DEW was on site and provided with the information. Scene turned over to VDOT. VDEM report number VDEM-2022-08-17-0073.	Closed

FD220031760	8/18/2022	Bristow Rd/Dumfries Rd	tractor trailer fuel tank	Phone call received from PWC PSCC in reference to a request from E503. E503 was on scene of a two-vehicle tractor trailer accident. E503 was initially dispatched for the accident and associated truck fire. E503 arrived on scene, extinguished the truck fire, and mitigated hazards. E503's officer stated the saddle tank had been compromised and an estimated 50 gallons of diesel fuel was on the roadway, shoulder, and grass. Puddles were noted off the roadway on the grassy shoulder. The officer on scene, Lt. Clatterbuck was a Hazmat Specialist and had already issued an LEPC. Waggys towing was on scene and was able to clean up the roadway. Waggys was also directed to soak up fuel in soil with absorbent. VDOT was arriving on scene and would be working with the trucking company to identify the clean up contractor for the puddles in the grass. Lt. Clatterbuck was comfortable facilitating the process and was ok with units not responding. Hazmat units placed in service. Photos and information were sent to Captain Moreau for report and required notifications. No waterways impacted. VDEM report number VDEM-2022-08-18-0079.	Closed
FD22081300040881	8/20/2022	Prince William PKY @ Smoketown Rd	garbage truck	Rescue 506, Hazmat 506, and Hazmat Support 506 arrived on scene of a garbage truck fire which was fueled by CNG. Upon arrival crews on scene advised the tanks were "hissing" during firefighting operations but had stopped prior to hazmat arrival. After a quick recon it was determined that the hissing was caused by a ruptured fuel line near the truck's engine. The four CNG storage tanks were in the rear of the truck and were not compromised by the fire. Due to the ruptured fuel line and the consition of the truck, the tanks were turned off to prevent any possible leakage. Several booms were placed along two storm drains to prevent contaminants from entering the water system. Readings were taken in storm drains in the area and a visual inspection was taken of a nearby retention pond with no signs of any contaminated runoff. A representative from DEQ was on scene and advised everything was going well and to notify VA EOC. Scene was turned over to Waggy's Towing for cleanup and recovery operations. VAEOC Report # VDEM-2022-08-13-0062	Closed
FD220033184	8/27/2022	8413 Rugby Rd Manassas	Dump Truck	Requested to the scene by E508 for an investigation. Homeowner at above location was complaining of diesel smell in drainage waterway in his backyard. Upon arrival a smell of diesel was noted in the back yard. The stream was followed upstream to a property across the street 8412 Rugby. A smell of fuel was also noted at that property. Located on the property was a dump truck that appeared in service. Booms were placed downstream beyond where product appeared to be. FTIR was used to sample the product located on both properties. 8413 sample came back as power steering fluid. 8412 sample came back as diesel. FM was requested to the scene. Lt. Hornaday arrived and conducted a face to face. Lt. Hornady was walked through what we had. Lt. Hornaday made contact with a resident at 8412 and he stated the owner of the truck had left approximately 30 mins prior. While walking away evidence of servicing the truck was noted in the front yard. Evidence noted included a 5-gallon bucket with no lid that appeared to have diesel fluid in it. There was also a pan with used oil in it and several buckets that appeared to have remnants of petroleum products. Lt. Hornaday is going to follow up with the truck owner to interview. DEQ and watershed notified VIA email.	Closed
N/A	8/30/2022	14870 Lightner Rd	diesel	Vendor (Sunbelt Rental) to remove generator with faulty plugged fuel line and clean-up spill (remove approximately 3 gallons of soil).	Closed
FD220035263	9/11/2022	201 Mill St Occoquan	Police vehicle	Report of gas and oil leaking in to the Potomac river near 201 Mill st. Hazmat 506 responded and during the investigation found that a auto accident involving a Occoquan town police car leaked oil and gas in to the storm drain. This leak was not reported when it happened. A sheen on the river appoximaly 150-200 yeard along the shore line was present. After cosulting with DEQ it was determined that fuel and oil spill was deluted in the river and no hazard mitigation would be preformed.	Closed
N/A	10/10/2022	14811 Dumfries Rd	diesel fuel	Disposal Services truck punctured the fuel tank and lost the fuel. Employee of Disposal Service and PWC placed absorbent on the spill. The absorbent the absorbent was collected by Disposal Services for proper disposal.	Closed
N/A	10/11/2022	4701 Locust Shade Dr	Diesel fuel	This morning, while loading up some trailers, crews noticed a strong smell of diesel in the air. After looking around, they observed a leak underneath a skid steer. They immediately applied some absorbent mix to initiate cleanup. Unknown how deep the material soaked into the soil. Crews are going to dig down to see how far the material leeched into the soil. Estimated to be less that a few gallons. Equipment is being taken to maintenance shop to be repaired.	Closed
FD220031528	10/18/2022	Prince William Pkwy/ Telegraph Rd	Bucket	Hazmat consult fielded by Lt. Lind (On Duty Hazmat Technician) for a 5 gallon bucket of oil that had spilled onto the roadway. E520BM's OIC advised that they had spread absorbant over the road to collect most of the product. I advised them to have PD contact VDOT for additional cleanup and support. No waterways were affected.	Closed
FD220041598	10/26/2022	1422 East Longview Dr	Poweline Transformer	Phone consult with E502 for a transformer that was knocked off a pole and leaked approximately 25-30 gallons of oil on the ground. E502 contained the liquid with a dam and absorbant. A LAPC form was provided to VDOT / Dominion electric to have the roadway cleand up.	Closed
MNSS220006123	11/1/2022	8521 Quarry Road	drums	Phone call received from PWC Communications Supervisor. She stated she had a call come in from a citizen who reported a business that was dumping isocyanate into a storm drain. The citizen reported that the company would collect barrels and dump them when they had a bunch of them. PWC Communications Supervisor stated that they had already dispatched a Manassas unit for an investigation and wanted to know if hazmat units should be dispatched as well. I advised to continue to City units and to have them contact me once they arrived on scene. I spoke with Lt. Jenkins (TW501) who stated they were on scene and found no illegal dumping at the address. He stated they found a single blue barrel that had approximately 6 inches of rainwater in the bottom of the barrel. He stated the company had a dumpster that appeared to have secondary containment built into it or added to prevent leaks from occurring. Lt. Jenkins stated he saw no evidence of dumping, no wet ground, and not barrels near the storm drain. Lt. Jenkins would be notifying the Manassas City FM for further follow up. The City of Manassas did not request Hazmat Units for further investigation. I advised Lt. Jenkins that I would make notification to VA DEQ and VA EOC for additional follow up as well. Based on the report from TW501, there appeared to be no hazard present or product to recover. I contacted the citizen who reported the dumping, and she stated that the company routinely dumped the barrels into the storm drain. Based on the CAD notes, the citizen reported having pictures of the dumping. I provided my email (rmoreau@pwcgov.org) and requested she send the pictures so we could better understand the complaint and pass them on to VA DEQ and the Manassas City FM. I received a phone call form PWC FRS Hazmat Officer Briant Atkins who stated the State Regional Hazmat Officer had notified him of the incident and that it had been reported through the National Response Center. I updated HMO Atkins on the information provided to me from TW501 and the follow up notifications that would be made to the Manassas City FM and VA DEQ. I contacted VA EOC and confirmed they already had generated a report. VA EOC also confirmed that they had already notified VA DEQ. VDEM report number VDEM-2022-11-01-0009.	Closed

FD220042498	11/2/2022	15904 Richmond HWY	Fuel Tractor Trailer	HM506 dispatched for a possible fuel leak. Comments first started a few gallons leaked from a pump then updated to possibly 100 gallons. AOS to find a fuel truck that was filling the underground tank over flowed and leaked gasoline. Driver stated he had 300 gallons unaccounted for. Driver damned in front of storm drain in the lot and prevented any from getting into it. Fuel made its way to Richmond Highway and traveled into a storm drain. Very small amount found in one storm drain, surrounding drains checked and were clear, creek near by was also checked with no evidence of product present. LEPC was given to truck driver. Truck was from JRP fueling company. Spoke with Andrew who stated he would work on getting a clean up contractor. Andrew stated first call environmental would be coming. Ethan from first call environmental made contact with me to find out what was going on and said he had a 1.5 hour eta. Scene turned over to PD. Steven from VA DEQ was contacted.	Closed
N/A	11/2/2022	15904 Jefferson Davis Highway	Gasoline	James River fuel vendor spilled approximately 30 gallons during refuelling. PWC HazMat responded initially to contain spill. Additionally, First Call Environmental responded to conduct clean up. DEQ was notified of the spill.	Closed
N/A	11/5/2022	14450 John Marshall Hwy	transmission fluid	While operating a reserve engine, an increase in transmission temp was noticed and transmission fluid was notice, actively leaking under the cab of the engine. Spill was contained with absorbant and engine was parked. PWCDFR fleet was notified.	Closed
FD220043704	11/10/2022	I-66 E MM 46.8	Tractor Trailer	Company 6 unts were dispatched for a report of a two vehicle collision which had resulted in the rupture of a saddle tank on a rollback towtruck as well as a release of motor oil from damage to the engine of the truck. Prior to arrival Technician 2 Militello organized was able to control the majority of the spill through damming and diking, assisted by R522. When company 6 units arrived on scene the spill had been largely contained to the roadway and a small strip of dirt adjacent to it. Company 6 units placed absorbent on the oil and diesel, approximately 10 to 20 gallons of diesel and 2 gallons of motor oil. No waterways were impacted. Lt Moore spoke with the responsible party who had another tow truck already on scene. Lt Moore explained that all absorbent and any contaminated soil needed to be removed and properly disposed of. The responsible party stetd he understood and would do so. As such no LEPC was given. State Police were informed of the arrangement and agreed to verify that clean up was performed before the responsible party left the scene. Company 6 units went n service, tot State Police. VAEOC Report Number: 2022-11-10-0034	Closed
N/A	11/16/2022	14811 Dumfries Rd	Oil	Call from scale house said there was oil in front of inbound scale. Used staydri to soak up oil. collected absorbent from concrete.	Closed
FD220044748	11/17/2022	Jeff Davis HWY@Powells Creek BLVD	tractor trailer fuel tank	Hazmat requested to the scene of a large tow vehicle that had been involved in an auto accident. Tow vehicle had been hit on the passenger side @ the saddle tank. Company 23 units arrived on scene and found the saddle tank with a slow leak. They deployed a pop-up pool to capture leaking fuel. Hazmat units responded priority two and evaluated the saddle tank. Tank was leaking from under the support bank and Hazmat was unable to stop the leak. Truck was moved up Jefferson Davis approx., 400 feet to a turn lane and the roadway was opened. Pop-up pool placed back under the leak. Leak was a slow leak with a drip every two seconds. Redmans towing was identified by PWC PD. They arrived on scene and were able to off load the single saddle tank, isolated the transverse fuel line, and the driver of the truck was able to continue to his shop in Baltimore, MD. No waterways or storm drains impacted. No absorbents or booms placed by FD or Hazmat.	Closed
FD220044843	11/17/2022	I-66 WB @mile 46.2	tractor trailer	Hazmat team was requested to the above noted location for a hydrocarbon release post vehicle accident. A tractor trailer was traveling on I66 WB when it struck an unoccupied Road Safe vehicle. Road Safe vehicle was on the right side of the road blocking workers on the interstate. Tractor trailer struck the unoccupied vehicle and continued WB ending in the express lanes of I66. IC requested Hazmat to be dispatched. PWC Communications dispatched a Hazmat compliment to include Loudoun and FFX units. DCO was notified and placed all non PWC Hazmat units in service. While responding, Captain Moreau requested VDOT incident management team to the scene. Arrived on scene and determined no hazard in the tractor trailer. Tractor trailer had ruptured its saddle tanks and spread upwards of 100 gallons of diesel fuel across the roadway. VSP and VDOT had I66 WB and Express lanes shut down. Incident was determined to be stabilized. No water way impacted. VSP advised Redmans towing was enroute to the incident. Recommendation from Hazmat was to release all units from the incident with the exception of the Hazmat team (E506, R506, HM506, HS506). Incident was moved to 5B and Captain Moreau was the on scene contact. No water ways were impacted. VDOT IM arrived on scene and stated they were ok with Redmans performing cleanup and towing of vehicles. No further action needed by Hazmat. VDEM report number VDEM-2022-11-17-0058.	Closed
N/A	11/29/2022	8460 Maplewood Dr	Used oil	DPRT County Rangers we called to the incident. No witnesses or suspects for the event. DPRT Maintenance was advised and assisted in clean up with obsorbant material.	Closed
N/A	11/29/2022	7625 Aaron Lane	Motor Oil	While checking the parking lot of Ellis L. Barron park, PR McCarthy observed a vehicle with what appeared to be an engine oil spill under it. The vehicle owner arrived and it was determined he was repairing the vehicle and responsible for the spill. He was advised of the regulations. Due to it being after hours, grounds staff was not available for immediate response. Grounds supervisor Kevin Flickinger was notified by email. Pictures of the scene were taken and included in the Incident Report (#2022-1628).	Closed
N/A	12/2/2022	14811 Dumfries Rd	Hydraulic Fluid	A hydraulic hose blew. The spill was contained and covered with Oil Dri. The Oil Dri was brushed to clean up the residual hydraulic oil that was on the ground, which was cleaned up and put in the trash.	Closed
FD220047684	12/7/2022	8900 Freedom Center	Refueling Generator	Company 6 units were dispatched for a report of a large amount of diesel fuel spilled while refueling a generator at the Western District Police Station. Initial reports were of 3000 gallons, but the amount was later determined to be around 1750 gallons. PWC Buildings and Grounds had been conducting a generator refueling operation when an error of malfunction resulted in a pump being left in operation which overflowed the generator being fueled. By the time DFR units arrived on scene Public Works had already placed booms, pads and absorbent. The spill was entirely contained by the gravel spill protection surrounding the tank and generator. No Fire Department action was necessary. Briant Atkins was on scene and stated he would handle the cleanup contractor as well as notifying DEQ. No waterways were impacted. VAEOC Report Number: 2022-12-07-0020. DEQ notified by Risk Management Rep on site Bobby Lin. Spill later determined to be 2200 Gallons of Diesel. Diesel fuel leeched into ground and into an adjacent storm drain running parallel to Freedom Center Drive and into the creek adjacent to Western District PD property later in the day from an outflow that was covered over and not easily detectable. HM506 called back out to scene to assist in booming areas of Canon Branch later in the day around 1700 hours. Fuel discovered as far up where Cannon Branch crossed University Drive. HM506 returned later in the evening and the next morning (12/08/2022) to assess if the spilled product had gone any further and added additional booms as needed. DEQ also responded to scene later in the day on 12/8/2022. Cleanup contractor utilized on site was Total Environmental Concepts and Miller Environmental. HM506 personnel checked as far as the construction project at Route 28 & Godwin Drive with no evidence of product there. The environmental contractor took charge of the remediation on site…..Addendum - B. Atkins	Closed
N/A	12/7/2022	8900 Freedom Center Blvd	diesel fuel	The Transfer pump on Generator BG3062B was stuck in the on position and continued to pump diesel fuel from the adjacent aboveground storage tank into the generator belly tank. Fuel pumped out of the overflow pipe and onto the pad and eventually into Cannon Branch. HazMat initially responded and DEQ was notified. PC#2023-3068	Closed

FD220067278	12/30/2022	18321 Richmond HWY Triangle	vehicle	Hazmat phone consult was received through communications. E503 was on the scene of a vehicle fire in which the fuel line was compromised during firefighting efforts. Fuel ran onto private property (18314 Richmond HWY Triangle VA 22172) and possibly into two storm drains. E503 had placed absorbent around storm drains to minimize spread of fuel. E506 and HM506 went to the scene to investigate further. Sheen was visible on the ground of the noted address. Address was also a vehicle maintenance shop, and it is unknown what sheen was related to the fire and what may have been present prior to the fire. Absorbent was placed in pooling areas of visible fuel. No storm drains were impacted. LEPC was issued to operator of the vehicle, and he was advised to contact a company to clean the absorbent from the private property. Owner was responsive and advised he would work through his auto insurance to resolve.	Closed
FD230000030	1/1/2023	12836 Cara Dr	Oil Transformer	Hazmat consult fielded by Lt. Lind (On Duty Hazmat Technician) for oil that had leaked from a transformer as a result of an auto accident. E514's OIC stated that the vehicle travelled at a high rate of speed and knocked over a large transformer. The transformer then leaked a majority of its oil into the pit/concrete pad that it was sitting on. There however was a small amount (aprox. .5 gal) that had pooled onto the grass. I advised them to place stay dry on the puddle if needed and verify that the oil was not traveling into any waterways or streams. They stated that the pooling was contained to one area and was not traveling anywhere. The power company (Dominion) was en route to address the issue, but no other hazards were noted. This is for notification purposes only.	Closed
N/A	1/2/2023	14809 Dumfries Rd	Power Steering Fluid	Leaking power steering gear box. Gear box resealed.	Closed
FD23013000005097	1/30/2023	12650 Galveston Court	citizen dumping	Phone Consult Request. Fire supervisor contacted DHM G. Clark at 0930 that E526 had requested a hazmat consult. I initiated phone consult with Lt. Allen Lagrave on E526, he reported the resident of 12650 Galveston Court was concerned about contents left in roadway from the previous day. E526 found 3 quart size 15W-40 oil containers, and one 5-gallon oil pan (filled with used oil) in the roadway near storm water drain. A small amount of oil was on the road, and appeared to have entered the storm water drain. E526 removed the cover above the drain, and no visible oil had made it to the bottom of drain. Captain Clark advised Lt. Lagrave to contact the on duty fire marshal to initiate an illegal dumping report; other notifications would be made to VDOT, DEQ, and PWC Stormwater Management. At 0941, Captain Clark spoke with Joseph Warner, VDOT representative, and informed him of the situation. Mr. Warner requested that if the fire marshal could not determine a responsible party then to contact him for clean up. At 0945, Captain Clark spoke with Lt. Lagrave to relay VDOT's request, Lagrave remaining on scene for fire marshals arrival. Notification email sent to VDOT, DEQ and PWC Stormwater Management. At 1145, VDOT Representative Joseph Warner updated Captain Clark that FMO Lt. Barbara Quick had notified him that VDOT was responsible party, and that their environmental division was working on clean up.	Closed
FD230004289	2/1/2023	9208 Douglas St	Motor Oil by Citizen	Dispatched for a hazmat at the dispatched address. Notes on the call stated that the City of Manassas Storm Water Management division was notified of motor oil being spilled into a creek behind the dispatched address. Crews aos to find what appeared to be several quarts of oil that had been dumped into the creek. City water management took defensive measures of placing oil pads in the creek to try and absorb some of the product prior to our arrival. Hazmat resources aos and met with the incident commander (BC589) and with city water management officials. They advised that they were contacting their vendor/contractor to clean up the product and that they were notifying VA DEQ and VDEM of the spill. Hazmat crews placed a boom in the creek behind 9225 Douglas St (downstream) to try and capture additional product that had traveled downstream. No other resources or actions were needed, and the scene was turned over to City of Manassas FD's FMO and storm water management.	Closed
FD230004294	2/1/2023	Dale Blvd/ Forestdate Ave	Automobile	Fielded a hazmat consult from Capt. Darabond (BC503) regarding leaking fluids from an auto accident. He advised that the vehicle was overturned in the median and that fluids were leaking into a drainage ditch. Crews on scene used stay dry to contain the spill. After discussion, no other hazards were noted and that the tow company would complete the clean up.	Closed
N/A	2/14/2023	Fire Station 24	Diesel Fuel	Overflow tube was not connected to the fuel tank causing the fuel to drain onto the ground. Fleet Maintence sent a mechanic from AES who installed a hose clamp to repair the problem.	Closed
N/A	2/20/2023	18809 Fuller Heights	Hydraulic Oil	Line busted on mower. Put down oil drop cloths on surface and picked up asborbed materials. Called to get tractor towed.	Closed
FD23031000012491	3/10/2023	12400 Spingwoods Dr	Automobile	Engine 526 requested a phone consult for an auto accident involving a small amount of oil that entered a storm drian. They advised that approx. 2 to 3 quarts of motor oil leaked into the drain resulting in a small pool at the bottom. Absorbent was placed around the drain to prevent any further fluids from enteting. They were advised by the DHM to get the driver's info in case a follow up was necessary and to ensure the tow company cleaned up all used abrorbent that was placed on the ground. Notification to VAEOC completed by DHM.	Closed
N/A	3/10/2023	15125 Blackburn Rd	Motor Oil	On March 10, 2023 at 10:45 am while checking the parking lot at Neabsco Regional Park (PR) McCarthy observed an empty bottle of motor oil and spill nearby. Shifty Supervisor Park Ranger Hurtado was notified as well as Maintenance and Operations Superintendent Kevin Flickinger for proper cleanup and disposal. Cones and caution tape, and spill pads were placed by the oil spill. Risk, Wellness and Safety Specialist Yancee McLemore was also notified. At 12:40 pm Kevin Flickinger advised that the spill had been cleaned up.	Closed
FD230010870	3/20/2023	I-95N MM154	Tractor Trailer	Hazmat units were dispatched to I95N at the 154 MM (truck scales) for a tractor trailer leaking an unknown reddish liquid from the cargo area. There was a placard per VSP on the side that said 1755 (Chromic Acid). Initial units aos and established Hot/Warm/Cold zones and started initial damming and diking to prevent the product from reaching any storm drains. None of the product reached the storm drains and did not reach any water ways. Company 6 units aos and assumed hazmat responsibilities. Hazmat 506 confirmed that the product was chloric acid by utilizing pH paper and the First Defender RMX. Air monitoring was also preformed around the area to ensure the atmosphere was safe to operate in. All personnel were in structural firefighting gear and scba to recon the trailer. The trailer doors were opened to gain access to the cargo area and it was noted that there was liquid spilled all on the floor of the cargo area from 1 or many of the 10+ containers of hazardous waste/chromic acid. Crews donned tyvex suits and scba to inspect the inside of the trailer to see if the leak was an easy fix. It was noted that there was pooling of approx. 1 inch of product in the front of the trailer. A leaking tote was not identified due to the container's being large and in close proximity to each other. Once outside the trailer, crews deployed additional absorbent and a pop-up pool to try and contain the spill. Notifications made were HMO501, VDOT and DEQ. VSP was on scene initially and stayed during the duration of the incident working with the driver and shipping company. VDOT and DEQ reps aos and continued to work with VSP and the shipping company on coordinating the clean up efforts. Company 6 units cleared the scene and returned to service	Closed

N/A	3/20/2023	14811 Dumfries Road	Hydraulic Oil	Noticed liquid on the ground as I was heading out of the front gate. Stopped and put down oil dri, came back to sweep and clean up spill. Later on video Polly found the truck responsible. Told him to be more care and get a spill kit for his truck.	Closed
FD230011276	3/23/2023	Dumfries RD & Bradley Cemetery Wy	Vehicle Accident	E506, R506, HM506, HS506 arrived on scene of a fuel spill from the result of vehicle accident at the request of E521C. DC 581 had established command prior to arrival. HMT McAlister had activated the isolation valve between the two saddle tanks, and placed a pop up pool under the leaking driver side saddle tank prior to our arrival. Approximately 30 gallons of diesel fuel had spilled onto the roadway; no fuel entered any waterway or storm drain. Defensive control tactics completed by E521C and TW501. HM506 used wax ring to stop the leak from the driver side fuel tank. PWC PD identified the responsible party of the accident as the driver of the dump truck (Oscar Antonio Valle, Santana Trucking LLC). PWC PD had made contact with Redman's Fleet Services LLC to tow both vehicles. Redman's representative on scene (Mike Fox), informed Captain Clark they would be able to handle the clean up due to it being on roadway and limited amount. Redman's was sending extra truck with absorbent and bobcat to sweep roadway clean. Scene turned over to PWC PD. No LEPC form given, and Captain Clark spoke with Santana Trucking LLC owner, Rosa Valle-Espinoza, to inform her of process.	Closed
FD2300112511	4/1/2023	Digges Road at Sudley Road	Utility Poles Transformers	DHM was notified by E501B of 3 utility poles which had been blown over behind Prince William Hospital, destroying 2 transformers and leaking mineral oil. R506 and HM506 went enroute to the scene and discovered approximately 52 gallons of mineral oil had spilled from the transformers and run both directions on Digges Rd. The oil had spread several hundred feet and had entered a storm drain on Sudley Road. The oil within the storm drain appeared to be less then one gallon, as E501B had blocked the storm drain with absorbent before arrival of R506. A boom was placed in the storm drain and absorbent was also used. The spill running away from Sudley road did not enter any waterways and was contained by absorbent. The mineral oil was tested for PCBs and found to be negative. Additional absorbent was placed until the majority of the mineral oil had been absorbed or contained. Jeffery Stephens with Manassas City Risk and Safety was the responsible party and contacted ECC for mitigation after receiving the LEPC. ECC reported an approximately one hour eta, and R506 and HM506 went in service after confirming Mr Stephens would remain on scene to act as point of contact for the clean up. Approximately 20 bags of absorbent were used as well as one PCB test kit. Reported to Bria at VA EOC Report # Unavailable	Closed
FD23040400017256	4/4/2023	Lee HWY/Tysons Oaks Court	Tractor Trailer	E504 was on scene of a vehicle accident involving a tractor trailor. The tractor trailer was leaking approximately 40 gallons of diesel fuel from a saddle tank, and E504 upgraded the call to a HAZMAT. The leak was in proximity of a storm drain. Crews on scene performed defensive tactical control measures prior to the arrival of Hazmat resources to prevent further product travel. Hazmat resources arrived on scene and assessed the situation, noting no product in the waterway. Hazmat resources issued an LEPC to the responsible party. Hazmat resources placed protective boom to ensure no product leaked into the waterway. Aaron's Towing was contacted by the responsible party to tow the vehicle, and they advised they'd handle the clean up of the diesel in the roadway; Aaron's Towing contacted First Call Environmental at 1941 to assist with the clean up of the field that the storm drain emptied into.	Closed
N/A	4/5/2023	14811 Dumfries Road	Hydraulic Oil	Hydraulic hose on boom cylinder failed while the truck driver was loading a roll-off box on to the truck. The driver stopped his operation and used his spill kit to contain the oi. Call for assistance got oil absorbent. Using the oil absorbent to clean up the oil that was pooled up. Making sure no more oil was left on the ground.	Closed
N/A	4/7/2023	8900 Freedom Center Blvd.	Gasoline	Gasoline was spilled out onto the concrete and ran down to the asphalt. It was stopped after being noticed and cleaned up before it could spread or enter any waste water run off. Assistant Fleet Manager Jacob DeBriae contacted. He contacted Risk Management and advised they will put down some more absorbent if needed.	Closed
N/A	4/12/2023	14811 Dumfries Road	Gasoline	While fueling county vehicle small amount of gasoline spilled from filler pipe. Oil dry was used to soak up spilled gas.	Closed
N/A	5/1/2023	14809 Dumfries Rd	Anti Freeze	Coolant leak from vehicle. Cleaned up with Stay Dry Asborbent.	Closed
FD23050300022764	5/3/2023	I-95 Truck Scales	Tractor Trailer	E510 was on scene of a tractor trailer leaking approximately 24 gallons of diesel fuel from a saddle tank. The fuel spill spanned the whole area of the truck scales. Fuel did not enter any waterways, and crews had a bucket under the leak to contain any additional leakage. HazMat units did not respond. E510 was instructed to issue an LEPC; VSP was on scene and ensured the driver contacted a clean-up contractor (EEC). Notifications to VAEOC were not made due to the leak being below reportable quantities.	Closed
N/A	5/8/2023	Prine William Golf Course Maintenance Yard	Diesel Fuel	DPRT Safety Mgr on site for fuel tank inspection on 5/8/23 @ 11:30 AM and observed large dark area on the gravel near the diesel fueling tank. Closer inspection revealed it was spilled diesel fuel. Initial estimates are <5 gallons. Site supervisor indicated that contractors have been working to replace fuel pumps on the tank. Opon observation, it was observed that there was no nozzle attached to the diesel fuel pump line; the metal end of the hose was laying on the top of the tank. Site supervisor was instructed to excavate the contaminated gravel; properly dispose of, and backfill with clean dirt and new gravel.	Closed
FD23051200024460	5/12/2023	I-95 Truck Scales	Tractor Trailer	At 1033 on 5/12/23, a HazMat assignment was dispatched for a diesel spill at the truck scales. E523 arrived and advised 10 gallons with no product in a waterway. BC503 initiated a phone consult with DHM (Capt. Hauser). BC503 was advised to document the incident, issue an LEPC, and ensure no product was in a waterwy. Not notifications were made due to the quantity being below the reportable quantity.	Closed
FD23051200024468	5/12/2023	PW Parkway/ Brentsville Road	construction site	At 1102 on 5/12/23, a HazMat assignment was dispatched for a fuel spill at the intersection of Prince William Parkway and Brentsville Road. Crews arrived and advised 5 gallons with no product in a waterway. HM506 used 10 bags of absorbent to cover the product on the ground. Brad McClung (Wagman Construction) was onsite and stated they'd handle the clean-up (product was in a construction site that was already being dug up).	Closed
N/A	5/17/2023	15219 Hollyside Dr Parking lot	Diesel Fuel	Diesel Powered Pressure washer started to leak diesel after a hour of use. Noticed after a sheen was noticed on the blacktop. I obtained the spill kit nearby and grabbed 2 oil absorbing pads, 1 pig sock and 5 of the cleanup cloths. and placed in a yellow bag for dispoal.	Closed
FD230020015	5/22/2023	I-95SB MM156	Tractor trailer	Hazmat units were dispatched to assist on I95 with an overturned tractor trailer leaking fluids. R506 OIC (Lt. Lind) went direct to the incident commander to obtain a situation update due to no phone consult being communicated. IC Captain Adams advised that there was approx. 50-60 gallons of hydraulic fluid/fuel on the roadway and it had went into the shoulder of the off-ramp. Lt. Lind advised him to instruct crews to deploy pop up pools and absorbent to contain the leaking/running fluids. As we approached the interstate, Captain Adams advised that Waggys Towing was already on scene and in the process of cleaning up the hazardous fluids. Lt Lind advised Captain Adams that as long as the cleanup process was taking place and there were no other hazards, that he could issue the driver or designated authority (VSP) an LEPC form explaining to them that they are the responsible party for any cleanup efforts. Hazmat units were no longer needed on the incident and all company 6 units returned to service. While en route to the station, Captain Adams contacted Lt. Lind and advised they needed a unit to return to the scene to bring an in date LEPC form. TII Wayland drove to the scene in Utility 6 to deliver the LEPC form to E510's OIC (Captain Wesley.) Captain Brubaker, VA DEQ (Steven Fontenot) and the VA EOC were all notified of the incident. VDOT also responded to the scene as well. The scene was turned over from E510's OIC to VSP.	Closed

N/A	5/23/2023	7500 Ben Lomond Dr	liquid chlorine	Vendor driver delivering liquid chlorine overfilled the container, continuing to overfill into the secondary containment and subsequently over the top and onto the floor. A nearby pool operator notified the delivery driver, who was unaware. The driver told the pool operator to get a hose, which he used to dilute the chlorine and wash into nearby deck drain outside the chlorine room instead of putting down spill pads.	Closed
N/A	5/23/2023	Splashdown Waterpark, 7500 Ben Lomond Dr	Liquid Chlorine	Vendor driver delivering liquid chlorine overfilled the container, continuing to overfill into the secondary containment and subsequently over the top and onto the floor. A nearby pool operator notified the delivery driver, who was unaware. The driver told the pool operator to get a hose, which he used to dilute the chlorine and wash into nearby deck drain outside the chlorine room instead of putting down spill pads.	Closed
N/A	5/29/2023	14811 Dumfries Road	Paint	Paint put in metal box and spilled when the box was emptied at the metal pile. Used oil dry to clean up paint.	Closed
N/A	5/30/2023	Brandon Way, Manassas VA Unity Reed Middle School campus	Hydraulic Oil	Hydraulic line/hose on 15 ft mower ruptured due to unknown causes. Spewed onto equipment and ultimately leaked onto ground. Small trail on grass path, with largest concentration on gravel area. Absorbent pads placed underneath equipment to catch any residual leakage. When equipment is moved, the contaminated gravel/soil will be excavated and contained.	Closed
FD23051200024468	6/1/2023	3401 Panther Pride Drive Potomac HS	Fueling container overfill	E506, R506, HM506, and HS506 dispatched to 3401 Panther Pride Drive for the report of leaking diesel fuel from a truck. E523 arrived on scene and reported that a fixed diesel storage tank was overfilled by the distributing company, and that approximately 20 gallons were on the ground. Andre Dickerson of JRP was the driver (phone number: 202-714-1873). BC503 (Phillips) arrived and established command. Command initiated a phone consult with DHM G. Clark, who was en route to the incident. Phillips advised that the driver placed booms and absorbent down, and no fuel entered waterways or storm drains. A LEPC Form was given to Mr. Dickerson, and he made contact with his company to coordinate clean up. Phillips placed all units in service with the exception of E523 who remained on scene as a point of contact, and requested the on duty FM to enforce clean up compliance.	Closed
N/A	6/9/2023	Fleet Management 14809 Dumfries Rd	Oil	A vendor came to pick up totaled vehicles and it leaked oil out leaving a trail. Cleaned up with Stay dry absorbent	Closed
FD23061900031965	6/19/2023	I-95S MM161 HOV Exit Ramp	pesticide company	E506 Officer, Graham Clark, conducted a phone consult with E502 officer Bryan Janda. Janda explained that a pest control pickup truck was involved in an accident on I95 South HOV lane ramp to Gordon Blvd, and that the water tank in back was leaking, mixing with some of the chemicals that were in bed of truck. Clark advised Janda that hazmat resources would respond to scene. E506, R506, HM506, and HS506 responded to the scene. Clark and Moore met with Janda to obtain on scene information, absorbent used by E502 prior to arrival on scene. Moore had personnel test product running out of truck with pH paper, water paper, oil paper, and used advanced tech to determine what was leaking. Clark met with driver (George Palczynski, Eco Shield Pest Solutions, 1-888-744-1274, 22560 Glenn Street, Suite 113, Sterling, VA, 20164), to obtain information and explain the process going on. George's supervisor, Kurt Stegmeier (571-926-6777) arrived on scene. Moore reported back that the liquid around the truck was just indicating as water, however there was a granular substance on the shoulder of the road, spilled from a bag that was in the bed of the truck; granular substance was bifenthrin. Bifenthrin is mixed with water for pest control. Clark issued Stegmeier an LEPC form for clean up. Stegmeier informed Clark that first three companies turned him down, and that ECC had accepted. Clark released R506, HM506, and HS506. VDOT given curiosity notification to Joe Warner. Due to incoming rain weather Clark asked Stegmeier ETA for ECC, but he had not be given a time yet. Stegmeier notified Clark that Eco Shield Pest Solutions did have clean up spill kits, and could sweep up the bifenthrin granular product. Due to the concern of it washing away from pending rain, Clark agreed to Stegmeier cleaning the product up, and Clark supervised the clean up process. Stegmeier took possession of the cleaned up product and removed it from I95. Scene turned over to VSP, and tow company. Notification made to VAEOC, but VSP had already given all information, VDEM202306190077.	Closed
FD230024369	6/20/2023	12831 & 12824 Fitzwater Dr	residental diesel tank	Company 506 units were dispatched for a reported fuel leak in a creek/runoff area to the left of the dispatched address. Initial units AOS and found fuel (possibly diesel) in the runoff area. Initiated defensive measures setting up dams using soil to contain the product. Company 506 units AOS and assessed the scene. DHM Lind requested the Duty FMO through the incident commander. Crews were directed to deploy oil absorption pads and booms to absorb most of the product in the runoff area. These soiled booms and pads were left for the clean up company to handle. The product was not flowing anywhere else except into this runoff area. The product was contained to this area. FMO Lt's Kelly and Lefever AOS and assisted with determining the responsible party of the runoff area. The responsible party of the runoff area was determined to be the owner of the property to the left of the dispatched address (12829 Fitzwater Dr). Testing was conducted on the product and by utilizing the tru defender, the product was determined to be diesel fuel. Initially, the LEPC for was issued to the owner of 12829 Fitzwater Dr. since the product was on their property. Command was terminated and only Company 506 units, as well as PE505 remained on scene. After further investigation with the FMO on scene, more product was found in additional manhole covers across from the runoff area. When tracing the sewer system back, the leak was discovered behind address 12824 Fitzwater Dr. Product was leaking from an approximately 100-120 gal tank and dripping into a bucket. The product was tested utilizing the tru defender, and it also came back as diesel fuel. The fuel had leaked into the soil and into a drainage pipe that ran directly into the sewer system. The responsible party for this property was identified and the LEPC form was withdrawn and reissued to a representative of the property owner. The leaking tank was mitigated by utilizing a wax ring. The property representative contacted a DEQ rep (Billy Willard) regarding the spill. The representative was working with a clean-up company already on site to conduct the clean up efforts. Company 506 assisted the FMO with sample/evidence collection. Notifications on the scene included VADEQ (Steven Fontenot), the VA EOC, and the PWC Service Authority (requested through communications.) The scene was turned over to the FMO for further investigation. Company 506 units returned to service.	Closed
N/A	6/21/2023	14811 Dumfries Road	Latex Paint	Our vendor Clean Harbor spilled paint behind the trash box. The drain is directly behind the box. They covered the spill with absorbent but the rain did wash some material into the drain. The shut off valve was turned down.	Closed
FD23030100010802	3/1/2023	Lee HWY/Pageland Ln	dump truck	Capt. Hauser received a text from the UFRO to contact E522 for a hazmat phone consult. Capt. Jeremy Moore stated they had a dump truck on it's side leaking diesel fuel from the upper saddle tank. Company 522 had placed a pop-up pool under the saddle tank and the pool was containing the leak. Approximately 10 gallons had spilled prior to the arrival of units, but the fuel was contained to a field, not impacting any waterways. Capt. Moore was instructed to issue the LEPC form to the dump truck driver and advise him to contact a clean-up contractor.	Closed

Appendix G

Industrial and High Risk Inspection Summary

Landuse	Outfall Id	Last Inspection Date	Flow Present	Illicit Discharge	High Risk	Maintenance Required	Within PWC Service Area	VPDES Permitted
Vehicle Sale/Repair/Miscellaneous Automotive	7564	9/16/2022	Stagnant	Unlikely	Y	False	N	N
Shopping Center	33551	8/9/2022	No	Unlikely	Y	True	N	N
Shopping Center	26018	9/20/2022	Yes	Unlikely	Y	False	Y	N
Shopping Center	18157	7/7/2022	Yes	Unlikely	Y	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	7558	9/16/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	31195	9/1/2022	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	58310	9/16/2022	No	Unlikely	Y	False	Y	N
Planned Industrial Park	37344	8/16/2022	No	Unlikely	Y	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	20789	8/24/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	31185	9/1/2022	Stagnant	Unlikely	Y	False	N	N
Planned Industrial Park	31189	9/1/2022	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	30228	9/16/2022	No	Unlikely	Y	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	30226	9/16/2022	No	Unlikely	Y	False	Y	N
Planned Industrial Park	5756-001	9/1/2022	Yes	Unlikely	Y	False	N	Y
Other	18212	7/7/2022	No	Unlikely	Y	True	N	N
Other	16270	9/16/2022	Yes	Unlikely	Y	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	50491	8/16/2022	Stagnant	Unlikely	Y	True	N	N
Other	16272	9/16/2022	Yes	Unlikely	Y	False	N	N
Shopping Center	10961	8/17/2022	No	Unlikely	Y	False	N	N
Shopping Center	10236	8/17/2022	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	30230	9/16/2022	Stagnant	Unlikely	Y	False	Y	N
Planned Industrial Park	46738	8/10/2022	No	Unlikely	Y	False	N	N
Hotel w/ Restaurant	19822	7/8/2022	Stagnant	Unlikely	Y	False	N	N
Shopping Center	27775	8/17/2022	Yes	Unlikely	Y	False	N	N
Shopping Center	5371	8/18/2022	Yes	Unlikely	Y	True	N	N
Planned Industrial Park	25022	8/16/2022	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	19041	8/25/2022	No	Unlikely	Y	True	N	N
Shopping Center	31103	8/9/2022	No	Unlikely	Y	True	N	N
Other	19050	8/25/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	16088	8/16/2022	No	Unlikely	N	True	N	N
Planned Industrial Park	19260	8/10/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	20584	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31195	9/1/2022	Yes	Unlikely	Y	False	N	N
Planned Industrial Park	66507	8/16/2022	No	Unlikely	N	True	N	N
Planned Industrial Park	37344	8/16/2022	No	Unlikely	Y	True	N	N
Planned Industrial Park	55078	7/22/2022	No	Unlikely	N	True	N	N
Planned Industrial Park	1118	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	34353	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31191	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	20574	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31185	9/1/2022	Stagnant	Unlikely	Y	False	N	N
Planned Industrial Park	31179	9/1/2022	No	Unlikely	N	True	N	N
Planned Industrial Park	31536	8/16/2022	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	31189	9/1/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	31183	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	5756-001	9/1/2022	Yes	Unlikely	Y	False	N	Y
Planned Industrial Park	31569	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	25017	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31945	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31941	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31556	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	66499	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31943	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37334	8/16/2022	No	Unlikely	N	True	N	N
Planned Industrial Park	31567	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	58320	7/22/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	46738	8/10/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	21510	9/1/2022	No	Unlikely	N	True	N	N
Planned Industrial Park	31181	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31187	9/1/2022	No	Unlikely	N	False	N	N

Planned Industrial Park	37363	8/16/2022	Yes	Unlikely	N	True	N	N
Planned Industrial Park	31554	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	25022	8/16/2022	Yes	Unlikely	Y	False	N	N
Planned Industrial Park	21512	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37374	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	55083	7/20/2022	No	Unlikely	N	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	36576	10/11/2022	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	36573	10/11/2022	No	Unlikely	Y	False	N	N
Gas Station	31165	10/11/2022	No	Unlikely	Y	True	N	N
Shopping Center	10248	10/21/2022	No	Unlikely	Y	False	N	N
Residential	14614	12/19/2022	No	Obvious	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	62029	10/11/2022	No	Unlikely	Y	False	N	N
Residential	14617	12/19/2022	No	Obvious	Y	False	N	N
Shopping Center	60542	10/10/2022	Stagnant	Unlikely	Y	True	N	N
Shopping Center	43163	10/24/2022	Yes	Unlikely	Y	False	N	N
Residential	4619	11/9/2022	No	Unlikely	Y	False	N	N
Residential	4091	12/14/2022	Yes	Unlikely	Y	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	30898	10/11/2022	No	Unlikely	Y	False	N	N
Hotel w/ Restaurant	41817	10/20/2022	Yes	Unlikely	Y	False	N	N
Shopping Center	10042	11/1/2022	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	58857	12/21/2022	No	Unlikely	Y	False	N	N
Shopping Center	21398	10/21/2022	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	43388	12/21/2022	Stagnant	Unlikely	Y	False	N	N
Planned Industrial Park	38615	11/22/2022	Yes	Unlikely	Y	False	Y	N
Shopping Center	10033	10/20/2022	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	61545	10/12/2022	No	Unlikely	Y	False	N	N
Landuse	Outfall Id	Last Inspection Date	Flow Present	Illicit Discharge	High Risk	Maintenance Required	Within PWC Service Area	VPDES Permitted
Planned Industrial Park	37192	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37194	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	36181	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	46740	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37185	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	46742	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	46748	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37196	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	38615	11/22/2022	Yes	Unlikely	Y	False	Y	N
Planned Industrial Park	48037	3/9/2023	No	Unlikely	Y	False	N	N
Gas Station	19640	3/29/2023	No	Unlikely	Y	True	Y	N
Planned Industrial Park	48453	3/9/2023	No	Unlikely	Y	False	N	N
Other	21203	2/6/2023	Yes	Unlikely	Y	False	N	N
Planned Industrial Park	29361	2/10/2023	No	Unlikely	Y	False	N	N
Open Space	67039	2/6/2023	Yes	Unlikely	Y	False	N	N
Planned Industrial Park	56281	2/10/2023	Intermittent	Unlikely	Y	True	N	N
Gas Station	67020	2/7/2023	No	Unlikely	Y	True	N	N
Gas Station	60653	3/29/2023	No	Unlikely	Y	True	N	N
Wholesale Warehousing	22896	2/6/2023	Yes	Unlikely	Y	False	N	N
Wholesale Warehousing	10632	2/7/2023	Stagnant	Obvious	Y	False	N	N
Open Space	67051	2/6/2023	Stagnant	Unlikely	Y	False	N	N
Gas Station	21205	2/7/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	67018	2/7/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	48037	3/9/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	40783	2/10/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	48453	3/9/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	30871	2/10/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	29361	2/10/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	56296	2/10/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	56281	2/10/2023	Intermittent	Unlikely	Y	True	N	N
Planned Industrial Park	40801	2/10/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	56290	2/10/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	45358	2/10/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	67018	2/7/2023	No	Unlikely	Y	False	N	N
Non-durable Manufacturing	68667	4/19/2023	No	Unlikely	Y	False	N	N

Shopping Center	721	4/20/2023	Yes	Unlikely	Y	False	Y	N
Shopping Center	33614	5/18/2023	No	Unlikely	Y	True	N	N
Residential	68459	4/20/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	68662	4/19/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	49370	5/18/2023	Stagnant	Unlikely	Y	False	N	N
Planned Industrial Park	14639	4/17/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	12119	4/17/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	17192	4/17/2023	Yes	Unlikely	N	False	N	N
Planned Industrial Park	17188	4/17/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	25303	4/18/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	57978	4/19/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	68662	4/19/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	68172	4/19/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	49333	5/18/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	49333	5/18/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	49372	5/18/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	49370	5/18/2023	Stagnant	Unlikely	Y	False	N	N

Appendix H

County-Maintained SWM Facilities - Inspection Summary

County-Maintained SWM/BMP - Compliance Report FY23

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1	313	7/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
2	439	7/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
3	685	7/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
4	962	7/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
5	1001	7/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
6	1002	7/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
7	141	7/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
8	795	7/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
9	858	7/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
10	859	7/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
11	884	7/5/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
12	270	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
13	314	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
14	343	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
15	445	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
16	446	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
17	519	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
18	527	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
19	528	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
20	616	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
21	669	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
22	808	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
23	813	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
24	814	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
25	815	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
26	823	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
27	883	7/6/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
28	887	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No

County-Maintained SWM/BMP - Compliance Report FY23

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
29	892	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
30	895	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
31	896	7/6/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
32	897	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
33	906	7/6/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
34	910	7/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
35	928	7/6/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
36	939	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
37	967	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
38	968	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
39	969	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
40	987	7/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
41	63	7/8/2022	Other	No	Meeting	Yes	No
42	178	7/8/2022	Other	No	Meeting	Yes	No
43	179	7/8/2022	Other	No	Meeting	Yes	No
44	182	7/8/2022	Other	No	Meeting	Yes	No
45	142	7/11/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
46	143	7/11/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
47	189	7/12/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
48	214	7/12/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
49	410	7/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
50	613	7/12/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
51	850	7/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
52	216	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
53	217	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
54	318	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
55	377	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
56	907	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No

County-Maintained SWM/BMP - Compliance Report FY23

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
57	908	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
58	909	7/13/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
59	16	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
60	17	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
61	532	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
62	533	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
63	652	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
64	806	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
65	807	7/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
66	345	7/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
67	346	7/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
68	424	7/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
69	505	7/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
70	536	7/15/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
71	583	7/15/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
72	645	7/15/2022	60-day reinspection	No	Maintenance is needed (County)	No	Yes
73	837	7/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
74	848	7/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
75	894	7/15/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
76	30	7/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
77	218	7/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
78	238	7/18/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
79	387	7/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
80	388	7/18/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
81	451	7/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
82	576	7/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
83	577	7/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
84	578	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No

County-Maintained SWM/BMP - Compliance Report FY23

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
85	579	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
86	582	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
87	596	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
88	668	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
89	790	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
90	791	7/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
91	803	7/20/2022	Complaint Based	No	Maintenance is needed (Owner)	Yes	No
92	963	7/20/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
93	271	7/21/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
94	41	7/22/2022	60-day reinspection	No	Maintenance is needed (County)	No	Yes
95	210	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
96	281	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
97	336	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
98	338	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
99	339	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
100	340	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
101	435	7/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
102	467	7/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
103	468	7/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
104	469	7/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
105	559	7/22/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
106	567	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
107	618	7/22/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
108	657	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
109	665	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
110	666	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
111	682	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
112	818	7/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
113	126	7/25/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
114	252	7/25/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
115	253	7/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
116	68	7/26/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
117	108	7/26/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
118	151	7/26/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
119	269	7/26/2022	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
120	401	7/26/2022	Routine	No	Maintenance is needed (County)	No	Yes
121	414	7/26/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
122	124	7/28/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
123	938	7/28/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
124	970	7/28/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
125	988	7/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
126	1005	7/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
127	608	8/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
128	609	8/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
129	321	8/2/2022	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
130	399	8/2/2022	Other	Yes	No maintenance is neededed at this time.	No	No
131	517	8/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
132	848	8/2/2022	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
133	973	8/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
134	974	8/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
135	975	8/2/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
136	144	8/3/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
137	232	8/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
138	235	8/3/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
139	371	8/3/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
140	372	8/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No

County-Maintained SWM/BMP - Compliance Report FY23

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
141	375	8/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
142	405	8/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
143	520	8/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
144	836	8/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
145	916	8/3/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
146	369	8/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
147	370	8/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
148	373	8/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
149	374	8/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
150	176	8/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
151	428	8/5/2022	Other	No	Maintenance is needed (Owner)	Yes	No
152	432	8/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
153	433	8/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
154	788	8/5/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
155	890	8/5/2022	Routine	No	Maintenance is needed (County)	No	Yes
156	891	8/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
157	155	8/8/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
158	237	8/8/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
159	819	8/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
160	879	8/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
161	901	8/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
162	902	8/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
163	903	8/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
164	39	8/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
165	185	8/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
166	196	8/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
167	197	8/9/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
168	386	8/9/2022	Routine	No	Maintenance is needed (County)	No	Yes

County-Maintained SWM/BMP - Compliance Report FY23

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
169	492	8/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
170	568	8/9/2022	Routine	No	Maintenance is needed (County)	No	Yes
171	651	8/9/2022	Complaint Based	No	Maintenance is needed (Owner)	Yes	No
172	951	8/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
173	952	8/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
174	321	8/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
175	399	8/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
176	470	8/10/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
177	579	8/10/2022	Other	No	Maintenance is needed (County/Owner)	Yes	Yes
178	581	8/10/2022	Routine	No	Maintenance is needed (County)	No	Yes
179	954	8/10/2022	Routine	No	Maintenance is needed (County)	No	Yes
180	99	8/11/2022	Complaint Based	No	Meeting	No	No
181	376	8/11/2022	Complaint Based	No	Meeting	Yes	No
182	966	8/11/2022	Complaint Based	Yes	No maintenance is neededed at this time.	No	No
183	789	8/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
184	808	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
185	864	8/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
186	880	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
187	917	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
188	918	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
189	919	8/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
190	925	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
191	927	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
192	936	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
193	964	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
194	965	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
195	926	8/15/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
196	53	8/16/2022	Routine	No	Maintenance is needed (Owner)	Yes	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
197	55	8/16/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
198	113	8/16/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
199	389	8/16/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
200	442	8/16/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
201	920	8/16/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
202	922	8/16/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
203	214	8/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
204	297	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
205	387	8/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
206	458	8/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
207	459	8/17/2022	Routine	No	Maintenance is needed (County)	No	Yes
208	538	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	No
209	557	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
210	560	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
211	561	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
212	565	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
213	566	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
214	597	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
215	622	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
216	623	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
217	624	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
218	630	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
219	631	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
220	684	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
221	820	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
222	821	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
223	822	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
224	866	8/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
225	867	8/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
226	868	8/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
227	921	8/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
228	953	8/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
229	98	8/18/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
230	345	8/18/2022	Other	No	Meeting	Yes	No
231	346	8/18/2022	Other	No	Meeting	Yes	No
232	529	8/18/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
233	584	8/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
234	610	8/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
235	654	8/18/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
236	889	8/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
237	989	8/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
238	990	8/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
239	999	8/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
240	1000	8/18/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
241	180	8/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
242	428	8/19/2022	Other	No	Meeting	Yes	No
243	429	8/19/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
244	628	8/19/2022	Routine	No	Maintenance is needed (County)	No	Yes
245	629	8/19/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
246	649	8/19/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
247	650	8/19/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
248	816	8/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
249	817	8/19/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
250	251	8/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
251	527	8/22/2022	60-day reinspection	No	Maintenance is needed (County/Owner)	Yes	Yes
252	570	8/22/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
253	587	8/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
254	637	8/22/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
255	638	8/22/2022	Routine	No	Maintenance is needed (County)	No	Yes
256	687	8/22/2022	Routine	No	Maintenance is needed (County)	No	Yes
257	839	8/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
258	998	8/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
259	163	8/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
260	200	8/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
261	201	8/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
262	655	8/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
263	797	8/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
264	877	8/23/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
265	878	8/23/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
266	1042	8/23/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
267	1048	8/24/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
268	52	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
269	148	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
270	149	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
271	150	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
272	434	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
273	474	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
274	482	8/25/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
275	911	8/25/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
276	1039	8/25/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
277	1040	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
278	1041	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
279	912	8/26/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
280	996	8/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
281	89	8/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
282	123	8/29/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
283	379	8/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
284	483	8/29/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
285	852	8/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
286	974	8/29/2022	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
287	478	8/30/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
288	860	8/30/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
289	861	8/30/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
290	84	8/31/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
291	85	8/31/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
292	477	8/31/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
293	554	8/31/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
294	1003	8/31/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
295	234	9/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
296	543	9/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
297	692	9/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
298	793	9/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
299	80	9/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
300	81	9/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
301	86	9/2/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
302	129	9/2/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
303	130	9/2/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
304	131	9/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
305	427	9/2/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
306	503	9/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
307	62	9/7/2022	Routine	No	Maintenance is needed (County)	No	Yes
308	65	9/7/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
309	696	9/7/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
310	203	9/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
311	404	9/8/2022	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
312	405	9/8/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
313	658	9/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
314	659	9/8/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
315	859	9/8/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
316	12	9/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
317	31	9/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
318	32	9/9/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
319	33	9/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
320	411	9/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
321	10	9/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
322	34	9/12/2022	Routine	No	Maintenance is needed (County)	No	Yes
323	158	9/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
324	312	9/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
325	627	9/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
326	662	9/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
327	690	9/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
328	957	9/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
329	1020	9/12/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
330	15	9/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
331	56	9/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
332	195	9/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
333	906	9/13/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	Yes	No
334	147	9/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
335	233	9/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
336	527	9/14/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
337	556	9/14/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
338	571	9/14/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
339	116	9/15/2022	Routine	No	Maintenance is needed (County)	No	Yes
340	117	9/15/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
341	119	9/15/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
342	226	9/15/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
343	227	9/15/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
344	562	9/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
345	974	9/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
346	1012	9/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
347	1037	9/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
348	801	9/21/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
349	802	9/21/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
350	840	9/21/2022	Routine	No	Maintenance is needed (County)	No	Yes
351	960	9/21/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
352	29	9/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
353	267	9/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
354	499	9/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
355	500	9/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
356	212	9/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
357	213	9/23/2022	Routine	No	Maintenance is needed (County)	No	Yes
358	215	9/23/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
359	402	9/23/2022	Routine	No	Maintenance is needed (County)	No	Yes
360	403	9/23/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
361	566	9/23/2022	Routine	No	Meeting	Yes	No
362	587	9/23/2022	Routine	No	Meeting	Yes	No
363	622	9/23/2022	Routine	No	Meeting	Yes	No
364	842	9/23/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
365	843	9/23/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
366	844	9/23/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
367	966	9/23/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
368	989	9/23/2022	Routine	No	Meeting	Yes	No
369	991	9/23/2022	Routine	No	Meeting	Yes	No
370	1039	9/23/2022	Routine	No	Meeting	Yes	No
371	1040	9/23/2022	Routine	No	Meeting	Yes	No
372	455	9/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
373	805	9/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
374	874	9/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
375	882	9/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
376	99	9/27/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
377	688	9/27/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
378	689	9/27/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
379	269	9/28/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
380	817	9/28/2022	Routine	No	Meeting	Yes	No
381	881	9/28/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
382	219	9/29/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
383	296	9/29/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
384	463	9/29/2022	Other	No	Meeting	Yes	No
385	508	9/29/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
386	509	9/29/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
387	563	9/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
388	937	9/29/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
389	1049	9/29/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
390	239	9/30/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
391	240	9/30/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
392	424	9/30/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
393	552	9/30/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
394	564	9/30/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
395	596	9/30/2022	Routine	No	Meeting	Yes	No
396	845	9/30/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
397	915	9/30/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
398	551	10/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
399	553	10/3/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
400	558	10/3/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
401	590	10/3/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
402	975	10/3/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
403	206	10/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
404	416	10/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
405	460	10/4/2022	Routine	No	Maintenance is needed (County)	No	Yes
406	521	10/4/2022	Routine	No	Maintenance is needed (County)	No	Yes
407	586	10/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
408	593	10/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
409	599	10/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
410	641	10/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
411	686	10/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
412	855	10/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
413	856	10/4/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
414	857	10/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
415	75	10/5/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
416	121	10/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
417	471	10/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
418	490	10/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
419	509	10/5/2022	Routine	No	Meeting	Yes	No
420	670	10/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
421	538	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
422	557	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
423	561	10/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
424	565	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
425	566	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
426	622	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
427	623	10/6/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
428	631	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
429	684	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
430	990	10/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
431	604	10/7/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
432	699	10/7/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
433	989	10/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
434	689	10/12/2022	Routine	No	Meeting	Yes	No
435	73	10/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
436	63	10/14/2022	Routine	No	Maintenance is needed (County)	No	Yes
437	146	10/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
438	462	10/14/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
439	493	10/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
440	494	10/14/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	No
441	546	10/14/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
442	849	10/14/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
443	18	10/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
444	70	10/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
445	87	10/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
446	133	10/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
447	258	10/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
448	547	10/17/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
449	632	10/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
450	633	10/17/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
451	935	10/17/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
452	284	10/18/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
453	368	10/18/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
454	501	10/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
455	794	10/18/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
456	115	10/20/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
457	118	10/20/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
458	135	10/20/2022	Routine	No	Maintenance is needed (County)	No	Yes
459	140	10/20/2022	Routine	No	Maintenance is needed (County)	No	Yes
460	228	10/20/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
461	535	10/21/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
462	898	10/21/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
463	899	10/21/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
464	208	10/24/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
465	916	10/24/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
466	207	10/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
467	390	10/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
468	398	10/26/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
469	431	10/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
470	648	10/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
471	660	10/26/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
472	671	10/26/2022	Routine	No	Maintenance is needed (County)	No	Yes
473	859	10/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
474	950	10/26/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
475	646	10/27/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
476	980	10/27/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
477	630	10/28/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
478	1051	10/28/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
479	232	10/31/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
480	235	10/31/2022	60-day reinspection	No	Maintenance is needed (County)	No	Yes
481	27	11/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
482	202	11/1/2022	Routine	No	Maintenance is needed (County)	No	Yes
483	698	11/1/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
484	885	11/1/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
485	1050	11/1/2022	Routine	No	Maintenance is needed (County)	No	Yes
486	125	11/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
487	166	11/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
488	647	11/2/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
489	530	11/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
490	640	11/4/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
491	931	11/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
492	932	11/4/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
493	1043	11/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
494	1044	11/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
495	1045	11/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
496	1046	11/4/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
497	39	11/6/2022	Routine	No	Meeting	Yes	No
498	4	11/7/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
499	50	11/7/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
500	335	11/7/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
501	970	11/8/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
502	120	11/9/2022	Routine	No	Maintenance is needed (County)	No	Yes
503	136	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
504	137	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
505	138	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
506	139	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
507	187	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
508	278	11/9/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
509	291	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
510	310	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
511	322	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
512	396	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
513	437	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
514	438	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
515	476	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
516	488	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
517	495	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
518	496	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
519	497	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
520	498	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
521	518	11/9/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
522	99	11/10/2022	Routine	No	Meeting	Yes	No
523	309	11/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
524	572	11/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
525	573	11/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
526	574	11/10/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
527	619	11/10/2022	Routine	No	Maintenance is needed (County)	No	Yes
528	643	11/10/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
529	644	11/10/2022	Routine	No	Maintenance is needed (County)	No	Yes
530	862	11/10/2022	Routine	No	Maintenance is needed (County)	No	Yes
531	930	11/10/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
532	549	11/11/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
533	235	11/14/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
534	402	11/18/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
535	484	11/18/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
536	871	11/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
537	872	11/22/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
538	873	11/22/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
539	64	11/28/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
540	971	11/28/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
541	1017	11/28/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
542	1018	11/28/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
543	1015	11/30/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
544	74	12/1/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
545	300	12/2/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
546	1038	12/2/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
547	104	12/5/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
548	293	12/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
549	294	12/5/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
550	426	12/6/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
551	594	12/8/2022	Routine	No	Maintenance is needed (County)	No	Yes
552	595	12/8/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
553	809	12/8/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
554	295	12/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
555	173	12/16/2022	Routine	No	Maintenance is needed (County)	No	Yes
556	174	12/16/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
557	175	12/16/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
558	257	12/16/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
559	259	12/16/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
560	260	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
561	261	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
562	262	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
563	263	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
564	264	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
565	265	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
566	266	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
567	268	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
568	279	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
569	280	12/16/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
570	356	12/16/2022	Routine	No	Maintenance is needed (County)	No	Yes
571	42	12/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
572	71	12/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
573	78	12/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
574	100	12/19/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
575	107	12/19/2022	Routine	No	Maintenance is needed (County)	No	Yes
576	304	12/19/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
577	358	12/19/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
578	636	12/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
579	354	12/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
580	355	12/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
581	357	12/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
582	359	12/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
583	360	12/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
584	361	12/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
585	362	12/20/2022	Routine	No	Maintenance is needed (Owner)	Yes	No
586	363	12/20/2022	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
587	316	12/21/2022	Routine	Yes	No maintenance is neededed at this time.	No	No
588	886	12/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
589	694	1/4/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
590	72	1/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
591	154	1/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
592	157	1/5/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
593	298	1/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
594	317	1/5/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
595	454	1/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
596	798	1/5/2023	Routine	No	Maintenance is needed (County)	No	Yes
597	329	1/6/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
598	835	1/6/2023	Routine	No	Maintenance is needed (County)	No	Yes
599	810	1/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
600	870	1/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
601	904	1/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
602	905	1/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
603	1004	1/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
604	122	1/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
605	465	1/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
606	541	1/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
607	689	1/10/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
608	955	1/10/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
609	1006	1/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
610	328	1/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
611	525	1/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
612	605	1/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
613	664	1/11/2023	Routine	No	Maintenance is needed (County)	No	Yes
614	869	1/11/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
615	888	1/11/2023	Routine	No	Maintenance is needed (County)	No	Yes
616	1014	1/11/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
617	57	1/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
618	92	1/12/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
619	170	1/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
620	171	1/12/2023	Routine	No	Maintenance is needed (County)	No	Yes
621	182	1/12/2023	Routine	No	Maintenance is needed (County)	No	Yes
622	183	1/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
623	225	1/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
624	337	1/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
625	524	1/12/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
626	526	1/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
627	606	1/12/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
628	607	1/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
629	653	1/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
630	691	1/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
631	93	1/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
632	94	1/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
633	502	1/13/2023	Routine	No	Maintenance is needed (County)	No	Yes
634	603	1/13/2023	Routine	No	Maintenance is needed (County)	No	Yes
635	634	1/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
636	635	1/13/2023	Routine	No	Maintenance is needed (County)	No	Yes
637	49	1/18/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
638	186	1/18/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
639	299	1/18/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
640	383	1/19/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
641	384	1/19/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
642	385	1/19/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
643	617	1/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
644	45	1/31/2023	Routine	No	Maintenance is needed (County)	No	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
645	59	1/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
646	127	1/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
647	128	1/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
648	167	1/31/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
649	452	1/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
650	453	1/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
651	531	1/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
652	651	1/31/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
653	695	1/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
654	800	1/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
655	994	1/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
656	995	1/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
657	997	1/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
658	26	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
659	106	2/1/2023	Routine	No	Maintenance is needed (County)	No	Yes
660	198	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
661	199	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
662	220	2/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
663	271	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
664	327	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
665	378	2/1/2023	Routine	No	Maintenance is needed (County)	No	Yes
666	457	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
667	958	2/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
668	959	2/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
669	61	2/2/2023	Routine	No	Maintenance is needed (County)	No	Yes
670	209	2/2/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
671	412	2/2/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
672	472	2/2/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
673	979	2/2/2023	Routine	No	Maintenance is needed (County)	No	Yes
674	114	2/3/2023	Routine	No	Maintenance is needed (County)	No	Yes
675	213	2/3/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
676	799	2/3/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
677	156	2/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
678	308	2/6/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
679	598	2/6/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
680	88	2/7/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
681	853	2/7/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
682	854	2/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
683	972	2/7/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
684	490	2/9/2023	Routine	No	Maintenance is needed (County)	No	Yes
685	147	2/10/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
686	178	2/10/2023	Routine	No	Maintenance is needed (County)	No	Yes
687	179	2/10/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
688	355	2/10/2023	Routine	No	Maintenance is needed (County)	No	Yes
689	362	2/10/2023	Routine	No	Maintenance is needed (County)	No	Yes
690	642	2/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
691	305	2/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
692	306	2/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
693	835	2/27/2023	Other	No	Maintenance is needed (County)	No	Yes
694	326	2/28/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
695	656	2/28/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
696	824	2/28/2023	Routine	No	Maintenance is needed (County)	No	Yes
697	825	2/28/2023	Routine	No	Maintenance is needed (County)	No	Yes
698	826	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
699	827	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
700	828	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
701	829	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
702	830	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
703	831	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
704	832	2/28/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
705	833	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
706	834	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
707	846	2/28/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
708	1021	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
709	1025	2/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
710	1029	2/28/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
711	40	3/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
712	51	3/1/2023	Routine	No	Maintenance is needed (County)	No	Yes
713	421	3/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
714	444	3/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
715	592	3/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
716	190	3/3/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
717	191	3/3/2023	Routine	No	Maintenance is needed (County)	No	Yes
718	334	3/3/2023	Routine	No	Maintenance is needed (County)	No	Yes
719	394	3/3/2023	Routine	No	Maintenance is needed (County)	No	Yes
720	425	3/3/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
721	924	3/3/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
722	555	3/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
723	60	3/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
724	112	3/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
725	54	3/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
726	971	3/13/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
727	6	3/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
728	23	3/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
729	76	3/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
730	79	3/14/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
731	102	3/14/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
732	134	3/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
733	350	3/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
734	351	3/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
735	585	3/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
736	950	3/14/2023	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
737	5	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
738	35	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
739	36	3/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
740	69	3/15/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
741	77	3/15/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
742	101	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
743	103	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
744	105	3/15/2023	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
745	164	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
746	311	3/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
747	330	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
748	443	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
749	487	3/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
750	792	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
751	838	3/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
752	976	3/15/2023	Routine	Yes	Facility is still on bond	No	No
753	1036	3/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
754	241	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
755	242	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
756	247	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
757	249	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
758	364	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
759	366	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
760	367	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
761	393	3/16/2023	Routine	No	Maintenance is needed (County)	No	Yes
762	395	3/16/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
763	400	3/16/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
764	966	3/17/2023	60-day reinspection	No	Maintenance is needed (County)	No	Yes
765	986	3/17/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
766	391	3/19/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
767	392	3/19/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
768	204	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
769	205	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
770	243	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
771	244	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
772	248	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
773	250	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
774	365	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
775	453	3/20/2023	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
776	473	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
777	887	3/20/2023	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
778	908	3/20/2023	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
779	1022	3/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
780	1023	3/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
781	1024	3/20/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
782	1030	3/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
783	1031	3/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
784	1032	3/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
785	1033	3/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
786	1034	3/20/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
787	24	3/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
788	153	3/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
789	168	3/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
790	172	3/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
791	184	3/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
792	230	3/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
793	307	3/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
794	344	3/21/2023	Routine	No	Maintenance is needed (County)	No	Yes
795	380	3/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
796	419	3/21/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
797	812	3/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
798	25	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
799	152	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
800	165	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
801	193	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
802	231	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
803	236	3/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
804	315	3/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
805	534	3/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
806	588	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
807	589	3/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	No
808	602	3/22/2023	Routine	No	Maintenance is needed (County)	No	Yes
809	847	3/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
810	1009	3/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
811	1013	3/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
812	90	3/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
813	194	3/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
814	275	3/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
815	319	3/23/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
816	320	3/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
817	386	3/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
818	628	3/23/2023	Routine	No	Maintenance is needed (County)	No	Yes
819	629	3/23/2023	Routine	No	Maintenance is needed (County)	No	Yes
820	649	3/23/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
821	1019	3/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
822	7	3/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
823	8	3/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
824	43	3/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
825	274	3/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
826	480	3/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
827	169	3/27/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
828	223	3/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
829	224	3/27/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
830	245	3/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
831	246	3/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
832	277	3/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
833	145	3/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
834	161	3/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
835	600	3/30/2023	Routine	No	Maintenance is needed (Owner)	No	No
836	601	3/30/2023	Routine	No	Maintenance is needed (County)	No	Yes
837	97	4/5/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
838	272	4/7/2023	Routine	No	Maintenance is needed (County)	No	Yes
839	273	4/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
840	325	4/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
841	548	4/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
842	595	4/7/2023	Routine	No	Maintenance is needed (County)	No	Yes
843	811	4/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
844	105	4/11/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
845	700	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
846	701	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
847	702	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
848	703	4/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
849	704	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
850	705	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
851	706	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
852	707	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
853	711	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
854	712	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
855	713	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
856	714	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
857	715	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
858	716	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
859	717	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
860	719	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
861	721	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
862	722	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
863	724	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
864	725	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
865	726	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
866	727	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
867	728	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
868	729	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
869	730	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
870	731	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
871	732	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
872	733	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
873	734	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
874	735	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
875	736	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
876	737	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
877	738	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
878	739	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
879	748	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
880	749	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
881	754	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
882	757	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
883	758	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
884	759	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
885	764	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
886	776	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
887	778	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
888	782	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
889	784	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
890	785	4/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
891	710	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
892	718	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
893	723	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
894	741	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
895	742	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
896	743	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
897	744	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
898	745	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
899	746	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
900	747	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
901	750	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
902	751	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
903	752	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
904	753	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
905	755	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
906	756	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
907	760	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
908	761	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
909	762	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
910	763	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
911	765	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
912	766	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
913	767	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
914	768	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
915	769	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
916	770	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
917	771	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
918	773	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
919	774	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
920	775	4/12/2023	Routine	No	Maintenance is needed (County)	No	Yes
921	777	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
922	779	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
923	780	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
924	781	4/12/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
925	783	4/12/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
926	708	4/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
927	720	4/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
928	978	4/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
929	178	4/14/2023	Routine	No	Maintenance is needed (County)	No	Yes
930	594	4/14/2023	Routine	No	Maintenance is needed (County)	Yes	No
931	740	4/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
932	772	4/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
933	787	4/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
934	28	4/17/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
935	82	4/17/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
936	83	4/17/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
937	977	4/17/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
938	709	4/18/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
939	786	4/18/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
940	308	4/19/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
941	323	4/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
942	377	4/20/2023	60-day reinspection	No	Maintenance is needed (County)	No	Yes
943	661	4/20/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
944	177	4/21/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	No
945	888	4/21/2023	Routine	No	Maintenance is needed (County)	No	Yes
946	221	4/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
947	222	4/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
948	324	4/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
949	341	4/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
950	347	4/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
951	613	4/24/2023	Complaint Based	No	Maintenance is needed (County)	No	Yes
952	863	4/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
953	2	4/25/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
954	3	4/25/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
955	11	4/25/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
956	22	4/25/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
957	456	4/25/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
958	807	4/25/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
959	16	4/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
960	17	4/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
961	67	4/26/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
962	95	4/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
963	96	4/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
964	806	4/26/2023	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No
965	806	4/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
966	807	4/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
967	871	4/26/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
968	252	4/27/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
969	345	4/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
970	346	4/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
971	609	5/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
972	848	5/1/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
973	608	5/2/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
974	19	5/8/2023	Routine	No	Maintenance is needed (County)	No	Yes
975	667	5/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
976	353	5/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
977	510	5/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
978	511	5/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
979	514	5/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
980	515	5/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
981	577	5/9/2023	Routine	No	Maintenance is needed (County)	No	Yes
982	791	5/9/2023	Routine	No	Maintenance is needed (County)	No	Yes
983	804	5/9/2023	Routine	No	Maintenance is needed (County)	No	Yes
984	321	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
985	375	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
986	440	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
987	441	5/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
988	489	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
989	512	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
990	516	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
991	569	5/11/2023	Routine	No	Maintenance is needed (County)	No	Yes
992	796	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
993	981	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
994	982	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
995	985	5/11/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
996	44	5/15/2023	Routine	No	Maintenance is needed (County)	No	Yes
997	47	5/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
998	934	5/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
999	401	5/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1000	428	5/16/2023	60-day reinspection	No	Maintenance is needed (County)	No	Yes
1001	382	5/17/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1002	423	5/17/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1003	436	5/17/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1004	1047	5/17/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1005	66	5/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1006	132	5/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1007	430	5/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1008	697	5/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1009	46	5/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1010	159	5/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1011	332	5/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1012	422	5/24/2023	Routine	No	Maintenance is needed (County)	No	Yes
1013	479	5/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1014	491	5/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1015	544	5/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1016	545	5/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1017	871	5/24/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1018	1010	5/24/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1019	1011	5/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1020	254	5/30/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1021	255	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1022	256	5/30/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1023	290	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1024	292	5/30/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1025	397	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1026	461	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1027	522	5/30/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1028	523	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1029	550	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1030	611	5/30/2023	Routine	No	Maintenance is needed (County)	No	Yes
1031	612	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1032	639	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1033	851	5/30/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1034	900	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1035	913	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1036	993	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1037	1015	5/30/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1038	288	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1039	289	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1040	352	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1041	914	5/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1042	915	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1043	923	5/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1044	933	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1045	940	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1046	941	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1047	943	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1048	944	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1049	945	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1050	946	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1051	947	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1052	948	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1053	949	5/31/2023	Routine	No	Maintenance is needed (County)	No	Yes
1054	956	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1055	983	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1056	984	5/31/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1057	1026	5/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1058	481	6/6/2023	Routine	No	Maintenance is needed (County)	No	Yes
1059	188	6/7/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1060	406	6/7/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1061	192	6/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1062	929	6/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1063	1027	6/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1064	1028	6/13/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1065	961	6/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1066	58	6/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1067	464	6/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1068	466	6/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1069	537	6/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1070	621	6/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1071	663	6/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1072	841	6/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1073	865	6/21/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1074	875	6/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1075	9	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1076	21	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1077	37	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1078	38	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1079	342	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1080	349	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1081	485	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1082	486	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1083	504	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1084	506	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1085	507	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1086	513	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1087	575	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1088	614	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1089	615	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1090	620	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1091	625	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1092	693	6/22/2023	Routine	No	Maintenance is needed (County)	No	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1093	893	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1094	992	6/22/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1095	1007	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1096	1035	6/22/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1097	13	6/23/2023	Routine	No	Maintenance is needed (County)	No	Yes
1098	407	6/23/2023	Routine	No	Maintenance is needed (County)	No	Yes
1099	408	6/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1100	409	6/23/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1101	591	6/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1102	683	6/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1103	14	6/26/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1104	14	6/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1105	20	6/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1106	109	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1107	160	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1108	282	6/26/2023	Routine	No	Maintenance is needed (County)	No	Yes
1109	283	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1110	301	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1111	302	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1112	303	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1113	348	6/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1114	381	6/27/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1115	413	6/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1116	417	6/27/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1117	418	6/27/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1118	475	6/27/2023	Routine	No	Maintenance is needed (County)	No	Yes
1119	626	6/27/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1120	811	6/27/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes

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No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1121	876	6/27/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1122	942	6/27/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1123	48	6/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1124	229	6/28/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1125	285	6/28/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1126	286	6/28/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1127	376	6/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1128	110	6/29/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1129	111	6/29/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1130	276	6/29/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1131	463	6/30/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
1132	977	4/18/2023	Routine	Yes	No maintenance is neededed at this time.	No	No
1133	978	4/18/2023	Routine	Yes	No maintenance is neededed at this time.	No	No

Appendix I

Privately-Maintained SWM Facilities – Inspection Summary

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
1	5004	11/3/2022	Routine	No	Maintenance is needed.	Yes	No	No
2	5009	11/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
3	5017	2/13/2023	Routine	No	Maintenance is needed.	Yes	No	No
4	5018	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
5	5018	10/14/2022	Routine	No	Meeting	No	No	No
6	5035	1/18/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
7	5036	1/17/2023	Routine	No	Maintenance is needed.	Yes	No	No
8	5047	10/12/2022	Routine	No	Maintenance is needed.	Yes	No	No
9	5050	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
10	5051	4/5/2023	Routine	No	Maintenance is needed.	Yes	No	No
11	5057	1/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
12	5079	6/7/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
13	5080	4/5/2023	Routine	No	Maintenance is needed.	Yes	No	No
14	5120	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
15	5126	12/31/2022	Routine	No	Maintenance is needed.	Yes	No	No
16	5128	10/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
17	5132	3/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
18	5146	2/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
19	5147	2/20/2023	Routine	No	Maintenance is needed.	Yes	No	No
20	5149	1/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
21	5154	1/5/2023	Routine	No	Maintenance is needed.	Yes	No	No
22	5166	3/3/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
23	5168	2/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
24	5186	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
25	5188	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
26	5189	11/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
27	5190	10/11/2022	Routine	No	Maintenance is needed.	Yes	No	No
28	5190	10/25/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No	No
29	5192	2/3/2023	Routine	No	Maintenance is needed.	Yes	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
30	5198	12/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
31	5207	11/16/2022	Routine	No	Maintenance is needed.	Yes	No	No
32	5207	11/1/2022	Routine	No	Meeting	No	No	No
33	5209	12/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
34	5209	12/28/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
35	5217	9/21/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
36	5235	10/13/2022	Routine	No	Maintenance is needed.	Yes	No	No
37	5239	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
38	5239	10/12/2022	Routine	No	Maintenance is needed.	Yes	No	No
39	5242	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
40	5255	2/20/2023	Routine	No	Maintenance is needed.	Yes	No	No
41	5264	3/2/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
42	5265	3/2/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
43	5266	3/2/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
44	5267	3/2/2023	Routine	No	Maintenance is needed.	Yes	No	No
45	5280	3/15/2023	Routine	No	Maintenance is needed.	Yes	No	No
46	5286	2/14/2023	Routine	No	Maintenance is needed.	Yes	No	No
47	5289	4/6/2023	Routine	No	Maintenance is needed.	Yes	No	No
48	5298	1/5/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
49	5321	5/11/2023	Routine	No	Maintenance is needed.	Yes	No	No
50	5329	4/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
51	5330	4/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
52	5332	10/13/2022	Routine	No	Maintenance is needed.	Yes	No	No
53	5333	12/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
54	5336	4/6/2023	Routine	No	Maintenance is needed.	Yes	No	No
55	5337	1/31/2023	Routine	No	Maintenance is needed.	Yes	No	No
56	5338	11/4/2022	Routine	No	Maintenance is needed.	Yes	No	No
57	5339	11/4/2022	Routine	No	Maintenance is needed.	Yes	No	No
58	5341	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
59	5344	4/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
60	5345	4/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
61	5348	4/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
62	5351	3/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
63	5355	2/20/2023	Routine	No	Maintenance is needed.	Yes	No	No
64	5356	4/6/2023	Routine	No	Maintenance is needed.	Yes	No	No
65	5357	4/6/2023	Routine	No	Maintenance is needed.	Yes	No	No
66	5358	11/1/2022	Routine	No	Maintenance is needed.	Yes	No	No
67	5361	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
68	5380	9/21/2022	Routine	No	Maintenance is needed.	Yes	No	No
69	5384	1/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
70	5387	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
71	5394	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
72	5394	1/12/2023	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No	No
73	5397	10/31/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
74	5398	10/31/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
75	5410	1/6/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
76	5416	9/21/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
77	5417	9/21/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
78	5428	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
79	5474	2/14/2023	Routine	No	Maintenance is needed.	Yes	No	No
80	5474	4/27/2023	60-day reinspection	No	Maintenance is needed.	Yes	No	No
81	5477	12/30/2022	Routine	No	Maintenance is needed.	Yes	No	No
82	5492	8/12/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
83	5495	8/25/2022	Routine	No	Maintenance is needed.	Yes	No	No
84	5503	9/23/2022	Routine	No	Maintenance is needed.	Yes	Yes	No
85	5506	7/22/2022	Other	No	Meeting	No	No	No
86	5507	7/22/2022	Other	No	Meeting	No	No	No
87	5509	10/12/2022	Routine	No	Maintenance is needed.	Yes	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
88	5512	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
89	5527	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
90	5528	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
91	5529	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
92	5530	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
93	5531	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
94	5532	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
95	5533	11/16/2022	Routine	No	Maintenance is needed.	Yes	No	No
96	5534	7/8/2022	Other	No	Meeting	No	No	No
97	5535	4/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
98	5536	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
99	5537	4/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
100	5538	4/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
101	5539	4/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
102	5540	4/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
103	5541	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
104	5546	4/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
105	5551	1/26/2023	Routine	No	Maintenance is needed.	Yes	No	No
106	5552	10/5/2022	Routine	No	Maintenance is needed.	Yes	No	No
107	5552	11/10/2022	Routine	No	Meeting	No	No	No
108	5563	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
109	5564	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
110	5565	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
111	5566	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
112	5567	4/7/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
113	5568	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
114	5569	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
115	5570	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
116	5571	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
117	5572	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
118	5574	8/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
119	5581	1/4/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
120	5582	1/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
121	5583	1/5/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
122	5584	1/4/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
123	5588	11/18/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
124	5589	9/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
125	5591	1/26/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
126	5595	10/8/2022	Routine	No	Maintenance is needed.	Yes	No	No
127	5597	8/18/2022	Routine	No	Maintenance is needed.	Yes	No	No
128	5598	8/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
129	5599	8/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
130	5600	8/18/2022	Routine	No	Maintenance is needed.	Yes	No	No
131	5601	8/18/2022	Routine	No	Maintenance is needed.	Yes	No	No
132	5620	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
133	5630	3/24/2023	Routine	No	Maintenance is needed.	Yes	No	No
134	5632	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
135	5644	8/23/2022	Routine	No	Maintenance is needed.	Yes	No	No
136	5661	1/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
137	5669	2/20/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
138	5670	1/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
139	5672	1/11/2023	Routine	No	Meeting	No	No	No
140	5686	4/6/2023	Routine	No	Maintenance is needed.	Yes	No	No
141	5697	10/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
142	5707	10/12/2022	Routine	No	Maintenance is needed.	Yes	No	No
143	5711	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
144	5713	7/8/2022	Other	No	Meeting	No	No	No
145	5725	9/14/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
146	5727	10/10/2022	Routine	No	Maintenance is needed.	Yes	No	No
147	5740	10/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
148	5748	11/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
149	5749	1/18/2023	Routine	No	Maintenance is needed.	No	No	No
150	5766	9/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
151	5767	9/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
152	5771	3/9/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
153	5772	2/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
154	5781	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
155	5785	7/6/2022	Routine	No	Maintenance is needed.	Yes	No	No
156	5812	9/21/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
157	5823	12/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
158	5824	12/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
159	5831	10/5/2022	Routine	No	Maintenance is needed.	Yes	No	No
160	5852	2/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
161	5856	10/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
162	5857	9/30/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
163	5858	9/28/2022	Routine	No	Maintenance is needed.	Yes	No	No
164	5869	2/15/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
165	5870	2/15/2023	Routine	No	Maintenance is needed.	Yes	No	No
166	5872	10/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
167	5877	2/14/2023	Other	Yes	No maintenance is neededed at this time.	No	No	No
168	5877	12/13/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
169	5878	2/15/2023	Routine	No	Maintenance is needed.	Yes	No	No
170	5889	8/11/2022	Routine	No	Maintenance is needed.	Yes	No	No
171	5892	7/22/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
172	5893	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
173	5894	8/26/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
174	5895	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
175	5896	12/30/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No	No
176	5897	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
177	5909	12/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
178	5915	11/1/2022	Routine	No	Maintenance is needed.	Yes	No	No
179	5924	8/9/2022	Routine	No	Maintenance is needed.	Yes	No	No
180	5925	7/7/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
181	5929	12/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
182	5929	12/6/2022	Routine	No	Maintenance is needed.	Yes	No	No
183	5932	11/4/2022	Routine	No	Maintenance is needed.	Yes	No	No
184	5935	12/6/2022	Routine	No	Maintenance is needed.	Yes	No	No
185	5935	12/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
186	5937	7/22/2022	Routine	No	Maintenance is needed.	Yes	No	No
187	5948	10/10/2022	Routine	No	Maintenance is needed.	Yes	No	No
188	5949	10/10/2022	Routine	No	Maintenance is needed.	Yes	No	No
189	5955	10/31/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
190	5956	12/29/2022	60-day reinspection	Yes	No maintenance is neededed at this time.	No	No	No
191	5977	3/1/2023	Routine	No	Maintenance is needed.	Yes	No	No
192	5978	9/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
193	5979	9/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
194	5983	4/5/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
195	5988	11/3/2022	Routine	No	Meeting	No	No	No
196	5990	1/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
197	5991	1/4/2023	Routine	No	Maintenance is needed.	Yes	No	No
198	5992	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
199	5993	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
200	5994	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
201	5995	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
202	5996	1/27/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
203	5997	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
204	5998	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
205	5999	1/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
206	6005	1/5/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
207	6007	4/6/2023	Routine	No	Maintenance is needed.	Yes	No	No
208	6010	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
209	6011	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
210	6012	10/19/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
211	6013	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
212	6014	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
213	6015	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
214	6016	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
215	6017	10/19/2022	Routine	No	Maintenance is needed.	Yes	No	No
216	6019	1/5/2023	Routine	No	Maintenance is needed.	Yes	No	No
217	6020	1/5/2023	Routine	No	Maintenance is needed.	Yes	No	No
218	6021	11/4/2022	Routine	No	Maintenance is needed.	Yes	No	No
219	6022	11/4/2022	Routine	No	Maintenance is needed.	Yes	No	No
220	6023	11/4/2022	Routine	No	Maintenance is needed.	Yes	No	No
221	6028	8/9/2022	Routine	No	Need plans	No	No	No
222	6029	8/8/2022	Routine	No	Maintenance is needed.	Yes	No	No
223	6039	9/14/2022	Routine	No	Maintenance is needed.	Yes	No	No
224	6046	2/13/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
225	6088	3/9/2023	Routine	No	Maintenance is needed.	Yes	No	No
226	6100	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
227	6101	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
228	6102	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
229	6103	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
230	6104	4/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
231	6120	1/9/2023	Routine	No	Maintenance is needed.	Yes	No	No
232	6123	12/29/2022	Routine	No	Maintenance is needed.	Yes	No	No

Privately-Maintained SWM/BMP Facilities - Compliance Report FY23

No. Count	Facility Id	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
233	6124	1/12/2023	Routine	No	Maintenance is needed.	Yes	No	No
234	6125	3/14/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
235	6126	1/12/2023	Routine	No	Maintenance is needed.	Yes	No	No
236	6127	2/12/2023	Routine	No	Maintenance is needed.	Yes	No	No
237	6128	1/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
238	6129	1/10/2023	Routine	Yes	No maintenance is neededed at this time.	No	No	No
239	6146	11/15/2022	Routine	No	Maintenance is needed.	Yes	No	No
240	6166	11/10/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
241	6205	8/24/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
242	6206	8/24/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
243	6207	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
244	6208	8/25/2022	Routine	Yes	No maintenance is neededed at this time.	No	No	No
245	6209	9/27/2022	Routine	No	Maintenance is needed.	Yes	No	No
246	6210	10/5/2022	Routine	No	Maintenance is needed.	Yes	No	No

Appendix J

Summary of SWM Facilities Added to Inventory

Facilities added to County Inventory in FY2023

Facility ID	Facility Type	Facility Description	Inventory Date	Maintenance	Comments	Swm Agreement	VAHUC 6	VAHUC12 Name	Plan Name	Status	Drainage Area	Latitude	Longitude
1049	SWMP/BMP	D	7/28/2022	P	3" BMP ORIFICE AT EW	N	PL44	Middle Bull Run	BLACKBURN LANDBAY 2A	R	24.65	38.7923	-77.5325
1050	SWMP/BMP	D	8/16/2022	P	4'x4' RISER, 1.6" BMP ORIFICE AT RISER	N	PL52	Quantico Creek	QUANTICO HILLS OVERLOOK	R	9.46	38.5345	-77.3111
1051	SWMP/BMP	W	9/8/2022	P	PWSE=314.58'; 4" BMP ORIFICE AT RISER	N	PL51	Powells Creek	MALLARD'S OVERLOOK NORTH	R	11.43	38.6328	-77.4086
1052	SWMP/BMP	W	4/7/2023	P	PWSE=243.02', 6" DRAWDOWN PIPE	N	PL41	Occoquan River-Lake Jackson	GRANT AVENUE IMPROVEMENT & SWM PLAN	R	15.53	38.7238	-77.4627
6209	CBMP	B	7/28/2022	C	BIORETENTION AREA	Y	PL44	Middle Bull Run	BLACKBURN LANDBAY 2A	R	0.80	38.7911	-77.5307
6210	CSWMP/BMP	U	8/5/2022	C	STORMTECH MC-3500 W/ ISOLATOR CHAMBER	Y	PL32	Broad Run-Catletts Branch	ROUTE 29 CAR WASH	NR	1.49	38.7942	-77.6265
6211	CSWMP/BMP	U	3/29/2023	C	STORMTECH SC-740 W/ ISOLATOR CHAMBER	Y	PL40	Cedar Run-Slate Run	DOLLAR GENERAL NOKESVILLE	NR	1.54	38.6991	-77.5828

Appendix K

Clean Water Partners Annual Report

Northern Virginia Clean Water Partners
Annual Summary of Results
July 1, 2021 - June 30, 2022

Polluted stormwater runoff is the number one cause of poor water quality in Northern Virginia's streams and rivers. When it rains and snows, water runs off streets, driveways, yards and parking lots and mixes with pollutants, such as litter, fertilizer, pet waste, road salt, and auto fluids. These pollutants then enter storm drains on the street and are discharged directly into nearby streams.

To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners joined together to improve residents' knowledge and behavior through an ongoing public education campaign.

About the Partnership

The Northern Virginia Clean Water Partners is composed of a group of local governments, drinking water and sanitation authorities, and businesses that share the common goals to keep Northern Virginia residents healthy and safe by reducing the amount of pollution from stormwater runoff that reaches local creeks and rivers, and empower individuals to take action to reduce pollution.

To meet these goals, the partners work together to:

- Identify high priority water quality issues for the region
- Identify the target audience(s) for outreach
- Educate the region's residents on simple ways to reduce pollution around their homes
- Monitor changes in behavior through surveys and other data collection techniques
- Pilot new cost-effective opportunities for public outreach and education

Membership is voluntary and each member makes an annual contribution to fund the program. By working together, the partners are able to leverage their funds to develop and implement a range of bilingual education and outreach strategies throughout Northern Virginia.

"Only rain down the storm drain"
- Partnership Motto

The 2022 campaign helped to satisfy MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

For more information visit **onlyrain.org**

2022 Campaign Overview

The Northern Virginia Clean Water Partners identified the following water quality issues to highlight in their 2022 campaign:

- **Nutrients (Phosphorus and Nitrogen)**
- **Bacteria**
- **Salt**
- **Illicit Discharges (e.g., pesticides, motor oil, etc.)**

Target audiences for these issues include pet owners, winter salt applicators, home mechanics, and residents with a lawn or garden. To reach these audiences, the campaign used a combination of social media, television, printed advertising, and the Only Rain website to distribute messaging that would improve stormwater-related knowledge and behaviors. Partners also participated in local events throughout the year to engage residents and raise campaign awareness.

To expand outreach and engagement, the 2022 campaign also included several new social marketing tools, including:

- A "Clean Water Pledge" on onlyrain.org for participants to adopt a new clean water behavior
- New “made for social media” psa’s for target audiences on Facebook and Twitter
- A quarterly e-newsletter
- A Facebook Group for people to interact and connect on reducing stormwater runoff

Social Media

The Clean Water Partners created Facebook and Twitter accounts as a part of their 2020 campaign strategy.

Since July 1, 2021, the Facebook page has gained 120 new followers for a total of 403 current followers. During the campaign year, the page had 405 posts, 29,216 post engagements, and 12,740 post link clicks. The Clean Water Partners Facebook Group also gained 53 members.

The Twitter account currently has 131 followers, with 50 new followers since July 1, 2021. Over the year, the account had 408 tweets, 1,051 tweet engagements, and 68 link clicks.

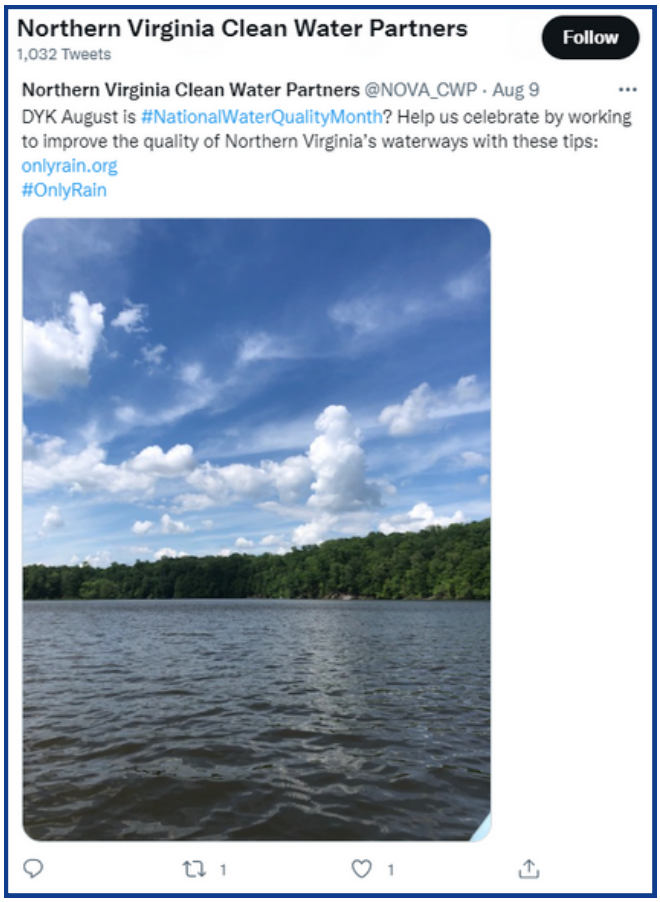
Video Advertisements

The campaign continued to reach residents through a series of video advertisements that focused on residential stormwater management actions. In 2022, the campaign aired two public service announcements (one in English and one in Spanish) on a combination of English and Spanish language networks for a total of 820,154 impressions, or views.

Key Facts and Figures for 2022

- **3,984** visits to OnlyRain.org
- **500** Stormwater Survey responses
- **32** Clean Water Pledges
- **820,154** Premium digital TV impressions* (cable network ads)
- **1,257,502** Total social media impressions* (Facebook and Twitter)
- **30,267** Engagements with social media posts (Facebook and Twitter)

**Impressions are the number of times an ad appeared on a single television or computer screen.*



Top reaching Facebook post of the campaign year

Annual Stormwater Survey

Survey Goal

The Clean Water Partners conduct an annual online survey of 500 Northern Virginia residents to better understand their stormwater-related knowledge and behaviors over time. Results help the partners to assess their campaign's effectiveness and direct future education and outreach efforts.

Results

Stormwater and Watershed Knowledge

Only 37% of Northern Virginia residents believe that they live within the Potomac River Watershed, representing a 7% decrease from 2020. 28% of residents are not sure if they live in the watershed and 7% do not know what a watershed is.

When asked where stormwater eventually ends up, 61% of residents responded that it goes to the Potomac River or Chesapeake Bay, while nearly half believe that it goes to a wastewater treatment plant (27%) or do not know where it ends up (18%). Responses to this question have been consistent since 2019.

Overall, results relating to resident knowledge indicate a need for more general education on the Chesapeake Bay watershed and how stormwater runoff ends up in its waterways.

Information and Advertising

Nearly one-third (32%) of residents in 2022 reported that they have seen or received at least some form of information about reducing water pollution in the past 12 months. 24% have heard of specific opportunities to participate in water quality improvement activities, such as stream clean ups and storm drain stenciling.

28% of residents recalled viewing a Clean Water Partners ad on TV, Facebook, or Twitter prior to taking the survey. While similar to 2021 (29%), this response represents a significant increase from 2020 (22%).

After viewing an ad, 42% of residents stated that they now pick up pet waste more often, 37% plan to fertilize less frequently, 12% now properly dispose of motor oil, and 40% were already taking action to reduce water pollution.

When shown the "only rain down the storm drain" fish logo, 66% of residents reported seeing the logo prior to the survey. While over 50% of residents have recognized the logo each year since 2013, the 2022 response was the highest so far with a 5% increase from 2021. This result highlights a growing awareness of the campaign in recent years through new advertising and engagement efforts.

Resident Behaviors

The survey asked specific questions to understand changes in Northern Virginia residents' behaviors around relevant stormwater management and pollution issues, including pet waste, lawn and garden care, car fluids, and household hazardous waste.

As in 2021, nearly half (48%) of residents reported owning a dog. Of those that walk their dog, 70% stated that they always pick up their dog's waste, while 4% rarely or never pick up the waste.

When asked why they pick up their dog's waste, 32% of residents selected that "it's what good neighbors do" and 21% responded that their actions where due to city or county ordinances. Although there was a slight increase from 2021 (14%), only 17% of residents noted picking up their pet's waste because it causes water pollution.

Based on the percentage of new dog owners in recent years, these results underscore the need and opportunity for further outreach and education around pet waste impacts on local waterways.

77% of residents with a lawn or garden reported fertilizing their lawn at least once a year. Similar to 2021, 21% of residents fertilize twice a year, compared to those that only fertilize in the spring (16%) or in the fall (6%). Notably, 12% stated that they use a lawn care service, indicating that they also fertilize at least once a year.

For those that cut their own grass, only 28% of residents keep their grass clippings on their lawn or garden. 50% bag their clippings and either recycle them (27%) or put them in the regular trash (23%). Future engagement with lawn and garden owners might include information about the various benefits of leaving grass clippings in the yard.

Respondents were provided descriptions of a rain barrel, rain garden, and conservation landscaping and asked whether they have heard of these stormwater management features and would be interested in getting one for their property. While there was a decline in those that had heard of each feature from 2021, there were increases in those reporting that they had seen the features in the neighborhood and were interested in getting one. Specifically, from 2021, there was a 5% increase in those interested in having some form of conservation landscaping on their property.

To build on greater levels of interest, the campaign could provide further resources and opportunities to support residents in obtaining and maintaining these features in the future.

Two-thirds (67%) of residents know if their locality has a specific location to drop off household hazardous waste. Responses to this question have consistently remained above 60% since 2018.

The majority of residents (75%) reported going to an auto center for an oil change or taking their old motor oil to a gas station or hazmat facility for recycling (10%). However, similar to past years, nearly 10% of residents store their used motor oil in their garage, place it in the trash, or dump it down the storm drain, sink or onto the ground.

50% of residents reported that they wash their car or truck at least every other month, with 14% washing it multiple times a month. In particular, there has been a continuous annual increase in residents that wash their automobiles at home (30% in 2018 versus 43% in 2022) and decrease in those that take their car to a carwash (45% in 2018 and 36% in 2022). For those that wash their cars or trucks at home, about half (52%) stated that they use environmentally friendly detergent, while 10% solely use water.

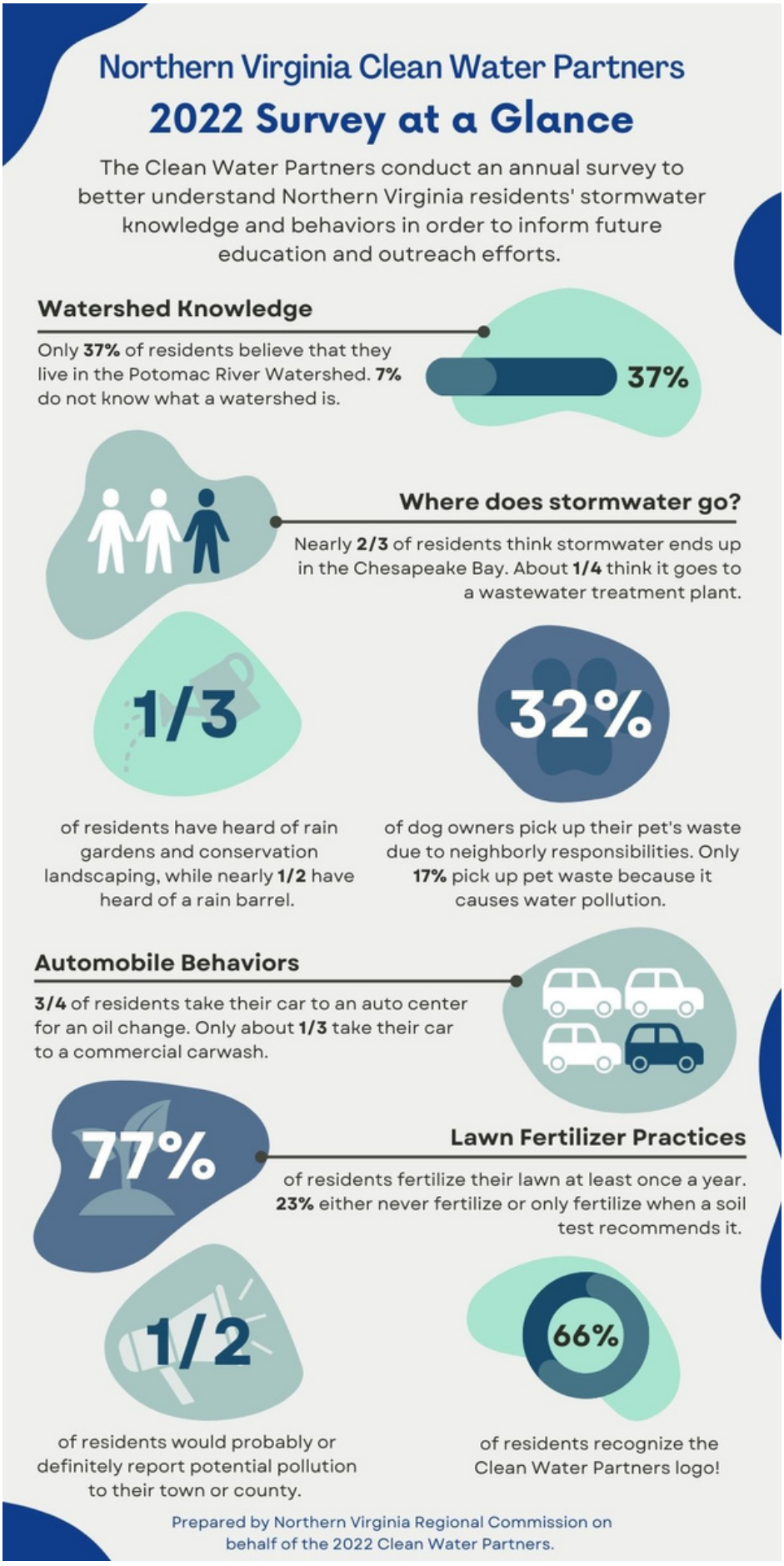
With an increasing number of residents washing their automobiles at home, related engagement should be centered around safe washing practices or encouragement to go to a carwash where dirty water is sent to a wastewater treatment plant.

Next Steps

Through a combination of social media, TV, and the Only Rain website, the 2022 campaign was able to reach a broad span of Northern Virginia residents around stormwater runoff and pollution. New social marketing features, such as the quarterly e-newsletter, further advanced the campaign's messaging and outreach goals.

The 2023 campaign will aim to build off of current momentum and continue to integrate fresh tools to engage residents around various stormwater issues. The next campaign year will include:

- A new campaign video
- Enhanced social media content strategies, such as a "spot the stormdrain sticker" contest
- Monthly partner highlights
- And more!


Northern Virginia Clean Water Partners
2022 Survey at a Glance
The Clean Water Partners conduct an annual survey to better understand Northern Virginia residents' stormwater knowledge and behaviors in order to inform future education and outreach efforts.
Watershed Knowledge
Only 37% of residents believe that they live in the Potomac River Watershed. 7% do not know what a watershed is.
37%
Where does stormwater go?
Nearly 2/3 of residents think stormwater ends up in the Chesapeake Bay. About 1/4 think it goes to a wastewater treatment plant.
1/3
of residents have heard of rain gardens and conservation landscaping, while nearly 1/2 have heard of a rain barrel.
32%
of dog owners pick up their pet's waste due to neighborly responsibilities. Only 17% pick up pet waste because it causes water pollution.
Automobile Behaviors
3/4 of residents take their car to an auto center for an oil change. Only about 1/3 take their car to a commercial carwash.
77%
Lawn Fertilizer Practices
of residents fertilize their lawn at least once a year. 23% either never fertilize or only fertilize when a soil test recommends it.
1/2
of residents would probably or definitely report potential pollution to their town or county.
66%
of residents recognize the Clean Water Partners logo!
Prepared by Northern Virginia Regional Commission on behalf of the 2022 Clean Water Partners.

Additional Information

Website: onlyrain.org
Facebook: facebook.com/NVCWP
Twitter: twitter.com/nova_cwp

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Fairfax, VA 22031

2022 Clean Water Partners:

Fairfax County | Arlington County | Loudoun County | Loudoun Water | Fairfax Water | City of Alexandria | City of Fairfax | City of Falls Church | City of Manassas | City of Manassas Park | Stafford County | Town of Leesburg | Town of Dumfries | Town of Herndon | Town of Vienna | Prince William County | Northern Virginia Regional Commission | George Mason University | Virginia Coastal Zone Management Program | Fairfax County Public Schools | Prince William County Public Schools | Northern Virginia Soil and Water Conservation District

This summary was produced by Northern Virginia Regional Commission on behalf of the 2022 Clean Water Partners.

Appendix L

Summary of County Training Program

FY23 County Training Program Summary

Prince William County Staff are trained in the recognition and reporting of Illicit Discharges as well as implementation of good housekeeping practices. Currently, appropriate staff are trained in basic good housekeeping, spill prevention, and illicit discharge prevention practices through EMS training. This training is conducted biennially and is required for all staff including full-time parks and rec staff.

To increase training opportunities for personnel with varying shifts and schedules, an effort was made during FY18 to offer more online environmental compliance courses. These custom courses with voice-over narration were developed internally and featured pertinent photos from County facilities to demonstrate information and relay County specific procedures for compliance and response. A test at the end of these courses ensured users remained engaged and attentive. Training records are maintained using the online SkillSoft platform that is customized for the County and named "PWC University", and attendance reports are generated by that system. Risk Management maintains a copy of sign-in sheets and course content. In FY23 COVID continued to limit the number of in-person training opportunities, so more online, on demand training was provided. In addition, many groups found ways to conduct in-person training outdoors. The following table lists training courses offered in FY23 and the number of participants.

Training	Number of Personnel
Environmental Regulatory Overview	91
SPCC Refresher for Solid Waste	37
Watershed Protection: County Policies and Site Compliance	37
US DOT Hazardous Materials Handling Certification (3-Year cert)	11
Fuel Tank Inspections Training	43
Snow Rodeo, Proper De-icing Methods	145
Watershed Illicit Discharge Prevention	59
Spill Prevention Control and Countermeasures Plan	81
Resource Conservation and Recovery Act	102
Introduction to PWC's Environmental Management Systems (EMS)	6
EMS Refresher Training	62
SPCC Refresher Training for Fleet Management	58
Facility Winter Maintenance	20

Appendix M

Dry Weather Screening – Inspection Summary

Dry Weather Screening -Inspection Summary								
Landuse	**Outfall Id**	**Last Inspection Date**	**Flow Present**	**Illicit Discharge**	**High Risk**	**Maintenance Required**	**Within PWC Service Area**	**VPDES Permitted**
Residential	22716	8/18/2022	Yes	Unlikely	N	False	Y	N
Residential	22373	7/12/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	32891	8/18/2022	No	Unlikely	N	False	N	N
Shopping Center	36152	8/9/2022	No	Unlikely	N	True	N	N
Other	54847	7/12/2022	No	Unlikely	N	False	N	N
Residential	7324	8/9/2022	No	Unlikely	N	False	Y	N
Residential	13662	7/20/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	16088	8/16/2022	No	Unlikely	N	True	N	N
Residential	45873	7/12/2022	Stagnant	Unlikely	N	False	Y	N
Other	12535	7/7/2022	No	Unlikely	N	True	Y	N
Residential	36640	7/11/2022	Yes	Unlikely	N	False	Y	N
Residential	36595	7/11/2022	No	Unlikely	N	False	Y	N
Other	5798	7/19/2022	Yes	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	7564	9/16/2022	Stagnant	Unlikely	Y	False	N	N
Residential	65260	7/20/2022	No	Unlikely	N	False	Y	N
Other	32832	7/22/2022	No	Unlikely	N	False	N	N
Shopping Center	10968	8/18/2022	No	Unlikely	N	False	N	N
Open Space	67571	9/20/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	19260	8/10/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	20584	8/16/2022	No	Unlikely	N	False	N	N
Residential	34707	8/10/2022	No	Unlikely	N	True	Y	N
Regional Mall	21291	7/8/2022	No	Unlikely	N	False	N	N
Open Space	56176	9/15/2022	No	Unlikely	N	False	N	N
Shopping Center	33551	8/9/2022	No	Unlikely	Y	True	N	N
Residential	52958	9/15/2022	Stagnant	Unlikely	N	False	N	N
Shopping Center	26018	9/20/2022	Yes	Unlikely	Y	False	Y	N
Research and Testing	31543	8/16/2022	Stagnant	Unlikely	N	False	N	N
Residential	22259	7/12/2022	No	Unlikely	N	False	Y	N
Shopping Center	18157	7/7/2022	Yes	Unlikely	Y	True	N	N
Residential	43791	8/9/2022	No	Unlikely	N	False	Y	N
Residential	52977	9/15/2022	No	Unlikely	N	False	N	N
Residential	25919	7/8/2022	No	Unlikely	N	False	Y	N
Residential	23432	9/22/2022	No	Unlikely	N	True	Y	N
Residential	50992	9/27/2022	No	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	7558	9/16/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	31195	9/1/2022	Yes	Unlikely	Y	False	N	N
Residential	51266	8/10/2022	No	Unlikely	N	True	Y	N
Residential	44777	9/15/2022	No	Unlikely	N	False	N	N
Other	50601	9/27/2022	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	66507	8/16/2022	No	Unlikely	N	True	N	N
Residential	32418	8/24/2022	No	Unlikely	N	True	Y	N
Shopping Center	19769	7/8/2022	No	Unlikely	N	False	N	N
Shopping Center	19772	7/8/2022	No	Unlikely	N	True	N	N
Residential	45129	9/15/2022	No	Unlikely	N	False	N	N
Residential	14335	9/14/2022	No	Unlikely	N	False	Y	N
Wholesale Warehousing	12939	8/25/2022	No	Unlikely	N	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	58310	9/16/2022	No	Unlikely	Y	False	Y	N
Residential	23181	9/22/2022	No	Unlikely	N	False	Y	N
Residential	14332	9/14/2022	No	Unlikely	N	False	Y	N
Residential	11370	9/14/2022	No	Unlikely	N	False	Y	N
Residential	7746	8/25/2022	Yes	Unlikely	N	True	N	N
Residential	21076	8/10/2022	No	Unlikely	N	False	Y	N
Residential	49472	7/20/2022	Yes	Unlikely	N	False	N	N
Residential	22255	7/12/2022	No	Unlikely	N	False	Y	N
Other	32978	7/22/2022	No	Unlikely	N	False	N	N

Other	54841	7/12/2022	No	Unlikely	N	False	N	N
Shopping Center	55311	8/9/2022	No	Unlikely	N	True	N	N
Open Space	64776	9/1/2022	No	Unlikely	N	True	N	N
Shopping Center	60379	7/7/2022	No	Unlikely	N	True	N	N
Other	50619	9/27/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37344	8/16/2022	No	Unlikely	Y	True	N	N
Other	50664	9/27/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	21289	7/8/2022	No	Unlikely	N	False	N	N
Other	13655	7/20/2022	Yes	Unlikely	N	False	N	N
Residential	22714	8/19/2022	No	Unlikely	N	False	Y	N
Residential	39855	9/27/2022	Stagnant	Unlikely	N	False	N	N
Residential	22706	8/18/2022	No	Unlikely	N	True	Y	N
Residential	34580	8/10/2022	No	Unlikely	N	False	N	N
Other	54844	7/12/2022	No	Unlikely	N	False	N	N
Residential	22710	8/19/2022	No	Unlikely	N	False	N	N
Residential	32409	8/23/2022	No	Unlikely	N	True	N	N
Other	49470	7/20/2022	Stagnant	Unlikely	N	False	Y	N
Residential	25924	7/8/2022	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	8007	8/19/2022	Stagnant	Unlikely	N	False	N	N
Other	13689	7/19/2022	Yes	Unlikely	N	False	N	N
Planned Industrial Park	55078	7/22/2022	No	Unlikely	N	True	N	N
Residential	44768	9/15/2022	Stagnant	Unlikely	N	False	N	N
Residential	47524	8/24/2022	No	Unlikely	N	False	Y	N
Other	50651	9/27/2022	Stagnant	Unlikely	N	False	N	N
Residential	21084	8/10/2022	No	Unlikely	N	False	Y	N
Other	68164	7/12/2022	Yes	Unlikely	N	False	N	N
Planned Industrial Park	1118	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	34353	8/16/2022	No	Unlikely	N	False	N	N
Residential	34699	8/10/2022	No	Unlikely	N	False	N	N
Residential	24163	8/10/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	31191	9/1/2022	No	Unlikely	N	False	N	N
Residential	44773	9/15/2022	Stagnant	Unlikely	N	False	N	N
Residential	22364	7/12/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	20789	8/24/2022	No	Unlikely	Y	False	N	N
Wholesale Warehousing	38168	7/20/2022	No	Unlikely	N	True	N	N
Institutional (schools/churches)	8016	8/18/2022	Yes	Unlikely	N	False	N	N
Residential	47522	8/24/2022	No	Unlikely	N	False	Y	N
Residential	58992	9/27/2022	No	Unlikely	N	False	N	N
Residential	43783	8/9/2022	No	Unlikely	N	False	Y	N
Residential	7320	8/9/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	20574	8/16/2022	No	Unlikely	N	False	N	N
Other	64238	8/9/2022	No	Unlikely	N	True	N	N
Other	59616	7/7/2022	No	Unlikely	N	False	N	N
Open Space	12795	7/8/2022	Yes	Unlikely	N	False	N	N
Other	43775	8/9/2022	No	Unlikely	N	False	Y	N
Residential	38364	8/23/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	31185	9/1/2022	Stagnant	Unlikely	Y	False	N	N
Residential	51252	8/10/2022	No	Unlikely	N	True	Y	N
Residential	11363	9/14/2022	No	Unlikely	N	False	Y	N
Other	54854	7/12/2022	No	Unlikely	N	False	N	N
Residential	47520	8/24/2022	No	Unlikely	N	False	Y	N
Residential	32416	8/23/2022	No	Unlikely	N	False	N	N
Institutional (schools/churches)	8009	8/19/2022	No	Unlikely	N	False	N	N
Residential	8438	8/24/2022	No	Unlikely	N	True	N	N
Institutional (schools/churches)	74561	9/21/2022	No	Unlikely	N	False	N	N
Residential	28555	7/11/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	31179	9/1/2022	No	Unlikely	N	True	N	N
Residential	22712	8/18/2022	Yes	Unlikely	N	False	N	N

Other	64779	9/1/2022	Yes	Unlikely	N	False	N	N
Other	50610	9/27/2022	Stagnant	Unlikely	N	True	N	N
Other	26015	9/20/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31536	8/16/2022	Stagnant	Unlikely	N	False	N	N
Residential	40009	9/27/2022	No	Unlikely	N	False	N	N
Residential	60995	9/15/2022	Stagnant	Unlikely	N	False	N	N
Other	22700	8/19/2022	No	Unlikely	N	False	Y	N
Residential	6777	8/9/2022	No	Unlikely	N	False	Y	N
Residential	51001	9/27/2022	No	Unlikely	N	False	N	N
Residential	38366	8/23/2022	No	Unlikely	N	False	Y	N
Residential	36687	7/11/2022	Yes	Unlikely	N	False	N	N
Planned Industrial Park	31189	9/1/2022	No	Unlikely	Y	False	N	N
Residential	47973	9/14/2022	No	Unlikely	N	False	Y	N
Residential	45855	7/12/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	31183	9/1/2022	No	Unlikely	N	False	N	N
Open Space	22261	7/12/2022	No	Unlikely	N	False	Y	N
Residential	51293	8/19/2022	No	Unlikely	N	False	Y	N
Open Space	44758	9/15/2022	No	Unlikely	N	False	N	N
Residential	21079	8/10/2022	No	Unlikely	N	False	Y	N
Residential	51271	8/10/2022	No	Unlikely	N	True	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	30228	9/16/2022	No	Unlikely	Y	False	Y	N
Shopping Center	60026	7/7/2022	No	Unlikely	N	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	30226	9/16/2022	No	Unlikely	Y	False	Y	N
Planned Industrial Park	5756-001	9/1/2022	Yes	Unlikely	Y	False	N	Y
Residential	36658	7/11/2022	No	Unlikely	N	False	Y	N
Residential	50995	9/27/2022	No	Unlikely	N	False	N	N
Open Space	42295	9/15/2022	No	Unlikely	N	False	N	N
Shopping Center	18182	7/7/2022	No	Unlikely	N	True	N	N
Residential	28932	8/19/2022	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	11225	9/22/2022	No	Unlikely	N	False	Y	N
Shopping Center	55414	8/9/2022	Stagnant	Unlikely	N	True	N	N
Other	18212	7/7/2022	No	Unlikely	Y	True	N	N
Residential	14602	9/14/2022	Yes	Unlikely	N	False	Y	N
Residential	32420	8/24/2022	No	Unlikely	N	False	Y	N
Residential	7774	8/25/2022	Yes	Unlikely	N	False	N	N
Residential	67640	9/21/2022	No	Unlikely	N	False	N	N
Residential	51297	8/19/2022	No	Unlikely	N	False	Y	N
Residential	23418	9/22/2022	No	Unlikely	N	False	Y	N
Residential	26441	8/23/2022	No	Unlikely	N	True	Y	N
Residential	36733	7/12/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	31569	8/16/2022	No	Unlikely	N	False	N	N
Residential	36680	7/11/2022	Stagnant	Unlikely	N	False	Y	N
Residential	22704	8/19/2022	No	Unlikely	N	False	Y	N
Wholesale Warehousing	12932	8/25/2022	No	Unlikely	N	False	N	N
Other	63340	7/12/2022	No	Unlikely	N	False	N	N
Other	16270	9/16/2022	Yes	Unlikely	Y	True	N	N
Residential	22370	7/12/2022	No	Unlikely	N	False	Y	N
Shopping Center	19809	7/8/2022	Yes	Unlikely	N	False	N	N
Shopping Center	50606	9/27/2022	No	Unlikely	N	True	N	N
Other	22700	8/19/2022	No	Unlikely	N	False	Y	N
Residential	57056	7/22/2022	Stagnant	Unlikely	N	False	N	N
Residential	11368	9/14/2022	No	Unlikely	N	False	N	N
Residential	435	9/14/2022	No	Unlikely	N	False	N	N
Open Space	39890	9/27/2022	Stagnant	Unlikely	N	False	N	N
Residential	38288	7/11/2022	No	Unlikely	N	False	N	N
Residential	32407	8/23/2022	No	Unlikely	N	True	N	N
Other	31560	8/16/2022	No	Unlikely	N	True	N	N
Shopping Center	19796	7/8/2022	Yes	Unlikely	N	False	N	N
Residential	7333	8/9/2022	No	Unlikely	N	False	N	N

Residential	23176	9/22/2022	Yes	Unlikely	N	True	Y	N
Other	67573	9/16/2022	Yes	Unlikely	N	False	N	N
Restaurant	18208	7/7/2022	No	Unlikely	N	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	50491	8/16/2022	Stagnant	Unlikely	Y	True	N	N
Residential	11374	9/14/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	25017	8/16/2022	No	Unlikely	N	False	N	N
Residential	43779	8/9/2022	No	Unlikely	N	False	N	N
Residential	5796	7/19/2022	Yes	Unlikely	N	False	N	N
Hospital	49928	7/6/2022	Stagnant	Unlikely	N	False	Y	N
Shopping Center	43752	8/9/2022	Yes	Unlikely	N	False	N	N
Institutional (schools/churches)	74564	9/21/2022	No	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	66977	8/18/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	41021	7/22/2022	No	Unlikely	N	False	N	N
Residential	67569	9/20/2022	No	Unlikely	N	False	N	N
Residential	8422	8/25/2022	No	Unlikely	N	True	Y	N
Residential	57059	7/22/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31945	9/1/2022	No	Unlikely	N	False	N	N
Other	27239	9/20/2022	No	Unlikely	N	False	N	N
Residential	45126	9/15/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31941	9/1/2022	No	Unlikely	N	False	N	N
Residential	59008	9/15/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31556	8/16/2022	No	Unlikely	N	False	N	N
Other	57063	7/22/2022	Yes	Unlikely	N	False	N	N
Institutional (schools/churches)	8014	8/19/2022	No	Unlikely	N	False	N	N
Residential	11361	9/14/2022	No	Unlikely	N	False	N	N
Residential	13680	7/20/2022	No	Unlikely	N	False	N	N
Other	55085	7/22/2022	Yes	Unlikely	N	True	N	N
Other	16272	9/16/2022	Yes	Unlikely	Y	False	N	N
Other	68160	7/12/2022	Yes	Unlikely	N	False	N	N
Regional Mall	21296	7/8/2022	Yes	Unlikely	N	False	N	N
Institutional (schools/churches)	74573	9/21/2022	Stagnant	Unlikely	N	False	N	N
Shopping Center	10961	8/17/2022	No	Unlikely	Y	False	N	N
Other	7330	8/9/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	66499	8/16/2022	No	Unlikely	N	False	N	N
Residential	38105	7/11/2022	No	Unlikely	N	True	N	N
Residential	23158	8/9/2022	No	Unlikely	N	False	N	N
Institutional (schools/churches)	7994	8/19/2022	No	Unlikely	N	False	N	N
Shopping Center	10236	8/17/2022	Yes	Unlikely	Y	False	N	N
Shopping Center	26013	9/20/2022	No	Unlikely	N	False	N	N
Residential	28239	7/12/2022	No	Unlikely	N	False	N	N
Residential	26027	9/16/2022	Stagnant	Unlikely	N	False	Y	N
Planned Industrial Park	31943	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37334	8/16/2022	No	Unlikely	N	True	N	N
Residential	52974	9/15/2022	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	31567	8/16/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	58320	7/22/2022	No	Unlikely	N	False	N	N
Shopping Center	59967	7/6/2022	Yes	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	30230	9/16/2022	Stagnant	Unlikely	Y	False	Y	N
Institutional (schools/churches)	23532	9/16/2022	Stagnant	Unlikely	N	True	N	N
Residential	8427	8/25/2022	No	Unlikely	N	True	Y	N
Planned Industrial Park	46738	8/10/2022	No	Unlikely	Y	False	N	N
Planned Industrial Park	21510	9/1/2022	No	Unlikely	N	True	N	N
Hotel w/ Restaurant	19822	7/8/2022	Stagnant	Unlikely	Y	False	N	N

Shopping Center	27775	8/17/2022	Yes	Unlikely	Y	False	N	N
Residential	36647	7/11/2022	No	Unlikely	N	False	Y	N
Residential	26439	8/24/2022	No	Unlikely	N	False	Y	N
Residential	23178	9/22/2022	No	Unlikely	N	True	Y	N
Planned Industrial Park	31181	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31187	9/1/2022	No	Unlikely	N	False	N	N
Residential	38360	8/23/2022	No	Unlikely	N	False	Y	N
Shopping Center	5371	8/18/2022	Yes	Unlikely	Y	True	N	N
Planned Industrial Park	37363	8/16/2022	Yes	Unlikely	N	True	N	N
Residential	39753	9/27/2022	No	Unlikely	N	False	N	N
Open Space	11973	9/14/2022	No	Unlikely	N	True	N	N
Residential	7322	8/9/2022	No	Unlikely	N	False	Y	N
Open Space	56184	9/15/2022	No	Unlikely	N	False	N	N
Residential	60997	9/15/2022	Yes	Unlikely	N	False	N	N
Residential	66509	8/16/2022	No	Unlikely	N	False	N	N
Open Space	11372	9/14/2022	No	Unlikely	N	False	Y	N
Residential	52981	9/15/2022	Stagnant	Unlikely	N	False	N	N
Residential	23423	9/22/2022	No	Unlikely	N	False	Y	N
Residential	64773	9/1/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	31554	8/16/2022	No	Unlikely	N	False	N	N
Residential	49458	7/20/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	25022	8/16/2022	Yes	Unlikely	Y	False	N	N
Residential	23421	9/22/2022	No	Unlikely	N	True	Y	N
Other	16261	9/20/2022	Yes	Unlikely	N	False	N	N
Residential	50642	9/27/2022	No	Unlikely	N	False	N	N
Other	43067	7/22/2022	No	Unlikely	N	False	N	N
Open Space	18224	8/9/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	21512	9/1/2022	No	Unlikely	N	False	N	N
Residential	40069	9/27/2022	No	Unlikely	N	False	N	N
Residential	22366	7/11/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	19041	8/25/2022	No	Unlikely	Y	True	N	N
Shopping Center	31103	8/9/2022	No	Unlikely	Y	True	N	N
Residential	34719	8/10/2022	No	Unlikely	N	False	Y	N
Residential	5754	7/20/2022	No	Unlikely	N	False	Y	N
Residential	18140	9/21/2022	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	37374	8/16/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	41011	7/20/2022	No	Unlikely	N	False	N	N
Residential	13675	7/20/2022	Stagnant	Unlikely	N	False	N	N
Other	19050	8/25/2022	No	Unlikely	Y	False	N	N
Residential	59011	9/15/2022	No	Unlikely	N	False	N	N
Residential	67575	9/16/2022	No	Unlikely	N	False	N	N
Residential	36702	7/12/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	55083	7/20/2022	No	Unlikely	N	True	N	N
Residential	50628	9/27/2022	Stagnant	Unlikely	N	False	N	N
Residential	11355	9/14/2022	No	Unlikely	N	False	Y	N
Residential	32414	8/23/2022	No	Unlikely	N	False	Y	N
Other	68403	9/20/2022	No	Unlikely	N	False	N	N
Residential	40465	10/26/2022	No	Unlikely	N	False	Y	N
Open Space	58673	11/2/2022	No	Unlikely	N	False	Y	N
Residential	12191	10/10/2022	No	Unlikely	N	False	N	N
Residential	16100	12/19/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	38862	12/21/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	37660	12/21/2022	Stagnant	Unlikely	N	False	N	N
Institutional (schools/churches)	30676	10/21/2022	No	Unlikely	N	False	Y	N
Residential	35337	10/19/2022	No	Unlikely	N	False	Y	N
Residential	31865	11/4/2022	No	Unlikely	N	False	Y	N
Other	32980	11/22/2022	No	Unlikely	N	False	N	N
Residential	41492	11/3/2022	No	Unlikely	N	False	Y	N
Residential	28559	10/19/2022	No	Unlikely	N	False	Y	N

Residential	27416	10/12/2022	No	Unlikely	N	False	N	N
Residential	58390	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Other	29618	12/14/2022	Stagnant	Unlikely	N	False	N	N
Residential	22109	10/12/2022	Yes	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	36576	10/11/2022	No	Unlikely	Y	False	N	N
Shopping Center	33637	12/21/2022	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	37192	11/4/2022	No	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	36573	10/11/2022	No	Unlikely	Y	False	N	N
Residential	25845	11/15/2022	No	Unlikely	N	False	N	N
Residential	43315	10/19/2022	No	Unlikely	N	False	Y	N
Gas Station	31165	10/11/2022	No	Unlikely	Y	True	N	N
Residential	48769	11/3/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	37194	11/4/2022	No	Unlikely	N	False	N	N
Residential	12092	10/10/2022	No	Unlikely	N	False	N	N
Other	28778	10/12/2022	No	Unlikely	N	False	N	N
Other	51200	12/2/2022	No	Unlikely	N	False	N	N
Other	17270	10/11/2022	No	Unlikely	N	False	N	N
Residential	29651	12/14/2022	No	Unlikely	N	False	N	N
Residential	12173	12/19/2022	No	Unlikely	N	False	N	N
Residential	38470	11/4/2022	No	Unlikely	N	False	Y	N
Residential	48222	10/12/2022	No	Unlikely	N	False	Y	N
Residential	48161	10/12/2022	No	Unlikely	N	False	Y	N
Residential	43313	10/19/2022	No	Unlikely	N	False	Y	N
Shopping Center	10248	10/21/2022	No	Unlikely	Y	False	N	N
Residential	39598	11/3/2022	No	Unlikely	N	False	Y	N
Residential	16742	10/10/2022	No	Unlikely	N	False	Y	N
Residential	58399	11/2/2022	No	Unlikely	N	False	Y	N
Residential	3070	10/11/2022	No	Unlikely	N	False	N	N
Residential	3253	11/22/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	36181	11/4/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	37690	12/21/2022	Stagnant	Unlikely	N	False	N	N
Residential	28562	10/19/2022	No	Unlikely	N	False	Y	N
Residential	41959	10/26/2022	No	Unlikely	N	False	Y	N
Residential	22102	10/12/2022	No	Unlikely	N	False	N	N
Residential	28868	11/10/2022	Stagnant	Unlikely	N	False	N	N
Residential	58342	11/2/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	51424	10/11/2022	No	Unlikely	N	False	N	N
Residential	18247	10/18/2022	No	Unlikely	N	False	Y	N
Hotel w/ Restaurant	32176	11/1/2022	No	Unlikely	N	False	N	N
Residential	23454	10/12/2022	No	Unlikely	N	False	N	N
Residential	24852	11/10/2022	No	Unlikely	N	False	N	N
Other	16092	12/14/2022	Yes	Unlikely	N	False	N	N
Residential	40906	11/3/2022	No	Unlikely	N	False	N	N
Residential	45108	10/25/2022	No	Unlikely	N	False	Y	N
Residential	58647	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Open Space	37382	11/4/2022	No	Unlikely	N	False	N	N
Residential	31388	10/18/2022	No	Unlikely	N	False	Y	N
Residential	4549	11/22/2022	No	Unlikely	N	False	N	N
Residential	6456	11/22/2022	No	Unlikely	N	False	Y	N
Residential	12563	12/19/2022	No	Unlikely	N	False	N	N
Open Space	24740	12/19/2022	No	Unlikely	N	False	N	N
Residential	48218	10/12/2022	Yes	Unlikely	N	False	Y	N
Institutional (schools/churches)	7972	12/21/2022	No	Unlikely	N	False	N	N
Open Space	42907	10/26/2022	No	Unlikely	N	False	Y	N
Residential	40561	11/10/2022	No	Unlikely	N	False	Y	N
Residential	29649	12/14/2022	No	Unlikely	N	True	N	N
Residential	5008	11/22/2022	No	Unlikely	N	False	N	N

Residential	28565	10/18/2022	No	Unlikely	N	False	Y	N
Gas Station	34038	10/11/2022	No	Unlikely	N	False	N	N
Residential	44438	11/22/2022	No	Unlikely	N	False	Y	N
Shopping Center	47627	12/21/2022	No	Unlikely	N	False	N	N
Residential	14610	12/19/2022	No	Unlikely	N	False	N	N
Residential	14614	12/19/2022	No	Obvious	Y	False	N	N
Other	22272	12/21/2022	No	Unlikely	N	False	N	N
Residential	40912	11/3/2022	No	Unlikely	N	False	N	N
Residential	33794	12/21/2022	No	Unlikely	N	False	N	N
Residential	58455	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Residential	58402	11/2/2022	No	Unlikely	N	False	Y	N
Residential	18241	10/18/2022	No	Unlikely	N	False	Y	N
Residential	8283	10/10/2022	No	Unlikely	N	False	N	N
Restaurant	59019	12/21/2022	No	Unlikely	N	False	N	N
Residential	8275	10/10/2022	No	Unlikely	N	False	N	N
Residential	48119	10/12/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	62029	10/11/2022	No	Unlikely	Y	False	N	N
Residential	18234	10/18/2022	No	Unlikely	N	False	Y	N
Residential	37415	11/3/2022	Stagnant	Unlikely	N	False	Y	N
Residential	16098	12/14/2022	No	Unlikely	N	False	Y	N
Residential	40483	10/26/2022	No	Unlikely	N	False	Y	N
Residential	58576	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Shopping Center	30894	10/11/2022	No	Unlikely	N	False	N	N
Residential	58589	11/2/2022	No	Unlikely	N	False	Y	N
Residential	14617	12/19/2022	No	Obvious	Y	False	N	N
Open Space	16086	12/14/2022	No	Unlikely	N	False	Y	N
Residential	40908	11/3/2022	No	Unlikely	N	False	N	N
Residential	41934	10/25/2022	Yes	Unlikely	N	False	Y	N
Other	42874	10/26/2022	No	Unlikely	N	False	Y	N
Residential	35351	10/19/2022	No	Unlikely	N	False	Y	N
Residential	5005	11/22/2022	No	Unlikely	N	False	Y	N
Shopping Center	47659	10/24/2022	No	Unlikely	N	True	N	N
Residential	58429	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Residential	40496	10/26/2022	No	Unlikely	N	False	Y	N
Residential	25696	11/10/2022	Stagnant	Unlikely	N	True	N	N
Shopping Center	60542	10/10/2022	Stagnant	Unlikely	Y	True	N	N
Regional Mall	43166	10/24/2022	Stagnant	Unlikely	N	False	N	N
Other	29640	12/14/2022	Yes	Unlikely	N	False	N	N
Planned Industrial Park	46740	11/4/2022	No	Unlikely	N	False	N	N
Residential	46753	10/12/2022	No	Unlikely	N	False	Y	N
Residential	58489	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Residential	6437	11/22/2022	No	Unlikely	N	False	N	N
Residential	23864	11/15/2022	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	17260	10/11/2022	Yes	Unlikely	N	False	N	N
Shopping Center	43163	10/24/2022	Yes	Unlikely	Y	False	N	N
Residential	23887	11/15/2022	No	Unlikely	N	False	Y	N
Residential	28773	10/12/2022	No	Unlikely	N	False	N	N
Residential	20557	11/14/2022	No	Unlikely	N	False	N	N
Residential	4619	11/9/2022	No	Unlikely	Y	False	N	N
Other	29643	12/14/2022	No	Unlikely	N	False	Y	N
Residential	4648	11/10/2022	No	Unlikely	N	False	N	N
Residential	35568	11/22/2022	Stagnant	Unlikely	N	False	Y	N
Residential	25158	10/19/2022	Yes	Unlikely	N	False	Y	N
Open Space	54543	11/22/2022	No	Unlikely	N	True	Y	N
Residential	40939	11/3/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	37185	11/4/2022	No	Unlikely	N	False	N	N
Other	35729	11/3/2022	No	Unlikely	N	False	Y	N
Residential	4091	12/14/2022	Yes	Unlikely	Y	False	Y	N
Residential	18238	10/18/2022	No	Unlikely	N	False	Y	N
Other	51202	12/2/2022	Yes	Unlikely	N	False	N	N
Residential	4651	11/10/2022	No	Unlikely	N	False	N	N

Planned Industrial Park	46742	11/4/2022	No	Unlikely	N	False	N	N
Residential	16346	10/10/2022	No	Unlikely	N	False	N	N
Research and Testing	19568	11/22/2022	No	Unlikely	N	True	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	30898	10/11/2022	No	Unlikely	Y	False	N	N
Other	42899	10/26/2022	No	Unlikely	N	False	Y	N
Residential	45074	10/26/2022	No	Unlikely	N	False	Y	N
Open Space	48767	11/3/2022	No	Unlikely	N	False	Y	N
Residential	19612	10/18/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	46748	11/4/2022	No	Unlikely	N	False	N	N
Residential	14462	10/19/2022	No	Unlikely	N	False	Y	N
Other	17268	10/11/2022	Stagnant	Unlikely	N	True	N	N
Residential	34569	10/19/2022	No	Unlikely	N	False	Y	N
Open Space	32270	11/4/2022	No	Unlikely	N	False	Y	N
Residential	35758	11/3/2022	No	Unlikely	N	False	Y	N
Residential	37411	11/3/2022	No	Unlikely	N	False	Y	N
Residential	12087	10/10/2022	No	Unlikely	N	False	N	N
Residential	58346	11/2/2022	No	Unlikely	N	False	Y	N
Other	29629	12/14/2022	No	Unlikely	N	False	N	N
Hotel w/ Restaurant	41817	10/20/2022	Yes	Unlikely	Y	False	N	N
Residential	4659	11/10/2022	No	Unlikely	N	False	N	N
Residential	25849	11/14/2022	Yes	Unlikely	N	False	Y	N
Residential	32281	11/3/2022	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	6665	10/11/2022	Stagnant	Unlikely	N	False	N	N
Gas Station	31159	10/11/2022	Stagnant	Unlikely	N	False	N	N
Shopping Center	8223	10/21/2022	No	Unlikely	N	False	Y	N
Residential	4644	11/10/2022	No	Unlikely	N	False	Y	N
Residential	12089	10/10/2022	No	Unlikely	N	False	N	N
Open Space	48771	11/3/2022	No	Unlikely	N	False	Y	N
Residential	23866	11/15/2022	No	Unlikely	N	False	Y	N
Shopping Center	10042	11/1/2022	Yes	Unlikely	Y	False	N	N
Other	6450	11/21/2022	Yes	Unlikely	N	False	N	N
Residential	8273	10/10/2022	No	Unlikely	N	False	N	N
Open Space	35457	11/4/2022	No	Unlikely	N	False	Y	N
Residential	35335	10/19/2022	No	Unlikely	N	False	Y	N
Residential	35264	11/4/2022	No	Unlikely	N	False	Y	N
Residential	34445	11/10/2022	No	Unlikely	N	False	Y	N
Residential	48765	11/3/2022	No	Unlikely	N	False	Y	N
Residential	41487	11/3/2022	No	Unlikely	N	False	Y	N
Other	41732	10/19/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	58857	12/21/2022	No	Unlikely	Y	False	N	N
Shopping Center	21398	10/21/2022	Yes	Unlikely	Y	False	N	N
Residential	6448	11/22/2022	No	Unlikely	N	False	N	N
Other	29638	12/14/2022	Yes	Unlikely	N	False	N	N
Residential	25853	11/15/2022	No	Unlikely	N	False	Y	N
Residential	42891	10/25/2022	Yes	Unlikely	N	False	Y	N
Residential	58328	11/2/2022	No	Unlikely	N	False	Y	N
Residential	18024	10/11/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	37720	12/21/2022	Stagnant	Unlikely	N	False	N	N
Other	23856	11/15/2022	No	Unlikely	N	False	Y	N
Residential	37901	10/19/2022	No	Unlikely	N	False	Y	N
Other	57167	10/11/2022	No	Unlikely	N	False	Y	N
Residential	58392	11/2/2022	No	Unlikely	N	False	Y	N
Residential	33792	12/21/2022	No	Unlikely	N	False	N	N
Residential	23883	11/15/2022	No	Unlikely	N	True	Y	N
Residential	14469	10/19/2022	No	Unlikely	N	False	Y	N
Residential	3028	10/11/2022	No	Unlikely	N	False	N	N
Residential	40332	11/10/2022	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	19108	10/21/2022	No	Unlikely	N	False	Y	N

Residential	12575	12/19/2022	Stagnant	Unlikely	N	False	N	N
Residential	34451	11/10/2022	No	Unlikely	N	False	N	N
Residential	19609	10/18/2022	No	Unlikely	N	False	Y	N
Residential	25169	10/19/2022	No	Unlikely	N	False	Y	N
Other	42903	10/26/2022	No	Unlikely	N	False	Y	N
Residential	16750	10/10/2022	No	Unlikely	N	True	N	N
Residential	45120	10/26/2022	No	Unlikely	N	False	Y	N
Residential	58480	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Other	34032	10/11/2022	No	Unlikely	N	False	N	N
Other	23859	11/14/2022	Yes	Unlikely	N	False	N	N
Residential	4554	11/22/2022	No	Unlikely	N	False	Y	N
Residential	44321	11/2/2022	Stagnant	Unlikely	N	False	Y	N
Residential	55718	11/4/2022	No	Unlikely	N	False	N	N
Planned Industrial Park	37196	11/4/2022	No	Unlikely	N	False	N	N
Shopping Center	12924	10/19/2022	No	Unlikely	N	False	Y	N
Residential	12194	10/10/2022	No	Unlikely	N	False	N	N
Residential	45033	10/26/2022	No	Unlikely	N	False	Y	N
Shopping Center	10243	10/21/2022	No	Unlikely	N	False	N	N
Residential	37394	11/4/2022	No	Unlikely	N	False	Y	N
Residential	35252	11/4/2022	No	Unlikely	N	False	Y	N
Residential	53563	12/19/2022	No	Unlikely	N	False	N	N
Other	38879	11/15/2022	Yes	Unlikely	N	False	N	N
Residential	40882	11/3/2022	No	Unlikely	N	False	Y	N
Other	51426	10/11/2022	No	Unlikely	N	False	N	N
Residential	46775	10/12/2022	No	Unlikely	N	False	Y	N
Open Space	32267	11/4/2022	No	Unlikely	N	False	N	N
Wholesale Warehousing	31636	10/10/2022	Stagnant	Unlikely	N	True	N	N
Residential	28334	11/15/2022	No	Unlikely	N	False	Y	N
Residential	55703	11/4/2022	No	Unlikely	N	False	N	N
Residential	59753	10/10/2022	No	Unlikely	N	False	N	N
Residential	28368	10/26/2022	No	Unlikely	N	False	Y	N
Open Space	12926	10/18/2022	No	Unlikely	N	False	Y	N
Other	51198	12/2/2022	Stagnant	Unlikely	N	False	N	N
Regional Mall	20422	10/24/2022	No	Unlikely	N	False	N	N
Residential	24321	11/15/2022	No	Unlikely	N	False	N	N
Residential	34507	10/18/2022	No	Unlikely	N	False	Y	N
Residential	20562	11/15/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	43388	12/21/2022	Stagnant	Unlikely	Y	False	N	N
Shopping Center	47630	12/21/2022	No	Unlikely	N	False	N	N
Residential	4691	11/22/2022	No	Unlikely	N	False	N	N
Residential	44999	10/26/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	38615	11/22/2022	Yes	Unlikely	Y	False	Y	N
Residential	14626	12/19/2022	Stagnant	Unlikely	N	False	N	N
Residential	50570	10/12/2022	No	Unlikely	N	False	N	N
Open Space	28871	11/10/2022	No	Unlikely	N	False	N	N
Other	30764	11/10/2022	No	Unlikely	N	False	Y	N
Open Space	60921	12/19/2022	Stagnant	Unlikely	N	False	N	N
Shopping Center	10033	10/20/2022	Yes	Unlikely	Y	False	N	N
Residential	5755-004	10/12/2022	No	Unlikely	N	False	N	N
Residential	42885	10/26/2022	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	61545	10/12/2022	No	Unlikely	Y	False	N	N
Other	48224	10/12/2022	Yes	Unlikely	N	False	N	N
Shopping Center	21251	12/21/2022	Stagnant	Unlikely	N	False	N	N
Residential	16090	12/14/2022	No	Unlikely	N	False	Y	N
Residential	44468	11/22/2022	No	Unlikely	N	False	Y	N
Planned Industrial Park	48037	3/9/2023	No	Unlikely	Y	False	N	N
Residential	25137	3/9/2023	No	Unlikely	N	False	Y	N
Residential	24940	3/1/2023	No	Unlikely	N	False	Y	N
Residential	13778	2/20/2023	No	Unlikely	N	False	Y	N
Residential	44564	2/21/2023	No	Unlikely	N	False	Y	N

Residential	53257	3/9/2023	No	Unlikely	N	False	Y	N
Residential	38494	2/21/2023	No	Unlikely	N	False	Y	N
Other	13173	3/29/2023	No	Unlikely	N	False	N	N
Open Space	60076	1/10/2023	No	Unlikely	N	True	N	N
Residential	45137	1/10/2023	No	Unlikely	N	True	Y	N
Residential	33578	3/14/2023	Yes	Unlikely	N	False	N	N
Residential	47552	3/9/2023	No	Unlikely	N	False	Y	N
Residential	65723	2/24/2023	No	Unlikely	N	False	Y	N
Residential	13774	2/20/2023	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	41826	3/31/2023	No	Unlikely	N	True	Y	N
Residential	25230	3/31/2023	No	Unlikely	N	False	Y	N
Other	56219	1/10/2023	No	Unlikely	N	False	Y	N
Residential	38513	2/21/2023	No	Unlikely	N	False	Y	N
Other	45131	1/10/2023	No	Unlikely	N	False	N	N
Open Space	18218	3/20/2023	No	Unlikely	N	False	N	N
Other	34541	1/9/2023	No	Unlikely	N	False	Y	N
Other	36122	3/14/2023	No	Unlikely	N	False	N	N
Residential	39083	3/10/2023	No	Unlikely	N	False	Y	N
Gas Station	19640	3/29/2023	No	Unlikely	Y	True	Y	N
Other	35607	3/29/2023	No	Unlikely	N	False	N	N
Residential	31833	3/15/2023	No	Unlikely	N	False	Y	N
Residential	34554	1/9/2023	Yes	Unlikely	N	False	N	N
Other	28494	2/20/2023	Yes	Unlikely	N	False	N	N
Planned Industrial Park	40783	2/10/2023	No	Unlikely	N	True	N	N
Other	62207	3/20/2023	No	Unlikely	N	False	N	N
Residential	65717	2/24/2023	No	Unlikely	N	False	Y	N
Residential	39331	3/10/2023	No	Unlikely	N	False	N	N
Residential	32547	2/20/2023	No	Unlikely	N	True	N	N
Residential	25433	3/1/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	48453	3/9/2023	No	Unlikely	Y	False	N	N
Residential	13783	2/20/2023	No	Unlikely	N	True	Y	N
Residential	13765	2/20/2023	No	Unlikely	N	False	N	N
Residential	49148	3/14/2023	No	Unlikely	N	False	Y	N
Wholesale Warehousing	19287	3/29/2023	No	Unlikely	N	False	Y	N
Residential	13787	2/20/2023	No	Unlikely	N	False	Y	N
Residential	59334	1/10/2023	No	Unlikely	N	False	Y	N
Other	18227	3/20/2023	No	Unlikely	N	True	N	N
Residential	915	3/31/2023	No	Unlikely	N	False	Y	N
Other	52256	3/10/2023	Yes	Unlikely	N	False	Y	N
Residential	49130	3/14/2023	No	Unlikely	N	True	Y	N
Residential	53287	3/1/2023	No	Unlikely	N	False	Y	N
Shopping Center	50778	2/21/2023	No	Unlikely	N	True	N	N
Other	21203	2/6/2023	Yes	Unlikely	Y	False	N	N
Residential	57102	2/23/2023	No	Unlikely	N	False	Y	N
Residential	25205	3/31/2023	No	Unlikely	N	False	Y	N
Residential	53283	3/1/2023	No	Unlikely	N	True	Y	N
Planned Industrial Park	30871	2/10/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	29361	2/10/2023	No	Unlikely	Y	False	N	N
Residential	47548	3/9/2023	Stagnant	Unlikely	N	False	Y	N
Other	59337	1/9/2023	Yes	Unlikely	N	False	Y	N
Residential	20170	3/29/2023	No	Unlikely	N	True	Y	N
Residential	13794	2/20/2023	No	Unlikely	N	False	N	N
Open Space	57109	2/23/2023	No	Unlikely	N	False	Y	N
Other	55840	2/23/2023	No	Unlikely	N	False	Y	N
Residential	13763	2/20/2023	No	Unlikely	N	False	N	N
Open Space	60074	1/10/2023	No	Unlikely	N	True	N	N
Other	66456	2/24/2023	No	Unlikely	N	False	N	N
Residential	59630	1/10/2023	Stagnant	Unlikely	N	False	N	N
Other	10639	2/7/2023	No	Unlikely	N	False	N	N
Other	61057	1/10/2023	No	Unlikely	N	False	Y	N
Other	26038	3/29/2023	No	Unlikely	N	False	Y	N
Other	59314	3/14/2023	Yes	Unlikely	N	True	N	N
Residential	47535	3/9/2023	No	Unlikely	N	True	Y	N

Other	67293	2/23/2023	Yes	Unlikely	N	False	Y	N
Other	2687	1/9/2023	Yes	Unlikely	N	True	N	N
Other	26040	3/29/2023	No	Unlikely	N	False	Y	N
Residential	65800	3/1/2023	Stagnant	Unlikely	N	False	Y	N
Planned Industrial Park	56296	2/10/2023	Stagnant	Unlikely	N	False	N	N
Residential	60072	1/10/2023	Stagnant	Unlikely	N	False	N	N
Residential	25233	3/31/2023	No	Unlikely	N	False	Y	N
Residential	54813	2/23/2023	No	Unlikely	N	False	N	N
Residential	44176	3/10/2023	No	Unlikely	N	False	Y	N
Residential	28476	2/20/2023	No	Unlikely	N	False	Y	N
Residential	13772	2/20/2023	No	Unlikely	N	False	N	N
Open Space	67039	2/6/2023	Yes	Unlikely	Y	False	N	N
Other	38922	3/10/2023	Yes	Unlikely	N	False	N	N
Residential	38516	2/21/2023	No	Unlikely	N	False	Y	N
Residential	60295	1/10/2023	No	Unlikely	N	False	N	N
Other	56204	1/10/2023	No	Unlikely	N	True	Y	N
Other	56215	1/10/2023	Yes	Unlikely	N	False	N	N
Residential	53280	3/9/2023	No	Unlikely	N	False	Y	N
Residential	60693	3/28/2023	Yes	Unlikely	N	False	Y	N
Other	51911	3/14/2023	Yes	Unlikely	N	False	Y	N
Open Space	51908	3/14/2023	No	Unlikely	N	False	Y	N
Other	34532	1/9/2023	No	Unlikely	N	False	Y	N
Other	62209	3/20/2023	No	Unlikely	N	False	N	N
Residential	55825	2/24/2023	Yes	Unlikely	N	False	Y	N
Residential	33474	1/9/2023	No	Unlikely	N	False	N	N
Gas Station	21207	2/7/2023	No	Unlikely	N	False	N	N
Gas Station	67037	2/7/2023	No	Unlikely	N	False	N	N
Open Space	35709	2/21/2023	Yes	Unlikely	N	False	Y	N
Residential	37803	3/10/2023	Yes	Unlikely	N	False	N	N
Residential	48229	3/14/2023	No	Unlikely	N	True	Y	N
Other	18231	3/20/2023	No	Unlikely	N	False	N	N
Other	56202	1/10/2023	No	Unlikely	N	True	Y	N
Residential	13796	2/20/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	35612	3/29/2023	No	Unlikely	N	False	N	N
Open Space	59316	3/14/2023	Yes	Unlikely	N	False	N	N
Other	29275	3/14/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	56281	2/10/2023	Intermittent	Unlikely	Y	True	N	N
Residential	44526	2/21/2023	No	Unlikely	N	False	Y	N
Residential	65163	2/24/2023	No	Unlikely	N	False	N	N
Other	62192	3/20/2023	No	Unlikely	N	False	N	N
Other	67053	2/7/2023	Yes	Unlikely	N	False	N	N
Other	56210	1/10/2023	No	Unlikely	N	True	Y	N
Residential	38490	2/21/2023	Yes	Unlikely	N	False	N	N
Other	35725	2/21/2023	Stagnant	Unlikely	N	False	Y	N
Other	33476	1/9/2023	No	Unlikely	N	False	N	N
Residential	38536	2/21/2023	No	Unlikely	N	False	Y	N
Residential	25138	3/9/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	47064	3/31/2023	No	Unlikely	N	True	Y	N
Other	56190	1/10/2023	No	Unlikely	N	False	N	N
Residential	7195	3/1/2023	No	Unlikely	N	False	Y	N
Other	62198	3/20/2023	No	Unlikely	N	False	N	N
Gas Station	67020	2/7/2023	No	Unlikely	Y	True	N	N
Residential	918	3/31/2023	No	Unlikely	N	True	Y	N
Residential	53268	3/9/2023	Stagnant	Unlikely	N	False	Y	N
Other	35696	2/21/2023	No	Unlikely	N	False	Y	N
Residential	58267	2/23/2023	No	Unlikely	N	False	Y	N
Residential	50953	2/24/2023	No	Unlikely	N	False	Y	N
Residential	13785	2/20/2023	No	Unlikely	N	False	Y	N
Durable Manufacturing	25035	1/9/2023	No	Unlikely	N	False	N	N
Residential	25064	1/9/2023	No	Unlikely	N	False	N	N
Other	56207	1/10/2023	No	Unlikely	N	False	Y	N
Residential	62308	3/1/2023	Stagnant	Unlikely	N	False	Y	N

Other	62150	3/20/2023	No	Unlikely	N	False	N	N
Gas Station	60653	3/29/2023	No	Unlikely	Y	True	N	N
Residential	52561	2/24/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	40801	2/10/2023	Stagnant	Unlikely	N	False	N	N
Residential	907	3/31/2023	Yes	Unlikely	N	False	Y	N
Other	21299	3/28/2023	No	Unlikely	N	True	N	N
Regional Mall	59312	3/14/2023	No	Unlikely	N	False	N	N
Residential	60998	1/10/2023	Stagnant	Unlikely	N	False	N	N
Residential	24942	3/1/2023	No	Unlikely	N	False	Y	N
Other	56213	1/10/2023	No	Unlikely	N	True	N	N
Residential	45132	1/10/2023	Yes	Unlikely	N	False	N	N
Residential	13789	2/20/2023	No	Unlikely	N	False	Y	N
Open Space	62205	3/20/2023	Stagnant	Unlikely	N	False	N	N
Residential	61081	1/10/2023	No	Unlikely	N	False	Y	N
Residential	39090	3/10/2023	No	Unlikely	N	False	Y	N
Residential	36132	3/14/2023	No	Unlikely	N	False	N	N
Residential	65689	2/24/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	22896	2/6/2023	Yes	Unlikely	Y	False	N	N
Residential	25429	3/1/2023	No	Unlikely	N	False	Y	N
Residential	10105	1/10/2023	No	Unlikely	N	False	N	N
Residential	61097	1/10/2023	No	Unlikely	N	True	Y	N
Residential	38505	2/21/2023	No	Unlikely	N	False	Y	N
Residential	49168	3/14/2023	No	Unlikely	N	True	N	N
Residential	28483	2/20/2023	No	Unlikely	N	False	N	N
Residential	65796	3/1/2023	Stagnant	Unlikely	N	False	Y	N
Residential	57105	2/23/2023	No	Unlikely	N	False	Y	N
Other	62196	3/20/2023	No	Unlikely	N	False	N	N
Open Space	876	3/31/2023	Yes	Unlikely	N	False	Y	N
Residential	36127	3/14/2023	No	Unlikely	N	False	N	N
Gas Station	21197	2/7/2023	No	Unlikely	N	False	N	N
Open Space	41874	3/14/2023	No	Unlikely	N	False	Y	N
Open Space	18229	3/20/2023	No	Unlikely	N	False	N	N
Residential	7198	3/1/2023	No	Unlikely	N	False	Y	N
Other	61000	1/10/2023	No	Unlikely	N	False	N	N
Residential	33583	3/14/2023	No	Unlikely	N	False	Y	N
Wholesale Warehousing	19292	3/28/2023	Yes	Unlikely	N	False	Y	N
Residential	44503	2/21/2023	No	Unlikely	N	False	Y	N
Residential	24140	3/9/2023	No	Unlikely	N	False	N	N
Residential	67290	2/23/2023	Yes	Unlikely	N	False	Y	N
Other	62194	3/20/2023	No	Unlikely	N	False	N	N
Residential	3147	1/10/2023	No	Unlikely	N	False	N	N
Residential	61093	1/10/2023	No	Unlikely	N	False	Y	N
Other	62203	3/20/2023	No	Unlikely	N	False	N	N
Open Space	35714	2/21/2023	Yes	Unlikely	N	False	Y	N
Residential	50933	2/24/2023	No	Unlikely	N	False	Y	N
Residential	2695	1/9/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	10632	2/7/2023	Stagnant	Obvious	Y	False	N	N
Residential	58763	2/1/2023	Intermittent	Obvious	N	False	N	N
Gas Station	21199	2/6/2023	Yes	Unlikely	N	False	N	N
Other	34556	1/9/2023	Yes	Unlikely	N	False	N	N
Open Space	67051	2/6/2023	Stagnant	Unlikely	Y	False	N	N
Residential	58254	2/23/2023	Yes	Unlikely	N	False	Y	N
Residential	37792	3/10/2023	No	Unlikely	N	False	Y	N
Other	44591	2/23/2023	No	Unlikely	N	True	Y	N
Residential	65692	2/24/2023	No	Unlikely	N	False	N	N
Residential	44178	3/10/2023	No	Unlikely	N	False	Y	N
Residential	57085	2/23/2023	No	Unlikely	N	False	Y	N
Residential	60801	1/10/2023	No	Unlikely	N	False	Y	N
Other	35609	3/29/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	56290	2/10/2023	Stagnant	Unlikely	N	False	N	N
Gas Station	21205	2/7/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	45358	2/10/2023	Stagnant	Unlikely	N	False	N	N
Residential	52564	2/24/2023	No	Unlikely	N	False	Y	N
Residential	28487	2/20/2023	No	Unlikely	N	False	Y	N

Planned Industrial Park	67018	2/7/2023	No	Unlikely	Y	False	N	N
Residential	25984	3/10/2023	No	Unlikely	N	False	Y	N
Residential	920	4/12/2023	No	Unlikely	N	False	Y	N
Residential	22847	4/12/2023	No	Unlikely	N	False	Y	N
Open Space	11781	4/12/2023	Yes	Unlikely	N	False	Y	N
Residential	874	4/12/2023	No	Unlikely	N	False	Y	N
Residential	25237	4/12/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	47062	4/12/2023	No	Unlikely	N	False	Y	N
Residential	898	4/12/2023	No	Unlikely	N	False	Y	N
Residential	900	4/12/2023	No	Unlikely	N	False	Y	N
Residential	22849	4/12/2023	No	Unlikely	N	False	Y	N
Residential	30289	4/14/2023	No	Unlikely	N	False	Y	N
Residential	30316	4/14/2023	No	Unlikely	N	False	Y	N
Residential	30292	4/14/2023	No	Unlikely	N	False	Y	N
Residential	30308	4/14/2023	No	Unlikely	N	False	Y	N
Other	30302	4/14/2023	No	Unlikely	N	False	N	N
Residential	30298	4/14/2023	No	Unlikely	N	False	Y	N
Residential	30300	4/14/2023	No	Unlikely	N	False	Y	N
Residential	24616	4/14/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	14639	4/17/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	12119	4/17/2023	Stagnant	Unlikely	N	False	N	N
Residential	27268	4/17/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	17192	4/17/2023	Yes	Unlikely	N	False	N	N
Planned Industrial Park	17188	4/17/2023	No	Unlikely	N	False	N	N
Other	30272	4/18/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	25303	4/18/2023	No	Unlikely	N	False	N	N
Residential	18953	4/18/2023	No	Unlikely	N	False	N	N
Residential	24608	4/18/2023	No	Unlikely	N	False	N	N
Residential	30306	4/18/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	57978	4/19/2023	No	Unlikely	N	False	N	N
Non-durable Manufacturing	68667	4/19/2023	No	Unlikely	Y	False	N	N
Durable Manufacturing	57980	4/19/2023	No	Unlikely	N	False	N	N
Open Space	57973	4/19/2023	Stagnant	Unlikely	N	False	N	N
Other	53081	4/19/2023	Stagnant	Unlikely	N	False	N	N
Other	53064	4/19/2023	Stagnant	Unlikely	N	False	N	N
Planned Industrial Park	68662	4/19/2023	No	Unlikely	Y	False	N	N
Other	13058	4/19/2023	Yes	Unlikely	N	False	N	N
Wholesale Warehousing	67196	4/19/2023	No	Unlikely	N	False	N	N
Other	13056	4/19/2023	Yes	Unlikely	N	False	N	N
Planned Industrial Park	68172	4/19/2023	No	Unlikely	N	False	N	N
Regional Mall	51735	4/20/2023	No	Unlikely	N	False	N	N
Shopping Center	721	4/20/2023	Yes	Unlikely	Y	False	Y	N
Regional Mall	41815	4/20/2023	No	Unlikely	N	False	N	N
Hospital	51746	4/20/2023	No	Unlikely	N	False	N	N
Shopping Center	53714	4/20/2023	No	Unlikely	N	False	N	N
Residential	68459	4/20/2023	No	Unlikely	Y	False	N	N
Residential	7170	4/20/2023	No	Unlikely	N	False	N	N
Hospital	51741	4/20/2023	No	Unlikely	N	False	N	N
Hospital	51744	4/20/2023	No	Unlikely	N	False	N	N
Residential	66864	4/21/2023	No	Unlikely	N	False	Y	N
Residential	67843	4/21/2023	No	Unlikely	N	False	Y	N
Residential	33990	4/21/2023	No	Unlikely	N	False	N	N
Residential	67744	4/21/2023	No	Unlikely	N	False	Y	N
Residential	67755	4/21/2023	No	Unlikely	N	False	Y	N
Residential	66869	4/21/2023	No	Unlikely	N	False	Y	N
Other Industrial	67726	4/21/2023	Yes	Unlikely	N	False	N	N
Other	67747	4/21/2023	No	Unlikely	N	False	N	N
Residential	66884	4/24/2023	No	Unlikely	N	False	N	N
Residential	67805	4/24/2023	No	Unlikely	N	False	N	N
Residential	66871	4/24/2023	No	Unlikely	N	False	N	N
Other	67846	4/24/2023	Yes	Unlikely	N	False	N	N
Open Space	66873	4/24/2023	No	Unlikely	N	True	N	N

Other	67715	4/24/2023	No	Unlikely	N	False	Y	N
Other	35196	5/16/2023	Yes	Unlikely	N	False	N	N
Shopping Center	43518	5/16/2023	Yes	Unlikely	N	False	N	N
Open Space	24473	5/17/2023	No	Unlikely	N	False	N	N
Open Space	24439	5/17/2023	No	Unlikely	N	False	N	N
Regional Mall	24478	5/17/2023	No	Unlikely	N	False	N	N
Regional Mall	43006	5/18/2023	Stagnant	Unlikely	N	False	N	N
Shopping Center	33614	5/18/2023	No	Unlikely	Y	True	N	N
Shopping Center	35386	5/18/2023	No	Unlikely	N	False	N	N
Open Space	29580	5/18/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	49333	5/18/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	49333	5/18/2023	No	Unlikely	N	True	N	N
Research and Testing	35222	5/18/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	49372	5/18/2023	Stagnant	Unlikely	N	False	N	N
Other	49112	5/18/2023	Yes	Unlikely	N	True	N	N
Planned Industrial Park	49370	5/18/2023	Stagnant	Unlikely	Y	False	N	N
Residential	14035	5/19/2023	No	Unlikely	N	False	Y	N
Residential	14071	5/19/2023	No	Unlikely	N	False	Y	N
Residential	14076	5/19/2023	No	Unlikely	N	False	Y	N
Residential	11464	5/19/2023	Yes	Unlikely	N	False	Y	N
Residential	25426	5/19/2023	No	Unlikely	N	False	Y	N
Residential	11447	5/19/2023	No	Unlikely	N	False	Y	N
Residential	7576	5/19/2023	No	Unlikely	N	False	Y	N
Residential	57227	5/19/2023	No	Unlikely	N	False	Y	N
Residential	57244	5/19/2023	No	Unlikely	N	False	Y	N
Other	53243	5/19/2023	No	Unlikely	N	False	N	N
Residential	11836	5/19/2023	No	Unlikely	N	False	Y	N
Residential	19759	5/19/2023	No	Unlikely	N	False	Y	N
Residential	11833	5/19/2023	No	Unlikely	N	False	Y	N
Residential	14048	5/19/2023	No	Unlikely	N	False	Y	N
Residential	19750	5/19/2023	Stagnant	Unlikely	N	True	Y	N
Residential	14042	5/19/2023	No	Unlikely	N	False	Y	N
Residential	35083	5/26/2023	No	Unlikely	N	False	Y	N
Residential	35089	5/26/2023	No	Unlikely	N	False	N	N
Residential	16547	5/30/2023	No	Unlikely	N	False	N	N
Residential	35079	5/30/2023	No	Unlikely	N	False	N	N
Residential	35081	5/30/2023	No	Unlikely	N	False	N	N
Residential	35071	5/30/2023	Stagnant	Unlikely	N	False	Y	N
Residential	35087	5/30/2023	No	Unlikely	N	False	N	N
Residential	35073	5/30/2023	Stagnant	Unlikely	N	False	N	N
Residential	35091	5/30/2023	No	Unlikely	N	False	N	N
Residential	35077	5/30/2023	No	Unlikely	N	False	N	N
Residential	16554	5/30/2023	Yes	Unlikely	N	False	N	N
Institutional (schools/churches)	68059	5/31/2023	No	Unlikely	N	True	N	N
Residential	44378	6/1/2023	No	Unlikely	N	False	Y	N
Residential	40149	6/1/2023	No	Unlikely	N	True	Y	N
Residential	15734	6/1/2023	Yes	Unlikely	N	False	Y	N
Residential	15661	6/1/2023	No	Unlikely	N	True	Y	N
Residential	15672	6/1/2023	No	Unlikely	N	False	Y	N
Residential	44385	6/1/2023	No	Unlikely	N	False	Y	N
Residential	44388	6/1/2023	No	Unlikely	N	False	Y	N
Residential	15669	6/1/2023	No	Unlikely	N	False	Y	N
Residential	45229	6/1/2023	No	Unlikely	N	False	Y	N
Residential	15716	6/1/2023	No	Unlikely	N	False	Y	N
Residential	44380	6/1/2023	No	Unlikely	N	False	Y	N
Residential	15508	6/1/2023	No	Unlikely	N	False	Y	N
Residential	44383	6/1/2023	No	Unlikely	N	False	Y	N
Residential	38686	6/15/2023	No	Unlikely	N	False	Y	N
Residential	67438	6/15/2023	No	Unlikely	N	False	N	N
Residential	38684	6/15/2023	No	Unlikely	N	False	Y	N
Residential	38688	6/15/2023	No	Unlikely	N	False	Y	N
Hotel w/ Restaurant	67436	6/15/2023	Yes	Unlikely	N	False	N	N
Other	67429	6/15/2023	No	Unlikely	N	False	Y	N

Residential	67421	6/15/2023	No	Unlikely	N	False	Y	N
Open Space	67423	6/15/2023	No	Unlikely	N	False	Y	N
Residential	59125	6/16/2023	No	Unlikely	N	False	Y	N
Residential	57434	6/16/2023	No	Unlikely	N	False	N	N
Residential	67415	6/16/2023	No	Unlikely	N	True	Y	N
Residential	66445	6/16/2023	Yes	Unlikely	N	False	N	N
Residential	42303	6/2/2023	No	Unlikely	N	False	N	N
Residential	45215	6/2/2023	No	Unlikely	N	False	Y	N
Residential	45210	6/2/2023	No	Unlikely	N	False	Y	N
Residential	40161	6/2/2023	No	Unlikely	N	False	Y	N
Residential	45204	6/2/2023	No	Unlikely	N	False	Y	N
Residential	53917	6/2/2023	No	Unlikely	N	False	Y	N
Residential	45225	6/2/2023	No	Unlikely	N	False	Y	N
Residential	45202	6/2/2023	No	Unlikely	N	False	Y	N
Residential	44374	6/2/2023	No	Unlikely	N	False	N	N
Residential	20543	6/26/2023	No	Unlikely	N	False	N	N
Residential	11964	6/26/2023	No	Unlikely	N	True	Y	N
Residential	11934	6/27/2023	No	Unlikely	N	False	Y	N
Residential	41040	6/27/2023	No	Unlikely	N	False	Y	N
Residential	66447	6/27/2023	Yes	Unlikely	N	False	N	N
Residential	41049	6/27/2023	No	Unlikely	N	False	Y	N
Residential	20535	6/27/2023	No	Unlikely	N	False	Y	N
Other	41052	6/27/2023	No	Unlikely	N	False	N	N
Residential	56887	6/27/2023	No	Unlikely	N	False	N	N
Other	11970	6/27/2023	No	Unlikely	N	True	Y	N
Other	68688	6/27/2023	No	Unlikely	N	False	Y	N
Residential	64944	6/27/2023	No	Unlikely	N	False	N	N
Residential	61148	6/27/2023	Stagnant	Unlikely	N	False	N	N
Residential	57535	6/27/2023	Stagnant	Unlikely	N	False	Y	N
Residential	16788	6/30/2023	Stagnant	Unlikely	N	False	Y	N
Residential	45235	6/5/2023	No	Unlikely	N	False	Y	N
Residential	45212	6/5/2023	No	Unlikely	N	False	Y	N
Open Space	56922	6/5/2023	No	Unlikely	N	False	Y	N
Residential	56902	6/5/2023	No	Unlikely	N	False	Y	N
Residential	45248	6/5/2023	No	Unlikely	N	False	Y	N
Residential	45244	6/5/2023	No	Unlikely	N	False	Y	N
Residential	56920	6/5/2023	No	Unlikely	N	False	Y	N
Residential	45218	6/5/2023	No	Unlikely	N	False	Y	N
Residential	45233	6/5/2023	No	Unlikely	N	False	Y	N
Open Space	56945	6/5/2023	No	Unlikely	N	False	Y	N
Open Space	56933	6/5/2023	No	Unlikely	N	False	Y	N
Residential	56917	6/5/2023	No	Unlikely	N	False	Y	N
Residential	56928	6/5/2023	No	Unlikely	N	False	Y	N
Residential	2236	6/6/2023	No	Unlikely	N	False	Y	N
Residential	2240	6/6/2023	No	Unlikely	N	False	Y	N
Residential	15677	6/6/2023	No	Unlikely	N	False	Y	N
Residential	2246	6/6/2023	No	Unlikely	N	False	Y	N
Residential	2234	6/6/2023	No	Unlikely	N	False	Y	N
Residential	2238	6/6/2023	No	Unlikely	N	False	Y	N
Residential	15688	6/6/2023	Yes	Unlikely	N	False	Y	N
Residential	2248	6/6/2023	No	Unlikely	N	False	Y	N
Residential	64060	6/7/2023	No	Unlikely	N	False	Y	N
Residential	64080	6/7/2023	Yes	Unlikely	N	False	Y	N
Residential	57436	6/7/2023	Stagnant	Unlikely	N	False	Y	N

Appendix N

Wet Weather Screening Reports

Wet Weather Monitoring Report

First Quarter 2023 (January – March 31)
Event Dates: March 2 and March 25

Prepared for:

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May 2, 2023
Project No. 151280002

1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q1 sampling events that occurred on March 2, 2023 and March 25, 2023 as well as the findings from the water quality analysis results of the sampling events.

2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate. Replacement ISCO 730 bubble flow modules have been installed at both sites beginning in Q1 of 2023.

SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on March 2nd, programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The sample collection at the Manassas site was not successful and a makeup sampling event occurred on March 25th.

Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single

flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:

Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right) A R^{\frac{2}{3}} \sqrt{S} \text{ [US]}$$

Q = Flow rate
A = Flow area
V = Avg. velocity
S = Water surface slope
R = Hydraulic Radius
n = Roughness coefficient
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's *n* value of 0.013 was assumed for the concrete pipes[1].
Two sampling programs were implemented to accommodate for different conditions between the sites.

Manassas Sampling Program
Although a replacement bubbler module has been installed, the ponded site conditions continue to provide inaccurate water level readings at the Manassas site and fluctuates during static water conditions. To accommodate the unreliable equipment readings due to the site conditions, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During the March 2nd event, the storm event at Manassas produced an event that was <0.3in which was not enough to generate significant runoff and trigger the sampler to begin collection.

During the makeup March 25th event, the sampling was set as a time-paced program to collect discrete samples every hour, which are then composited into a single container.

Dale City Sampling Program
During the March 2nd event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every hour, which are then composited into a single container.

[1] Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 07:40 on March 24th – 18:40 on March 25th. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) did not report a data observation during this period. Weather Underground Manassas Regional Station (KHEF) recorded 0.56 inches of precipitation over that period with temperatures ranging from 42 - 72 degrees Fahrenheit. The previous storm event was recorded on March 23rd, producing 0.01 inch of precipitation.

SITE #4684; DALE CITY, VA

Sampling occurred from 12:30 on March 2nd – 08:10 on March 4th. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) recorded 0.41 in inches of precipitation over this same period. The previous storm event was recorded on February 28th producing 0.20 inch of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on March 28th for Manassas and on March 6th for Dale City.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow rate reached 84.69 cfs with two predominate peaks. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on March 25th

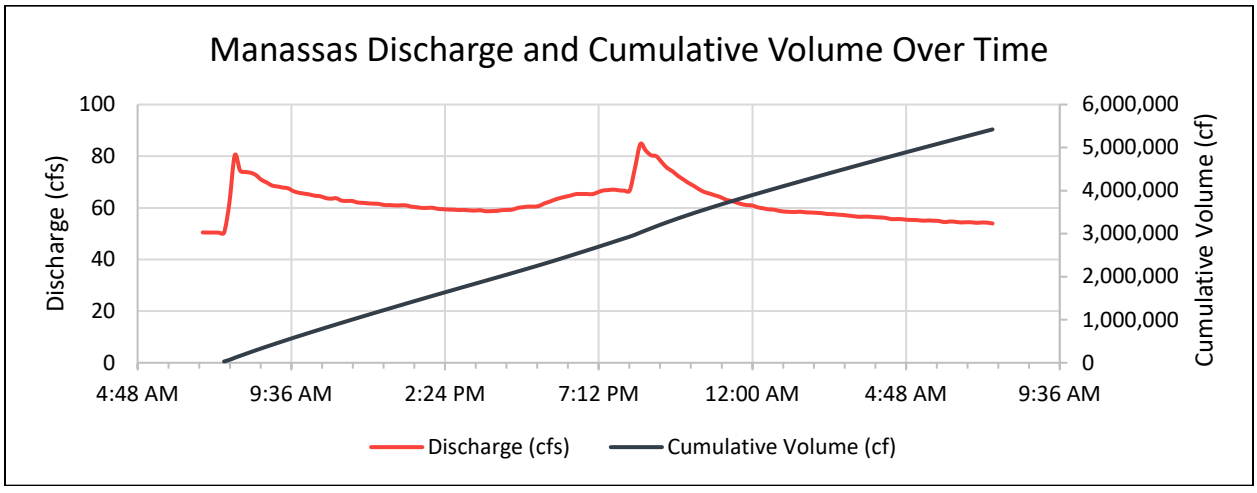


Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	3/24/2023 7:40	37203.8	4.14%	207.08
2	3/24/2023 8:40	42509.2	4.73%	236.61
3	3/24/2023 9:40	39868.9	4.44%	221.92
4	3/24/2023 10:40	38295.3	4.26%	213.16
5	3/24/2023 11:40	37241.9	4.15%	207.30
6	3/24/2023 12:40	36634.7	4.08%	203.92
7	3/24/2023 13:40	35994.2	4.01%	200.35
8	3/24/2023 14:40	35582.3	3.96%	198.06
9	3/24/2023 15:40	35209.6	3.92%	195.98
10	3/24/2023 16:40	35975.4	4.00%	200.25
11	3/24/2023 17:40	37432.5	4.17%	208.36
12	3/24/2023 18:40	39205.1	4.36%	218.22
13	3/24/2023 19:40	40241.8	4.48%	223.99
14	3/24/2023 20:40	49330.2	5.49%	274.58
15	3/24/2023 21:40	43479	4.84%	242.01
16	3/24/2023 22:40	39302.5	4.38%	218.77
17	3/24/2023 23:40	36861.9	4.10%	205.18
18	3/25/2023 0:40	35582.3	3.96%	198.06
19	3/25/2023 1:40	34949.7	3.89%	194.54
20	3/25/2023 2:40	34413.9	3.83%	191.55
21	3/25/2023 3:40	33936.6	3.78%	188.90
22	3/25/2023 4:40	33371.3	3.72%	185.75
23	3/25/2023 5:40	33008.7	3.67%	183.73
24	3/25/2023 6:40	32647.8	3.63%	181.72

*5.0 L sample

SITE #4684; DALE CITY, VA

Flow rate reached 0.915 cfs with three predominate peaks The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Figure 2: Flow data over time for the storm event at Site #4684 on March 2nd

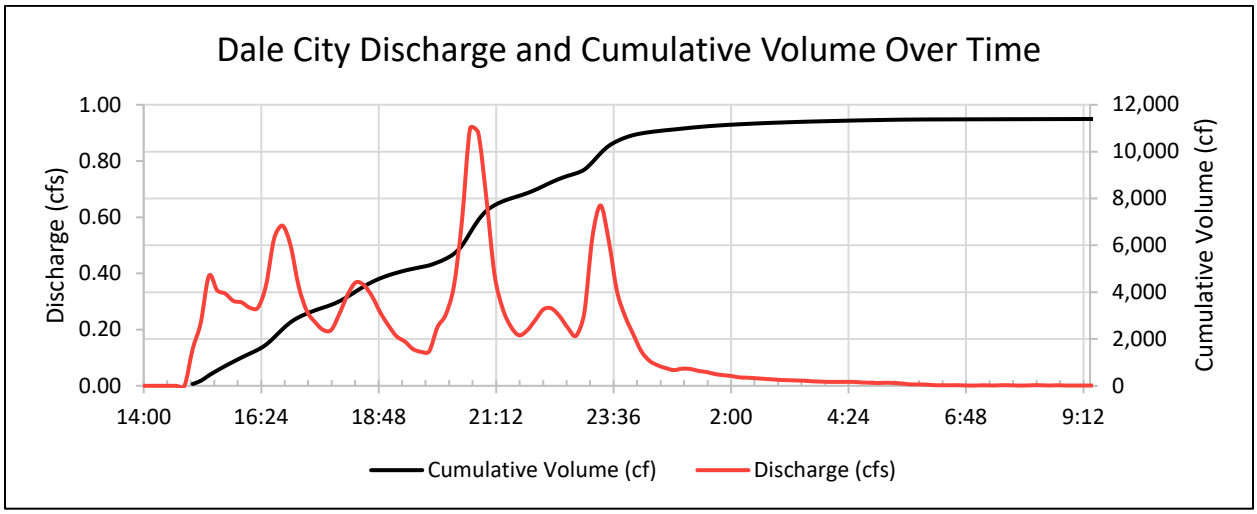


Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #*	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)**
1	3/3/2023 15:00	78.0868	3.21	160.66
2	3/3/2023 15:50	181.42	7.47	373.25
3	3/3/2023 16:30	214.616	8.83	441.55
4	3/3/2023 17:20	159.596	6.57	328.35
5	3/3/2023 18:00	154.37	6.35	317.60
6	3/3/2023 18:50	156.319	6.43	321.61
7	3/3/2023 19:30	78.5388	3.23	161.59
8	3/3/2023 20:20	210.782	8.67	433.66
9	3/3/2023 21:00	401.248	16.51	825.53
10	3/3/2023 21:50	118.093	4.86	242.96
11	3/3/2023 22:30	147.967	6.09	304.43
12	3/3/2023 23:20	385.373	15.86	792.87
13	3/4/2023 0:00	110.364	4.54	227.06
14	3/4/2023 0:50	33.4764	1.38	160.66

*Sampler did not collect for bottles 15 to 24
*5.0 L sample

3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

Table 3: Analytical Parameters

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

Table 4: Results of Water Quality Analysis

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	27.1	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	115	µg/L	10.0	120	a
	Total Suspended Solids	99.0	mg/L	5.0	100	b
	Nitrogen, Ammonia	0.16	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.6	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.72	mg/L	0.040	-	-
	Total Nitrogen	2.3	mg/L	0.040	2.2	c
	Phosphorus, Total	0.17	mg/L	0.050	2	b
	Chemical Oxygen Demand	74.6	mg/L	25	120	b
	pH	7.6	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	8.2	µg/L	2.0	13	a
	Lead	ND	µg/L	1.0	120	a
	Nickel	1.7	µg/L	1.0	180	a
	Zinc	75.3	µg/L	10.0	120	a
	Total Suspended Solids	9.5	mg/L	1.0	100	b
	Nitrogen, Ammonia	0.57	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.3	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.75	mg/L	0.040	-	-
	Total Nitrogen	2.0	mg/L	0.040	2.2	c
	Phosphorus, Total	ND	mg/L	0.050	2	b
	Chemical Oxygen Demand	30.1	mg/L	25.0	120	b
	pH	7.3	Std. Units	0.10	6.0-9.0	d

[a] State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.
[b] Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.
[c] The sum of Nitrogen as Ammonia, NO_2, NO_3, and Total Kjeldahl Nitrogen.
[d] Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.
* Values highlighted in red were found to be in exceedance of their respective criterion.
ND = The analyte was not detected above specified reporting limit.

4.0 SUMMARY

As indicated in **Table 4**, an exceedance occurred for Copper and Total Nitrogen at Site #941. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 3: Exceedance Tracking for the Wet Weather Monitoring Program

Manassas (#941)	2016		2017				2018				2019				2020				2021				2022				2023
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Copper	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x		x	x	x
Lead																											
Nickel																											
Zinc	x		x	x	x	x	x	x							x	x							x	x			
Total Suspended Solids						x	x								x	x							x	x			
Total Nitrogen					x	x	x				x												x	x			x
Phosphorus, Total																											
Chemical Oxygen Demand		x				x	x								x								x	x			
pH						x												x									

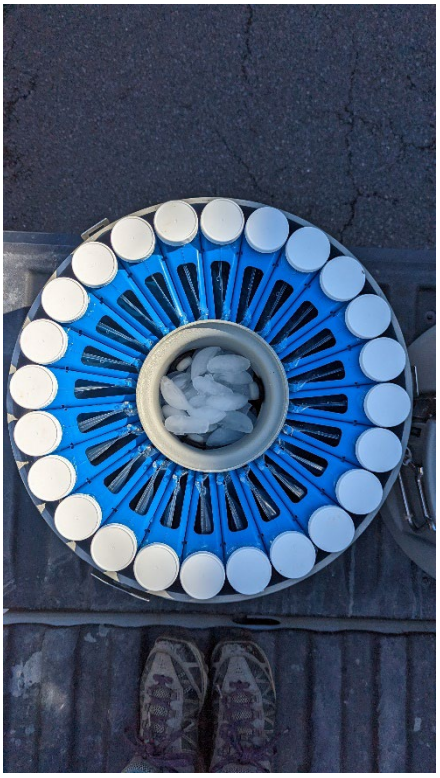
Dale City (#4684)	2016		2017				2018				2019				2020				2021				2022				2023
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Copper	x		x	x	x	x	x	--		x	x											x	x	x			
Lead								--																			
Nickel								--																			
Zinc			x		x	x	x	--																			
Total Suspended Solids						x		--																			
Total Nitrogen	x	x	x	x		x	x	--			x																
Phosphorus, Total								--																			
Chemical Oxygen Demand						x	x	--																			
pH		x		x		x		--									x					x					

* No sample collected at #4684 during Q2 2018.

APPENDIX A

PHOTO LOG OF SITE CONDITIONS

Wet Weather Monitoring Q1 Report
Prince William County, VA
Photographic Log

	**Site:** Dale City Station **Photo: 1** **Date: 3/4/2023** **Description:** Dale City propak sample bottles.
	**Site:** Dale City Station **Photo: 2** **Date: 3/4/2023** **Description:** Dale City outfall. Note Iron-oxidizing bacteria growth in pipe and staining along footing and eroded outlet protection.

Site: Manassas Station

Photo: 3

Date: 3/26/2023

Description: Manassas sampler set up overview.

Site: Manassas Station

Photo: 4

Date: 3/26/2023

Description: Manassas outfall with ring installed. Note ponded water and graffiti.

APPENDIX B

WATER QUALITY LABORATORY RESULTS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 16, 2023

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on March 07, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92655435001	**DAL**	Water	03/06/23 15:00	03/07/23 12:10

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92655435001	**DAL**	EPA 200.8 Rev 5.4	CRW	4	PASI-A
		SM 2540D-2011	MAB2	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	MDW	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	KDF1	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

Sample: DAL **Lab ID: 92655435001** Collected: 03/06/23 15:00 Received: 03/07/23 12:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Rev 5.4 Preparation Method: EPA 200.8 Rev 5.4 Pace Analytical Services - Asheville							
Copper	**8.2**	ug/L	2.0	1	03/10/23 12:23	03/14/23 16:36	7440-50-8	
Lead	ND	ug/L	1.0	1	03/10/23 12:23	03/14/23 16:36	7439-92-1	
Nickel	**1.7**	ug/L	1.0	1	03/10/23 12:23	03/14/23 16:36	7440-02-0	
Zinc	**75.3**	ug/L	10.0	1	03/10/23 12:23	03/14/23 16:36	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**9.5**	mg/L	1.0	1		03/11/23 14:47		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		03/10/23 12:41		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**2.0**	mg/L	0.040	1		03/10/23 16:47		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	**0.57**	mg/L	0.10	1		03/08/23 13:17	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**1.3**	mg/L	0.50	1	03/08/23 17:42	03/09/23 05:35	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.75**	mg/L	0.040	1		03/10/23 09:49		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	ND	mg/L	0.050	1	03/08/23 17:03	03/09/23 11:13	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**30.1**	mg/L	25.0	1	03/09/23 01:30	03/09/23 05:18		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760652
QC Batch Method: EPA 200.8 Rev 5.4
Analysis Method: EPA 200.8 Rev 5.4
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92655435001

METHOD BLANK: 3951103 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	2.0	03/14/23 16:02	
Lead	ug/L	ND	1.0	03/14/23 16:02	
Nickel	ug/L	ND	1.0	03/14/23 16:02	
Zinc	ug/L	ND	10.0	03/14/23 16:02	

LABORATORY CONTROL SAMPLE: 3951104

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	50	51.3	103	85-115	
Lead	ug/L	50	52.4	105	85-115	
Nickel	ug/L	50	51.1	102	85-115	
Zinc	ug/L	50	51.4	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3951105 3951106

Parameter	Units	92655354001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	176	50	50	241	227	129	101	70-130	6	20	
Lead	ug/L	ND	50	50	52.6	52.3	103	103	70-130	0	20	
Nickel	ug/L	1.6	50	50	50.6	51.6	98	100	70-130	2	20	
Zinc	ug/L	482	50	50	558	528	153	93	70-130	6	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760811
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92655435001

METHOD BLANK: 3952109 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	03/11/23 14:45	

LABORATORY CONTROL SAMPLE: 3952110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	242	97	90-110	

SAMPLE DUPLICATE: 3952345

Parameter	Units	92656211001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	53.0	57.0	7	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760487
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92655435001

SAMPLE DUPLICATE: 3950303

Parameter	Units	92654979003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.6	1	10	D6,H1

SAMPLE DUPLICATE: 3950304

Parameter	Units	92654979004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	1	10	H1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760076
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92655435001

METHOD BLANK: 3947666 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	03/08/23 12:55	

LABORATORY CONTROL SAMPLE: 3947667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3947668 3947669

Parameter	Units	92654871001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	8.1	5	5	12.9	12.9	97	97	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3947670 3947671

Parameter	Units	92654871002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	98	98	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760129
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92655435001

METHOD BLANK: 3947957 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	03/09/23 05:08	

LABORATORY CONTROL SAMPLE: 3947958

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3947959 3947960

Parameter	Units	92654786004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	12.8	10	10	27.0	28.3	142	155	90-110	5	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3947961 3947962

Parameter	Units	92654810005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	15.0	10	10	31.1	31.0	161	160	90-110	0	10	M1

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760437
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92655435001

METHOD BLANK: 3949852 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	03/10/23 09:32	

LABORATORY CONTROL SAMPLE: 3949853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3949854 3949855

Parameter	Units	92655032003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	10.7	2.5	2.5	13.1	12.8	96	85	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3949856 3949857

Parameter	Units	92655057004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	11.0	2.5	2.5	13.2	12.9	86	76	90-110	2	10	M1

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760127
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92655435001

METHOD BLANK: 3947947 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	03/09/23 10:50	

LABORATORY CONTROL SAMPLE: 3947948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3947949 3947950

Parameter	Units	92654477004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.87	2.5	2.5	3.4	3.4	103	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3947951 3947952

Parameter	Units	92654937001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	ND	2.5	2.5	2.7	2.7	106	107	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

QC Batch: 760310
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92655435001

METHOD BLANK: 3949145 Matrix: Water
Associated Lab Samples: 92655435001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	03/09/23 05:15	

LABORATORY CONTROL SAMPLE: 3949146

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	784	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3949147 3949148

Parameter	Units	92655177001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	132	134	114	116	90-110	2	3	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92655435

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92655435001	**DAL**	EPA 200.8 Rev 5.4	760652	EPA 200.8 Rev 5.4	760738
92655435001	**DAL**	SM 2540D-2011	760811		
92655435001	**DAL**	EPA 9040C	760487		
92655435001	**DAL**	TKN+NO3+NO2 Calculation	760815		
92655435001	**DAL**	EPA 350.1 Rev 2.0 1993	760076		
92655435001	**DAL**	EPA 351.2 Rev 2.0 1993	760129	EPA 351.2 Rev 2.0 1993	760316
92655435001	**DAL**	EPA 353.2 Rev 2.0 1993	760437		
92655435001	**DAL**	EPA 365.1 Rev 2.0 1993	760127	EPA 365.1 Rev 2.0 1993	760351
92655435001	**DAL**	SM 5220D-2011	760310	SM 5220D-2011	760319

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 92655435

92655435

Company: Wood/WSP	Billing Information: Attn: lisa.weisert@wsp.com
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151	
Report To: Ilana Ton	Email To: ilana.ton@wsp.com
Copy To:	Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA
Customer Project Name/Number: Prince William County/ 151280002.0002.****, ORG 7526, GL Code 5210-00	State: VA County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 703 488 3778 Email: ilana.ton@wsp.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print):	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH					
~~MAN~~	~~OT-Water~~	~~Comp~~						~~5~~	~~P~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~					
DAL	OT-Water	Comp	3/6/2023	1500				5	P	X	X	X	X	X					

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips:
Sample pH Acceptable Y N NA
pH Strips:
Sulfide Present Y N NA
Lead Acetate Strips:

LAB USE ONLY:
Lab Sample # / Comments:
92655435 001

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

U	1	2	2	U								

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280002.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: (Wet) Blue Dry None
Packing Material Used:
Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A
Lab Tracking #:
Samples received via: FEDEX UPS (Client) Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 93708
Cooler 1 Temp Upon Receipt: 1.3 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 1.3 oC
Comments:

Relinquished by/Company: (Signature) Ilana Ton / WSP	Date/Time: 3/6/2023 1700	Received by/Company: (Signature)	Date/Time: 3/7/23 12:10
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO
Page: 1 of: 1

Pace	DC#_Title: ENV-FRM-HUN1-0083 v02_Sample Condition Upon Receipt
	Effective Date: 11/14/2022 8:18:30 AM

Laboratory receiving samples:
Asheville ☑ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Wood

Project #:

Courier: ☐ Commercial ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Other:

Custody Seal Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Date/Initials Person Examining Contents: 6 3/7/23

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 93T0872 Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp: 1.3 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.3

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

DC#_Title: ENV-FRM-HUN1-0083 v02_Sample Condition Upon Receipt

Effective Date: 11/14/2022

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

***Check all unpreserved Nitrates for chlorine

Project #

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP3S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2	1																							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 11, 2023

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on March 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92659112001	**MAN**	Water	03/27/23 16:00	03/28/23 10:40

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92659112001	**MAN**	EPA 200.7 Rev 4.4 1994	DBB1	4	PASI-A
		SM 2540D-2011	JMH1	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	KDF1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	EGC	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JMH1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

Pace Analytical Services, LLC
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(704)875-9092

ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

Sample: MAN **Lab ID: 92659112001** Collected: 03/27/23 16:00 Received: 03/28/23 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville							
Copper	**27.1**	ug/L	5.0	1	04/04/23 10:05	04/05/23 17:15	7440-50-8	
Lead	ND	ug/L	5.0	1	04/04/23 10:05	04/05/23 17:15	7439-92-1	
Nickel	ND	ug/L	5.0	1	04/04/23 10:05	04/05/23 17:15	7440-02-0	
Zinc	**115**	ug/L	10.0	1	04/04/23 10:05	04/05/23 17:15	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**99.0**	mg/L	5.0	1		03/29/23 10:55		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		03/29/23 17:20		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**2.3**	mg/L	0.040	1		04/03/23 13:00		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	**0.16**	mg/L	0.10	1		03/29/23 14:06	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**1.6**	mg/L	0.50	1	03/30/23 17:47	04/01/23 04:36	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.72**	mg/L	0.040	1		03/29/23 14:42		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.17**	mg/L	0.050	1	03/30/23 11:37	03/30/23 15:41	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**74.6**	mg/L	25.0	1	03/30/23 10:52	03/30/23 16:34		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 765678
QC Batch Method: EPA 200.7 Rev 4.4 1994
Analysis Method: EPA 200.7 Rev 4.4 1994
Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3975543 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	04/05/23 16:01	
Lead	ug/L	ND	5.0	04/05/23 16:01	
Nickel	ug/L	ND	5.0	04/05/23 16:01	
Zinc	ug/L	ND	10.0	04/05/23 16:01	

LABORATORY CONTROL SAMPLE: 3975544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	527	105	85-115	
Lead	ug/L	500	541	108	85-115	
Nickel	ug/L	500	540	108	85-115	
Zinc	ug/L	500	547	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3975545 3975546

Parameter	Units	92657942002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	500	500	505	509	100	101	70-130	1	20	
Lead	ug/L	ND	500	500	486	485	97	97	70-130	0	20	
Nickel	ug/L	43.1	500	500	548	545	101	100	70-130	1	20	
Zinc	ug/L	52.1	500	500	562	557	102	101	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3975547 3975548

Parameter	Units	92658520003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	500	500	530	525	102	101	70-130	1	20	
Lead	ug/L	ND	500	500	486	478	97	96	70-130	2	20	
Nickel	ug/L	ND	500	500	514	508	103	102	70-130	1	20	
Zinc	ug/L	871	500	500	1400	1390	106	103	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764531
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3969946 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	03/29/23 10:52	

LABORATORY CONTROL SAMPLE: 3969947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	238	95	90-110	

SAMPLE DUPLICATE: 3970020

Parameter	Units	92659072002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	106	115	8	10	

SAMPLE DUPLICATE: 3970021

Parameter	Units	92659112001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	99.0	102	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764547
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92659112001

SAMPLE DUPLICATE: 3969987

Parameter	Units	92659314002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	10	H3

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764474
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3969762 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	03/29/23 13:24	

LABORATORY CONTROL SAMPLE: 3969763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969764 3969765

Parameter	Units	92657940001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.1	5.1	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969766 3969767

Parameter	Units	92657954001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.34	5	5	5.4	5.4	102	102	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764874
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3971564 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	04/01/23 04:18	

LABORATORY CONTROL SAMPLE: 3971565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3971566 3971567

Parameter	Units	92659215001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	6.3	10	10	17.0	16.8	107	104	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3971568 3971569

Parameter	Units	92659215002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	7.9	10	10	18.0	17.2	101	92	90-110	5	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764484
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3969806 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	03/29/23 14:17	

LABORATORY CONTROL SAMPLE: 3969807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969808 3969809

Parameter	Units	92658931001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.36	2.5	2.5	2.7	2.7	95	95	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969810 3969811

Parameter	Units	92658966005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.023J	2.5	2.5	2.3	2.3	91	92	90-110	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764616
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3970496 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	03/30/23 15:16	

LABORATORY CONTROL SAMPLE: 3970497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3970498 3970499

Parameter	Units	92658104001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	2.9	2.5	2.5	5.5	5.6	107	107	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3970500 3970501

Parameter	Units	92658106001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.093	2.5	2.5	2.6	2.7	102	103	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

QC Batch: 764854
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92659112001

METHOD BLANK: 3971476 Matrix: Water
Associated Lab Samples: 92659112001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	03/30/23 16:33	

LABORATORY CONTROL SAMPLE: 3971477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	760	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3971478 3971479

Parameter	Units	92658683002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	559	100	100	666	659	108	101	90-110	1	3	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3971480 3971481

Parameter	Units	92658970001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	58.2	100	100	168	168	110	110	90-110	0	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Huntersville, NC 28078
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QUALIFIERS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.

Pace Analytical Services, LLC
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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92659112

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92659112001	**MAN**	EPA 200.7 Rev 4.4 1994	765678	EPA 200.7 Rev 4.4 1994	765868
92659112001	**MAN**	SM 2540D-2011	764531		
92659112001	**MAN**	EPA 9040C	764547		
92659112001	**MAN**	TKN+NO3+NO2 Calculation	765520		
92659112001	**MAN**	EPA 350.1 Rev 2.0 1993	764474		
92659112001	**MAN**	EPA 351.2 Rev 2.0 1993	764874	EPA 351.2 Rev 2.0 1993	765332
92659112001	**MAN**	EPA 353.2 Rev 2.0 1993	764484		
92659112001	**MAN**	EPA 365.1 Rev 2.0 1993	764616	EPA 365.1 Rev 2.0 1993	764905
92659112001	**MAN**	SM 5220D-2011	764854	SM 5220D-2011	764986

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 92659112

92659112

Pace Workorder Number or

LAB USE ONLY

Lab Project Manager:

Company: Wood/WSP	Billing Information: Attn: lisa.weisert@wsp.com
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151	
Report To: Ilana Ton	Email To: ilana.ton@wsp.com
Copy To:	Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA
Customer Project Name/Number: Prince William County/ 151280002.0002.**** , ORG 7526, GL Code 5210-00	State: VA County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 703 488 3778 Email: ilana.ton@wsp.com	Site/Facility ID #:
Collected By (print): IT	Purchase Order # : Quote #:
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day

Compliance Monitoring? [ ] Yes [ ] No
DW PWS ID #:
DW Location Code:
Immediately Packed on Ice: [X] Yes [ ] No
Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Cntrs	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH	Container Preservative Type	Analyses
MAN	OT-Water	Comp	3/27/2023	16:00				5	P	X	X	x	x	x	U 1 Z 2 U	

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: 2357
Sample pH Acceptable Y N NA
pH Strips: A23355:8v
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:
92659112
001

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280002.0002.**** , ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None
Packing Material Used:
Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #:
Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 431082
Cooler 1 Temp Upon Receipt: 1.6 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 1.6 oC
Comments:

Relinquished by/Company: (Signature) Ilana Ton / WSP	Date/Time: 3/27/23 1830	Received by/Company: (Signature)	Date/Time: 3/28/23 10:40
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCl MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Pace Analytical

DC#_Title: ENV-FRM-HUN1-0083 v02_Sample Condition Upon Receipt

Effective Date: 11/14/2022 8:18:30 AM

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project # **WO#: 92659112**

PM: SC Due Date: 04/04/23

CLIENT: 92-Amec VA

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH <2) (Cl-)	BP3N-250 mL plastic HNO3 (pH <2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH >12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH <2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH <2)	AG3S-250 mL Amber H2SO4 (pH <2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A--lab)	SP2T-250 mL Sterile Plastic (N/A--lab)	[illegible]	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AGDU-100 mL Amber Unpreserved (N/A) (Cl-)	SGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2	1																							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Wet Weather Monitoring Report

Second Quarter 2023 (April – June 30)
Event Dates: June 12 and June 21

Prepared for:

Prince William County Department of Public Works
5 County Complex Court, Suite 170
Prince William, Virginia 22192

Prepared by:
WSP USA Environment & Infrastructure Solutions, Inc.
4795 Meadow Wood Lane, Suite 310E
Chantilly, VA 20151
(703) 488-3700

August 2, 2023
Project No. 151280002

1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q2 sampling events that occurred on June 12, 2023, and June 21, 2023 as well as the findings from the water quality analysis results of the sampling events.

2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate. Replacement ISCO 730 bubble flow modules have been installed at both sites beginning in Q1 of 2023.

SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on June 11th, programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The sample collection at the Manassas site was not successful and a makeup sampling event set up occurred on June 20th.

Rain gage data were compiled from monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single

flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:

Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = (\frac{1.49}{n})AR^{\frac{2}{3}}\sqrt{S}\ [\ US\ ]$$

Q = Flow rate
A = Flow area
V = Avg. velocity
S = Water surface slope
R = Hydraulic Radius
n = Roughness coefficient
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's *n* value of 0.013 was assumed for the concrete pipes[1]. Two sampling programs were implemented to accommodate for different conditions between the sites.

Manassas Sampling Program

Although a replacement bubbler module has been installed, the ponded site conditions continue to provide inaccurate water level readings at the Manassas site and fluctuates during static water conditions. To accommodate the unreliable equipment readings due to the site conditions, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During the June 12th event, the storm event at Manassas produced an event that was <0.3 which was not enough to generate significant runoff and trigger the sampler to begin collection.

During the makeup June 21st event, the sampling was set as a time-paced program to collect discrete samples every hour and then composited into a single container.

Dale City Sampling Program

During the June 12th event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every hour and then composited into a single container.

[1] Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 08:00 on June 21st – 07:00 on June 22nd. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) recorded 0.85 inches of precipitation over that period. The previous storm event was recorded on June 16th, producing 0.35 inches of precipitation.

SITE #4684; DALE CITY, VA

Sampling occurred from 14:00 on June 12th – 01:30 on June 13th. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) did not record an accurate amount of precipitation for the sampling site location. Weather Underground recorded 0.30 inches of precipitation over this same period. The previous storm event was recorded on May 29th producing 0.04 inches of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on June 23rd for Manassas and on June 14th for Dale City.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow rate reached 87.36 cfs. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on June 21st

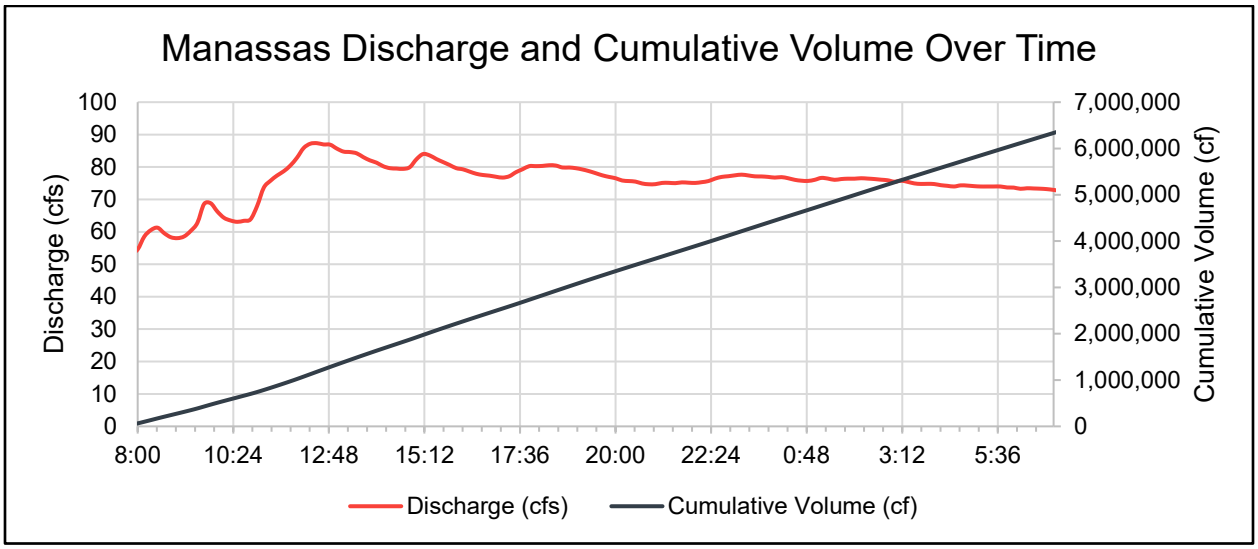

Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	6/21/2023 8:00	32755.89	3.03%	151.68
2	6/21/2023 9:00	34838.54	3.23%	161.33
3	6/21/2023 10:00	39770.99	3.68%	184.17
4	6/21/2023 11:00	40793.97	3.78%	188.90
5	6/21/2023 12:00	49714.89	4.60%	230.21
6	6/21/2023 13:00	51416.74	4.76%	238.09
7	6/21/2023 14:00	48797.9	4.52%	225.97
8	6/21/2023 15:00	49436.96	4.58%	228.93
9	6/21/2023 16:00	47782.16	4.43%	221.26
10	6/21/2023 17:00	46191.12	4.28%	213.90
11	6/21/2023 18:00	48162.08	4.46%	223.02
12	6/21/2023 19:00	47782.16	4.43%	221.26
13	6/21/2023 20:00	45921.11	4.25%	212.64
14	6/21/2023 21:00	44826.83	4.15%	207.58
15	6/21/2023 22:00	45053.08	4.17%	208.63
16	6/21/2023 23:00	46461.76	4.30%	215.15
17	6/22/2023 0:00	46045.65	4.26%	213.22
18	6/22/2023 1:00	45631.03	4.23%	211.30
19	6/22/2023 2:00	45838.16	4.25%	212.26
20	6/22/2023 3:00	45279.78	4.19%	209.68
21	6/22/2023 4:00	44847.38	4.15%	207.67
22	6/22/2023 5:00	44457.59	4.12%	205.87
23	6/22/2023 6:00	44191.68	4.09%	204.64
24	6/22/2023 7:00	43763.5	4.05%	202.65

*5.0 L sample

SITE #4684; DALE CITY, VA

Flow rate reached 1.35 cfs with one predominate peak. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Figure 2: Flow data over time for the storm event at Site #4684 on June 12th

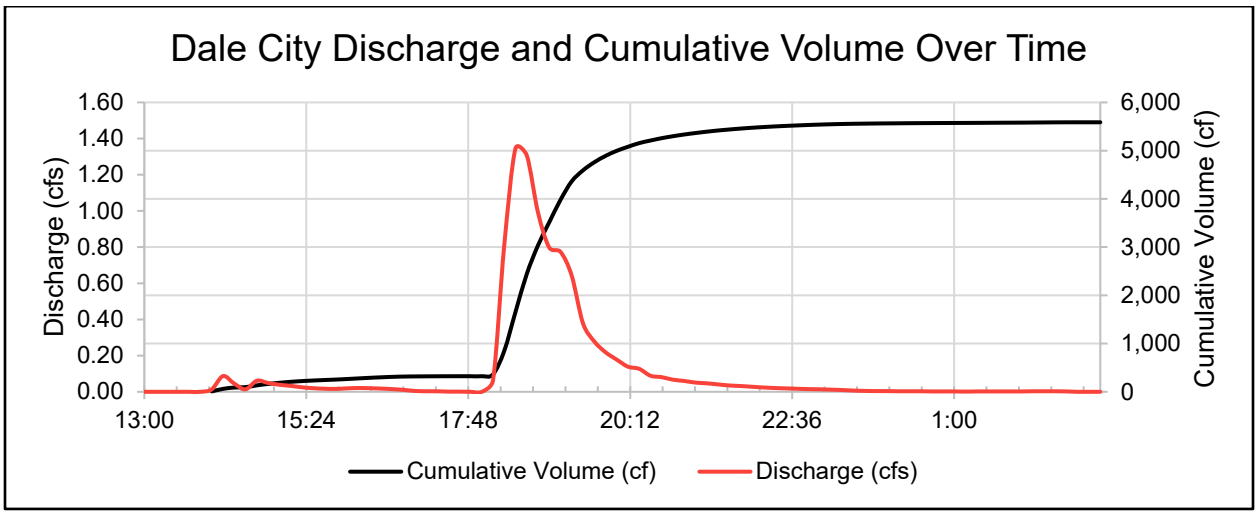

Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	6/12/2023 14:00	8.64	0%	9.29
2	6/12/2023 14:30	8.64	0%	9.29
3	6/12/2023 15:00	23.50	1%	25.28
4	6/12/2023 15:30	12.00	1%	12.91
5	6/12/2023 16:00	11.34	1%	12.20
6	6/12/2023 16:30	10.86	1%	11.69
7	6/12/2023 17:00	3.07	0%	3.30
8	6/12/2023 17:30	0.70	0%	0.76
9	6/12/2023 18:00	0.00	0%	0.00
10	6/12/2023 18:30	807.74	43%	868.90
11	6/12/2023 19:00	478.59	26%	514.82
12	6/12/2023 19:30	227.13	12%	244.32
13	6/12/2023 20:00	106.60	6%	114.67
14	6/12/2023 20:30	53.49	3%	57.54
15	6/12/2023 21:00	35.82	2%	38.53
16	6/12/2023 21:30	24.46	1%	26.31
17	6/12/2023 22:00	16.54	1%	17.79
18	6/12/2023 22:30	11.18	1%	12.03
19	6/12/2023 23:00	8.23	0%	8.85
20	6/12/2023 23:30	4.39	0%	4.73
21	6/13/2023 0:00	2.32	0%	2.50
22	6/13/2023 0:30	1.63	0%	1.76
23	6/13/2023 1:00	1.16	0%	1.25
24	6/13/2023 1:30	1.21	0%	1.30

*2.0 L sample

3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

Table 3: Analytical Parameters

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

Table 4: Results of Water Quality Analysis

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	17.0	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	48.6	µg/L	10.0	120	a
	Total Suspended Solids	9.2	mg/L	5.0	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.70	mg/L	0.040	-	-
	Total Nitrogen	1.1	mg/L	0.040	2.2	c
	Phosphorus, Total	0.059	mg/L	0.050	2	b
	Chemical Oxygen Demand	ND	mg/L	25	120	b
	pH	7.4	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	21.2	µg/L	5.0	13	a
	Lead	ND	µg/L	10.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	131	µg/L	20.0	120	a
	Total Suspended Solids	35.0	mg/L	2.0	100	b
	Nitrogen, Ammonia	0.30	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.6	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.50	mg/L	0.040	-	-
	Total Nitrogen	2.1	mg/L	0.040	2.2	c
	Phosphorus, Total	0.11	mg/L	0.050	2	b
	Chemical Oxygen Demand	102	mg/L	25.0	120	b
	pH	6.6	Std. Units	0.10	6.0-9.0	d

[a] State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.
[b] Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.
[c] The sum of Nitrogen as Ammonia, NO_2, NO_3, and Total Kjeldahl Nitrogen.
[d] Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.
* Values highlighted in red were found to be in exceedance of their respective criterion.
ND = The analyte was not detected above specified reporting limit.

4.0 SUMMARY

As indicated in **Table 4**, an exceedance occurred for Copper both sites. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 3: Exceedance Tracking for the Wet Weather Monitoring Program

Manassas (#941)	2016		2017				2018				2019				2020				2021				2022				2023	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Copper	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x		x	x	x	x
Lead																												
Nickel																												
Zinc	x		x	x	x	x	x	x							x	x							x	x				
Total Suspended Solids						x	x								x	x							x	x				
Total Nitrogen					x	x	x				x												x	x			x	
Phosphorus, Total																												
Chemical Oxygen Demand		x				x	x								x								x	x				
pH						x												x										

Dale City (#4684)	2016		2017				2018				2019				2020				2021				2022				2023	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Copper	x		x	x	x	x	x	--		x	x											x	x	x				x
Lead								--																				
Nickel								--																				
Zinc			x		x	x	x	--																				
Total Suspended Solids						x		--																				
Total Nitrogen	x	x	x	x		x	x	--			x																	
Phosphorus, Total								--																				
Chemical Oxygen Demand						x	x	--																				
pH		x		x		x		--									x					x						

* No sample collected at #4684 during Q2 2018.

APPENDIX A

PHOTO LOG OF SITE CONDITIONS

Wet Weather Monitoring Q2 Report
Prince William County, VA
Photographic Log

Site: Dale City Station

Photo: 1

Date: 6/12/2023

Description: Dale City sampler set up overview.

Site: Dale City Station

Photo: 2

Date: 6/12/2023

Description: Dale City outfall. Note Iron-oxidizing bacteria growth in pipe and staining along footing and eroded outlet protection.

Site: Manassas Station

Photo: 3

Date: 6/21/2023

Description: Manassas sampler set up overview.

Site: Manassas Station

Photo: 4

Date: 6/21/2023

Description: Manassas outfall with ring installed. Note ponded water and graffiti.

APPENDIX B

WATER QUALITY LABORATORY RESULTS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

August 01, 2023

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Ormond Beach

Report revised on 08/01/23 to include total nitrogen calculation, per client request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
DoD-ANAB #:ADE-3199
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92672324001	**DAL**	Water	06/13/23 15:00	06/14/23 10:55

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92672324001	**DAL**	EPA 200.7	AAM1	4	PASI-O
		SM 2540D-2011	MAB2	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	MDW	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	EGC	1	PASI-A
		EPA 365.1 Rev 2.0 1993	KDF1	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-O = Pace Analytical Services - Ormond Beach

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

Sample: DAL **Lab ID: 92672324001** Collected: 06/13/23 15:00 Received: 06/14/23 10:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Ormond Beach							
Copper	**21.2**	ug/L	5.0	1	06/19/23 06:02	06/19/23 16:12	7440-50-8	
Lead	ND	ug/L	10.0	1	06/19/23 06:02	06/19/23 16:12	7439-92-1	
Nickel	ND	ug/L	5.0	1	06/19/23 06:02	06/19/23 16:12	7440-02-0	
Zinc	**131**	ug/L	20.0	1	06/19/23 06:02	06/19/23 16:12	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**35.0**	mg/L	2.0	1		06/17/23 14:20		D6
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**6.6**	Std. Units	0.10	1		06/20/23 13:23		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**2.1**	mg/L	0.040	1		08/01/23 14:21		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	**0.30**	mg/L	0.10	1		06/23/23 11:32	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**1.6**	mg/L	0.50	1	06/16/23 04:16	06/17/23 07:06	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.50**	mg/L	0.040	1		06/15/23 14:39		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.11**	mg/L	0.050	1	06/20/23 17:44	06/21/23 11:18	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**102**	mg/L	25.0	1	06/20/23 01:49	06/21/23 00:05		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 927049
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 92672324001

METHOD BLANK: 5095337 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	06/19/23 15:17	
Lead	ug/L	ND	10.0	06/19/23 15:17	
Nickel	ug/L	ND	5.0	06/19/23 15:17	
Zinc	ug/L	ND	20.0	06/19/23 15:17	

LABORATORY CONTROL SAMPLE: 5095338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	250	265	106	85-115	
Lead	ug/L	250	262	105	85-115	
Nickel	ug/L	250	262	105	85-115	
Zinc	ug/L	1250	1250	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5095339 5095340

Parameter	Units	35807160001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	101	250	250	360	373	103	108	70-130	4	20	
Lead	ug/L	6.8J	250	250	262	268	102	104	70-130	2	20	
Nickel	ug/L	7.3	250	250	270	276	105	107	70-130	2	20	
Zinc	ug/L	325	1250	1250	1570	1600	100	102	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5095341 5095342

Parameter	Units	92672346001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	250	250	256	254	102	101	70-130	1	20	
Lead	ug/L	ND	250	250	253	255	101	102	70-130	1	20	
Nickel	ug/L	120	250	250	375	380	102	104	70-130	1	20	
Zinc	ug/L	0.028 mg/L	1250	1250	1290	1300	101	102	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 781221
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92672324001

METHOD BLANK: 4053201 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	06/17/23 14:19	

LABORATORY CONTROL SAMPLE & LCSD: 4053202 4053307

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	250	232	246	93	98	90-110	6	10	

SAMPLE DUPLICATE: 4053308

Parameter	Units	92672324001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	35.0	42.0	18	10	D6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 781606
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92672324001

SAMPLE DUPLICATE: 4054870

Parameter	Units	92673251004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	10	H3

SAMPLE DUPLICATE: 4054871

Parameter	Units	92673221001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	0	10	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 782250
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92672324001

METHOD BLANK: 4057747 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	06/23/23 11:25	

LABORATORY CONTROL SAMPLE: 4057748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4057749 4057750

Parameter	Units	92672306001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	38.9	5	5	44.3	44.5	109	111	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4057751 4057752

Parameter	Units	92672324001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.30	5	5	5.4	5.4	101	101	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 780946
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92672324001

METHOD BLANK: 4051626 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	06/17/23 06:48	

LABORATORY CONTROL SAMPLE: 4051627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4051628 4051629

Parameter	Units	92671119001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	ND	10	10	9.8	10	96	97	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4051630 4051631

Parameter	Units	92672324001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.6	10	10	11.8	11.7	102	101	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 780707
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92672324001

METHOD BLANK: 4049889 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	06/15/23 13:54	

LABORATORY CONTROL SAMPLE: 4049890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4049891 4049892

Parameter	Units	92672454001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.7	2.7	105	107	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4049893 4049894

Parameter	Units	92672240005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.3	2.3	93	93	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 781617
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92672324001

METHOD BLANK: 4054902 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	06/21/23 11:10	

LABORATORY CONTROL SAMPLE: 4054903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4054904 4054905

Parameter	Units	92672555001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	3.7	2.5	2.5	6.2	6.1	101	98	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4054906 4054907

Parameter	Units	92672785022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.16	2.5	2.5	2.7	2.7	101	101	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

QC Batch: 781556
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92672324001

METHOD BLANK: 4054721 Matrix: Water
Associated Lab Samples: 92672324001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	06/21/23 00:02	

LABORATORY CONTROL SAMPLE: 4054722

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	774	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4054723 4054724

Parameter	Units	92672460001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	133	155	118	140	90-110	15	3	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4054725 4054726

Parameter	Units	92672643004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	128	133	108	113	90-110	4	3	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92672324

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92672324001	**DAL**	EPA 200.7	927049	EPA 200.7	927093
92672324001	**DAL**	SM 2540D-2011	781221		
92672324001	**DAL**	EPA 9040C	781606		
92672324001	**DAL**	TKN+NO3+NO2 Calculation	790653		
92672324001	**DAL**	EPA 350.1 Rev 2.0 1993	782250		
92672324001	**DAL**	EPA 351.2 Rev 2.0 1993	780946	EPA 351.2 Rev 2.0 1993	781207
92672324001	**DAL**	EPA 353.2 Rev 2.0 1993	780707		
92672324001	**DAL**	EPA 365.1 Rev 2.0 1993	781617	EPA 365.1 Rev 2.0 1993	781902
92672324001	**DAL**	SM 5220D-2011	781556	SM 5220D-2011	781862

WO# : 92672324

92672324

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

List Pace Workorder Number or re

for LAB USE ONLY

Project Manager:

Company: Wood/WSP	Billing Information: Attn: lisa.weisert@wsp.com
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151	
Report To: Ilana Ton	Email To: ilana.ton@wsp.com
Copy To:	Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA
Customer Project Name/Number: Prince William County/ 151280002.0002.****, ORG 7526, GL Code 5210-00	State: VA; County/City: ; Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 703 488 3778 Email: ilana.ton@wsp.com	Site/Facility ID #:
Collected By (print):	Purchase Order # : Quote #:
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #:
	DW Location Code:
	Immediately Packed on Ice: [X] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [ ] No
	Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH					
										Analyses									
DAL	OT-Water	Comp	6/13/2023	~~00:00~~ 1500				5	P	X	X	x	x	x					
U	1	2	2	U															

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Profile/Line:

Lab Sample Receipt Checklist:
- Custody Seals Present/Intact: Y N NA
- Custody Signatures Present: Y N NA
- Collector Signature Present: Y N NA
- Bottles Intact: Y N NA
- Correct Bottles: Y N NA
- Sufficient Volume: Y N NA
- Samples Received on Ice: Y N NA
- VOA – Headspace Acceptable: Y N NA
- USDA Regulated Soils: Y N NA
- Samples in Holding Time: Y N NA
- Residual Chlorine Present: Y N NA
- Cl Strips: 2313
- Sample pH Acceptable: Y N NA
- pH Strips: 2323(9)8V
- Sulfide Present: Y N
- Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:
92672324
001

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280002.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #:

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 93T082
Cooler 1 Temp Upon Receipt: 2.2 oC
Cooler 1 Therm Corr. Factor: .6 oC
Cooler 1 Corrected Temp: 2.8 oC
Comments:

Relinquished by/Company: (Signature) Ilana Ton / WSP	Date/Time: 6/13/23 1600	Received by/Company: (Signature) RBunkumAir	Date/Time: 6/14 1055
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical	DC#_Title: ENV-FRM-HUN1-0083 v02_Sample Condition Upon Receipt
	Effective Date: 11/14/2022 8:18:30 AM

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

***Check all unpreserved Nitrates for chlorine

Project # WO# : 92672324

PM: SC Due Date: 06/21/23

CLIENT: 92-Amec VA

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH <2) (Cl-)	BP3N-250 mL plastic HNO3 (pH<2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH>12) (Cl-)	WGFU-Wide-mouthed Glassjar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH <2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH <2)	AG3S-250 mL Amber H2SO4 (pH.<2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9Y-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A--lab)	SP2T-250 mL Sterile Plastic (N/A--lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2 ✓	1 ✓																						
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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June 29, 2023

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on June 23, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92674240001	**MAN**	Water	06/22/23 12:00	06/23/23 11:00

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(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92674240001	**MAN**	EPA 200.7 Rev 4.4 1994	DBB1	4	PASI-A
		SM 2540D-2011	RVS	1	PASI-A
		EPA 9040C	MDW	1	PASI-A
		TKN+NO3+NO2 Calculation	KDF1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	EGC	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

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ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

Sample: MAN **Lab ID: 92674240001** Collected: 06/22/23 12:00 Received: 06/23/23 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville							
Copper	**17.0**	ug/L	5.0	1	06/24/23 11:15	06/25/23 22:47	7440-50-8	
Lead	ND	ug/L	5.0	1	06/24/23 11:15	06/25/23 22:47	7439-92-1	
Nickel	ND	ug/L	5.0	1	06/24/23 11:15	06/25/23 22:47	7440-02-0	
Zinc	**48.6**	ug/L	10.0	1	06/24/23 11:15	06/25/23 22:47	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**9.2**	mg/L	1.0	1		06/27/23 17:39		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		06/26/23 21:21		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**1.1**	mg/L	0.040	1		06/29/23 15:45		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	ND	mg/L	0.10	1		06/29/23 12:13	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	1	06/28/23 13:16	06/29/23 05:47	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.70**	mg/L	0.040	1		06/29/23 13:44		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.059**	mg/L	0.050	1	06/26/23 14:51	06/27/23 10:39	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	ND	mg/L	25.0	1	06/27/23 01:46	06/28/23 05:43		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 782805
QC Batch Method: EPA 200.7 Rev 4.4 1994
Analysis Method: EPA 200.7 Rev 4.4 1994
Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4060705 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	06/25/23 22:27	
Lead	ug/L	ND	5.0	06/25/23 22:27	
Nickel	ug/L	ND	5.0	06/25/23 22:27	
Zinc	ug/L	ND	10.0	06/25/23 22:27	

LABORATORY CONTROL SAMPLE: 4060706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	499	100	85-115	
Lead	ug/L	500	478	96	85-115	
Nickel	ug/L	500	490	98	85-115	
Zinc	ug/L	500	471	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4060707 4060708

Parameter	Units	92671200001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	500	500	521	522	103	103	70-130	0	20	
Lead	ug/L	ND	500	500	487	489	97	98	70-130	0	20	
Nickel	ug/L	ND	500	500	494	497	99	99	70-130	1	20	
Zinc	ug/L	53.5	500	500	535	539	96	97	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 783370
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4062942 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	06/27/23 17:37	

LABORATORY CONTROL SAMPLE: 4062943

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	246	98	90-110	

SAMPLE DUPLICATE: 4063127

Parameter	Units	92674289002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	230	263	14	10	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 783114
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92674240001

SAMPLE DUPLICATE: 4061788

Parameter	Units	92674021001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	10	H3

SAMPLE DUPLICATE: 4061789

Parameter	Units	92674021002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	10	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 783608
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4064086 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	06/29/23 12:10	

LABORATORY CONTROL SAMPLE: 4064087

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4064088 4064089

Parameter	Units	92673027001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	20.7	5	5	26.8	26.9	122	123	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4064090 4064091

Parameter	Units	92673115002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	29.2	5	5	35.8	37.4	133	165	90-110	4	10	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 783360
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4062860 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	06/29/23 05:15	

LABORATORY CONTROL SAMPLE: 4062861

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4062862 4062863

Parameter	Units	92673510001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	4.7	10	10	12.8	14.3	81	96	90-110	11	10	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4062864 4062865

Parameter	Units	92673513001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.5	10	10	11.7	11.9	103	104	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 783777
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4064913 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	06/29/23 13:23	

LABORATORY CONTROL SAMPLE: 4064914

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4064915 4064916

Parameter	Units	92673369005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.53	2.5	2.5	3.1	3.1	103	102	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4064917 4064918

Parameter	Units	92673369006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.1	2.5	2.5	3.6	3.6	103	102	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 782739
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4060451 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	06/27/23 10:18	

LABORATORY CONTROL SAMPLE: 4060452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4060453 4060454

Parameter	Units	92673012006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.64	2.5	2.5	3.2	3.1	101	99	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4060455 4060456

Parameter	Units	92673012007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.28	2.5	2.5	2.8	2.8	102	102	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

QC Batch: 783147
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92674240001

METHOD BLANK: 4061887 Matrix: Water
Associated Lab Samples: 92674240001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	06/28/23 05:36	

LABORATORY CONTROL SAMPLE: 4061888

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	766	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4061889 4061890

Parameter	Units	92673809001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	54.6	100	100	165	167	110	113	90-110	1	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4061891 4061892

Parameter	Units	92674225001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	115	117	113	115	90-110	2	3	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92674240

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92674240001	**MAN**	EPA 200.7 Rev 4.4 1994	782805	EPA 200.7 Rev 4.4 1994	782826
92674240001	**MAN**	SM 2540D-2011	783370		
92674240001	**MAN**	EPA 9040C	783114		
92674240001	**MAN**	TKN+NO3+NO2 Calculation	783954		
92674240001	**MAN**	EPA 350.1 Rev 2.0 1993	783608		
92674240001	**MAN**	EPA 351.2 Rev 2.0 1993	783360	EPA 351.2 Rev 2.0 1993	783740
92674240001	**MAN**	EPA 353.2 Rev 2.0 1993	783777		
92674240001	**MAN**	EPA 365.1 Rev 2.0 1993	782739	EPA 365.1 Rev 2.0 1993	783097
92674240001	**MAN**	SM 5220D-2011	783147	SM 5220D-2011	783435

WO# : 92674240

92674240

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

st Pace Workorder Number or

or LAB USE ONLY

Lab Project Manager:

Company: Wood/WSP	Billing Information: Attn: lisa.weisert@wsp.com
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151	
Report To: Ilana Ton	Email To: ilana.ton@wsp.com
Copy To:	Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA
Customer Project Name/Number: Prince William County/ 151280002.0002.****, ORG 7526, GL Code 5210-00	State: VA County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 703 488 3778 Email: ilana.ton@wsp.com	Site/Facility ID #: Manassas
Collected By (print): Anna Allie	Purchase Order # : Quote #:
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #: DW Location Code:
	Immediately Packed on Ice: [X] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **

Analyses

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH	U	1	2	2	U				
MAN	OT-Water	Comp	6/22/23	12:00				5	P	X	X	X	X	X								

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: 2313			
Sample pH Acceptable	Y	N	NA
pH Strips: 2238198V			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:

Lab Sample # / Comments: 92674240

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280002.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None

Packing Material Used: none

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 93708 2
Cooler 1 Temp Upon Receipt: 5.1 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 4.1 oC
Comments:

Relinquished by/Company: (Signature) Anna Allie WSP	Date/Time: 6/22/23 13:00	Received by/Company: (Signature) A Rucker/PACE/AVL
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)

Date/Time: 6-23-23	1100
Date/Time:	
Date/Time:	

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

WO#: 92674240

PM: SC Due Date: 06/30/23

CLIENT: 92-Amec VA

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

Project #

**Bottom half of box is to list number of bottles

***Check all unpreserved Nitrates for chlorine

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 Liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH<2) (Cl-)	BP3N-250 mL plastic HNO3 (pH<2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH>12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH<2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH<2)	AG3S-250 mL Amber H2SO4 (pH<2)	DG9A-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)		BP3B-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2	1																							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, Incorrect preservative, out of temp, Incorrect containers.

Wet Weather Monitoring Report

Third Quarter 2022 (July 1 – September 30)
Event Date: September 30 and October 13 (Q3 Makeup)

Prepared for:

Prince William County Department of Public Works
5 County Complex Court, Suite 170
Prince William, Virginia 22192

Prepared by:
WSP USA Environment & Infrastructure Solutions, Inc.
4795 Meadow Wood Lane, Suite 310E
Chantilly, VA 20151
(703) 488-3700

November 17, 2022
Project No. 151280001

1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) is pleased to provide this report of wet weather monitoring for compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q3 sampling events occurred on September 30th through October 3rd and the makeup event that occurred on October 13th as well as the findings from the water quality analysis results of the sampling events.

2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate.

SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on September 30th, programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The sample collection at the Dale City site was not successful and a makeup sampling event occurred on October 13th.

Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:

Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right) AR^{\frac{2}{3}}\sqrt{S} \text{ [US]}$$

Q = Flow rate
A = Flow area
V = Avg. velocity
S = Water surface slope
R = Hydraulic Radius
n = Roughness coefficient
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's *n* value of 0.013 was assumed for the concrete pipes[1].
Two sampling programs were implemented to accommodate for different conditions between the sites.

Manassas Sampling Program
The bubbler module does not currently provide accurate water level readings at the Manassas site and fluctuates during static water conditions. WSP recommends replacement of the module for future monitoring events. To accommodate the unreliable equipment readings, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

The sampler collects discrete samples every 20 minutes, which are then composited into a single container. The sample volume within the bucket is used to fill sample bottles sent to the lab. This provides a representative grab sample but does not represent the event mean concentration of pollutants.

Dale City Sampling Program
The ISCO samplers are capable of collecting samples using a flow-proportional composite program. Flow-proportional composite samples collect more frequently at higher flow rates and less frequently at lower flow rates (as flow rate increases, the time between aliquots decrease). This method is a direct measure of the storm's hydrograph or the relationship between the pollutant concentration and flow rate. This allows a direct estimation of event mean concentration (EMC).

During the September 30th event, the sampler at Dale City was programmed with a flow-proportional composite program, with an incremental flow volume of approximately 7,000 cubic feet. The sampler enabled and began collecting samples; however the incremental volume was too large and there was insufficient sample volume collected. While there is not a direct stage-discharge relationship available for the outfall at the Dale City monitoring station, this was an estimate based upon total storm volume of previously measured storm events at this station. A different programming protocol that can collect more frequent samples to ensure a full sample collection will be implemented.

During the makeup October 13th event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every 20 minutes, which are then composited into a single container.

[1] Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 18:00 on September 30th – 09:40 on October 3rd. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) recorded 2.2 inches of precipitation over that period with temperatures ranging from 47 - 60 degrees Fahrenheit. The previous storm event was recorded on September 26th, producing 0.10 inch of precipitation.

SITE #4684; DALE CITY, VA

Sampling occurred from 05:20 – 13:00 on October 13th. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) recorded 0.50 inches of precipitation over this same period. The previous storm event was recorded on October 5th, producing 0.12 inch of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on October 5th for Manassas and on October 17th for Dale City.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow rate reached 26.76 cfs and oscillated throughout the course of the storm. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on September 30th to October 3rd

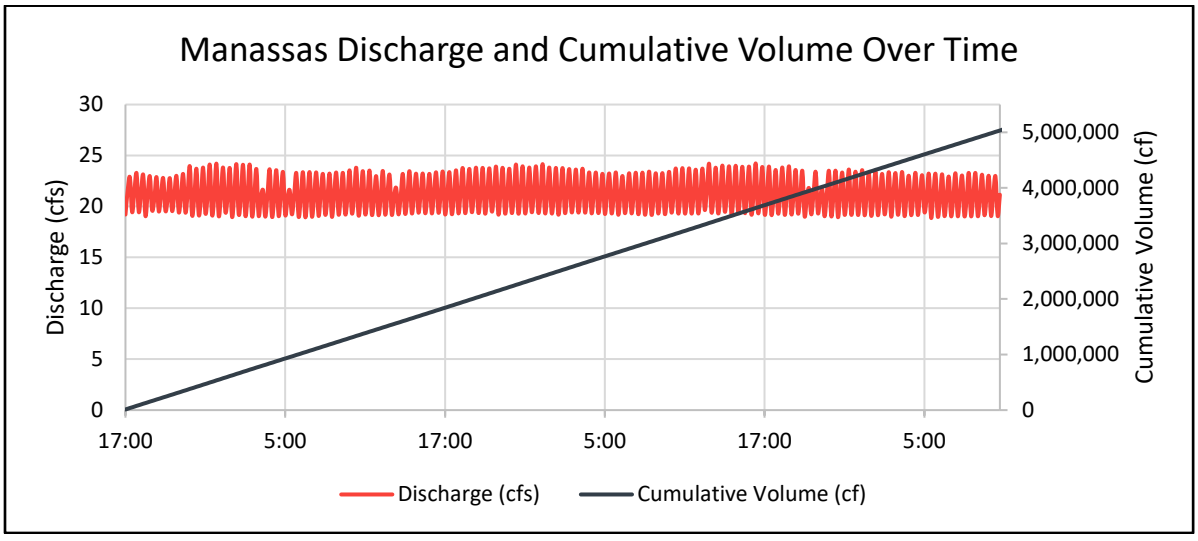

Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	18:00	101,851.69	4.16	208
2	20:40	100,760.57	4.12	206
3	23:20	103,703.88	4.24	212
4	02:00	101,130.86	4.13	207
5	04:40	99,232.04	4.05	203
6	07:20	102,878.12	4.20	210
7	10:00	102,184.12	4.18	209
8	12:40	99,797.78	4.08	204
9	15:20	102,898.38	4.20	210
10	18:00	103,014.78	4.21	211
11	20:40	101,613.66	4.15	208
12	23:20	104,415.71	4.27	213
13	02:00	102,576.00	4.19	210
14	04:40	100,194.67	4.09	205
15	07:20	102,772.66	4.20	210
16	10:00	102,859.15	4.20	210
17	12:40	102,087.43	4.17	209
18	15:20	104,038.25	4.25	213
19	18:00	101,354.30	4.14	207
20	20:40	99,700.58	4.07	204
21	23:20	103,297.71	4.22	211
22	02:00	102,047.41	4.17	209
23	04:40	100,278.80	4.10	205
24	07:20	102,520.73	4.19	210

*5.0 L sample

SITE #4684; DALE CITY, VA

Flow rate reached 0.177 cfs. The apparent oscillation in water level could be a result of the suction line sampling drawing down low flow levels. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Figure 2: Flow data over time for the storm event at Site #4684 on October 13th

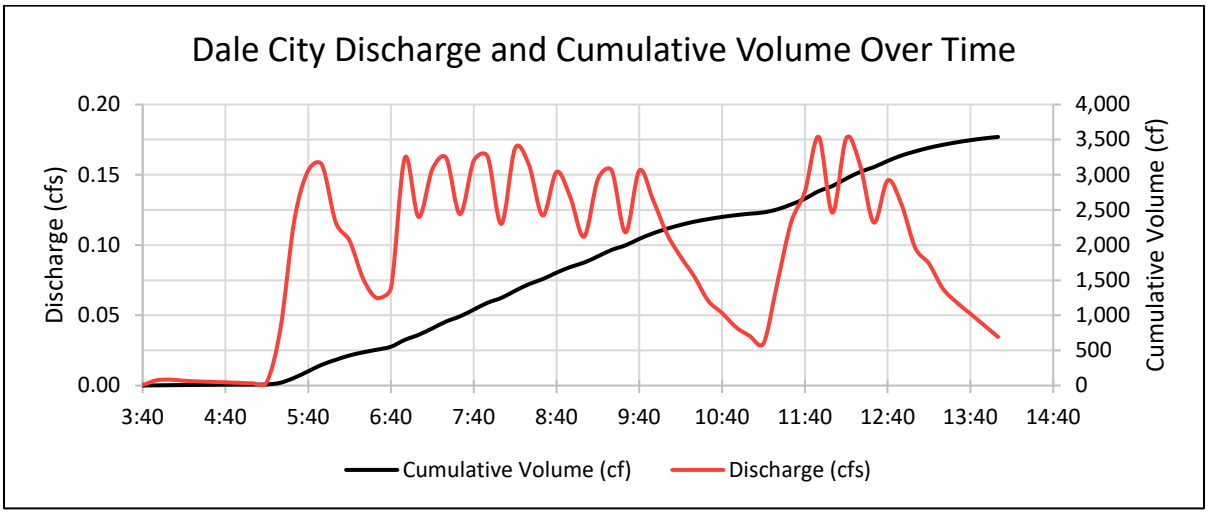

Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	05:20	24.70	0.74	37
2	05:40	162.80	4.91	245
3	06:00	163.57	4.93	247
4	06:20	107.29	3.23	162
5	06:40	79.04	2.38	119
6	07:00	169.15	5.10	255
7	07:20	189.50	5.71	286
8	07:40	169.45	5.11	255
9	08:00	166.68	5.02	251
10	08:20	195.58	5.90	295
11	08:40	163.61	4.93	247
12	09:00	143.90	4.34	217
13	09:20	180.11	5.43	272
14	09:40	156.93	4.73	237
15	10:00	143.75	4.33	217
16	10:20	101.35	3.06	153
17	10:40	67.06	2.02	101
18	11:00	46.13	1.39	70
19	11:20	61.63	1.86	93
20	11:40	152.43	4.60	230
21	12:00	180.15	5.43	272
22	12:20	199.77	6.02	301
23	12:40	156.73	4.72	236
24	13:00	135.98	4.10	205

*5.0 L sample

3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

Table 3: Analytical Parameters

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

Table 4: Results of Water Quality Analysis

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	16.4	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	64.4	µg/L	10.0	120	a
	Total Suspended Solids	7.1	mg/L	1.0	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.1	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.92	mg/L	0.040	-	-
	Total Nitrogen	2.1	mg/L	0.040	2.2	c
	Phosphorus, Total	0.057	mg/L	0.050	2	b
	Chemical Oxygen Demand	95.5	mg/L	25	120	b
	pH	7.5	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	7.6	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	53.2	µg/L	10.0	120	a
	Total Suspended Solids	16.9	mg/L	1.0	100	b
	Nitrogen, Ammonia	0.12	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.0	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.34	mg/L	0.040	-	-
	Total Nitrogen	1.3	mg/L	0.040	2.2	c
	Phosphorus, Total	0.079	mg/L	0.050	2	b
	Chemical Oxygen Demand	33.8	mg/L	25.0	120	b
	pH	7.0	Std. Units	0.10	6.0-9.0	d

[a]State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100mg/L.
[b]Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.
[c]The sum of Nitrogen as Ammonia, NO_2, NO_3, and Total Kjeldahl Nitrogen.
[d]Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.
*Values highlighted in red were found to be in exceedance of their respective criterion.
ND = The analyte was not detected above specified reporting limit.

4.0 SUMMARY

As indicated in **Table 4**, an exceedance occurred for Copper at Site #941. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 3: Exceedance Tracking for the Wet Weather Monitoring Program

Manassas (#941)	2016		2017				2018				2019				2020				2021				2022		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Copper	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x		X
Lead																									
Nickel																									
Zinc	x		x	x	x	x	x	x							x	x							x	x	
Total Suspended Solids						x	x								x	x							x	x	
Total Nitrogen					x	x	x				x												x	x	
Phosphorus, Total																									
Chemical Oxygen Demand		x				x	x								x								x	x	
pH						x												x							

Dale City (#4684)	2016		2017				2018				2019				2020				2021				2022		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Copper	x		x	x	x	x	x	--		x	x											x	x	x	
Lead								--																	
Nickel								--																	
Zinc			x		x	x	x	--																	
Total Suspended Solids						x		--																	
Total Nitrogen	x	x	x	x		x	x	--			x														
Phosphorus, Total								--																	
Chemical Oxygen Demand						x	x	--																	
pH		x		x		x		--									x					x			

* No sample collected at #4684 during Q2 2018.

APPENDIX A

PHOTO LOG OF SITE CONDITIONS

Wet Weather Monitoring Q3 Report
Prince William County, VA
Photographic Log

	**Site:** Dale City Station **Photo: 1** **Date:** 10/13/2022 **Description:** Dale City sampler set up.
	**Site:** Dale City Station **Photo: 2** **Date:** 10/13/2022 **Description:** Dale City samples.

Prepared By: INT
Checked By: CCD

Site: Manassas Station

Photo: 3

Date: 9/30/2022

Description: Manassas sampler set up.

Site: Manassas Station

Photo: 4

Date: 9/30/2022

Description: Manassas outfall with ring installed. Note ponded water and graffiti.

Prepared By: INT
Checked By: CCD

APPENDIX B

WATER QUALITY LABORATORY RESULTS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

October 19, 2022

Benjamin Green
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

Dear Benjamin Green:

Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92629751001	**MAN**	Water	10/03/22 12:30	10/06/22 13:20

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92629751001	**MAN**	EPA 200.7 Rev 4.4 1994	DEC	4	PASI-A
		SM 2540D-2011	CS1	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	DMN	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	KDF1	1	PASI-A
		EPA 365.1 Rev 2.0 1993	KDF1	1	PASI-A
		SM 5220D-2011	JMH1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

Sample: MAN **Lab ID: 92629751001** Collected: 10/03/22 12:30 Received: 10/06/22 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville							
Copper	**16.4**	ug/L	5.0	1	10/12/22 00:19	10/13/22 20:47	7440-50-8	
Lead	ND	ug/L	5.0	1	10/12/22 00:19	10/13/22 20:47	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/12/22 00:19	10/13/22 20:47	7440-02-0	
Zinc	**64.4**	ug/L	10.0	1	10/12/22 00:19	10/13/22 20:47	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**7.1**	mg/L	1.0	1		10/10/22 12:57		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		10/08/22 17:50		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**2.1**	mg/L	0.040	1		10/19/22 17:21		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	ND	mg/L	0.10	1		10/10/22 12:54	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**1.1**	mg/L	0.50	1	10/10/22 14:53	10/11/22 02:13	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.92**	mg/L	0.040	1		10/11/22 08:53		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.057**	mg/L	0.050	1	10/11/22 14:54	10/12/22 10:52	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**95.5**	mg/L	25.0	1	10/07/22 12:38	10/07/22 17:26		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 729532
QC Batch Method: EPA 200.7 Rev 4.4 1994
Analysis Method: EPA 200.7 Rev 4.4 1994
Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3798952 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	10/13/22 20:09	
Lead	ug/L	ND	5.0	10/13/22 20:09	
Nickel	ug/L	ND	5.0	10/13/22 20:09	
Zinc	ug/L	ND	10.0	10/13/22 20:09	

LABORATORY CONTROL SAMPLE: 3798953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	513	103	85-115	
Lead	ug/L	500	517	103	85-115	
Nickel	ug/L	500	515	103	85-115	
Zinc	ug/L	500	517	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3798954 3798955

Parameter	Units	92629129001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	24.6	500	500	532	514	101	98	70-130	3	20	
Lead	ug/L	5.0	500	500	519	502	103	99	70-130	3	20	
Nickel	ug/L	ND	500	500	513	499	102	99	70-130	3	20	
Zinc	ug/L	23.9	500	500	542	524	104	100	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 729031
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3796391 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	10/10/22 12:57	

LABORATORY CONTROL SAMPLE: 3796392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	232	93	90-110	

SAMPLE DUPLICATE: 3796528

Parameter	Units	92630078001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	17.0	16.4	4	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 728941
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92629751001

SAMPLE DUPLICATE: 3796226

Parameter	Units	92629102001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.6	8.6	0	10	H3

SAMPLE DUPLICATE: 3796227

Parameter	Units	92629873001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	10	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 728993
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3796314 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	10/10/22 12:12	

LABORATORY CONTROL SAMPLE: 3796315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3796316 3796317

Parameter	Units	92629855001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.4	5.4	108	108	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3796320 3796321

Parameter	Units	92629855002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.3	5.3	106	105	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 729075
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3796774 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	10/11/22 01:46	

LABORATORY CONTROL SAMPLE: 3796775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.4	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3796776 3796777

Parameter	Units	92629746001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	5.1	10	10	14.9	15.3	98	102	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3796778 3796779

Parameter	Units	92629746002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	0.82	10	10	9.8	10.0	89	92	90-110	3	10	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 728978
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3796284 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	10/11/22 08:17	

LABORATORY CONTROL SAMPLE: 3796285

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3796286 3796287

Parameter	Units	92629855001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.5	2.5	101	102	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3796288 3796289

Parameter	Units	92629855002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.5	2.5	99	99	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 729230
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3797637 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	10/12/22 10:33	

LABORATORY CONTROL SAMPLE: 3797638

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3797639 3797640

Parameter	Units	92629478039 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	ND	2.5	2.5	2.7	2.7	107	107	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3797641 3797642

Parameter	Units	92629215003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	18.7	2.5	2.5	19.9	19.7	111	101	90-110	1	10	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

QC Batch: 728716
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92629751001

METHOD BLANK: 3794980 Matrix: Water
Associated Lab Samples: 92629751001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	10/07/22 17:22	

LABORATORY CONTROL SAMPLE: 3794981

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	750	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3794984 3794985

Parameter	Units	92628991001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	18500	100	100	19000	19100	518	659	90-110	1	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3795012 3795013

Parameter	Units	92629337004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	274	100	100	385	387	111	113	90-110	1	3	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92629751

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92629751001	**MAN**	EPA 200.7 Rev 4.4 1994	729532	EPA 200.7 Rev 4.4 1994	729544
92629751001	**MAN**	SM 2540D-2011	729031		
92629751001	**MAN**	EPA 9040C	728941		
92629751001	**MAN**	TKN+NO3+NO2 Calculation	731450		
92629751001	**MAN**	EPA 350.1 Rev 2.0 1993	728993		
92629751001	**MAN**	EPA 351.2 Rev 2.0 1993	729075	EPA 351.2 Rev 2.0 1993	729222
92629751001	**MAN**	EPA 353.2 Rev 2.0 1993	728978		
92629751001	**MAN**	EPA 365.1 Rev 2.0 1993	729230	EPA 365.1 Rev 2.0 1993	729515
92629751001	**MAN**	SM 5220D-2011	728716	SM 5220D-2011	728843

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT – Complete all relevant fields

WO# : 92629751

92629751

Company: Wood

Billing Information:

Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151

Attn: lisa.weisert@woodplc.com

Report To: Benjamin Green

Email To: benjamin.green@woodplc.com

Copy To:

Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA

Customer Project Name/Number: Prince William County/ 151280001.0002.****, ORG 7526, GL Code 5210-00

State: VA County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET

Phone: 703 488 3795
Email: benjamin.green@woodplc.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected By (print):

Purchase Order #:
Quote #:

DW PWS ID #:
DW Location Code:

Collected By (signature):

Turnaround Date Required:

Immediately Packed on Ice: [X] Yes [ ] No

Sample Disposal:
[X] Dispose as appropriate
[ ] Return
[ ] Archive: ____
[ ] Hold:

Rush: (Expedite Charges Apply)
[ ] Same Day [ ] Next Day
[ ] 2 Day [ ] 3 Day
[ ] 4 Day [X] 5 Day

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ____

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH	Lab Sample # / Comments
Preservative type										U	1	2	2	U	
MAN	OT-Water	Comp	10/3/2022	1230				5	P	X	X	x	x	x	001

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: 2120
Sample pH Acceptable Y N NA
pH Strips: 02391284
Sulfide Present Y N NA
Lead Acetate Strips: ____

LAB USE ONLY:
Lab Sample # / Comments: 92629751

10/7/22 email
Ben Green email
Okay to proceed with OOH orthophosphate

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280001.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Packing Material Used:

Lab Tracking #:

Radchem sample(s) screened (<500 cpm): Y N NA

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 637071
Cooler 1 Temp Upon Receipt: 2.3 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 2.3 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY
Dana Tan / wood	10/5/22/1800	[signature]	10/6/22 13:20	Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-HUN1-0083 v01_Sample Condition Upon Receipt

Effective Date: 05/12/2022

WO# : 92629751

PM: SC **Due Date: 10/13/22**

CLIENT: 92-Amec VA

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

Project

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG9A-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	DG9S-40 mL VOA H2SO4 (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2	1																							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

November 16, 2022

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

Report revised on 11/16/22 to include total nitrogen calculation.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92631787001	**DAL**	Water	10/14/22 11:00	10/18/22 14:30

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SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92631787001	**DAL**	EPA 200.7 Rev 4.4 1994	SBW	4	PASI-A
		SM 2540D-2011	CS1	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	DMN	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	KDF1	1	PASI-A
		EPA 365.1 Rev 2.0 1993	SMT	1	PASI-A
		SM 5220D-2011	JMH1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

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ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

Sample: DAL **Lab ID: 92631787001** Collected: 10/14/22 11:00 Received: 10/18/22 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville							
Copper	**7.6**	ug/L	5.0	1	10/22/22 12:12	10/28/22 13:02	7440-50-8	
Lead	ND	ug/L	5.0	1	10/22/22 12:12	10/28/22 13:02	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/22/22 12:12	10/28/22 13:02	7440-02-0	
Zinc	**53.2**	ug/L	10.0	1	10/22/22 12:12	10/28/22 13:02	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**16.9**	mg/L	1.0	1		10/21/22 09:05		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		10/19/22 12:23		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**1.3**	mg/L	0.040	1		11/16/22 18:23		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	**0.12**	mg/L	0.10	1		10/19/22 13:37	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**1.0**	mg/L	0.50	1	10/21/22 17:09	10/22/22 06:35	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.34**	mg/L	0.040	1		10/21/22 10:42		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.079**	mg/L	0.050	1	10/20/22 23:10	10/21/22 21:42	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**33.8**	mg/L	25.0	1	10/19/22 14:28	10/19/22 21:15		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 732141
QC Batch Method: EPA 200.7 Rev 4.4 1994
Analysis Method: EPA 200.7 Rev 4.4 1994
Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3811228 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	10/28/22 11:59	
Lead	ug/L	ND	5.0	10/28/22 11:59	
Nickel	ug/L	ND	5.0	10/28/22 11:59	
Zinc	ug/L	ND	10.0	10/28/22 11:59	

LABORATORY CONTROL SAMPLE: 3811229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	505	101	85-115	
Lead	ug/L	500	501	100	85-115	
Nickel	ug/L	500	502	100	85-115	
Zinc	ug/L	500	480	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3811230 3811231

Parameter	Units	92630066001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	31.2	500	500	579	577	110	109	70-130	0	20	
Lead	ug/L	ND	500	500	518	511	104	102	70-130	1	20	
Nickel	ug/L	ND	500	500	526	523	105	104	70-130	1	20	
Zinc	ug/L	175	500	500	675	677	100	100	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3811232 3811233

Parameter	Units	92631170001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	500	500	538	532	107	106	70-130	1	20	
Lead	ug/L	ND	500	500	513	501	103	100	70-130	2	20	
Nickel	ug/L	ND	500	500	517	506	103	101	70-130	2	20	
Zinc	ug/L	ND	500	500	512	502	101	99	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731873
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3810079 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	10/21/22 09:03	

LABORATORY CONTROL SAMPLE: 3810080

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	226	90	90-110	

SAMPLE DUPLICATE: 3810133

Parameter	Units	92632338001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	13.3	13.0	3	10	

SAMPLE DUPLICATE: 3810134

Parameter	Units	92632337002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	2000	2360	16	10	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731058
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92631787001

SAMPLE DUPLICATE: 3806210

Parameter	Units	92631276001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	10.3	10.3	0	10	E,H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731246
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3806741 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	10/19/22 13:13	

LABORATORY CONTROL SAMPLE: 3806742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3806743 3806744

Parameter	Units	92631547001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	3.7	5	5	8.7	8.7	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3806745 3806746

Parameter	Units	92631633001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	2.0	5	5	7.1	7.2	103	104	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731639
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3808884 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	10/22/22 06:07	

LABORATORY CONTROL SAMPLE: 3808885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3808886 3808887

Parameter	Units	92631326006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	0.81	10	10	12.0	12.3	112	115	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3808888 3808889

Parameter	Units	92631326007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.0	10	10	12.0	11.6	109	106	90-110	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731524
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3808295 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	10/21/22 10:24	

LABORATORY CONTROL SAMPLE: 3808296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.6	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3808297 3808298

Parameter	Units	92631781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.3	2.2	91	89	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3808299 3808300

Parameter	Units	92631781002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.4	2.4	97	94	90-110	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731492
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3808225 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	10/21/22 21:20	

LABORATORY CONTROL SAMPLE: 3808226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.6	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3808227 3808228

Parameter	Units	92631253001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	7.5	2.5	2.5	9.8	9.9	90	96	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3808229 3808230

Parameter	Units	92631253003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	8.7	2.5	2.5	10.6	10.7	75	79	90-110	1	10	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

QC Batch: 731143
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92631787001

METHOD BLANK: 3806536 Matrix: Water
Associated Lab Samples: 92631787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	10/19/22 21:12	

LABORATORY CONTROL SAMPLE: 3806537

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	756	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3806538 3806539

Parameter	Units	92631420003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	3430	100	100	3800	3800	376	367	90-110	0	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3806540 3806541

Parameter	Units	92631420004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	3050	100	100	3370	3390	320	339	90-110	1	3	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY-Revised Report
Pace Project No.: 92631787

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92631787001	**DAL**	EPA 200.7 Rev 4.4 1994	732141	EPA 200.7 Rev 4.4 1994	732194
92631787001	**DAL**	SM 2540D-2011	731873		
92631787001	**DAL**	EPA 9040C	731058		
92631787001	**DAL**	TKN+NO3+NO2 Calculation	737629		
92631787001	**DAL**	EPA 350.1 Rev 2.0 1993	731246		
92631787001	**DAL**	EPA 351.2 Rev 2.0 1993	731639	EPA 351.2 Rev 2.0 1993	732135
92631787001	**DAL**	EPA 353.2 Rev 2.0 1993	731524		
92631787001	**DAL**	EPA 365.1 Rev 2.0 1993	731492	EPA 365.1 Rev 2.0 1993	732114
92631787001	**DAL**	SM 5220D-2011	731143	SM 5220D-2011	731483

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 92631787

92631787

Company: Wood	Billing Information:
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151	Attn: lisa.weisert@woodplc.com
Report To: Benjamin Green	Email To: benjamin.green@woodplc.com
Copy To:	Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA
Customer Project Name/Number: Prince William County/ 151280001.0002.****, ORG 7526, GL Code 5210-00	State: VA County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 703 488 3795 Email: benjamin.green@woodplc.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print):	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: ___ [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day Field Filtered (if applicable): [ ] Yes [ ] No Analysis: ___

Container Preservative Type **: U 1 2 2 U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ___

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/EPA 353.2 NO2+NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH
DAL	OT-Water	Comp	10/14/2022	1100				5	P	X	X	X	X	X

Lab Profile/Line:
Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact
Correct Bottles
Sufficient Volume
Samples Received on Ice
VOA - Headspace Acceptable
USDA Regulated Soils
Samples in Holding Time
Residual Chlorine Present
Cl Strips: 2243
Sample pH Acceptable Y N NA
pH Strips: 223391...
Sulfide Present Y N
Lead Acetate Strips:

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280001.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None
Packing Material Used: None
Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #:
Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 93707
Cooler 1 Temp Upon Receipt: 2.4
Cooler 1 Therm Corr. Factor:
Cooler 1 Corrected Temp: 2.4
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Ilana Tm / [signature]	10/17/22 1700	[signature] /PACE/DAL	10-18-22 1430
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

92631787

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-HUN1-0084 v01_Tech Spec Sample Condition Upon Receipt
	Effective Date: 05/12/2022

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO#: 92631787

PM: SC Due Date: 10/25/22

CLIENT: 92-Amec VA

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG84-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	DG9S-40 mL VOA H2SO4 (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		8P3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AGDU-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2	1																							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Wet Weather Monitoring Report

Fourth Quarter 2022 (October 1 – December 31)
Event Dates: November 11 and November 15

Prepared for:

Prince William County Department of Public Works
5 County Complex Court, Suite 170
Prince William, Virginia 22192

Prepared by:
WSP USA Environment & Infrastructure Solutions, Inc.
4795 Meadow Wood Lane, Suite 310E
Chantilly, VA 20151
(703) 488-3700

January 18, 2023
Project No. 151280002

1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q4 sampling events occurred on November 11, 2022 and November 15, 2022 as well as the findings from the water quality analysis results of the sampling events.

2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate.

SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on November 10th, programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The sample collection at the Manassas site was not successful and a makeup sampling event occurred on November 15th.

Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:

Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right) A R^{\frac{2}{3}} \sqrt{S} \text{ [US]}$$

Q = Flow rate
A = Flow area
V = Avg. velocity
S = Water surface slope
R = Hydraulic Radius
n = Roughness coefficient
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's *n* value of 0.013 was assumed for the concrete pipes[1].
Two sampling programs were implemented to accommodate for different conditions between the sites.

Manassas Sampling Program
The bubbler module does not currently provide accurate water level readings at the Manassas site and fluctuates during static water conditions. WSP recommends replacement of the module for future monitoring events. To accommodate the unreliable equipment readings, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During the November 11th event, the sampler at Manassas was programed to begin collecting at half an inch above base level however, because of the fluctuating readings, the sampler triggered prior to the storm and collected the ponded baseflow.

During the makeup November 15th event, the sampler was deployed closer the beginning of the storm event and was set to trigger at an inch above the base level to ensure that the sampling does not begin prematurely. The sampling was set as a time-paced program to collect discrete samples every 30 minutes, which are then composited into a single container.

Dale City Sampling Program
During the November 11th event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every 40 minutes, which are then composited into a single container.

[1] Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 14:10 on November 15th – 01:40 on November 16th. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) recorded 1.4 inches of precipitation over that period with temperatures ranging from 30 - 47 degrees Fahrenheit. The previous storm event was recorded on November 12th, producing 0.10 inch of precipitation.

SITE #4684; DALE CITY, VA

Sampling occurred from 05:50 – 21:10 on November 11th. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) recorded 0.55 inches of precipitation over this same period. The previous storm event was recorded on November 7th producing 0.09 inch of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on November 16th for Manassas and on November 14th for Dale City.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow rate reached 33.98 cfs and oscillated throughout the course of the storm. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on November 15th

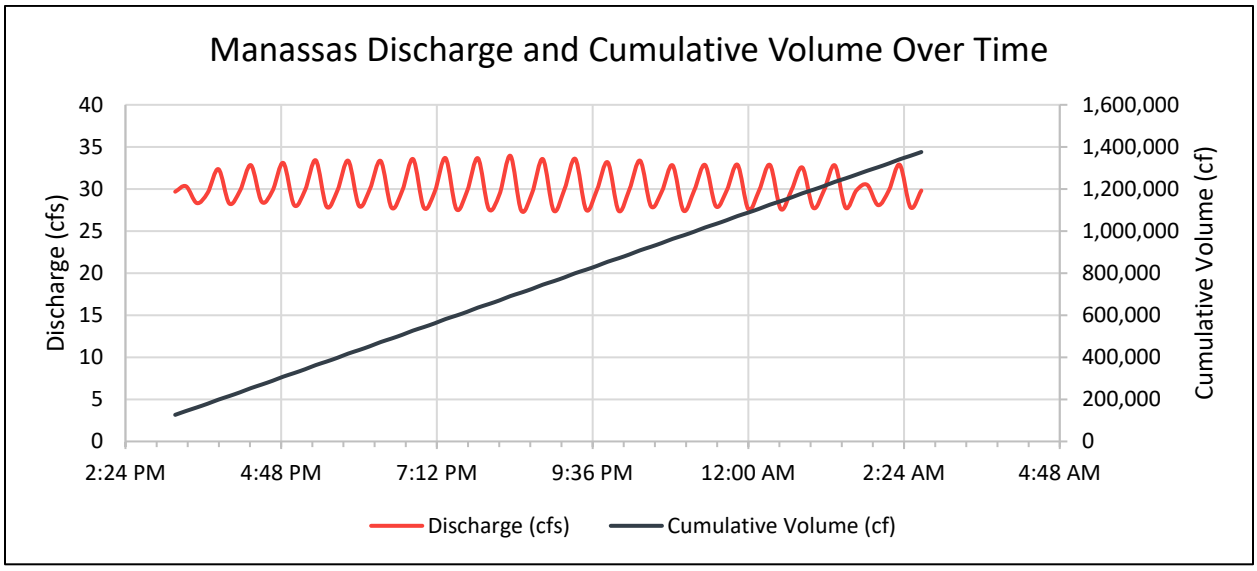

Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	11/15/2022 14:10	17874.9	4.17%	208.45
2	11/15/2022 14:40	17779.1	4.15%	207.34
3	11/15/2022 15:10	17806.4	4.15%	207.65
4	11/15/2022 15:40	17724.4	4.13%	206.70
5	11/15/2022 16:10	17888.6	4.17%	208.61
6	11/15/2022 16:40	17874.9	4.17%	208.45
7	11/15/2022 17:10	17902.3	4.18%	208.77
8	11/15/2022 17:40	17888.6	4.17%	208.61
9	11/15/2022 18:10	17984.7	4.19%	209.73
10	11/15/2022 18:40	17888.6	4.17%	208.61
11	11/15/2022 19:10	17806.4	4.15%	207.65
12	11/15/2022 19:40	17861.2	4.17%	208.29
13	11/15/2022 20:10	17642.6	4.11%	205.74
14	11/15/2022 20:40	17710.8	4.13%	206.54
15	11/15/2022 21:10	17984.7	4.19%	209.73
16	11/15/2022 21:40	17929.7	4.18%	209.09
17	11/15/2022 22:10	17957.2	4.19%	209.41
18	11/15/2022 22:40	17820.1	4.16%	207.81
19	11/15/2022 23:10	17902.3	4.18%	208.77
20	11/15/2022 23:40	17888.6	4.17%	208.61
21	11/16/2022 0:10	17902.3	4.18%	208.77
22	11/16/2022 0:40	17929.7	4.18%	209.09
23	11/16/2022 1:10	17902.3	4.18%	208.77
24	11/16/2022 1:40	17902.3	4.18%	208.77

*5.0 L sample

SITE #4684; DALE CITY, VA

Flow rate reached 0.237 cfs. The apparent oscillation in water level could be a result of the suction line sampling drawing down low flow levels. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Figure 2: Flow data over time for the storm event at Site #4684 on November 11th

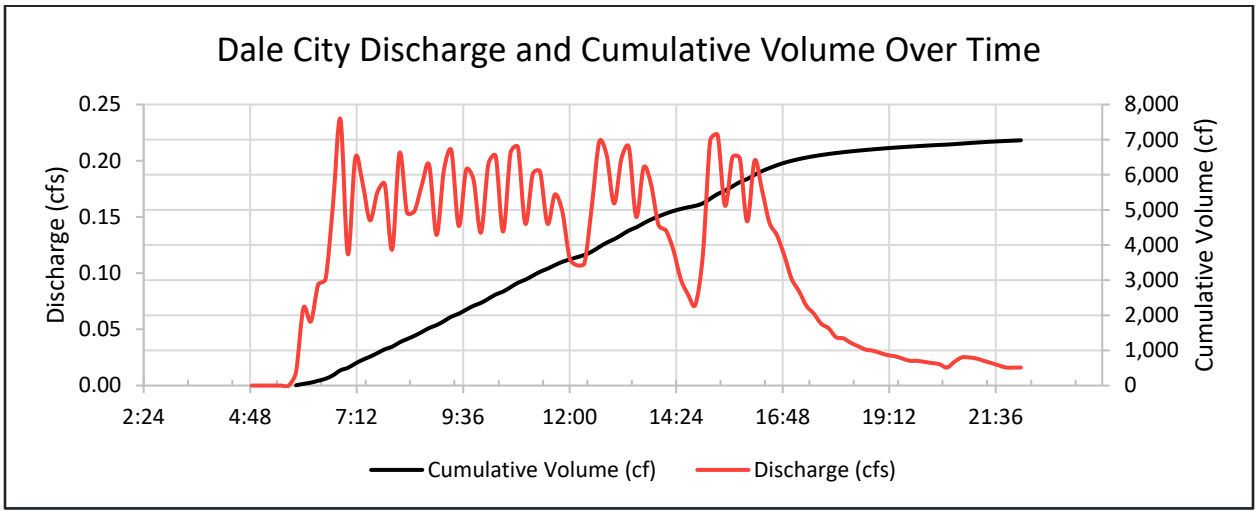

Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	11/11/2022 5:50	7.0536	0.41	20.48
2	11/11/2022 6:30	57.2453	3.32	166.23
3	11/11/2022 7:10	120.92	7.02	351.13
4	11/11/2022 7:50	107.671	6.25	312.66
5	11/11/2022 8:30	93.2388	5.42	270.75
6	11/11/2022 9:10	115.301	6.70	334.82
7	11/11/2022 9:50	109.823	6.38	318.91
8	11/11/2022 10:30	82.2043	4.77	238.71
9	11/11/2022 11:10	112.544	6.54	326.81
10	11/11/2022 11:50	93.2388	5.42	270.75
11	11/11/2022 12:30	95.7353	5.56	278.00
12	11/11/2022 13:10	120.92	7.02	351.13
13	11/11/2022 13:50	107.671	6.25	312.66
14	11/11/2022 14:30	57.2453	3.32	166.23
15	11/11/2022 15:10	130.799	7.60	379.82
16	11/11/2022 15:50	121.49	7.06	352.79
17	11/11/2022 16:30	86.9113	5.05	252.38
18	11/11/2022 17:10	50.2209	2.92	145.83
19	11/11/2022 17:50	30.6675	1.78	89.05
20	11/11/2022 18:30	20.9572	1.22	60.86

*5.0 L sample

3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

Table 3: Analytical Parameters

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

Table 4: Results of Water Quality Analysis

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	23.4	µg/L	2.0	13	a
	Lead	4.6	µg/L	1.0	120	a
	Nickel	2.7	µg/L	1.0	180	a
	Zinc	62.2	µg/L	10.0	120	a
	Total Suspended Solids	45.0	mg/L	2.0	100	b
	Nitrogen, Ammonia	0.12	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	0.96	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.51	mg/L	0.040	-	-
	Total Nitrogen	1.5	mg/L	0.040	2.2	c
	Phosphorus, Total	0.15	mg/L	0.050	2	b
	Chemical Oxygen Demand	68.2	mg/L	25	120	b
	pH	7.2	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	8.1	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	51.9	µg/L	20.0	120	a
	Total Suspended Solids	22.1	mg/L	1.4	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	0.61	mg/L	0.50	-	-
	Nitrogen, NO_2 plus NO_3	0.27	mg/L	0.040	-	-
	Total Nitrogen	0.87	mg/L	0.040	2.2	c
	Phosphorus, Total	0.066	mg/L	0.050	2	b
	Chemical Oxygen Demand	37.0	mg/L	25.0	120	b
	pH	7.1	Std. Units	0.10	6.0-9.0	d

[a] State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.
[b] Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.
[c] The sum of Nitrogen as Ammonia, NO_2, NO_3, and Total Kjeldahl Nitrogen.
[d] Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.
* Values highlighted in red were found to be in exceedance of their respective criterion.
ND = The analyte was not detected above specified reporting limit.

4.0 SUMMARY

As indicated in **Table 4**, an exceedance occurred for Copper at Site #941. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 3: Exceedance Tracking for the Wet Weather Monitoring Program

Manassas (#941)	2016		2017				2018				2019				2020				2021				2022			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Copper	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x		x	x
Lead																										
Nickel																										
Zinc	x		x	x	x	x	x	x							x	x							x	x		
Total Suspended Solids						x	x								x	x							x	x		
Total Nitrogen					x	x	x				x												x	x		
Phosphorus, Total																										
Chemical Oxygen Demand		x				x	x								x								x	x		
pH						x												x								

Dale City (#4684)	2016		2017				2018				2019				2020				2021				2022			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Copper	x		x	x	x	x	x	--		x	x											x	x	x		
Lead								--																		
Nickel								--																		
Zinc			x		x	x	x	--																		
Total Suspended Solids						x		--																		
Total Nitrogen	x	x	x	x		x	x	--			x															
Phosphorus, Total								--																		
Chemical Oxygen Demand						x	x	--																		
pH		x		x		x		--									x					x				

* No sample collected at #4684 during Q2 2018.

APPENDIX A

PHOTO LOG OF SITE CONDITIONS

Wet Weather Monitoring Q4 Report
Prince William County, VA
Photographic Log

Site: Dale City Station

Photo: 1

Date: 11/11/22

Description: Dale City sampler set up.

Site: Dale City Station

Photo: 2

Date: 11/11/22

Description: Dale City outfall. Note Iron-oxidizing bacteria growth in pipe and staining along footing and eroded outlet protection.

Site: Manassas Station

Photo: 3

Date: 11/15/22

Description: Manassas sampler set up.

Site: Manassas Station

Photo: 4

Date: 11/15/22

Description: Manassas outfall with ring installed. Note ponded water and graffiti.

APPENDIX B

WATER QUALITY LABORATORY RESULTS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 29, 2022

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92637434001	**MAN**	Water	11/15/22 10:30	11/17/22 16:30

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92637434001	**MAN**	EPA 200.8 Rev 5.4	DBB1	4	PASI-A
		SM 2540D-2011	MAB2	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	DMN	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	KDF1	1	PASI-A
		EPA 365.1 Rev 2.0 1993	MDW	1	PASI-A
		SM 5220D-2011	JMH1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

Sample: MAN **Lab ID: 92637434001** Collected: 11/15/22 10:30 Received: 11/17/22 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Rev 5.4 Preparation Method: EPA 200.8 Rev 5.4 Pace Analytical Services - Asheville							
Copper	**23.4**	ug/L	2.0	1	11/23/22 09:53	11/28/22 01:41	7440-50-8	
Lead	**4.6**	ug/L	1.0	1	11/23/22 09:53	11/28/22 01:41	7439-92-1	
Nickel	**2.7**	ug/L	1.0	1	11/23/22 09:53	11/28/22 01:41	7440-02-0	
Zinc	**62.2**	ug/L	10.0	1	11/23/22 09:53	11/28/22 01:41	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**45.0**	mg/L	2.0	1		11/18/22 12:40		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		11/26/22 11:04		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**1.5**	mg/L	0.040	1		11/28/22 15:20		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	**0.12**	mg/L	0.10	1		11/18/22 13:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**0.96**	mg/L	0.50	1	11/23/22 19:24	11/24/22 07:18	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.51**	mg/L	0.040	1		11/22/22 07:54		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.15**	mg/L	0.050	1	11/22/22 16:59	11/22/22 22:09	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**68.2**	mg/L	25.0	1	11/23/22 07:33	11/23/22 14:31		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 739033
QC Batch Method: EPA 200.8 Rev 5.4
Analysis Method: EPA 200.8 Rev 5.4
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3845895 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	2.0	11/24/22 13:28	
Lead	ug/L	ND	1.0	11/24/22 13:28	
Nickel	ug/L	ND	1.0	11/24/22 13:28	
Zinc	ug/L	ND	10.0	11/24/22 13:28	

LABORATORY CONTROL SAMPLE: 3845896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	50	50.8	102	85-115	
Lead	ug/L	50	49.9	100	85-115	
Nickel	ug/L	50	50.9	102	85-115	
Zinc	ug/L	50	48.4	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3845897 3845898

Parameter	Units	92636344001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	6630	50	50	6730	6450	211	-357	70-130	4	20	M1
Lead	ug/L	1.4	50	50	49.4	49.3	96	96	70-130	0	20	
Nickel	ug/L	2.2	50	50	52.9	52.5	101	101	70-130	1	20	
Zinc	ug/L	315	50	50	362	361	93	92	70-130	0	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3845899 3845900

Parameter	Units	92637704001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	50	50	51.8	51.5	100	100	70-130	0	20	
Lead	ug/L	ND	50	50	49.4	49.7	98	99	70-130	1	20	
Nickel	ug/L	0.0023 mg/L	50	50	52.6	52.7	101	101	70-130	0	20	
Zinc	ug/L	ND	50	50	60.3	60.8	104	105	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 737934
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3840606 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	11/18/22 12:34	

LABORATORY CONTROL SAMPLE: 3840607

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	242	97	90-110	

SAMPLE DUPLICATE: 3841489

Parameter	Units	92636602002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	460	400	14	10	D6

SAMPLE DUPLICATE: 3841490

Parameter	Units	92637075001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	23.8	25.8	8	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 739352
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92637434001

SAMPLE DUPLICATE: 3847332

Parameter	Units	92637596001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	0	10	H3

SAMPLE DUPLICATE: 3847333

Parameter	Units	92637388002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.1	1	10	H3

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 738009
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3840829 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	11/18/22 12:47	

LABORATORY CONTROL SAMPLE: 3840830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.3	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3840831 3840832

Parameter	Units	92636761001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	9.5	5	5	15.4	15.3	118	117	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3840833 3840834

Parameter	Units	92637118001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.3	5.3	105	105	90-110	0	10	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 739124
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3846404 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	11/24/22 06:43	

LABORATORY CONTROL SAMPLE: 3846405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3846410 3846411

Parameter	Units	92637048002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	4.3	10	10	14.7	14.4	104	100	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3846412 3846413

Parameter	Units	92637048004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	6.1	10	10	16.2	16.8	101	107	90-110	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 738408
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3842703 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	11/22/22 07:13	

LABORATORY CONTROL SAMPLE: 3842704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3842705 3842706

Parameter	Units	92637252013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	4.5	2.5	2.5	6.7	6.7	91	89	90-110	1	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3842707 3842708

Parameter	Units	92637252014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.38	2.5	2.5	2.7	2.8	94	95	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 738556
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3843469 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	11/22/22 21:46	

LABORATORY CONTROL SAMPLE: 3843470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3843471 3843472

Parameter	Units	92636179001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.14	2.5	2.5	2.7	2.7	103	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3843473 3843474

Parameter	Units	92636179002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.23	2.5	2.5	2.9	2.9	105	107	90-110	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

QC Batch: 738933
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92637434001

METHOD BLANK: 3845643 Matrix: Water
Associated Lab Samples: 92637434001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	11/23/22 14:27	

LABORATORY CONTROL SAMPLE: 3845644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	769	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3845645 3845646

Parameter	Units	92637114003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	137	135	121	119	90-110	2	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3845647 3845648

Parameter	Units	92637122001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	130	130	126	126	90-110	0	3	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92637434

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92637434001	**MAN**	EPA 200.8 Rev 5.4	739033	EPA 200.8 Rev 5.4	739192
92637434001	**MAN**	SM 2540D-2011	737934		
92637434001	**MAN**	EPA 9040C	739352		
92637434001	**MAN**	TKN+NO3+NO2 Calculation	739587		
92637434001	**MAN**	EPA 350.1 Rev 2.0 1993	738009		
92637434001	**MAN**	EPA 351.2 Rev 2.0 1993	739124	EPA 351.2 Rev 2.0 1993	739288
92637434001	**MAN**	EPA 353.2 Rev 2.0 1993	738408		
92637434001	**MAN**	EPA 365.1 Rev 2.0 1993	738556	EPA 365.1 Rev 2.0 1993	738942
92637434001	**MAN**	SM 5220D-2011	738933	SM 5220D-2011	739152

WO# : 92637434

92637434

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Wood

Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151

Report To: Ilana Ton

Copy To:

Customer Project Name/Number: Prince William County/ 151280002.0002.**** ORG 7526, GL Code 5210-00

Phone: 703-488-3778

Email: ilana.ton@wsp.com

Collected By (print):

Collected By (signature):

Sample Disposal:
[X] Dispose as appropriate
[ ] Return
[ ] Archive: ____
[ ] Hold:

Billing Information:
Attn: lisa.weisert@wsp.com

Email To: ilana.ton@wsp.com

Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA

State: VA | County/City: | Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET

Site/Facility ID #:

Purchase Order #:
Quote #:

Turnaround Date Required:

Rush: (Expedite Charges Apply)
[ ] Same Day [ ] Next Day
[ ] 2 Day [ ] 3 Day
[ ] 4 Day [X] 5 Day

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:
DW Location Code:

Immediately Packed on Ice: [X] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: ____

Container Preservative Type **: 1, 2

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/EPA 353.2 NO2 + NO3, Total Nitrogen Calculation	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH
MAN	OT-Water	Comp	11/15/2022	10:30				5	P	X	X	X	x	X

Lab Profile/Line:
Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: 3364
Sample pH Acceptable Y N NA
pH Strips: 1001161
Sulfide Present Y N NA
Lead Acetate Strips: ____

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280002.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 1380?1
Cooler 1 Temp Upon Receipt: °C
Cooler 1 Therm Corr. Factor: °C
Cooler 1 Corrected Temp: °C
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Ilana Ton /WSP	11/16/22 1700	T. Perkins / Pace Ane	11/17/22 1630

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Pace Analytical Services	DC#_Title: ENV-FRM-HUN1-0084 v01_Tech Spec Sample Condition Upon Receipt
	Effective Date: 05/12/2022

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO# : 92637434

PM: SC Due Date: 11/28/22

CLIENT: 92-Amec VA

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	DG9S-40 mL VOA H2SO4 (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2 ✓	1 ✓																							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, Incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

December 14, 2022

Ilana Ton
WOOD E&I
4795 Meadow Wood Lane
Suite 310E
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on November 14, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Poulson
sara.poulson@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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CERTIFICATIONS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92636772001	**DAL**	Water	11/12/22 10:45	11/14/22 14:05

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92636772001	**DAL**	EPA 200.7	KC2	4	PASI-O
		SM 2540D-2011	MAB2	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	DMN	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	KDF1	1	PASI-A
		EPA 365.1 Rev 2.0 1993	MDW	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-O = Pace Analytical Services - Ormond Beach

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

Sample: DAL **Lab ID: 92636772001** Collected: 11/12/22 10:45 Received: 11/14/22 14:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Ormond Beach							
Copper	**8.1**	ug/L	5.0	1	12/12/22 08:12	12/13/22 09:48	7440-50-8	
Lead	ND	ug/L	10.0	1	12/12/22 08:12	12/13/22 09:48	7439-92-1	
Nickel	ND	ug/L	5.0	1	12/12/22 08:12	12/13/22 09:48	7440-02-0	
Zinc	**51.9**	ug/L	20.0	1	12/12/22 08:12	12/13/22 09:48	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	**22.1**	mg/L	1.4	1		11/18/22 12:36		
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		11/16/22 12:35		H3
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville							
Total Nitrogen	**0.87**	mg/L	0.040	1		11/22/22 11:15		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	ND	mg/L	0.10	1		11/16/22 12:50	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	**0.61**	mg/L	0.50	1	11/21/22 19:35	11/22/22 04:20	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, NO2 plus NO3	**0.27**	mg/L	0.040	1		11/16/22 11:33		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Phosphorus	**0.066**	mg/L	0.050	1	11/17/22 22:32	11/18/22 19:49	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	**37.0**	mg/L	25.0	1	11/16/22 02:00	11/16/22 05:34		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 878581
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 92636772001

METHOD BLANK: 4834450 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	12/13/22 08:52	
Lead	ug/L	ND	10.0	12/13/22 08:52	
Nickel	ug/L	ND	5.0	12/13/22 08:52	
Zinc	ug/L	ND	20.0	12/13/22 08:52	

LABORATORY CONTROL SAMPLE: 4834451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	250	247	99	85-115	
Lead	ug/L	250	253	101	85-115	
Nickel	ug/L	250	251	100	85-115	
Zinc	ug/L	1250	1250	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4834452 4834453

Parameter	Units	92634898001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	21.3	250	250	281	284	104	105	70-130	1	20	
Lead	ug/L	ND	250	250	250	254	100	101	70-130	1	20	
Nickel	ug/L	ND	250	250	258	260	101	102	70-130	1	20	
Zinc	ug/L	138	1250	1250	1410	1430	102	103	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4834454 4834455

Parameter	Units	92636790002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	30.2	250	250	286	285	102	102	70-130	0	20	
Lead	ug/L	ND	250	250	263	262	103	102	70-130	1	20	
Nickel	ug/L	6.6	250	250	260	260	101	101	70-130	0	20	
Zinc	ug/L	134	1250	1250	1400	1390	101	101	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 737934
QC Batch Method: SM 2540D-2011
Analysis Method: SM 2540D-2011
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92636772001

METHOD BLANK: 3840606 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	11/18/22 12:34	

LABORATORY CONTROL SAMPLE: 3840607

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	242	97	90-110	

SAMPLE DUPLICATE: 3841489

Parameter	Units	92636602002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	460	400	14	10	D6

SAMPLE DUPLICATE: 3841490

Parameter	Units	92637075001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	23.8	25.8	8	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 737213
QC Batch Method: EPA 9040C
Analysis Method: EPA 9040C
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92636772001

SAMPLE DUPLICATE: 3836776

Parameter	Units	92636242001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	1	10	H3

SAMPLE DUPLICATE: 3836777

Parameter	Units	92636242002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	7.0	1	10	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 737352
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92636772001

METHOD BLANK: 3837435 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	11/16/22 12:25	

LABORATORY CONTROL SAMPLE: 3837436

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3837437 3837438

Parameter	Units	92635876002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.17	5	5	5.6	5.6	108	108	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3837439 3837440

Parameter	Units	92635876003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.16	5	5	5.2	5.2	101	101	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 738502
QC Batch Method: EPA 351.2 Rev 2.0 1993
Analysis Method: EPA 351.2 Rev 2.0 1993
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92636772001

METHOD BLANK: 3843117 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	11/22/22 03:46	

LABORATORY CONTROL SAMPLE: 3843118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3843119 3843120

Parameter	Units	92636192002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.3	10	10	11.8	11.3	104	99	90-110	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3843121 3843122

Parameter	Units	92636192003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	2.9	10	10	12.5	12.4	96	96	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 737338
QC Batch Method: EPA 353.2 Rev 2.0 1993
Analysis Method: EPA 353.2 Rev 2.0 1993
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92636772001

METHOD BLANK: 3837375 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	11/16/22 10:58	

LABORATORY CONTROL SAMPLE: 3837376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3837377 3837378

Parameter	Units	92636564001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.68	2.5	2.5	3.1	3.1	98	95	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3837379 3837380

Parameter	Units	92636564002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.56	2.5	2.5	2.9	2.9	93	93	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 737871
QC Batch Method: EPA 365.1 Rev 2.0 1993
Analysis Method: EPA 365.1 Rev 2.0 1993
Analysis Description: 365.1 Phosphorus, Total
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92636772001

METHOD BLANK: 3840264 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	11/18/22 19:31	

LABORATORY CONTROL SAMPLE: 3840265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3840266 3840267

Parameter	Units	92635840001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	7.5	2.5	2.5	10.3	11.4	111	156	90-110	10	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3840268 3840269

Parameter	Units	92635892001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	ND	2.5	2.5	2.6	2.6	103	104	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

QC Batch: 737314
QC Batch Method: SM 5220D-2011
Analysis Method: SM 5220D-2011
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92636772001

METHOD BLANK: 3837345 Matrix: Water
Associated Lab Samples: 92636772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	11/16/22 05:30	

LABORATORY CONTROL SAMPLE: 3837346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	758	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3837347 3837348

Parameter	Units	92636540001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	134	120	127	113	90-110	11	3	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3837349 3837350

Parameter	Units	92636633002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	ND	100	100	118	113	113	109	90-110	4	3	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY
Pace Project No.: 92636772

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92636772001	**DAL**	EPA 200.7	878581	EPA 200.7	878679
92636772001	**DAL**	SM 2540D-2011	737934		
92636772001	**DAL**	EPA 9040C	737213		
92636772001	**DAL**	TKN+NO3+NO2 Calculation	738753		
92636772001	**DAL**	EPA 350.1 Rev 2.0 1993	737352		
92636772001	**DAL**	EPA 351.2 Rev 2.0 1993	738502	EPA 351.2 Rev 2.0 1993	738657
92636772001	**DAL**	EPA 353.2 Rev 2.0 1993	737338		
92636772001	**DAL**	EPA 365.1 Rev 2.0 1993	737871	EPA 365.1 Rev 2.0 1993	738039
92636772001	**DAL**	SM 5220D-2011	737314	SM 5220D-2011	737327

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO#: 92636772

92636772

Company: Wood
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151
Billing Information:
Attn: lisa.weisert@wsp.com
Report To: Ilana Ton
Email To: ilana.ton@wsp.com
Copy To:
Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA
Customer Project Name/Number: Prince William County/ 151280002.0002.**** ORG 7526, GL Code 5210-00
State: VA County/City:
Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 703-488-3778
Email: ilana.ton@wsp.com
Site/Facility ID #:
Compliance Monitoring? [ ] Yes [ ] No
Collected By (print):
Purchase Order #:
Quote #:
DW PWS ID #:
DW Location Code:
Collected By (signature):
Turnaround Date Required:
Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal:
[X] Dispose as appropriate
[ ] Return
[ ] Archive:
[ ] Hold:
Rush: (Expedite Charges Apply)
[ ] Same Day [ ] Next Day
[ ] 2 Day [ ] 3 Day
[ ] 4 Day [X] 5 Day
Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: U | 1 | | 2 | U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3 Total Nitrogen Calculation	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH	Lab Profile/Line
DAL	OT-Water	Comp	11/12/2022	10:45				5	P	X	X	x	x	x	001

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: 2743
Sample pH Acceptable Y N NA
pH Strips: 22
Sulfide Present Y N NA
Lead Acetate Strips:

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:
Prince William County/
151280002.0002.****, ORG 7526, GL Code 5210-00
Pace PM Sara Poulson
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None
Packing Material Used:
Radchem sample(s) screened (<500 cpm): Y N NA
SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #:
Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 93107
Cooler 1 Temp Upon Receipt: °C
Cooler 1 Therm Corr. Factor: °C
Cooler 1 Corrected Temp: °C
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Ilana Ton / WSP	11/14/22 1600		11/14/22 14:05
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

92636772

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-HUN1-0084 v01_Tech Spec Sample Condition Upon Receipt
	Effective Date: 05/12/2022

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

***Check all unpreserved Nitrates for chlorine

Project # **WO# : 92636772**

PM: SC Due Date: 11/21/22

CLIENT: 92-Amec VA

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	DG9S-40 mL VOA H2SO4 (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1			1	2	1																						
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Appendix O

Annual VDOT Coordination Meeting – Participant List

1. Summary	
Meeting title	VDOT - NOVA MS4 Phase I Annual Coordination Meeting
Attended participants	23
Start time	5/12/23, 12:56:00 PM
End time	5/12/23, 2:45:03 PM
Meeting duration	1h 49m 2s
Average attendance time	1h 31m 42s

2. Participants						
Name	First Join	Last Leave	In-Meeting Duration	Email	Participant ID (UPN)	Role
Normand Goulet	5/12/23, 12:58:36 PM	5/12/23, 2:40:10 PM	1h 41m 33s	NGoulet@novaregion.org	NGoulet@novaregion.org	Organizer
Canizales, Hannah	5/12/23, 12:58:42 PM	5/12/23, 2:40:08 PM	1h 41m 25s	HCanizales@pwcgov.org	HCanizales@pwcgov.org	Presenter
Foraste, Alex (VDOT)	5/12/23, 12:58:47 PM	5/12/23, 2:40:06 PM	1h 41m 19s	Alex.Foraste@vdot.virginia.gov	Alex.Foraste@vdot.virginia.gov	Presenter
Parfitt, Joe (VDOT)	5/12/23, 12:58:53 PM	5/12/23, 2:40:05 PM	1h 41m 12s	Joseph.Parfitt@vdot.virginia.gov	Joseph.Parfitt@vdot.virginia.gov	Presenter
Teran, Luis	5/12/23, 12:59:01 PM	5/12/23, 2:40:16 PM	1h 41m 14s	Luis.Teran@fairfaxcounty.gov	Luis.Teran@fairfaxcounty.gov	Presenter
Crafton, Scott (VDOT)	5/12/23, 12:59:18 PM	5/12/23, 1:05:24 PM	6m 5s	Scott.Crafton@vdot.virginia.gov	Scott.Crafton@vdot.virginia.gov	Presenter
Hurd, Martin	5/12/23, 12:59:44 PM	5/12/23, 2:40:09 PM	1h 40m 24s	Martin.Hurd@fairfaxcounty.gov	martin.hurd@fairfaxcounty.gov	Presenter
Allie Wagner	5/12/23, 12:59:51 PM	5/12/23, 2:40:08 PM	1h 40m 16s	awagner@novaregion.org	awagner@novaregion.org	Presenter
Lightfoot, Jennifer "J.." (VDOT)	5/12/23, 1:00:44 PM	5/12/23, 2:40:08 PM	1h 39m 23s	Jennifer.Lightfoot@vdot.virginia.gov	Jennifer.Lightfoot@vdot.virginia.gov	Presenter
Janet Vick	5/12/23, 1:00:48 PM	5/12/23, 2:39:43 PM	1h 38m 55s	Jvick@arlingtonva.us	Jvick@arlingtonva.us	Presenter
Eib, Benjamin A.	5/12/23, 1:00:50 PM	5/12/23, 2:40:10 PM	1h 39m 20s	BEib@pwcgov.org	BEib@pwcgov.org	Presenter
Meritt, Jack K.	5/12/23, 1:01:11 PM	5/12/23, 2:40:12 PM	1h 39m	Jack.Meritt@fairfaxcounty.gov	Jack.Meritt@fairfaxcounty.gov	Presenter
McCarthy, Christopher	5/12/23, 1:01:12 PM	5/12/23, 2:41:49 PM	1h 40m 37s	Christopher.Mccarthy@fairfaxcounty.gov	Christopher.Mccarthy@fairfaxcounty.gov	Presenter
Fults, Michelle (VDOT)	5/12/23, 1:01:38 PM	5/12/23, 2:40:25 PM	1h 38m 47s	Michelle.Fults@vdot.virginia.gov	Michelle.Fults@vdot.virginia.gov	Presenter
Jason Papacosma	5/12/23, 1:02:25 PM	5/12/23, 2:40:11 PM	1h 37m 46s	Jpapacosma@arlingtonva.us	Jpapacosma@arlingtonva.us	Presenter
Dong, Kun (VDOT)	5/12/23, 1:02:41 PM	5/12/23, 2:40:07 PM	1h 37m 26s	Kun.Dong@vdot.virginia.gov	Kun.Dong@vdot.virginia.gov	Presenter
Burton, Emily	5/12/23, 1:03:27 PM	5/12/23, 2:40:09 PM	1h 36m 41s	Emily.Burton2@fairfaxcounty.gov	emily.burton2@fairfaxcounty.gov	Presenter
Mohan, Madan	5/12/23, 1:03:41 PM	5/12/23, 2:45:03 PM	1h 41m 22s	mmohan@pwcgov.org	mmohan@pwcgov.org	Presenter
Felton, Joe (VDOT)	5/12/23, 1:03:55 PM	5/12/23, 2:40:07 PM	1h 36m 11s	Joe.Felton@vdot.virginia.gov	Joe.Felton@vdot.virginia.gov	Presenter
Torgersen, Catherine S	5/12/23, 1:03:56 PM	5/12/23, 2:26:42 PM	1h 22m 46s	Catherine.Torgersen@fairfaxcounty.gov	Catherine.Torgersen@fairfaxcounty.gov	Presenter
Cannon, Takisha	5/12/23, 1:12:53 PM	5/12/23, 2:40:07 PM	1h 27m 14s	Takisha.Cannon@fairfaxcounty.gov	Takisha.Cannon@fairfaxcounty.gov	Presenter
Carroll, Marian (VDOT)	5/12/23, 1:16:00 PM	5/12/23, 2:40:09 PM	1h 21m 52s	Marian.Carroll@vdot.virginia.gov	Marian.Carroll@vdot.virginia.gov	Presenter
Venetsanos, Yeoanny	5/12/23, 1:41:53 PM	5/12/23, 2:40:07 PM	58m 13s	Yeoanny.Venetsanos@fairfaxcounty.gov	yeoanny.venetsanos@fairfaxcounty.gov	Presenter

3. In-Meeting Activities					
Name	Join Time	Leave Time	Duration	Email	Role
Normand Goulet	5/12/23, 12:58:36 PM	5/12/23, 2:40:10 PM	1h 41m 33s	NGoulet@novaregion.org	Organizer
Canizales, Hannah	5/12/23, 12:58:42 PM	5/12/23, 2:40:08 PM	1h 41m 25s	HCanizales@pwcgov.org	Presenter
Foraste, Alex (VDOT)	5/12/23, 12:58:47 PM	5/12/23, 2:40:06 PM	1h 41m 19s	Alex.Foraste@vdot.virginia.gov	Presenter
Parfitt, Joe (VDOT)	5/12/23, 12:58:53 PM	5/12/23, 2:40:05 PM	1h 41m 12s	Joseph.Parfitt@vdot.virginia.gov	Presenter
Teran, Luis	5/12/23, 12:59:01 PM	5/12/23, 2:40:16 PM	1h 41m 14s	Luis.Teran@fairfaxcounty.gov	Presenter
Crafton, Scott (VDOT)	5/12/23, 12:59:18 PM	5/12/23, 1:05:24 PM	6m 5s	Scott.Crafton@vdot.virginia.gov	Presenter
Hurd, Martin	5/12/23, 12:59:44 PM	5/12/23, 2:40:09 PM	1h 40m 24s	Martin.Hurd@fairfaxcounty.gov	Presenter
Allie Wagner	5/12/23, 12:59:51 PM	5/12/23, 2:40:08 PM	1h 40m 16s	awagner@novaregion.org	Presenter
Lightfoot, Jennifer "J.." (VDOT)	5/12/23, 1:00:44 PM	5/12/23, 2:40:08 PM	1h 39m 23s	Jennifer.Lightfoot@vdot.virginia.gov	Presenter
Janet Vick	5/12/23, 1:00:48 PM	5/12/23, 2:39:43 PM	1h 38m 55s	Jvick@arlingtonva.us	Presenter
Eib, Benjamin A.	5/12/23, 1:00:50 PM	5/12/23, 2:40:10 PM	1h 39m 20s	BEib@pwcgov.org	Presenter
Meritt, Jack K.	5/12/23, 1:01:11 PM	5/12/23, 2:40:12 PM	1h 39m	Jack.Meritt@fairfaxcounty.gov	Presenter
McCarthy, Christopher	5/12/23, 1:01:12 PM	5/12/23, 2:41:49 PM	1h 40m 37s	Christopher.Mccarthy@fairfaxcounty.gov	Presenter
Fults, Michelle (VDOT)	5/12/23, 1:01:38 PM	5/12/23, 2:40:25 PM	1h 38m 47s	Michelle.Fults@vdot.virginia.gov	Presenter
Jason Papacosma	5/12/23, 1:02:25 PM	5/12/23, 2:40:11 PM	1h 37m 46s	Jpapacosma@arlingtonva.us	Presenter
Dong, Kun (VDOT)	5/12/23, 1:02:41 PM	5/12/23, 2:40:07 PM	1h 37m 26s	Kun.Dong@vdot.virginia.gov	Presenter
Burton, Emily	5/12/23, 1:03:27 PM	5/12/23, 2:40:09 PM	1h 36m 41s	Emily.Burton2@fairfaxcounty.gov	Presenter
Mohan, Madan	5/12/23, 1:03:41 PM	5/12/23, 2:45:03 PM	1h 41m 22s	mmohan@pwcgov.org	Presenter
Felton, Joe (VDOT)	5/12/23, 1:03:55 PM	5/12/23, 2:40:07 PM	1h 36m 11s	Joe.Felton@vdot.virginia.gov	Presenter
Torgersen, Catherine S	5/12/23, 1:03:56 PM	5/12/23, 2:26:42 PM	1h 22m 46s	Catherine.Torgersen@fairfaxcounty.gov	Presenter
Cannon, Takisha	5/12/23, 1:12:53 PM	5/12/23, 2:40:07 PM	1h 27m 14s	Takisha.Cannon@fairfaxcounty.gov	Presenter
Carroll, Marian (VDOT)	5/12/23, 1:16:00 PM	5/12/23, 1:38:00 PM	21m 59s	Marian.Carroll@vdot.virginia.gov	Presenter
Carroll, Marian (VDOT)	5/12/23, 1:40:15 PM	5/12/23, 2:40:09 PM	59m 53s	Marian.Carroll@vdot.virginia.gov	Presenter
Venetsanos, Yeoanny	5/12/23, 1:41:53 PM	5/12/23, 2:40:07 PM	58m 13s	Yeoanny.Venetsanos@fairfaxcounty.gov	Presenter

Appendix P

Biological Monitoring Report

Benthic Macroinvertebrate Population and Water Quality Monitoring Report

Fall 2022

Prepared for:

Prince William County Department of Public Works
5 County Complex Court, Suite 170
Prince William, Virginia 22192

Prepared by:
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(703) 488-3700

Submitted January 18, 2023
Project No. 151280002

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LIST OF ACRONYMS

BI	Biotic Index
°C	Degrees Celsius
CWA	Clean Water Act
DO	Dissolved Oxygen
E. coli	*Escherichia coli*
EPT	Ephemeroptera/Plecoptera/Trichoptera
m	Meter
mg/L	Milligrams per Liter
µS/cm	Microsiemens per Centimeter
MPN/100mL	Most Probable Number of Coliform per 100 Milliliters
m/s	Meters per Second
MS4	Municipal Separate Storm Sewer System
NTU	Nephelometric Turbidity Units
PMA	Percent Model Affinity
RBP	USEPA Rapid Bioassessment Protocol
SU	Standard Units
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VDEQ	Virginia Department of Environmental Quality
VSCI	Virginia Stream Condition Index
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION

WSP Environment & Infrastructure Solutions, Inc. (WSP) has prepared this report for ongoing benthic macroinvertebrate sampling for compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Permit, Municipal Separate Storm Sewer System (MS4) Permit Number VA0088595, issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report presents the results of the 2022 Fall sampling event, which was conducted in accordance with the *Sampling Plan for Benthic Macroinvertebrate Population and Water Quality Monitoring* (Sampling Plan) (Amec Foster Wheeler 2015). This report provides detailed descriptions of the sampling and analysis activities conducted, as well as the water quality analytical results and benthic macroinvertebrate results for the Fall 2022 monitoring.

1.1 Background

The U.S. Environmental Protection Agency (USEPA) delegated the authority to implement Section 402 of the Clean Water Act (CWA) to the Commonwealth of Virginia on March 31, 1975. Subsequently, Section 62.1-44.15:25 of the Virginia Stormwater Management Act authorizes VDEQ to issue, deny, amend, revoke, terminate, and enforce permits for the control of stormwater discharges from MS4s. The VSMP Permit Number VA0088595 authorizes point source discharges of stormwater runoff and certain non-stormwater discharges from the MS4 operated or owned by Prince William County. Part I.C of the VSMP permit outlines the monitoring requirements guided by Section 9VAC25-870-380 C.2.c.(4) of the VSMP regulations. As stipulated in the permit, benthic macroinvertebrate and surface water monitoring is conducted at five locations in Prince William County:

- Cow Branch (PC 20)
- Dawkins Branch (PC 30)
- Little Bull Run (PC 90)
- Neabsco Creek (PC 60)
- Purcell Branch (PC 10)

A site locations map and site sampling location maps can be found in Figures 1 through 6.

1.2 Purpose

The purpose of this sampling report is to provide data that will be used to comply with the biological stream (Part I.C.1) and in-stream monitoring (Part I.C.2) requirements outlined in Prince William County's permit. The specific objectives are to gather sufficient data to evaluate, and subsequently demonstrate, the effectiveness of upstream best management practices. The results presented in this report will be compared to baseline conditions to evaluate trends in benthic health and stream ecosystem conditions at each site.

2.0 METHODS

The Fall 2022 sample collection occurred from October 17 to 19, 2022 in accordance with the Sampling Plan. Benthic macroinvertebrate and surface water samples were collected by WSP personnel from five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch (Figures 1 through 6).

The field team prepared Physical Characterization/Water Quality Field Data Sheets and Habitat Assessment Field Data Sheets for High Gradient Streams, as specified in USEPA Rapid Bioassessment Protocol (RBP) (Barbour et al. 1999; Appendix A). In-situ water quality data were collected using a YSI 556 water quality meter for dissolved oxygen (DO), pH, conductivity, and temperature. Turbidity was measured using a LaMotte 2020e meter in Nephelometric Turbidity Units (NTU).

Approximate stream width, water depth, and transparency (as measured with a Secchi disk) were measured in meters (m). Water velocity was measured using the Float Ball method in meters per second (m/s). Upstream and downstream photographs were also taken for each site (Appendix A). Grab water samples were collected for ammonia, *Escherichia coli* (*E. coli*), nitrate/nitrite, orthophosphate, total Kjeldahl nitrogen (TKN), total nitrogen, total phosphorus, and total suspended solids (TSS) analyses.

Benthic macroinvertebrate sampling was conducted in accordance with the Sampling Plan. The multiple habitat sampling method was used for each of the sites. This method consists of a total of 20 jabs or kicks, taken from each major habitat type in the reach. Benthic macroinvertebrate samples were placed on ice in coolers and shipped overnight to WSP's benthic macroinvertebrate laboratory in Gainesville, Florida. The laboratory sorted, mounted, identified, enumerated, evaluated, and classified benthic macroinvertebrates according to Section 7.2 of the RBP (Barbour et al. 1999). Eight metrics were calculated including the Hilsenhoff Biotic Index (HBI) (1987); the Percent Model Affinity (PMA) from Novak and Bode (1992); and the Virginia Stream Condition Index (VSCI) using guidance from TetraTech (2003) and VDEQ (2008).

It should be noted that HBI, PMA, and VSCI represent various ways to assess stream condition; as a result, score categories will not always agree among assessments. HBI estimates the overall tolerance of the community in a sampled area, weighted by the relative abundance of each taxonomic group (e.g., family), and the group's predetermined tolerance level. PMA is an index of percentage similarity, used to measure the affinity of various metrics (e.g., species richness) from the sample reach to that of the expected model community. VSCI is an index designed specifically for streams and small rivers in Virginia. The index utilizes eight scoring metrics, comparing monitored site metrics to the metrics of a designated reference condition.

3.0 RESULTS

The Fall 2022 sampling was conducted from October 17 to 19, 2022 in accordance with the Sampling Plan and is summarized in the following sections.

3.1 Field Condition and Parameter Results

Assessing physical habitat quality is an integral component of the final evaluation of impairment. The RBP matrix used to assess habitat quality is based on 10 visual physical characteristics of the waterbody and surrounding land, particularly the catchment of the site under investigation. The habitat parameters evaluated are related to overall aquatic life use and are a potential source of limitation to the aquatic biota; the scoring of each of these characteristics is included as page 4 of the site datasheets in Appendix A, while score totals and the resulting condition categories are summarized in Table 1 for the Fall 2022 event. The RBP defines the following condition categories based on the physical habitat characterization scores, to determine the ability of the habitat to support an optimal biological community:

151-200	Optimal	The physical habitat present meets natural expectations and is capable of supporting an optimal benthic community.
101-150	Suboptimal	Physical habitat is less than desirable but satisfies expectations under most circumstances to support a benthic community.
51-100	Marginal	Physical habitat has moderate levels of degradation, with a severity at frequent intervals throughout the reach, which limit the capability of supporting a benthic community.
0-50	Poor	Physical habitat has been substantially altered with severe degradation to characteristics that would support a benthic community.

Water quality is also an integral component of stream evaluation and the ability of a stream to support biological communities. Surface waters should meet Virginia's Water Quality Standards, as outlined in Section 9VAC25-260. However, these standards represent limits not to be exceeded. For a general comparison, the following bullets summarize typical conditions for piedmont streams.

- A pH range of 6.5 to 8.0 standard units (SU) is optimal for most organisms, as a pH outside this range reduces the diversity in the stream because it stresses the physiological systems of most organisms and can reduce reproduction.
- Distilled water has conductivity in the range of 0.5 to 3 microsiemens per centimeter (µS/cm). The conductivity of streams generally ranges from 0 to 1,500 µS/cm, while studies of inland fresh waters indicate that streams supporting mixed fisheries have a range between 50 and 500 µS/cm.
- Temperature affects feeding, reproduction and metabolism of aquatic animals. A week or two of high temperatures may make a stream unsuitable for sensitive aquatic

organisms; the maximum temperature of nontidal (piedmont) streams should not exceed 32 degrees Celsius (°C).

- DO is an important measure of stream water quality, as aquatic organisms need DO to live. DO in the water varies greatly with stream characteristics, temperature, and time, but a minimal DO level of 5 milligrams per liter (mg/L) is usually required to maintain healthy growth and activity.
- Turbidity is a measure of water clarity, and though Virginia water quality standards do not include guidelines for turbidity. As a general guide, water begins to appear cloudy when the turbidity is greater than 5 NTU.

3.1.1 Fall 2022

RBP physical habitat assessment scores ranged from 101 (Purcell Branch) to 153 (Neabsco Creek). The scores indicated that four sites exhibited suboptimal habitat, and Neabsco Creek exhibited optimal habitat for supporting benthic communities.

As shown in Table 1, the physical water quality characteristics of the five sites meet the typical water quality conditions described above.

Table 1. Fall 2022 Field Condition and Parameter Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Assessment/ Characterization Score	--	144	144	122	153	101
RBP Habitat Condition Category	--	Suboptimal	Suboptimal	Suboptimal	Optimal	Suboptimal
pH	SU	7.15	7.82	7.77	7.32	7.79
Specific Conductance	µS/cm	256	364	491	180	246
Temperature	°C	10.09	17.8	15.51	9.87	12.23
DO	mg/L	11.73	9.1	9.11	11.66	10.71
Turbidity	NTU	2.33	2.28	0.99	0.51	1.39
Water Depth	m	0.15	0.15	0.10	0.18	0.24
Secchi Depth	m	0.15	0.15	0.10	0.18	0.24
Reach Length	m	100	100	100	100	100
Reach Width	m	3.35	7.32	7.77	4.66	8.23
Surface Velocity	m/s	0.079	0.34	2.32	0.30	2.04

Abbreviations:
SU = Standard Unit
µS/cm = Microsiemens per Centimeter
°C = degrees Celsius
mg/L = milligrams per liter
NTU = Nephelometric Turbidity Units
m = meters
m/s = meters per second

Prepared by: INT
Checked by: CCD

3.2 Water Quality Laboratory Results

The laboratory analytical reports are provided in Appendix B. As mentioned in the previous section, following bullets represent typical conditions provide a general indication of stream health.

- Ammonia is toxic to fish and other types of aquatic life. Ammonia's toxicity depends on both the temperature and pH of the water, but chronic levels above 3.0 mg/L exceed water quality standards.
- *E. coli* can be used as an indicator of stream impairment from sewage and animal waste. The Virginia Water Quality Standard is 126 most probable number of coliform per 100 milliliters (MPN/100mL).
- Nitrate stimulates plant growth, and excessive plant growth can impact DO levels. Streams in areas with little human impact have less than 0.6 mg/L nitrate.
- Phosphates act as a nutrient for plant growth similar to nitrate. Streams in areas with little human impact have less than 0.1 mg/L. There is no Virginia Water Quality Standard for phosphate. Orthophosphate serves as an indicator of biologically available Phosphorus within streams.
- TKN is the sum of organic nitrogen, ammonia, and ammonium. Though there is no Virginia Water Quality Standard for TKN, it can be used as an indicator for stream impairment.
- There are no Virginia Water Quality standards for total phosphorus or nitrogen. However, total phosphorus levels higher than 0.1 mg/L may stimulate plant growth sufficiently to surpass natural growth rates. Levels in excess of 0.1 mg/L indicate a potential human source such as industrial soaps, sewage, fertilizers, disturbance of soil, animal waste, or industrial effluent.
- TSS, similar to turbidity, is a quantitative measurement of sediment and other particles found in surface water. Though there is no Virginia Water Quality Standard for TSS, it can be used as an indicator for erosion and sedimentation.

3.2.1 Fall 2022

As shown in Table 2, the water quality results for the five sites meet the typical water quality conditions described above, with the exception of elevated *E. coli* levels recorded at Cow Branch. Samples at this site exceed the Virginia Water Quality Standard of 126 MPN/100mL. Elevated *E. coli* levels are typically associated with sewage and animal waste. The weather station at Fort Belvoir (KDAA) recorded approximately 0.39 inches of precipitation on October 14, and 0.11 inches of precipitation on October 17, which may account for elevated levels within the streams. Also notable, nitrate + nitrite at Purcell Branch is above the threshold that may indicate human impact to the stream. While this is not an exceedance of a Virginia water quality standard, it indicates increased potential for excessive plant growth impacting DO levels.

Table 2. Fall 2022 Water Quality Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Ammonia as N	mg/L	0.02	0.03	0.02	<0.01	0.01
E. coli	MPN/100mL	**461**	38.6	46.4	4.1	50.4
Nitrate+Nitrite	mg/L	0.21	0.04	0.53	<0.01	0.97
Orthophosphate as P	mg/L	<0.01	0.2	0.02	0.011	0.08
TKN	mg/L	0.62	<0.5	<0.5	1.99	<0.5
Total Phosphorus	mg/L	0.01	0.03	0.04	0.01	0.09
TSS	mg/L	<1.0	3.8	<1.0	<1.0	<1.0

Abbreviations: *Prepared by: INT*
< = not detected at the associated reporting limit *Checked by: CCD*
mg/L = milligrams per liter
***bold** indicates a result exceeding the VA water quality standards*

The laboratory analytical report for the Fall 2022 sampling is provided in Appendix B.

3.3 Benthic Macroinvertebrate Results

Terms such as “tolerant” and “intolerant” taxa are used to describe benthic communities in this document without the negative or positive lay connotations of such language. Tolerant taxa are benthic species adapted to survive in a broad range of environmental conditions, whereas intolerant taxa are adapted to more limited range of environmental conditions. The term “impairment” has a negative connotation with its lay usage; in this document, the term is used to describe the nature and composition of a benthic community. The scientific “impairment” conditions are classified into four categories:

No Impairment	Similar to the reference conditions; the benthic community is of excellent quality.
Slight Impairment	Sustaining a diverse and abundant benthic community with some intolerant taxa; the benthic community is of good quality.
Moderate Impairment	Not having a highly diverse and abundant community, but having taxa present in several major groups, generally a few intolerant taxa and one taxa being dominant; the community has been impacted.
Severe Impairment	Few, if any, benthic invertebrate taxa are present, all tolerant taxa, low diversity, and often one taxa is very abundant; the benthic community has been severely impacted.

WSP's laboratory sorted and identified the organisms in the benthic macroinvertebrate samples and provided a report dated December 13, 2022 for the Fall 2022 sampling event that is included in Appendix C. The results of the sampling are provided in Table 3 below and summarized in this section.

3.3.1 Fall 2022

A total of 92 taxa were identified from the fall samples. Among the five sites, taxa richness ranged from 26 to 49, while abundance ranged from 192 to 239. EPT taxa ranged from 3 to 9 among the sites.

The percentage of the top taxa ranged from 22.59 to 39.06%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 43.23 to 61.62%.

The HBI ranged from 5.77 to 6.39 for the sites, with a corresponding HBI Category score of "Fair". The PMA ranged from 23.18 to 62.36 for the sites, indicating levels of impactedness ranging from "Severely Impacted" at Cow Branch, Dawkins Branch, and Neabsco Creek, to "Slightly Impacted" at Little Bull Run.

Results from the calculation of the VSCI for the individual sample sites ranged from 50.07 (Dawkins Branch) to 68.76 (Little Bull Run).

Table 3. Fall 2022 Benthic Macroinvertebrate Results.

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	26	33	49	28	35
Abundance	239	198	229	192	210
EPT Index	9	3	9	9	8
EPT/EPT+ Chironomidae	0.95	0.36	0.69	0.95	0.86
Percent Dominant Taxon	22.59	34.85	27.51	39.06	32.86
Percent Chironomidae	4.18	4.55	12.66	3.65	10.48
BI	5.77	6.39	5.92	6.30	5.92
BI Category	Fair	Fair	Fair	Fair	Fair
PMA	23.18	32.07	62.36	27.29	42.62
PMA Category	Severely Impacted	Severely Impacted	Slightly Impacted	Severely Impacted	Moderately Impacted
VSCI	57.02	50.07	68.76	53.68	63.35
VSCI Category	Stress	Stress	Good	Stress	Good

Abbreviations:
BI = Biotic Index
EPT = Ephemeroptera, Plecoptera, and Trichoptera
PMA = percent model affinity
VSCI = Virginia Stream Condition Index

Prepared by: INT
Checked by: CCD

4.0 SUMMARY AND CONCLUSION

Measured field and laboratory water quality parameters are generally within the normal ranges for shallow, cool, turbulent, piedmont Virginia streams, and generally meet Virginia's Water Quality Standards, as outlined in Section 3, with the exception of *E. coli* at Cow Branch. RBP physical habitat assessment scores indicated that four sites exhibited suboptimal habitat, and Neabsco Creek exhibited optimal habitat for supporting benthic communities.

A full comparison of the measured field parameters, water quality parameters, and habitat and benthic community results to the baseline sampling results will be provided in the full Benthic Macroinvertebrate Population and Water Quality Monitoring Report following the Spring 2023 sampling which is targeted to be conducted in April 2023. Monitoring efforts will be targeted to avoid collection periods following storm events to characterize the benthos and ambient water quality conditions.

5.0 REFERENCES

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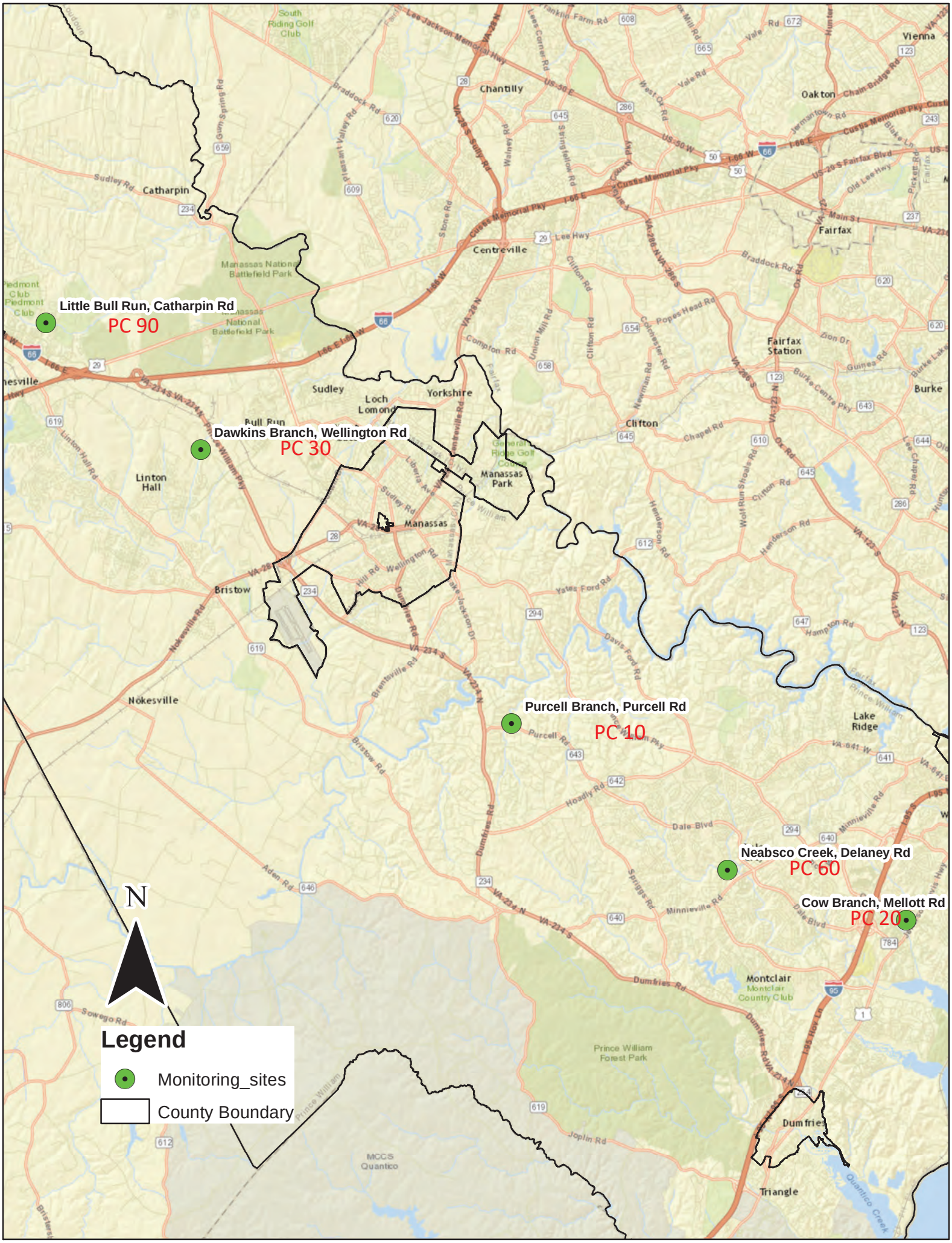
FIGURES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PC 90
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PC 30
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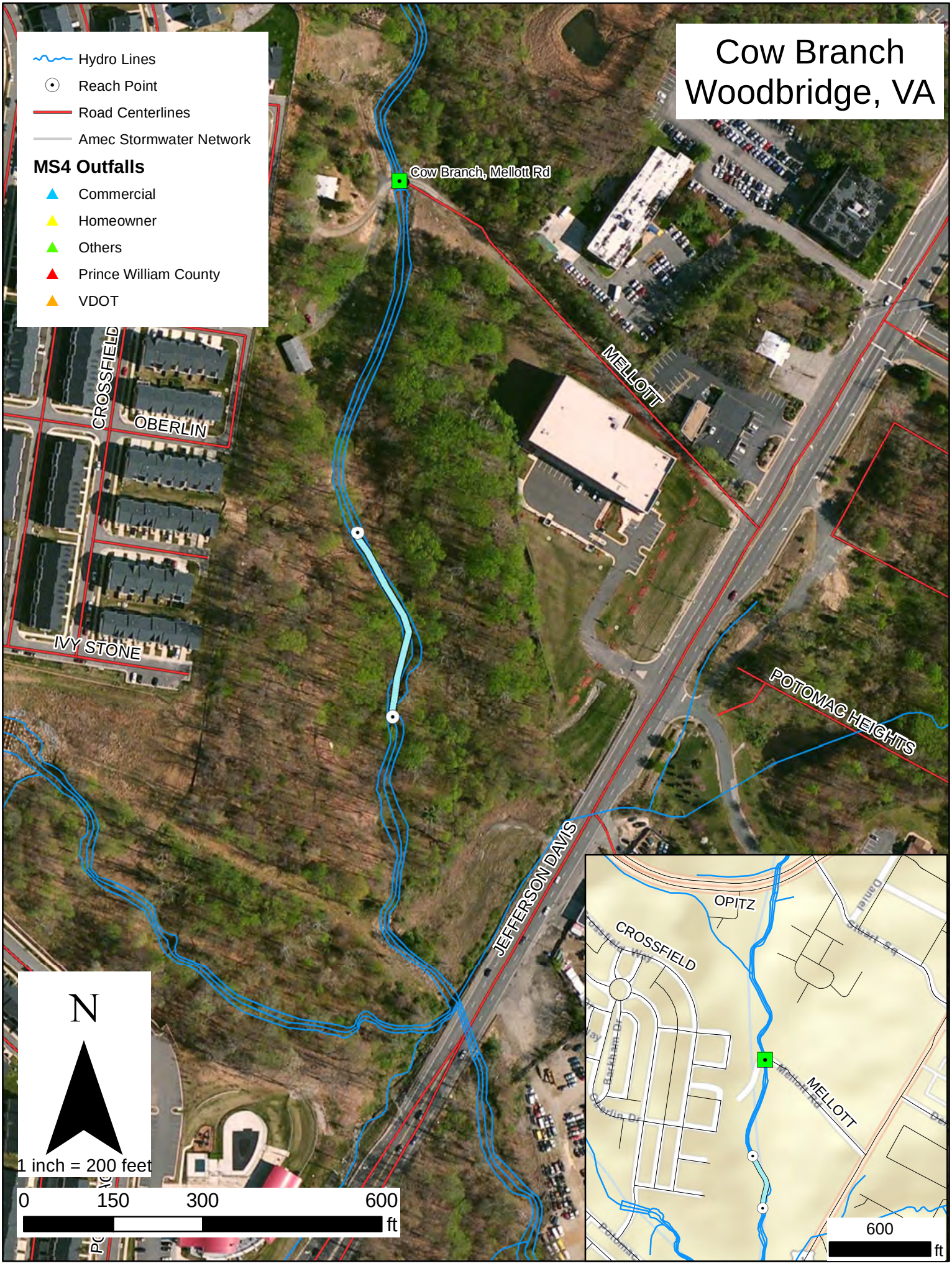
PC 10
Neabsco Creek, Delaney Rd
PC 60
Cow Branch, Mellott Rd
PC 20
N
Legend
Monitoring_sites
County Boundary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CROSSFIELD
OBERLIN
IVY STONE
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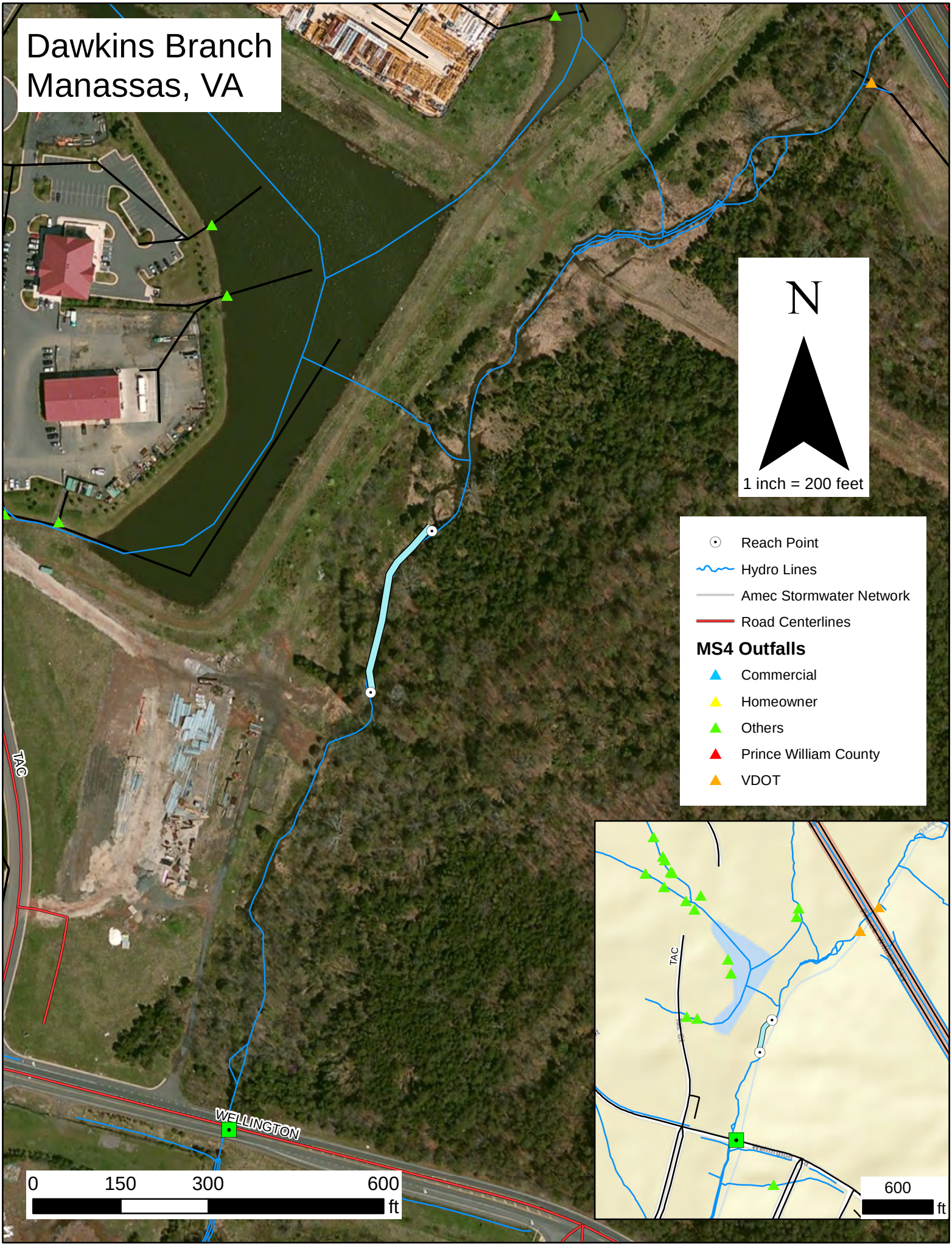
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Little Bull Run
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PIEDMONT VISTA
SNICKERSVILLE
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Reach Point
Hydro Lines
Amec Stormwater Network
Road Centerlines
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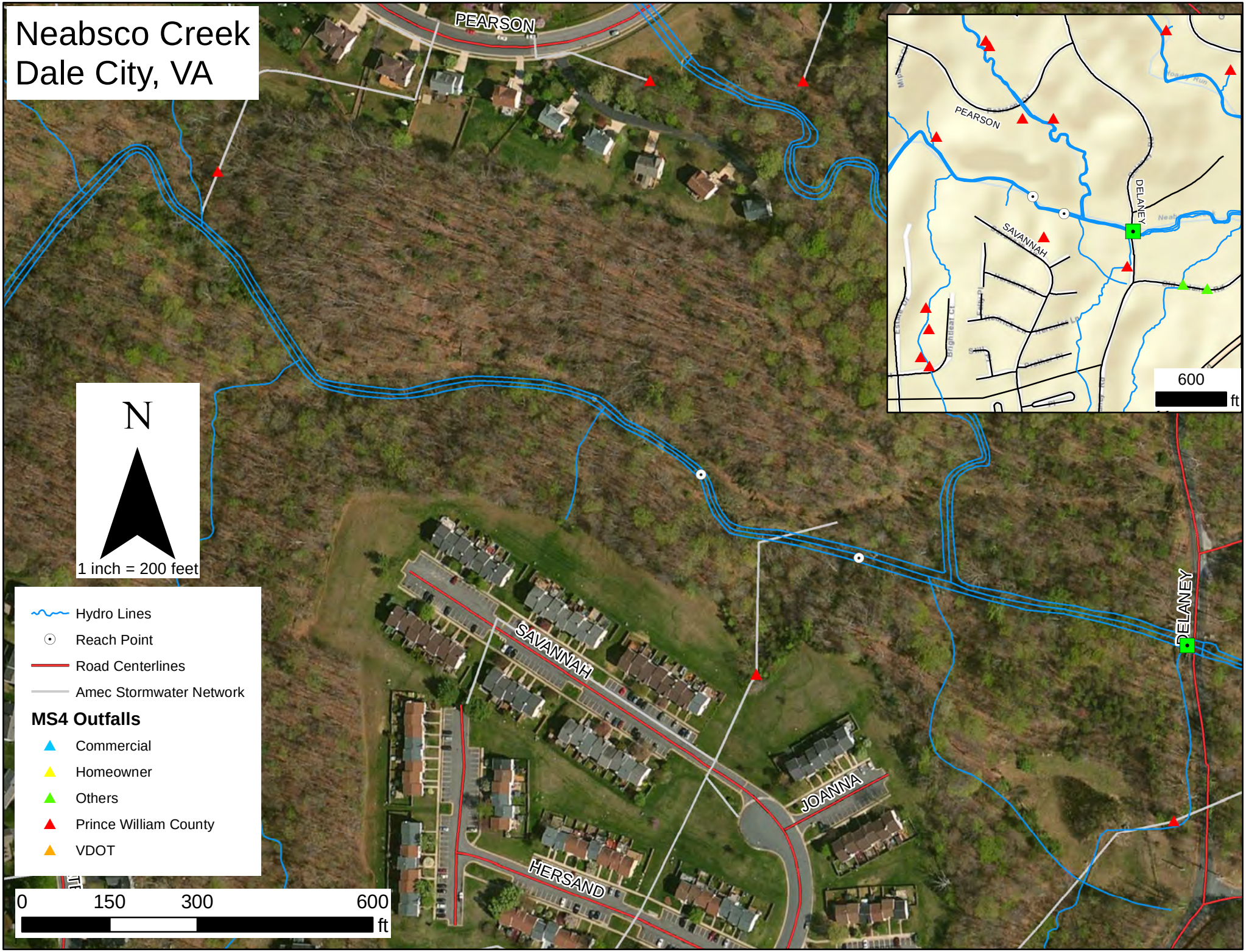
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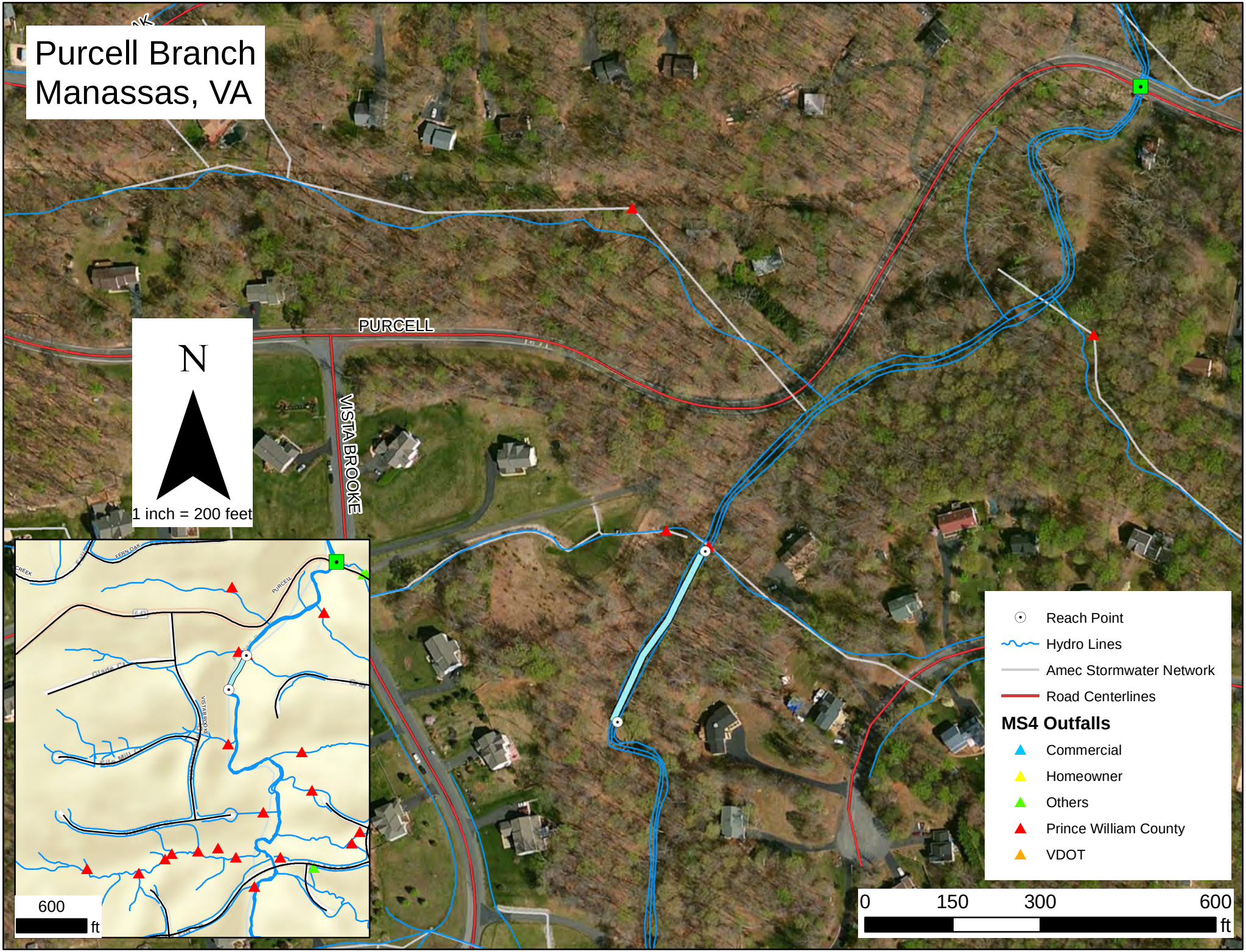
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Hydro Lines
Amec Stormwater Network
Road Centerlines
MS4 Outfalls
Commercial
Homeowner
Others
Prince William County
VDOT
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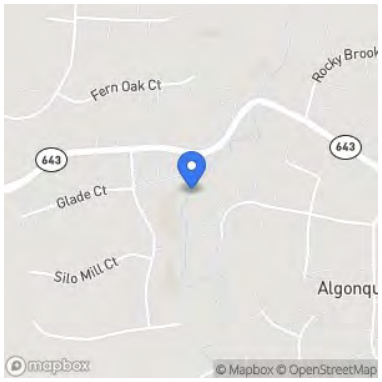
APPENDIX A

SITE DATA SHEETS

Prince William Biological Monitoring Form

Stream Name	Purcell Branch
Location	PC10
River Basin	Potomac
Investigators	Christina Davis and Ben Green
Date	10/18/2022
Time	12:57 PM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	Clear / Sunny

GPS location



RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Trees

INSTREAM FEATURES

Est. Stream Width (ft)	27.0
Est. Stream Depth (ft)	0.8
Surface Velocity (ft/sec at thalweg)	6.7
Canopy Cover	Shaded
High Water Mark (ft)	1.6
Channelized	○ Yes ◉ No
Dam Present	○ Yes ◉ No
Proporation of Reach by Stream Morphology Types	
Riffle (%)	35
Run (%)	60
Pool (%)	5

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	35

WATER QUALITY

Temperature °C	12.23
Specific Conductance µS/cm	246
Dissolved Oxygen mg/L	10.71
pH	7.79
Turbidity NTU	1.39
WQ Instrument Used	YSI and float test
Water Odors	☑ Normal / None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other

Water Surface Oils	
	☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☑ None ☐ Other

Inorganic Substrate Components

(should add up to 100%)

Substrate Type	Diameter	% Composition in sampling reach
Bedrock		25.0
Boulder	**>256 mm** (10")	15.0
Cobble	**64 - 256 mm** (2.5" - 10")	25.0
Gravel	**2 - 64 mm** (0.1" - 2.5")	5.0
Sand	**0.06 - 2 mm** (gritty)	25.0
Silt	**0.004 - 0.06 mm**	5.0
Clay	**< 0.004 mm** (slick)	0.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	11
Embeddedness	9
Velocity / Depth Regime	10
Sediment Deposition	12
Channel Flow Status	8

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	8
Bank Stability (LEFT BANK)	4
Bank Stability (RIGHT BANK)	3
Vegetative Protection (LEFT BANK)	2
Vegetative Protection (RIGHT BANK)	4
Riparian Vegetative Zone Width (LEFT BANK)	8
Riparian Vegetative Zone Width (RIGHT BANK)	6

Field Photography

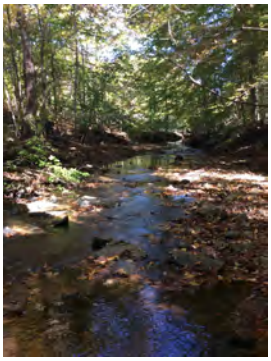
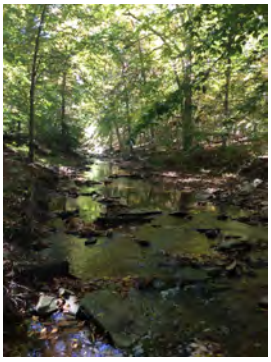
Image 1

Caption for Image 1
Looking downstream from downstream point of reach

Image 2

Caption for Image 2
Looking upstream from downstream point of reach

Report completed by:
Christina Davis

Signature


Signature Date/Time
10/18/2022 02:16 PM GMT-04:00

Please use the upper-right menu to "Save as complete and exit" to place this finalized form in the upload queue.

Prince William Biological Monitoring Form

Stream Name	Cow Branch
Location	PC20
River Basin	Potomac
Investigators	Ilana Ton and Christina Davis
Date	10/19/2022
Time	08:33 AM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	Clear / Sunny

RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Shrubs

INSTREAM FEATURES

Est. Stream Width (ft)	11.0
Est. Stream Depth (ft)	0.5
Surface Velocity (ft/sec at thalweg)	0.26
Canopy Cover	Partly shaded
High Water Mark (ft)	0.9
Channelized	(•) Yes ( ) No
Dam Present	( ) Yes (•) No
Proporation of Reach by Stream Morphology Types	
Riffle (%)	55
Run (%)	40
Pool (%)	5

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	85

WATER QUALITY

Temperature °C	10.09
Specific Conductance µS/cm	256
Dissolved Oxygen mg/L	11.73
pH	7.15
Turbidity NTU	2.33
WQ Instrument Used	YSI and float test
Water Odors	[✓] Normal / None [ ] Sewage [ ] Petroleum [ ] Chemical [ ] Fishy [ ] Other

Water Surface Oils	☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☐ None ☑ Other
Please describe "Other" surface oils	Sheen from Iron oxidizing bacteria on bar

Inorganic Substrate Components

(should add up to 100%)

Substrate Type	Diameter	% Composition in sampling reach
Bedrock		5.0
Boulder	**>256 mm** (10")	10.0
Cobble	**64 - 256 mm** (2.5" - 10")	35.0
Gravel	**2 - 64 mm** (0.1" - 2.5")	15.0
Sand	**0.06 - 2 mm** (gritty)	30.0
Silt	**0.004 - 0.06 mm**	5.0
Clay	**< 0.004 mm** (slick)	0.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	11
Embeddedness	17
Velocity / Depth Regime	10
Sediment Deposition	18
Channel Flow Status	16

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	7
Frequency of Riffles (or Bends)	12
Bank Stability (LEFT BANK)	7
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	9
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	10

Field Photography

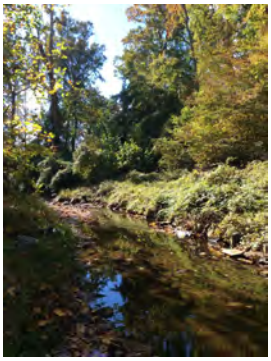
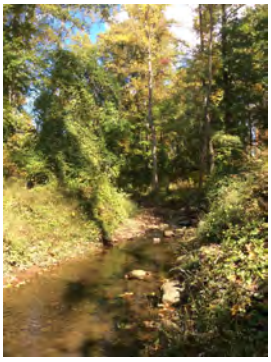
Image 1

Caption for Image 1
Downstream point looking downstream

Image 2

Caption for Image 2
Downstream point facing upstream

Report completed by:
Christina Davis

Signature


Signature Date/Time
10/19/2022 01:12 PM GMT-04:00

Please use the upper-right menu to "Save as complete and exit" to place this finalized form in the upload queue.

Prince William Biological Monitoring Form

Stream Name	Dawkins
Location	PC30
River Basin	Potomac
Investigators	Ben Green, Rob Smith
Date	10/17/2022
Time	04:31 PM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	Clear / Sunny

GPS location

RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Trees

INSTREAM FEATURES

Est. Stream Width (ft)	24.0
Est. Stream Depth (ft)	0.5
Surface Velocity (ft/sec at thalweg)	1.1
Canopy Cover	Partly shaded
High Water Mark (ft)	2.0
Channelized	○ Yes ◉ No
Dam Present	○ Yes ◉ No
Proporation of Reach by Stream Morphology Types	
Riffle (%)	70
Run (%)	20
Pool (%)	10

AQUATIC VEGETATION

Dominant Type	Rooted emergent
Portion of reach with aquatic veg	15

WATER QUALITY

Temperature °C	17.8
Specific Conductance µS/cm	364
Dissolved Oxygen mg/L	9.1
pH	7.82
Turbidity NTU	2.28
WQ Instrument Used	YSI, Turbidity Meter, float test substitute
Water Odors	☑ Normal / None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other

Water Surface Oils	
	☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☑ None ☐ Other

Inorganic Substrate Components

(should add up to 100%)

Substrate Type	Diameter	% Composition in sampling reach
Bedrock		10.0
Boulder	**>256 mm** (10")	15.0
Cobble	**64 - 256 mm** (2.5" - 10")	20.0
Gravel	**2 - 64 mm** (0.1" - 2.5")	25.0
Sand	**0.06 - 2 mm** (gritty)	5.0
Silt	**0.004 - 0.06 mm**	15.0
Clay	**< 0.004 mm** (slick)	10.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	15
Embeddedness	14
Velocity / Depth Regime	10
Sediment Deposition	13
Channel Flow Status	11

Parameters to be evaluated broader than sampling reach

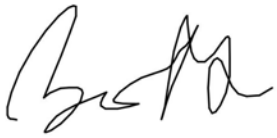
Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	14
Bank Stability (LEFT BANK)	8
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	9
Riparian Vegetative Zone Width (LEFT BANK)	8
Riparian Vegetative Zone Width (RIGHT BANK)	9

Field Photography

Image 1

Image 2

Report completed by:
Ben Green

Signature


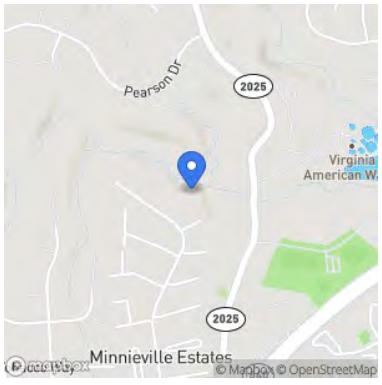
Signature Date/Time
10/17/2022 04:12 PM GMT-04:00

Please use the upper-right menu to "Save as complete and exit" to place this finalized form in the upload queue.

Prince William Biological Monitoring Form

Stream Name	Neabsco Creek
Location	PC60
River Basin	Potomac
Investigators	Ilana Ton and Christina Davis
Date	10/19/2022
Time	02:42 PM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	% Cloud Cover

GPS location



RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Trees

INSTREAM FEATURES

Est. Stream Width (ft)	15.3
Est. Stream Depth (ft)	0.6
Surface Velocity (ft/sec at thalweg)	0.98
Canopy Cover	Shaded
High Water Mark (ft)	0.9
Channelized	○ Yes ◉ No
Dam Present	○ Yes ◉ No
Proporation of Reach by Stream Morphology Types	
Riffle (%)	60
Run (%)	30
Pool (%)	10

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	40

WATER QUALITY

Temperature °C	9.87
Specific Conductance µS/cm	180
Dissolved Oxygen mg/L	11.66
pH	7.32
Turbidity NTU	0.51
WQ Instrument Used	YSI and float test
Water Odors	☑ Normal / None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other

Water Surface Oils	
	☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☑ None ☐ Other

Inorganic Substrate Components

(should add up to 100%)

Substrate Type	Diameter	% Composition in sampling reach
Bedrock		20.0
Boulder	**>256 mm** (10")	50.0
Cobble	**64 - 256 mm** (2.5" - 10")	10.0
Gravel	**2 - 64 mm** (0.1" - 2.5")	10.0
Sand	**0.06 - 2 mm** (gritty)	10.0
Silt	**0.004 - 0.06 mm**	0.0
Clay	**< 0.004 mm** (slick)	0.0

Parameters to be evaluated in sampling reach

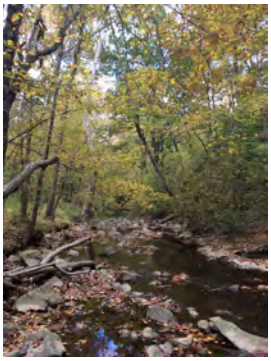
Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	16
Embeddedness	17
Velocity / Depth Regime	15
Sediment Deposition	19
Channel Flow Status	13

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	18
Frequency of Riffles (or Bends)	12
Bank Stability (LEFT BANK)	9
Bank Stability (RIGHT BANK)	6
Vegetative Protection (LEFT BANK)	6
Vegetative Protection (RIGHT BANK)	4
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	9

Field Photography

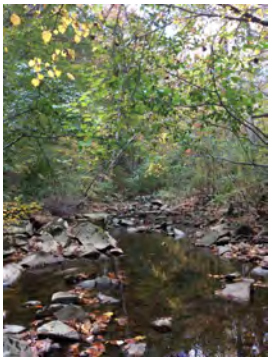
Image 1



Caption for Image 1

Downstream site looking downstream

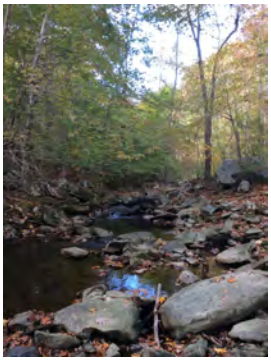
Image 2



Caption for Image 2

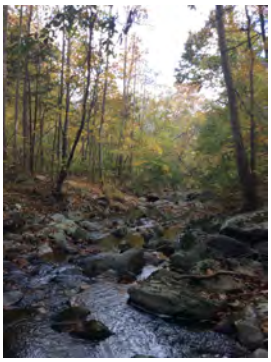
Downstream site looking upstream

Image 3



Caption for Image 3

Upstream site looking upstream

Image 4

Caption for Image 4
Upstream site looking downstream

Report completed by:
Christina Davis

Signature

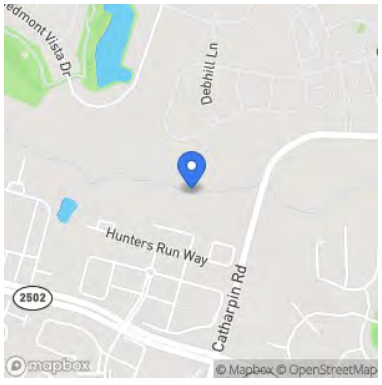

Signature Date/Time
10/19/2022 05:33 PM GMT-04:00

Please use the upper-right menu to "Save as complete and exit" to place this finalized form in the upload queue.

Prince William Biological Monitoring Form

Stream Name	Little Bull Run
Location	Catharpin; PC 90
River Basin	Potomac
Investigators	Ben Green, Rob Smith
Date	10/17/2022
Time	04:32 PM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	Clear / Sunny

GPS location



RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Trees

INSTREAM FEATURES

Est. Stream Width (ft)	25.5
Est. Stream Depth (ft)	0.333
Surface Velocity (ft/sec at thalweg)	7.6
Canopy Cover	Partly shaded
High Water Mark (ft)	4.5
Channelized	○ Yes ◉ No
Dam Present	○ Yes ◉ No
Proporation of Reach by Stream Morphology Types	
Riffle (%)	50
Run (%)	20
Pool (%)	30

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	65

WATER QUALITY

Temperature °C	15.51
Specific Conductance µS/cm	491
Dissolved Oxygen mg/L	9.11
pH	7.77
Turbidity NTU	0.99
WQ Instrument Used	YSI, Turbidity meter
Water Odors	☑ Normal / None ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Fishy ☐ Other

Water Surface Oils	
	☐ Slick ☐ Sheen ☐ Globs ☐ Flecks ☑ None ☐ Other

Inorganic Substrate Components
(should add up to 100%)

Substrate Type	Diameter	% Composition in sampling reach
Bedrock		30.0
Boulder	**>256 mm** (10")	5.0
Cobble	**64 - 256 mm** (2.5" - 10")	10.0
Gravel	**2 - 64 mm** (0.1" - 2.5")	25.0
Sand	**0.06 - 2 mm** (gritty)	15.0
Silt	**0.004 - 0.06 mm**	10.0
Clay	**< 0.004 mm** (slick)	5.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	14
Embeddedness	12
Velocity / Depth Regime	13
Sediment Deposition	14
Channel Flow Status	10

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	11
Bank Stability (LEFT BANK)	4
Bank Stability (RIGHT BANK)	5
Vegetative Protection (LEFT BANK)	7
Vegetative Protection (RIGHT BANK)	6
Riparian Vegetative Zone Width (LEFT BANK)	3
Riparian Vegetative Zone Width (RIGHT BANK)	7

Field Photography

Image 1

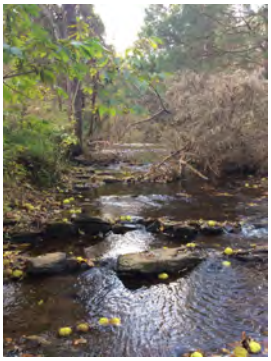
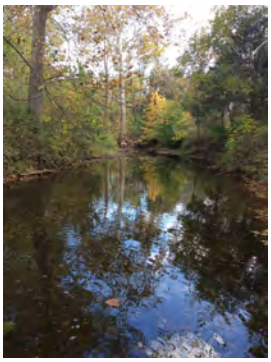


Image 2



Report completed by:
BTG

Signature


Signature Date/Time
10/17/2022 01:33 PM GMT-04:00

Please use the upper-right menu to "Save as complete and exit" to place this finalized form in the upload queue.

APPENDIX B

WATER QUALITY LABORATORY RESULTS

Occoquan Watershed Monitoring Laboratory

9408 Prince William St.

Manassas, VA 20110

Tel: (703) 361-5606

Virginia Laboratory ID: 460026

Att: Ms. Ilana Ton

WSP www.wsp.com

14424 Albemarle Point Place, Suite 115
Chantilly, VA 20151

Analysis Report

Report #20200527

Description	Sample Date	Sample ID	Result	Unit	Reporting Limit	Method	Analysis Date
Ammonia as N	10/17/2022	22-3076 PC30	0.03	mg/L	0.01	SM4500-NH3 G	10/19/2022
E. coli	10/17/2022	22-3076 PC30	38.6	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/7/2022
Nitrate+nitrite as N	10/17/2022	22-3076 PC30	0.04	mg/L	0.01	SM4500-NO3-F	10/19/2022
Orthophosphate as P	10/17/2022	22-3076 PC30	0.2	mg/L	0.01	SM4500-P F	10/19/2022
Total Kjeldahl Nitrogen	10/17/2022	22-3076 PC30	<0.5	mg/L	0.50	Lachat 10-107-06-2D	10/21/2022
Total Phosphorus	10/17/2022	22-3076 PC30	0.03	mg/L	0.01	SM4500-P F, 4500-P J	11/15/2022
Total Suspended Solids	10/17/2022	22-3076 PC30	3.8	mg/L	1.0	SM2540D	10/21/2022
Ammonia as N	10/17/2022	22-3077 PC90	0.02	mg/L	0.01	SM4500-NH3 G	10/19/2022
E. coli	10/17/2022	22-3077 PC90	46.4	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/7/2022
Nitrate+nitrite as N	10/17/2022	22-3077 PC90	0.53	mg/L	0.01	SM4500-NO3-F	10/19/2022
Orthophosphate as P	10/17/2022	22-3077 PC90	0.02	mg/L	0.01	SM4500-P F	10/19/2022
Total Kjeldahl Nitrogen	10/17/2022	22-3077 PC90	<0.5	mg/L	0.50	Lachat 10-107-06-2D	10/21/2022
Total Phosphorus	10/17/2022	22-3077 PC90	0.04	mg/L	0.01	SM4500-P F, 4500-P J	11/15/2022
Total Suspended Solids	10/17/2022	22-3077 PC90	<1.0	mg/L	1.0	SM2540D	10/21/2022
Ammonia as N	10/18/2022	22-3086 PC10	0.01	mg/L	0.01	SM4500-NH3 G	10/19/2022
E. coli	10/18/2022	22-3086 PC10	50.4	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/7/2022
Nitrate+nitrite as N	10/18/2022	22-3086 PC10	0.97	mg/L	0.01	SM4500-NO3-F	10/19/2022
Orthophosphate as P	10/18/2022	22-3086 PC10	0.08	mg/L	0.01	SM4500-P F	10/19/2022
Total Kjeldahl Nitrogen	10/18/2022	22-3086 PC10	<0.5	mg/L	0.50	Lachat 10-107-06-2D	10/21/2022
Total Phosphorus	10/18/2022	22-3086 PC10	0.09	mg/L	0.01	SM4500-P F, 4500-P J	11/18/2022
Total Suspended Solids	10/18/2022	22-3086 PC10	<1.0	mg/L	1.0	SM2540D	10/21/2022
Ammonia as N	10/19/2022	22-3092 PC20	0.02	mg/L	0.01	SM4500-NH3 G	11/9/2022
E. coli	10/19/2022	22-3092 PC20	461	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/7/2022
Nitrate+nitrite as N	10/19/2022	22-3092 PC20	0.21	mg/L	0.01	SM4500-NO3-F	11/9/2022
Orthophosphate as P	10/19/2022	22-3092 PC20	<0.01	mg/L	0.01	SM4500-P F	11/9/2022
Total Kjeldahl Nitrogen	10/19/2022	22-3092 PC20	0.62	mg/L	0.50	Lachat 10-107-06-2D	10/21/2022
Total Phosphorus	10/19/2022	22-3092 PC20	0.01	mg/L	0.01	SM4500-P F, 4500-P J	11/18/2022
Total Suspended Solids	10/19/2022	22-3092 PC20	<1.0	mg/L	1.0	SM2540D	10/25/2022
Ammonia as N	10/19/2022	22-3093 PC60	<0.01	mg/L	0.01	SM4500-NH3 G	11/9/2022
E. coli	10/19/2022	22-3093 PC60	4.1	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/7/2022
Nitrate+nitrite as N	10/19/2022	22-3093 PC60	<0.01	mg/L	0.01	SM4500-NO3-F	11/9/2022
Orthophosphate as P	10/19/2022	22-3093 PC60	0.011	mg/L	0.01	SM4500-P F	11/9/2022
Total Kjeldahl Nitrogen	10/19/2022	22-3093 PC60	1.99	mg/L	0.50	Lachat 10-107-06-2D	10/21/2022
Total Phosphorus	10/19/2022	22-3093 PC60	0.01	mg/L	0.01	SM4500-P F, 4500-P J	11/18/2022
Total Suspended Solids	10/19/2022	22-3093 PC60	<1.0	mg/L	1.0	SM2540D	10/25/2022

Note: TKN samples were contracted to NELAC certified lab at Prince William County Service Authority

Prepared by:

Dongmei Alvi (Wang)

Laboratory Supervisor

Occoquan Watershed Monitoring Laboratory

9408 Prince William St.

Manassas, VA 20110

Tel: (703) 361-5606

Virginia Laboratory ID: 460026

Att: Ms. Ilana Ton

WSP www.wsp.com

14424 Albemarle Point Place, Suite 115
Chantilly, VA 20151

Analysis Report

Report #20200527

Description	Blank	LCS, %R	Duplicate, RPD	Spike, %R	Matrix Spike, %R	Method	Analysis Date
Ammonia as N	0.008	98	n.a.	101	101	SM4500-NH3 G	10/19/2022
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
E. coli	n.a.	n.a.		n.a.	n.a.	SM9221 B(LT)E(EC)C MPN	
Accepted Range							
Nitrate+nitrite as N	-0.002	98	n.a.	93	95	SM4500-NO3-F	10/19/2022
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Orthophosphate as P	0.010	98	n.a.	90	93	SM4500-P F	10/19/2022
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Total Kjeldahl Nitrogen	n.a.	n.a.	n.a.	n.a.	n.a.	Lachat 10-107-06-2D	10/21/2022
Accepted Range							
Total Phosphorus	-0.008	99	8.7	102	n.a.	SM4500-P F, 4500-P J	11/18/2022
Accepted Range	-0.01~0.01	100±10	±10	100±10	100±10		
Total Suspended Solids	0.20	n.a.	0	n.a.	n.a.	SM2540D	10/21/2022
Accepted Range	-1.0~1.0		±20				

n.a.= not applicable

Note: TKN samples were contracted to NELAC certified lab at Prince William County Service Authority

Prepared by:

Dongmei Alvi (Wang)

Laboratory Supervisor

APPENDIX C

BENTHIC MACROINVERTEBRATE LABORATORY RESULTS

3701NW 98th Street
Gainesville, FL 32606

wsp.com

December 13, 2022

Ms. Lynne Mowery

WSP

14424 Albemarle Point Place, Suite 115

Chantilly, VA 20151

Re: Prince William County Multiple Habitat Sampling Method Report

Dear Ms. Mowery:

WSP (Gainesville office) completed benthic macroinvertebrate determinations for samples collected by WSP (Chantilly office), in October 2022. WSP (Gainesville office) received a total of five samples, one from each of the following locations: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch. The results of the taxonomic analyses are presented in this report.

1 Multiple Habitat Sampling Method

Methods and Procedures

All samples collected by WSP, Chantilly office, in October 2022, were received by WSP's taxonomy laboratory at Gainesville, Florida, where they were logged in and processed. The samples were sorted (i.e. organisms removed from debris) and organisms were identified and enumerated by a qualified taxonomist according to Section 7.2 of the U.S. Environmental Protection Agency's (USEPA) "Rapid Bioassessment Protocol for Use in Wadeable Streams and Rivers" (RBP) (Barbour et al., 1999). Eight metrics were calculated including the Biotic Index, using guidance from Hilsenhoff (1987); the Percent Model Affinity (PMA), using guidance from Novak and Bode (1992); and the Virginia Stream Condition Index, using guidance from Virginia Department of Environmental Quality (2008). The scraper taxa and tolerance values were identified according to life history information from RBP (Barbour et al., 1999); "An Introduction to the Aquatic Insects of North America" (Merritt et al., 2008); "Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys" (Tennessee Department of Environment and Conservation, 2011); and "Standard Operating Procedures for the Collection and Analysis of Benthic Macroinvertebrates" (North Carolina Department of Environmental Quality, 2016). Quality assurance and quality control checks were conducted according to the EPA RBP on Laboratory Quality Control for Macroinvertebrate Taxonomic Identification (Barbour et al., 1999). Quality assurance/quality control requirements for sample picking and taxonomic identification were conducted by a WSP Senior Taxonomist.

2 Benthic Macroinvertebrate Results

The benthic macroinvertebrate community data were used to generate metrics outlined in the WSP draft sampling plan. The Multiple Habitat Sampling assessments conducted for the five samples are summarized below in Table 1. Taxonomic identifications and abundances of the benthic macroinvertebrates and metric calculations for each sample are included in Attachment 1. References are listed in Attachment 2.

Table 1: Summary of Results of Multiple Habitat Samples

Metric	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	26	33	49	28	35
Abundance	239	198	229	192	210
EPT Index	9	3	9	9	8
EPT/EPT + Chironomidae Ratio	0.95	0.36	0.69	0.95	0.86
Percent Dominant Taxon	22.59	34.85	27.51	39.06	32.86
Percent Chironomidae	4.18	4.55	12.66	3.65	10.48
Biotic Index	5.77	6.39	5.92	6.30	5.92
BI Category	Fair	Fair	Fair	Fair	Fair
Percent Modal Affinity (PMA)	23.18	32.07	62.36	27.29	42.62
PMA Category	Severely Impacted	Severely Impacted	Slightly Impacted	Severely Impacted	Moderately Impacted
VSCI	57.02	50.07	68.76	53.68	63.35

Source: WSP, 2022 Created By: JSD Checked By: SEM

Closing

We appreciate the opportunity to provide ecological services to you. Please do not hesitate to contact me if you have questions or need to request further information. You can reach me by phone at (352) 559-0490, or via email at shannon.mcmorrow@wsp.com.

Sincerely,

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Attachments:
1 – Tabulated Data
2 – References

ATTACHMENT 1

TABULATED DATA

Multiple Habitat Sampling
Samples Collected: October 2022
Project #: 151280002.001

Metrics	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco	Purcell Branch
Taxa Richness	26	33	49	28	35
Abundance	239	198	229	192	210
EPT Index	9	3	9	9	8
EPT/EPT + Chironomidae Ratio	0.95	0.36	0.69	0.95	0.86
Percent Dominant Taxon	22.59	34.85	27.51	39.06	32.86
Percent Chironomidae	4.18	4.55	12.66	3.65	10.48
Biotic Index (BI)	5.77	6.39	5.92	6.30	5.92
Biotic Index (BI) Category	Fair	Fair	Fair	Fair	Fair
Percent Model Affinity (PMA)	23.18	32.07	62.36	27.29	42.62
Percent Model Affinity (PMA) Category	Severely Impacted	Severely Impacted	Slightly Impacted	Severely Impacted	Moderately Impacted
VSCI	57.02	50.07	68.76	53.68	63.35

Created By: JSD
Checked By: NFP
Source: WSP, 2022

Cow Branch
Multiple Habitat Sampling
Sample Collected: 19-Oct-2022
Project #: 151280002.001

Results for Cow Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Nemertea		Hoplonemertea		Monostilifera	Prostomatidae	*Prostoma* spp.	6	0	0	0	0		6.1	0.15	0	0	6			
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	1	0	0	0	0		5	0.02	0	1	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	*Nais pardalis*	3	0	0	0	0		8.7	0.11	0	3	0			
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	*Ferrissia fragilis*	1	0	0	0	0		6.6	0.03	0	0	1		1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	Planorbidae spp.	3	0	0	0	0		6.3	0.08	0	0	3		3	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Lymnaeidae	*Lymnaea* spp.	1	0	0	0	0		6.9	0.03	0	0	1		1	
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	1	0	0	0	0		6.6	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	1	1	0	0	0		6.1	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	*Baetis* spp.	1	1	0	0	0		4.51	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	43	0	0	43	0		4	0.72	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	51	0	0	51	0		6.6	1.41	0	0	0			51
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche* spp.	32	0	0	32	0		4.3	0.58	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche rossi*	3	0	0	3	0		4.8	0.06	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche betteni/depravata/potomacensis*	54	0	0	54	0	54	7.9	1.79	0	0	0			54
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	*Hydroptila* spp.	2	0	0	2	0		6.5	0.05	0	0	0	2	2	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	*Chimarra* spp.	22	0	0	22	0		3.3	0.31	0	0	0	22		
Arthropoda	Hexapoda	Insecta		Diptera		Tipuloidea spp.	1	0	0	0	0		4.9	0.02	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladiinae spp.	1	0	0	0	1		5	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum flavum*	1	0	0	0	1		5.7	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsus* spp.	4	0	0	0	4		6.5	0.11	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Dicrotendipes* spp.	1	0	0	0	1		7.2	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Thienemanniella* spp.	1	0	0	0	1		8	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Cricotopus* or *Orthocladius*	2	0	0	0	2		4.86	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Empididae	*Hemerodromia* spp.	1	0	0	0	0		7.57	0.03	0	0	1			
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Hygrobatidae	*Hygrobates* spp.	1	0	0	0	0		8	0.03	0	0	1			
Arthropoda	Chelicerata	Arachnida	Acari	Sarcoptiformes		Oribatida spp.	1	0	0	0	0			0.00	0	0	1			

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	39.16
Model % Plecoptera	5	5.00
Model % Trichoptera	10	76.61
Model % Chironomidae	20	15.82
Model % Coleoptera	10	10.00
Model % Oligochaeta	5	3.33
Model % Other	10	3.72
Sum of Difference		153.64
Sum of Difference * 0.5		76.82
Percent Model Affinity		23.18
Percent Model Affinity Category		Severely Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	26	118.18	100.00
Total Abundance	239		
% Ephemeroptera	0.84	1.37	1.37
% Plecoptera	0.00		
% Trichoptera	86.61		
% Chironomidae	4.18	95.82	95.82
% Dominant Taxon	22.59		
Biotic Index	5.77	62.27	62.27
% Coleoptera	0.00		
% Oligochaeta	1.67		
% Other	6.28		
% Plecoptera + Trichoptera (less Hydropsychidae)	10.04	28.21	28.21
% Scrapers	2.93	5.68	5.68
% Top 2 Dominant Taxa	43.93	81.02	81.02
EPT Index	9	81.82	81.82
EPT/EPT + Chironomidae Ratio	0.95		

Hilsenhoff Biotic Index Category	Fair

Final VSCI score	57.02

Created By: JSD
Checked By: NFP
Source: WSP, 2022

Dawkins Branch
Multiple Habitat Sampling
Sample Collected: 17-Oct-2022
Project #: 151280002.001

Results for Dawkins Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Cnidaria		Hydrozoa	Hydroidolina	Anthoathecata	Hydridae	*Hydra* spp.	2	0	0	0	0		6	0.06	0	0	2			
Platyhelminthes						Platyhelminthes spp.	7	0	0	0	0			0.00	0	0	7			
Nemertea		Hoplonemertea		Monostilifera	Prostomatidae	*Prostoma* spp.	1	0	0	0	0		6.1	0.03	0	0	1			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	8	0	0	0	0		9.5	0.38	0	8	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	*Dero* spp.	1	0	0	0	0		9.8	0.05	0	1	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	*Slavina appendiculata*	1	0	0	0	0		8.4	0.04	0	1	0			
Mollusca		Gastropoda	Caenogastropoda	Littorinimorpha	Hydrobiidae	Hydrobiidae spp.	1	0	0	0	0		5.78	0.03	0	0	1		1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	Ancylidae spp.	5	0	0	0	0		7	0.18	0	0	5		5	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	*Ferrissia fragilis*	9	0	0	0	0		6.6	0.30	0	0	9		9	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	*Menetus dilatatus*	1	0	0	0	0		7.6	0.04	0	0	1		1	
Mollusca		Bivalvia	Autobranchia	Venerida	Cyrenidae	*Corbicula* spp.	3	0	0	0	0		6.12	0.09	0	0	3			
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	3	0	0	0	0		6.6	0.10	0	0	3			
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda		Senticaudata spp.	3	0	0	0	0		7.4	0.11	0	0	3			
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Gammaridae	*Gammarus* spp.	69	0	0	0	0	69	7.1	2.47	0	0	69			69
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda	Cambaridae	Cambaridae spp.	1	0	0	0	0		7.5	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	*Caenis punctata*	1	1	0	0	0		6.8	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	*Argia* spp.	2	0	0	0	0		8.3	0.08	0	0	2			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	*Argia moesta*	2	0	0	0	0		8.3	0.08	0	0	2			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	2	0	0	2	0		4	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	2	0	0	2	0		6.6	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Dubiraphia* spp.	1	0	0	0	0		5.5	0.03	1	0	0		1	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Stenelmis* spp.	53	0	0	0	0		5.6	1.50	53	0	0		53	53
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	1	0	0	0	0		7	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	2	0	0	0	2		6.2	0.06	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Tanytarsus* spp.	2	0	0	0	2		6.6	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum flavum*	1	0	0	0	1		5.7	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsus* spp.	3	0	0	0	3		6.5	0.10	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Thienemannimyia* grp. sp.	1	0	0	0	1		8.4	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	Ceratopogoninae spp.	1	0	0	0	0		5.9	0.03	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	*Atrichopogon* spp.	4	0	0	0	0		6.1	0.12	0	0	4			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	*Simulium* spp.	3	0	0	0	0		4.9	0.07	0	0	3			
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Hygrobatidae	*Hygrobates* spp.	1	0	0	0	0		8	0.04	0	0	1			
Nematoda						Nematoda spp.	1	0	0	0	0		5	0.03	0	0	1			

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	39.49
Model % Plecoptera	5	5.00
Model % Trichoptera	10	7.98
Model % Chironomidae	20	15.45
Model % Coleoptera	10	17.27
Model % Oligochaeta	5	0.05
Model % Other	10	50.61
Sum of Difference		135.86
Sum of Difference * 0.5		67.93
Percent Model Affinity		32.07
Percent Model Affinity Category		Severely Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	33	150.00	100.00
Total Abundance	198		
% Ephemeroptera	0.51	0.82	0.82
% Plecoptera	0.00		
% Trichoptera	2.02		
% Chironomidae	4.55	95.45	95.45
% Dominant Taxon	34.85		
Biotic Index	6.39	53.06	53.06
% Coleoptera	27.27		
% Oligochaeta	5.05		
% Other	60.61		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	35.35	68.51	68.51
% Top 2 Dominant Taxa	61.62	55.47	55.47
EPT Index	3	27.27	27.27
EPT/EPT + Chironomidae Ratio	0.36		

Hilsenhoff Biotic Index Category	Fair

Final VSCI score	50.07

Created By: JSD
Checked By: NFP
Source: WSP, 2022

Little Bull Run
Multiple Habitat Sampling
Sample Collected: 17-Oct-2022
Project #: 151280002.001

Results for Little Bull Run

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Platyhelminthes						Platyhelminthes spp.	2	0	0	0	0			0.00	0	0	2			
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	3	0	0	0	0		5	0.07	0	3	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.04	0	1	0			
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	Ancylidae spp.	4	0	0	0	0		7	0.12	0	0	4		4	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	*Hebetancylus excentricus*	1	0	0	0	0		7	0.03	0	0	1		1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	*Physa* spp.	1	0	0	0	0		8.84	0.04	0	0	1		1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	Planorbidae spp.	6	0	0	0	0		6.3	0.17	0	0	6		6	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	*Helisoma anceps*	1	0	0	0	0		6.6	0.03	0	0	1		1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	*Menetus dilatatus*	6	0	0	0	0		7.6	0.20	0	0	6		6	
Mollusca		Bivalvia	Autobranchia	Venerida	Cyrenidae	*Corbicula* spp.	5	0	0	0	0		6.12	0.13	0	0	5			
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	8	0	0	0	0		6.6	0.23	0	0	8			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	*Caenis* spp.	8	8	0	0	0		6.8	0.24	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	*Caenis latipennis*	36	36	0	0	0		6.8	1.07	0	0	0			36
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	6	6	0	0	0		4	0.11	0	0	0		6	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	*Maccaffertium smithae*	1	1	0	0	0		3.15	0.01	0	0	0		1	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Gomphidae	Gomphidae spp.	1	0	0	0	0		5	0.02	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	*Argia* spp.	1	0	0	0	0		8.3	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	*Argia tibialis*	3	0	0	0	0		8.3	0.11	0	0	3			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	*Mystacides sepulchralis*	2	0	0	2	0		2.6	0.02	0	0	0	2		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	5	0	0	5	0		4	0.09	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	1	0	0	1	0		6.6	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	*Hydroptila* spp.	2	0	0	2	0		6.5	0.06	0	0	0	2	2	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	*Chimarra* spp.	3	0	0	3	0		3.3	0.04	0	0	0	3		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Dubiraphia* spp.	13	0	0	0	0		5.5	0.31	13	0	0		13	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Stenelmis* spp.	63	0	0	0	0	63	5.6	1.55	63	0	0		63	63
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Optioservus* spp.	1	0	0	0	0		2.1	0.01	1	0	0		1	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Curculionidae	Curculionidae spp.	2	0	0	0	0		4	0.04	2	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	*Ectopria* spp.	2	0	0	0	0		4.3	0.04	2	0	0		2	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	*Psephenus* spp.	2	0	0	0	0		2.35	0.02	2	0	0		2	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	3	0	0	0	3		6.2	0.08	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladiinae spp.	2	0	0	0	2		5	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Tanytarsus* spp.	5	0	0	0	5		6.6	0.14	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum flavum*	1	0	0	0	1		5.7	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsus* spp.	4	0	0	0	4		6.5	0.11	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Dicrotendipes* spp.	1	0	0	0	1		7.2	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Clinotanypus* spp.	1	0	0	0	1		7.8	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Corynoneura* spp.	1	0	0	0	1		5.7	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum beckae*	1	0	0	0	1		5.69	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Orthocladius* spp.	4	0	0	0	4		4.4	0.08	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Thienemanniella xena*	2	0	0	0	2		8	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Cricotopus* or *Orthocladius*	1	0	0	0	1		4.86	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Eukiefferiella claripennis* group	2	0	0	0	2		6.2	0.05	0	0	0		2	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Hydrobaenus* spp.	1	0	0	0	1		9.2	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	Ceratopogoninae spp.	1	0	0	0	0		5.9	0.03	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	*Simulium* spp.	4	0	0	0	0		4.9	0.09	0	0	4			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Empididae	*Hemerodromia* spp.	1	0	0	0	0		7.57	0.03	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Rhagovelia obesa*	2	0	0	0	0		6	0.05	0	0	2			
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Microvelia* spp.	1	0	0	0	0		6	0.03	0	0	1			
Arthropoda	Hexapoda	Collembola				Collembola spp.	1	0	0	0	0		10	0.04	0	0	1			

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	17.73
Model % Plecoptera	5	5.00
Model % Trichoptera	10	4.32
Model % Chironomidae	20	7.34
Model % Coleoptera	10	26.24
Model % Oligochaeta	5	3.25
Model % Other	10	11.40
Sum of Difference		75.28
Sum of Difference * 0.5		37.64
Percent Model Affinity		62.36
Percent Model Affinity Category		Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	49	222.73	100.00
Total Abundance	229		
% Ephemeroptera	22.27	36.33	36.33
% Plecoptera	0.00		
% Trichoptera	5.68		
% Chironomidae	12.66	87.34	87.34
% Dominant Taxon	27.51		
Biotic Index	5.92	60.02	60.02
% Coleoptera	36.24		
% Oligochaeta	1.75		
% Other	21.40		
% Plecoptera + Trichoptera (less Hydropsychidae)	3.06	8.59	8.59
% Scrapers	48.47	93.94	93.94
% Top 2 Dominant Taxa	43.23	82.04	82.04
EPT Index	9	81.82	81.82
EPT/EPT + Chironomidae Ratio	0.69		

Hilsenhoff Biotic Index Category	Fair
Final VSCI score	68.76

Created By: JSD
Checked By: NFP
Source: WSP, 2022

Neabsco Creek
Multiple Habitat Sampling
Sample Collected: 19-Oct-2022
Project #: 151280002.001

Results for Neabsco Creek

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	*Pristina americana*	1	0	0	0	0		7.7	0.04	0	1	0			
Annelida		Clitellata	Oligochaeta	Enchytraeida	Enchytraeidae	Enchytraeidae spp.	2	0	0	0	0		9.84	0.11	0	2	0			
Mollusca		Gastropoda	Heterobranc	Hygrophila	Ancylidae	Ancylidae spp.	4	0	0	0	0		7	0.15	0	0	4		4	
Mollusca		Gastropoda	Heterobranc	Hygrophila	Physidae	*Physa* spp.	1	0	0	0	0		8.84	0.05	0	0	1		1	
Mollusca		Bivalvia	Autobranchia	Venerida	Cyrenidae	*Corbicula* spp.	1	0	0	0	0		6.12	0.03	0	0	1			
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	1	0	0	0	0		6.6	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	2	2	0	0	0		6.1	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	*Baetis intercalaris*	1	1	0	0	0		5	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	*Argia* spp.	1	0	0	0	0		8.3	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Calopterygidae	*Calopteryx* spp.	2	0	0	0	0		7.5	0.08	0	0	2			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	14	0	0	14	0		4	0.30	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	75	0	0	75	0	75	6.6	2.68	0	0	0			75
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche* spp.	3	0	0	3	0		4.3	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche betteni/depravata/potomacensis*	21	0	0	21	0		7.9	0.90	0	0	0			21
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche bronta*	1	0	0	1	0		2.3	0.01	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	*Hydroptila* spp.	1	0	0	1	0		6.5	0.04	0	0	0	1	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	*Chimarra* spp.	10	0	0	10	0		3.3	0.18	0	0	0	10		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Dryopidae	*Helichus* spp.	1	0	0	0	0		4.1	0.02	1	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	1	0	0	0	0		7	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	2	0	0	0	2		6.2	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsus* spp.	3	0	0	0	3		6.5	0.11	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Orthocladius* spp.	1	0	0	0	1		4.4	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Thienemanniella xena*	1	0	0	0	1		8	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	*Tipula* spp.	7	0	0	0	0		7.5	0.28	0	0	7			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Limoniidae	*Antocha* spp.	15	0	0	0	0		4.4	0.36	0	0	15			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	*Simulium* spp.	17	0	0	0	0		4.9	0.45	0	0	17			
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Rhagovelia obesa*	2	0	0	0	0		6	0.06	0	0	2			
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Lebertiidae	*Lebertia* spp.	1	0	0	0	0		8	0.04	0	0	1			

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	38.44
Model % Plecoptera	5	5.00
Model % Trichoptera	10	55.10
Model % Chironomidae	20	16.35
Model % Coleoptera	10	9.48
Model % Oligochaeta	5	3.44
Model % Other	10	17.60
Sum of Difference		145.42
Sum of Difference * 0.5		72.71
Percent Model Affinity		27.29
Percent Model Affinity Category		Severely Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	28	127.27	100.00
Total Abundance	192		
% Ephemeroptera	1.56	2.55	2.55
% Plecoptera	0.00		
% Trichoptera	65.10		
% Chironomidae	3.65	96.35	96.35
% Dominant Taxon	39.06		
Biotic Index	6.30	54.35	54.35
% Coleoptera	0.52		
% Oligochaeta	1.56		
% Other	27.60		
% Plecoptera + Trichoptera (less Hydropsychidae)	5.73	16.09	16.09
% Scrapers	3.13	6.06	6.06
% Top 2 Dominant Taxa	50.00	72.25	72.25
EPT Index	9	81.82	81.82
EPT/EPT + Chironomidae Ratio	0.95		

Hilsenhoff Biotic Index Category	Fair

Final VSCI score	53.68

Created By: JSD
Checked By: NFP
Source: WSP, 2022

Purcell Branch
Multiple Habitat Sampling
Sample Collected: 18-Oct-2022
Project #: 151280002.001

Results for Purcell Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Nemertea		Hoplonemertea		Monostilifera	Prostomatidae	*Prostoma* spp.	2	0	0	0	0		6.1	0.07	0	0	2			
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	2	0	0	0	0		5	0.05	0	2	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	2	0	0	0	0		9.5	0.10	0	2	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	*Spirosperma carolinensis*	1	0	0	0	0		5.3	0.03	0	1	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	*Nais variabilis*	7	0	0	0	0		8.7	0.33	0	7	0			
Annelida		Clitellata	Hirudinida	Rhynchobdellida	Glossiphoniidae	*Helobdella elongata*	1	0	0	0	0		9.1	0.05	0	0	1			
Mollusca		Gastropoda	Heterobranc	Hygrophila	Ancylidae	*Ferrissia fragilis*	5	0	0	0	0		6.6	0.18	0	0	5		5	
Mollusca		Gastropoda	Heterobranc	Hygrophila	Physidae	*Physa* spp.	2	0	0	0	0		8.84	0.09	0	0	2		2	
Mollusca		Gastropoda	Heterobranc	Hygrophila	Planorbidae	Planorbidae spp.	2	0	0	0	0		6.3	0.07	0	0	2		2	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	1	1	0	0	0		6.1	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	*Baetis* spp.	1	1	0	0	0		4.51	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	5	5	0	0	0		4	0.11	0	0	0		5	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	11	0	0	11	0		4	0.24	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	43	0	0	43	0		6.6	1.52	0	0	0			43
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche* spp.	3	0	0	3	0		4.3	0.07	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Hydropsyche betteni/depravata/potomacensis*	7	0	0	7	0		7.9	0.30	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	*Chimarra* spp.	69	0	0	69	0	69	3.3	1.22	0	0	0	69		69
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Stenelmis* spp.	7	0	0	0	0		5.6	0.21	7	0	0		7	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Dryopidae	*Helichus* spp.	1	0	0	0	0		4.1	0.02	1	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	3	0	0	0	3		6.2	0.10	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Tanytarsus* spp.	1	0	0	0	1		6.6	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum flavum*	9	0	0	0	9		5.7	0.27	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsus* spp.	1	0	0	0	1		6.5	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Orthocladius* spp.	1	0	0	0	1		4.4	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Thienemanniella* spp.	3	0	0	0	3		8	0.13	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Labrundinia* spp.	1	0	0	0	1		6.2	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Parametriocnemus* spp.	1	0	0	0	1		3.9	0.02	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheocricotopus* spp.	1	0	0	0	1		4.7	0.03	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Diplocladius cultriger*	1	0	0	0	1		8	0.04	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	*Tipula* spp.	1	0	0	0	0		7.5	0.04	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	*Simulium* spp.	9	0	0	0	0		4.9	0.24	0	0	9			
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Rhagovelia obesa*	1	0	0	0	0		6	0.03	0	0	1			
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Microvelia* spp.	2	0	0	0	0		6	0.06	0	0	2			
Arthropoda	Hexapoda	Collembola				Collembola spp.	1	0	0	0	0		10	0.05	0	0	1			
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Sperchonidae	*Sperchon* spp.	2	0	0	0	0		8	0.09	0	0	2			

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	36.67
Model % Plecoptera	5	5.00
Model % Trichoptera	10	53.33
Model % Chironomidae	20	9.52
Model % Coleoptera	10	6.19
Model % Oligochaeta	5	0.71
Model % Other	10	3.33
Sum of Difference		114.76
Sum of Difference * 0.5		57.38
Percent Model Affinity		42.62
Percent Model Affinity Category		Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	35	159.09	100.00
Total Abundance	210		
% Ephemeroptera	3.33	5.44	5.44
% Plecoptera	0.00		
% Trichoptera	63.33		
% Chironomidae	10.48	89.52	89.52
% Dominant Taxon	32.86		
Biotic Index	5.92	59.99	59.99
% Coleoptera	3.81		
% Oligochaeta	5.71		
% Other	13.33		
% Plecoptera + Trichoptera (less Hydropsychidae)	32.86	92.30	92.30
% Scrapers	10.00	19.38	19.38
% Top 2 Dominant Taxa	53.33	67.44	67.44
EPT Index	8	72.73	72.73
EPT/EPT + Chironomidae Ratio	0.86		

Hilsenhoff Biotic Index Category	Fair
Final VSCI score	63.35

Created By: JSD
Checked By: NFP
Source: WSP, 2022

ATTACHMENT 2

REFERENCES

Attachment 2 - References

Barbour, M. T., J. Gerritsen, B. D. Snyder and J. B. Stribling. 1999. Rapid bioassessment protocols for use in wadeable streams and rivers: periphyton, benthic macroinvertebrates, and fish. 2nd ed. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

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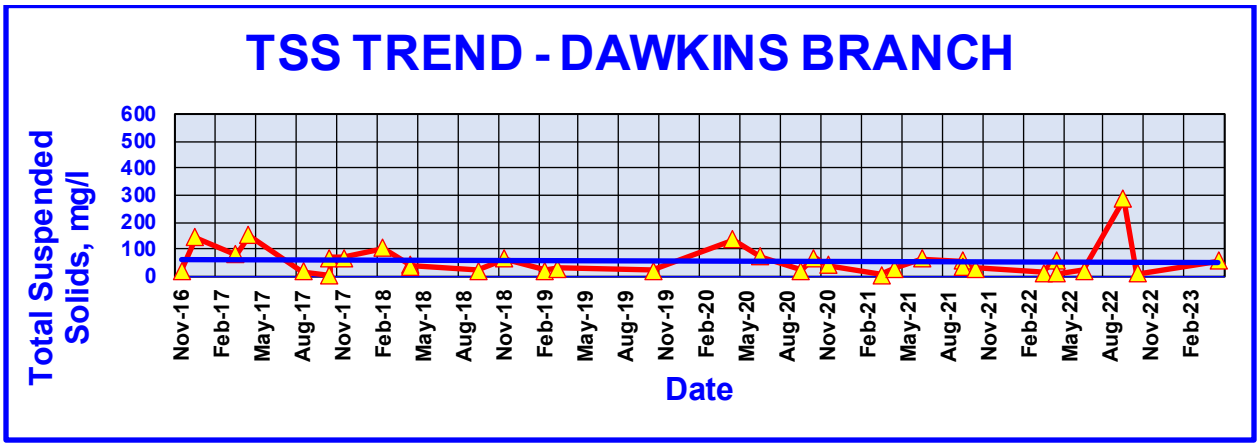
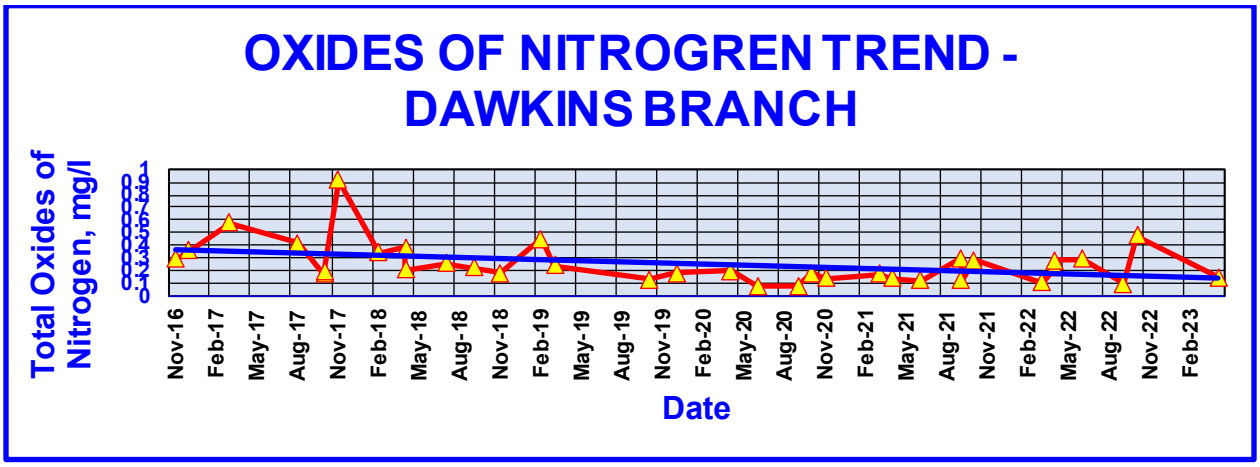
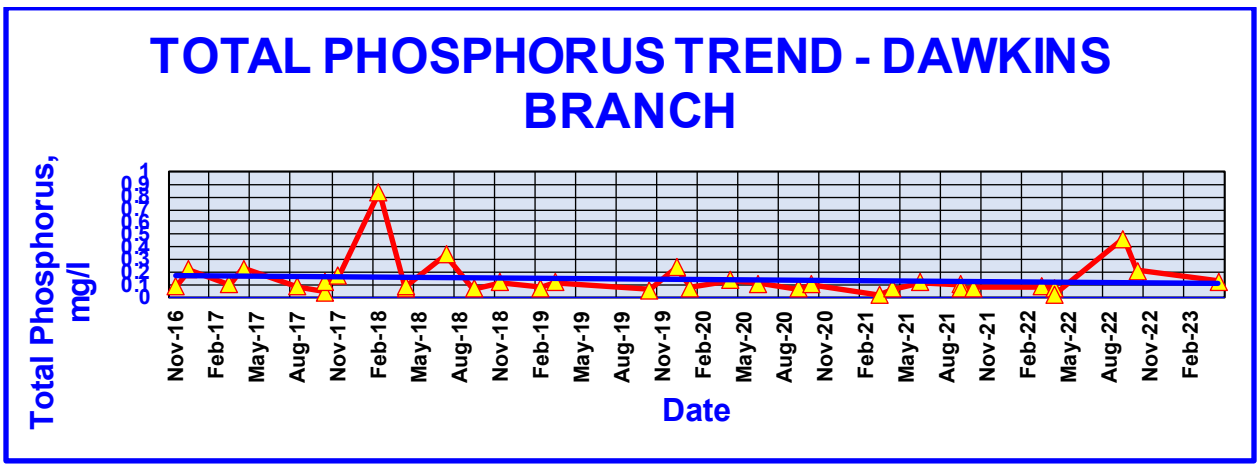
Appendix Q

In-Stream Monitoring Summary

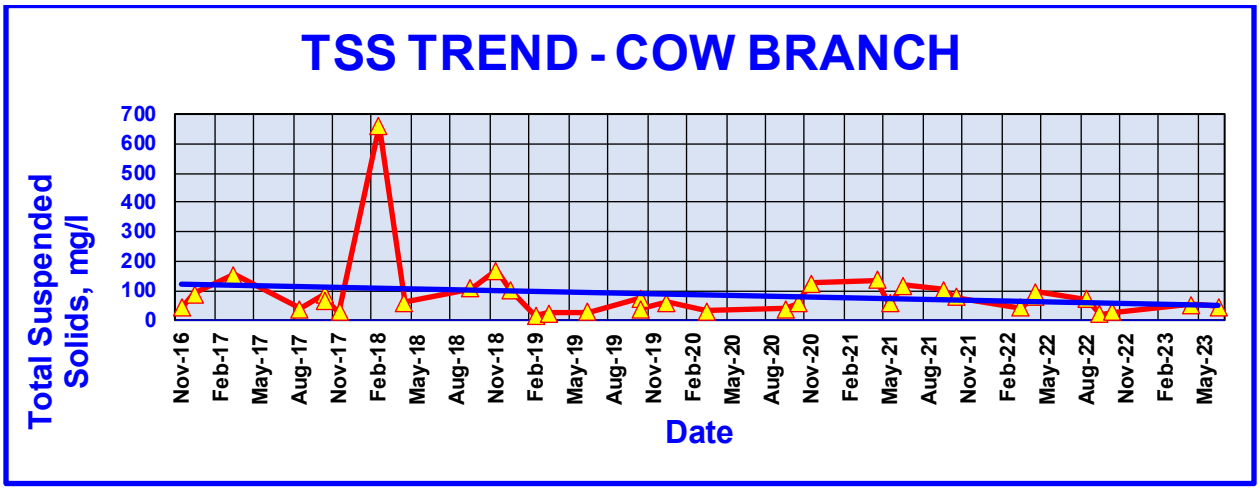
Dawkins Branch







Cow Branch


TSS TREND - COW BRANCH
Total Suspended Solids, mg/l
700
600
500
400
300
200
100
0
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
May-19
Aug-19
Nov-19
Feb-20
May-20
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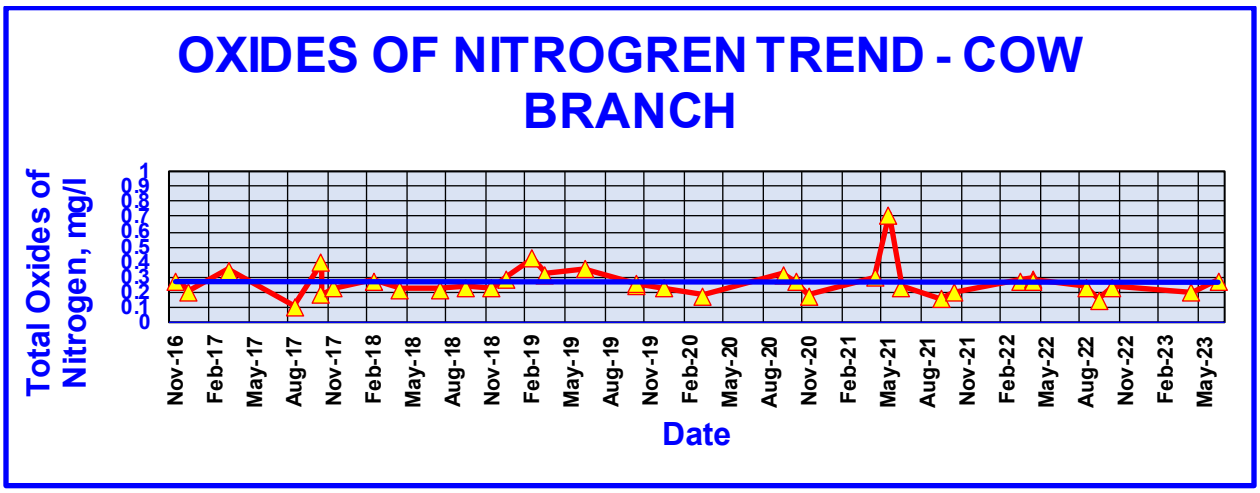
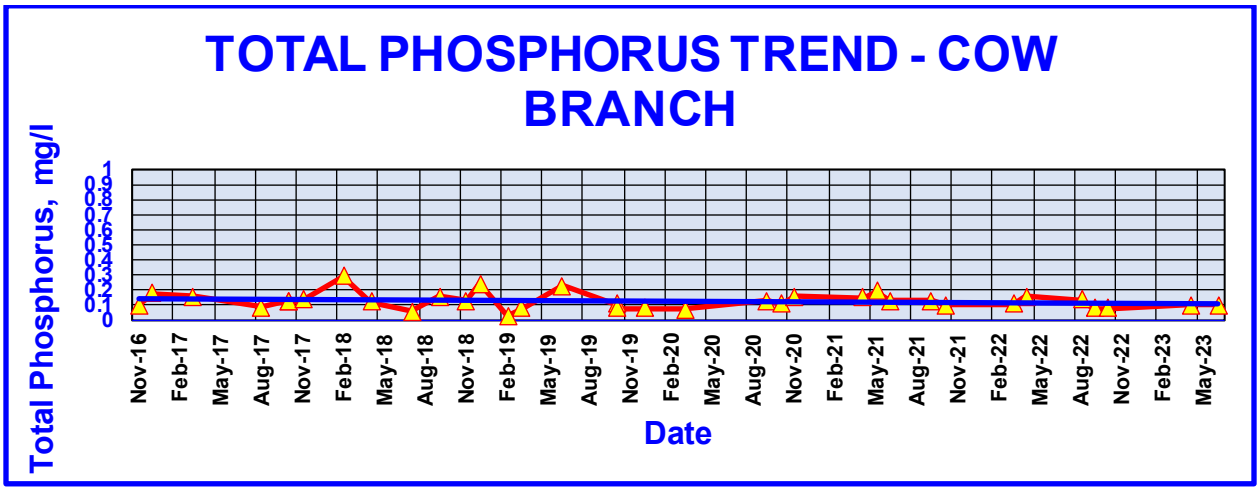
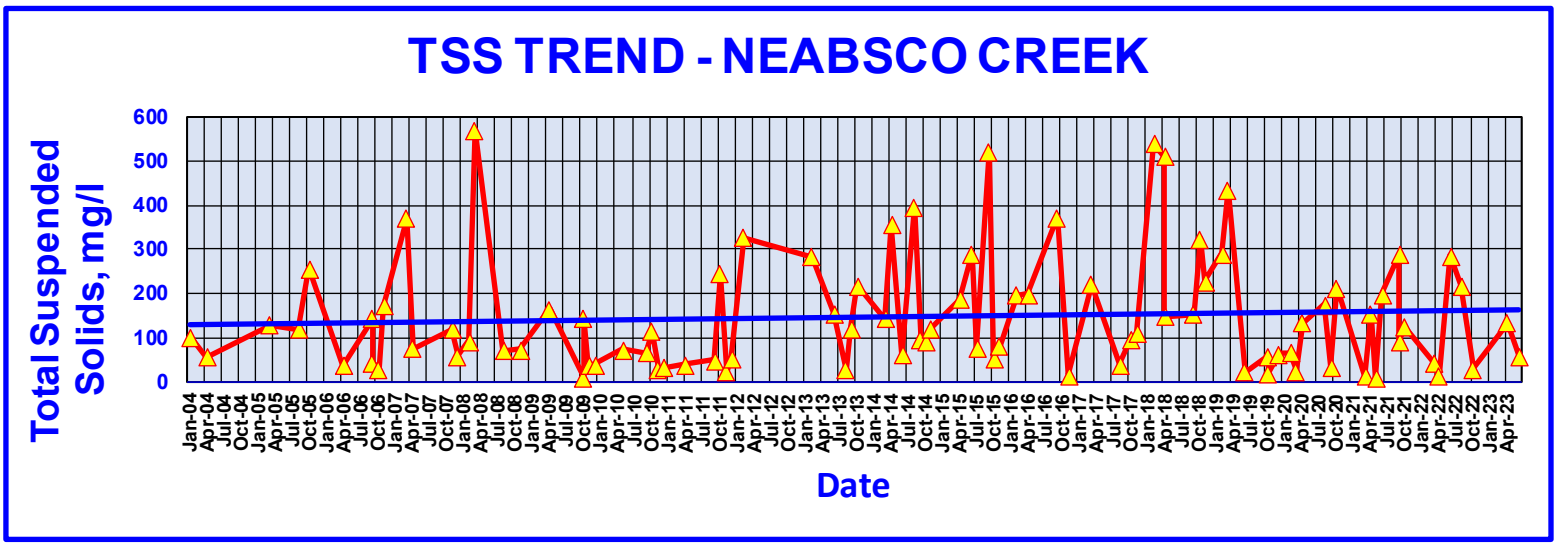
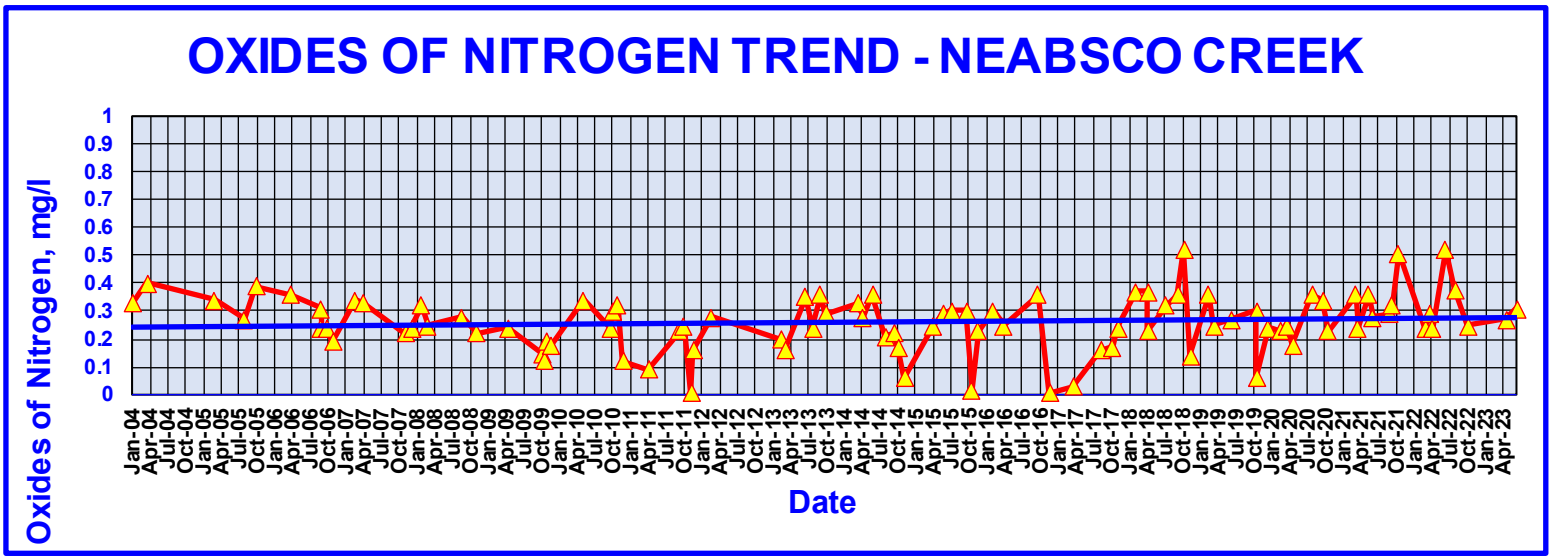
Nov-22
Feb-23
May-23
Date

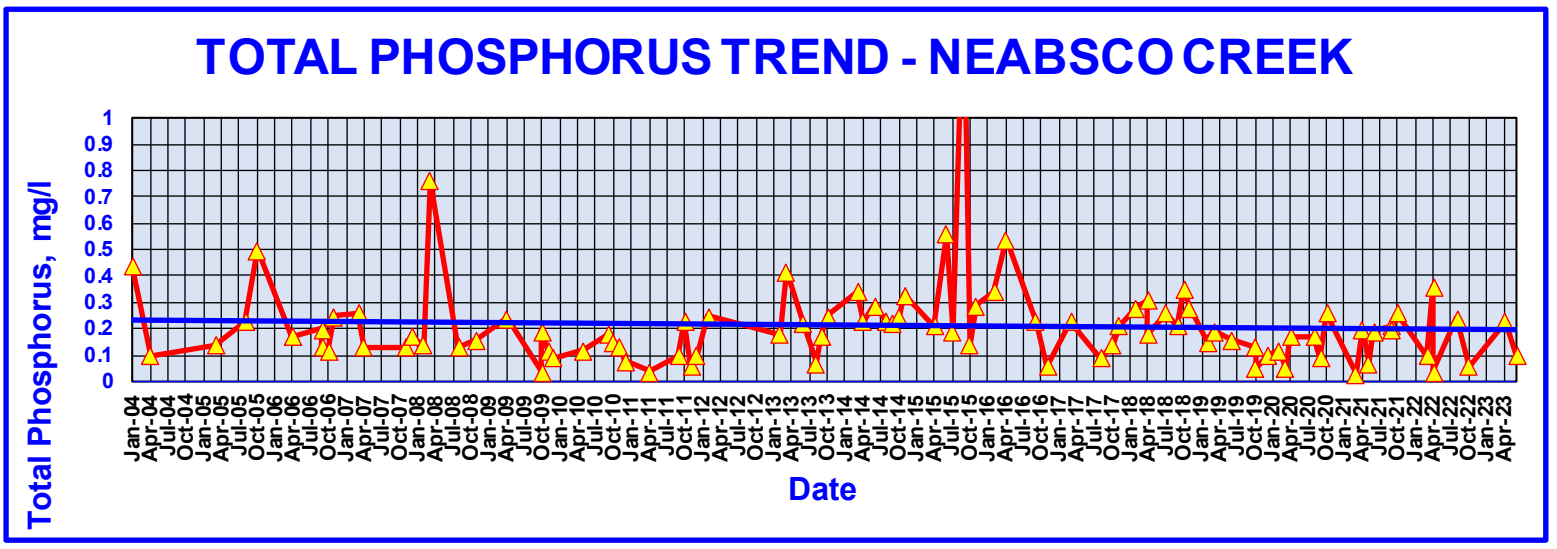

OXIDES OF NITROGREN TREND - COW BRANCH
Total Oxides of Nitrogen, mg/l
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
May-19
Aug-19
Nov-19
Feb-20
May-20
Aug-20
Nov-20
Feb-21
May-21
Aug-21
Nov-21
Feb-22
May-22
Aug-22
Nov-22
Feb-23
May-23
Date


TOTAL PHOSPHORUS TREND - COW BRANCH
Total Phosphorus, mg/l
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
May-19
Aug-19
Nov-19
Feb-20
May-20
Aug-20
Nov-20
Feb-21
May-21
Aug-21
Nov-21
Feb-22
May-22
Aug-22
Nov-22
Feb-23
May-23
Date

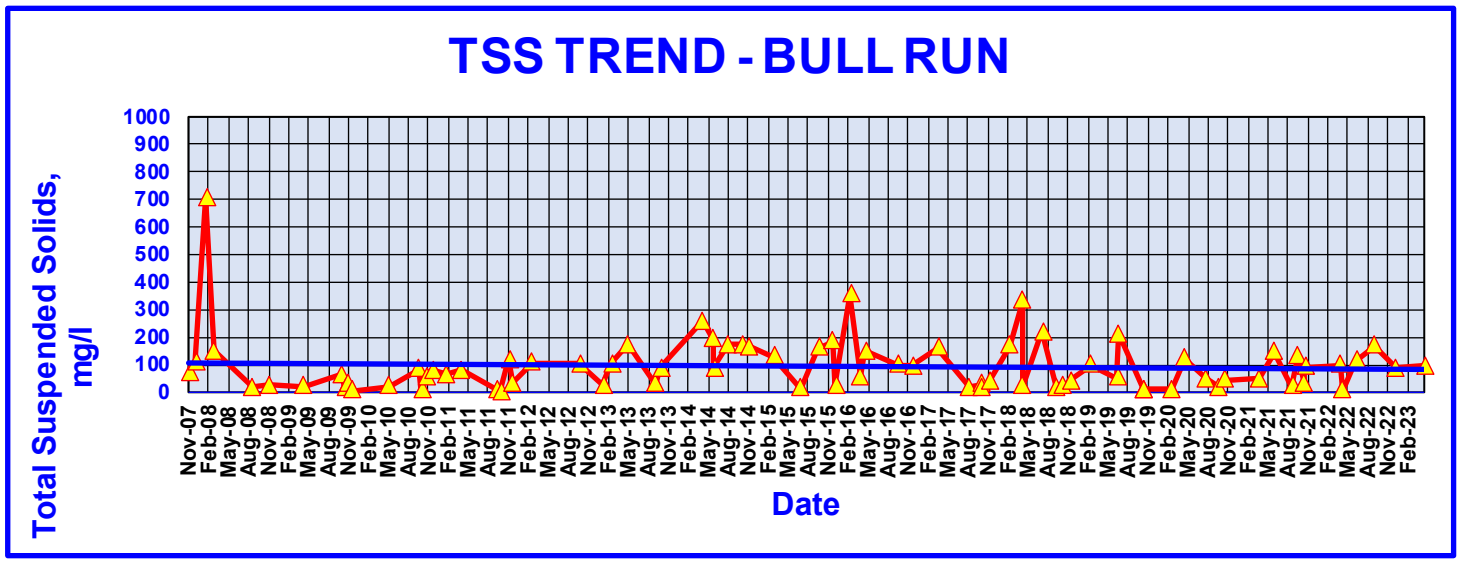
Neabsco Creek

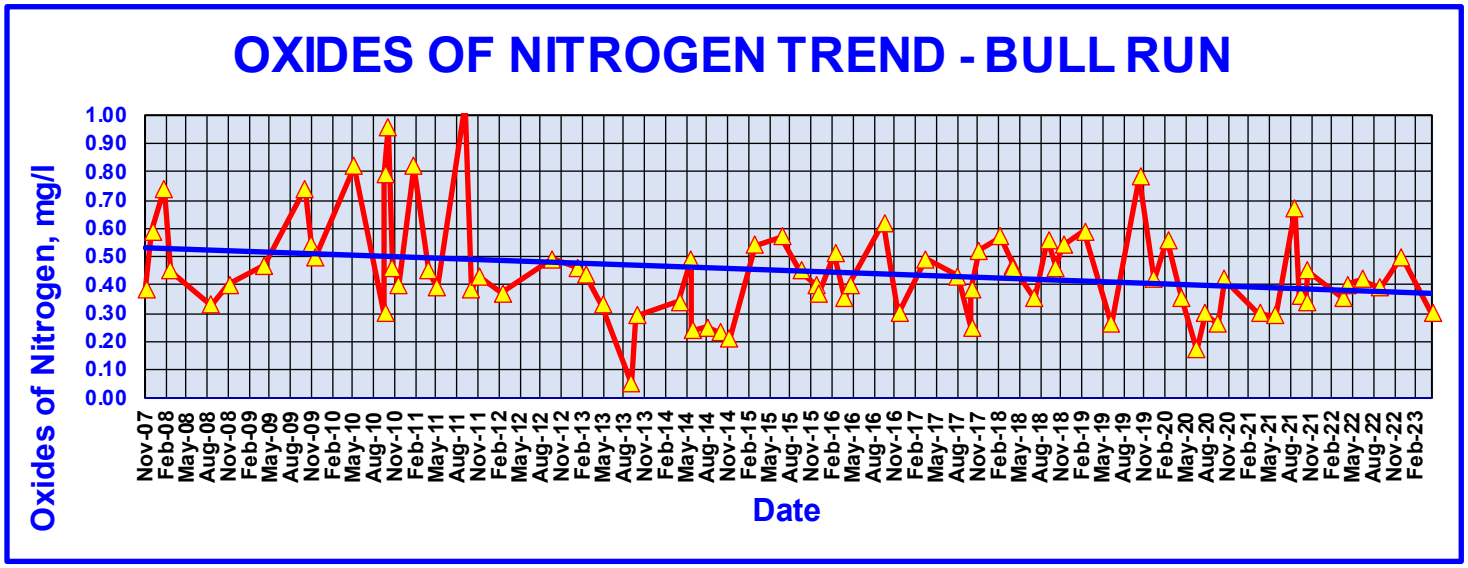


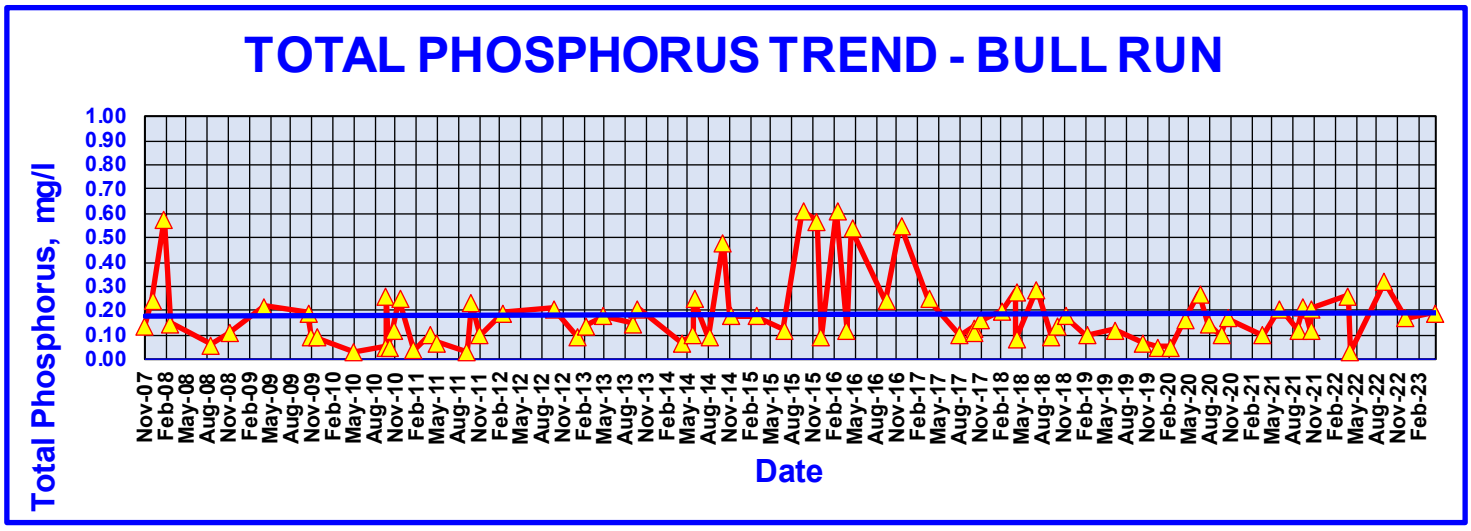




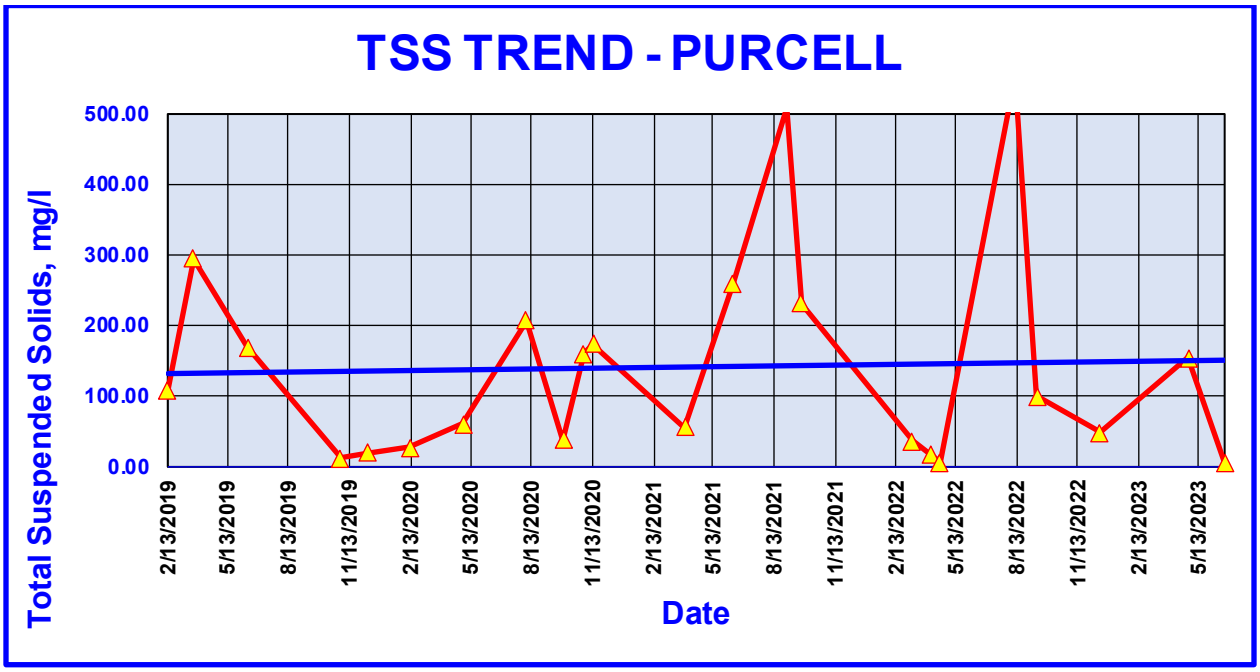
Bull Run

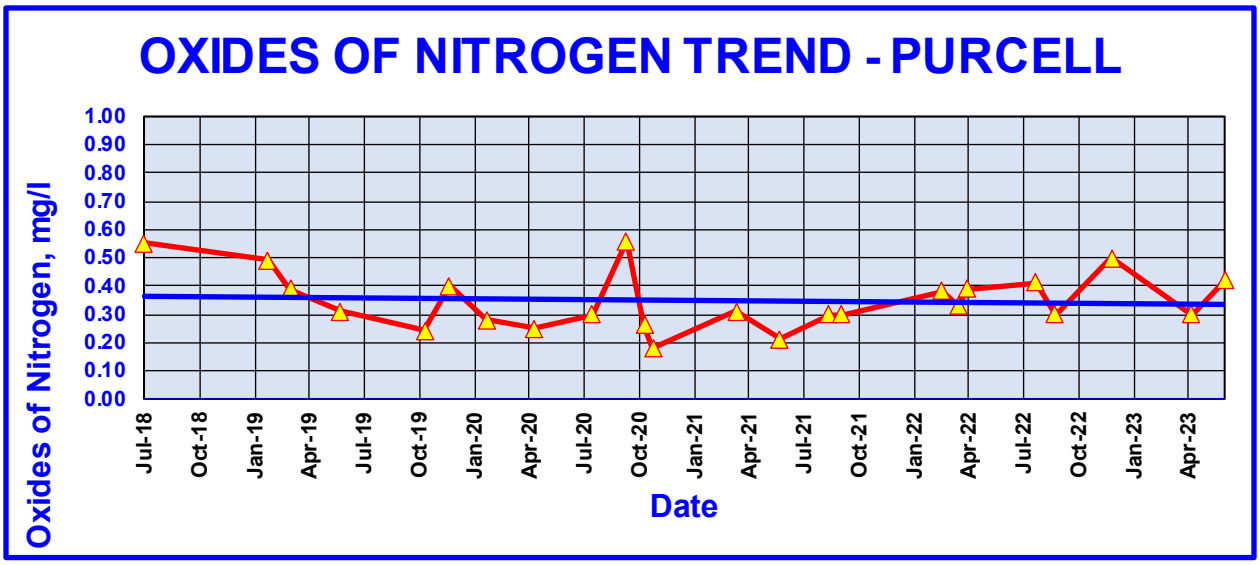

TSS TREND - BULL RUN
Total Suspended Solids, mg/l
1000
900
800
700
600
500
400
300
200
100
0
Nov-07 Feb-08 May-08 Aug-08 Nov-08 Feb-09 May-09 Aug-09 Nov-09 Feb-10 May-10 Aug-10 Nov-10 Feb-11 May-11 Aug-11 Nov-11 Feb-12 May-12 Aug-12 Nov-12 Feb-13 May-13 Aug-13 Nov-13 Feb-14 May-14 Aug-14 Nov-14 Feb-15 May-15 Aug-15 Nov-15 Feb-16 May-16 Aug-16 Nov-16 Feb-17 May-17 Aug-17 Nov-17 Feb-18 May-18 Aug-18 Nov-18 Feb-19 May-19 Aug-19 Nov-19 Feb-20 May-20 Aug-20 Nov-20 Feb-21 May-21 Aug-21 Nov-21 Feb-22 May-22 Aug-22 Nov-22 Feb-23
Date

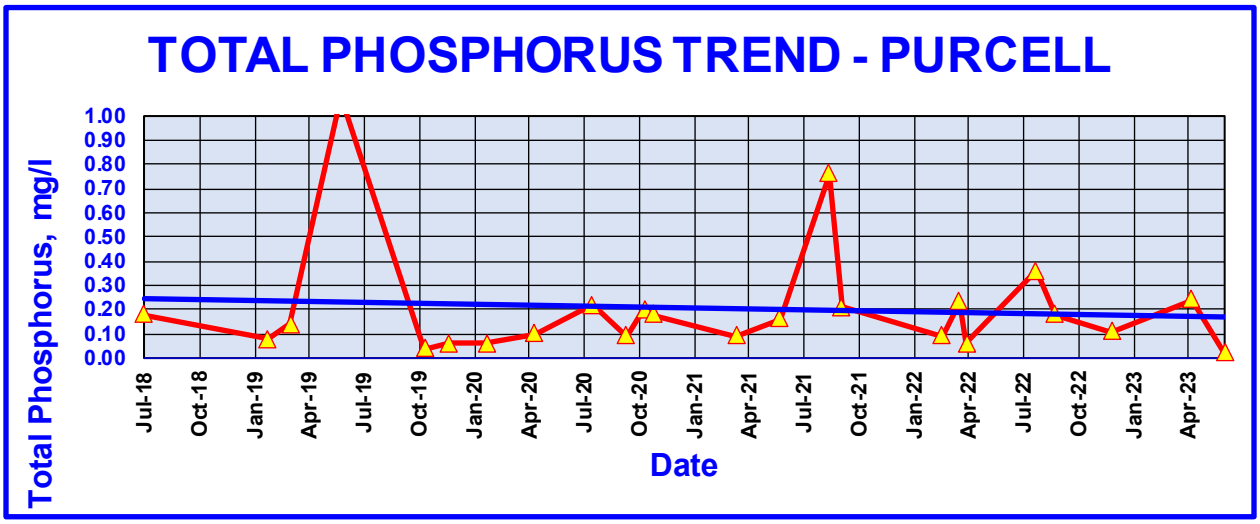

OXIDES OF NITROGEN TREND - BULL RUN
Oxides of Nitrogen, mg/l
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Nov-07 Feb-08 May-08 Aug-08 Nov-08 Feb-09 May-09 Aug-09 Nov-09 Feb-10 May-10 Aug-10 Nov-10 Feb-11 May-11 Aug-11 Nov-11 Feb-12 May-12 Aug-12 Nov-12 Feb-13 May-13 Aug-13 Nov-13 Feb-14 May-14 Aug-14 Nov-14 Feb-15 May-15 Aug-15 Nov-15 Feb-16 May-16 Aug-16 Nov-16 Feb-17 May-17 Aug-17 Nov-17 Feb-18 May-18 Aug-18 Nov-18 Feb-19 May-19 Aug-19 Nov-19 Feb-20 May-20 Aug-20 Nov-20 Feb-21 May-21 Aug-21 Nov-21 Feb-22 May-22 Aug-22 Nov-22 Feb-23
Date


TOTAL PHOSPHORUS TREND - BULL RUN
Total Phosphorus, mg/l
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Nov-07 Feb-08 May-08 Aug-08 Nov-08 Feb-09 May-09 Aug-09 Nov-09 Feb-10 May-10 Aug-10 Nov-10 Feb-11 May-11 Aug-11 Nov-11 Feb-12 May-12 Aug-12 Nov-12 Feb-13 May-13 Aug-13 Nov-13 Feb-14 May-14 Aug-14 Nov-14 Feb-15 May-15 Aug-15 Nov-15 Feb-16 May-16 Aug-16 Nov-16 Feb-17 May-17 Aug-17 Nov-17 Feb-18 May-18 Aug-18 Nov-18 Feb-19 May-19 Aug-19 Nov-19 Feb-20 May-20 Aug-20 Nov-20 Feb-21 May-21 Aug-21 Nov-21 Feb-22 May-22 Aug-22 Nov-22 Feb-23
Date

Purcell


TSS TREND - PURCELL
Total Suspended Solids, mg/l
500.00
400.00
300.00
200.00
100.00
0.00
2/13/2019
5/13/2019
8/13/2019
11/13/2019
2/13/2020
5/13/2020
8/13/2020
11/13/2020
2/13/2021
5/13/2021
8/13/2021
11/13/2021
2/13/2022
5/13/2022
8/13/2022
11/13/2022
2/13/2023
5/13/2023
Date


OXIDES OF NITROGEN TREND - PURCELL
Oxides of Nitrogen, mg/l
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
Jan-21
Apr-21
Jul-21
Oct-21
Jan-22
Apr-22
Jul-22
Oct-22
Jan-23
Apr-23
Date


TOTAL PHOSPHORUS TREND - PURCELL
Total Phosphorus, mg/l
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
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Jan-21
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Jul-21
Oct-21
Jan-22
Apr-22
Jul-22
Oct-22
Jan-23
Apr-23
Date

Appendix R

Floatables Monitoring Report

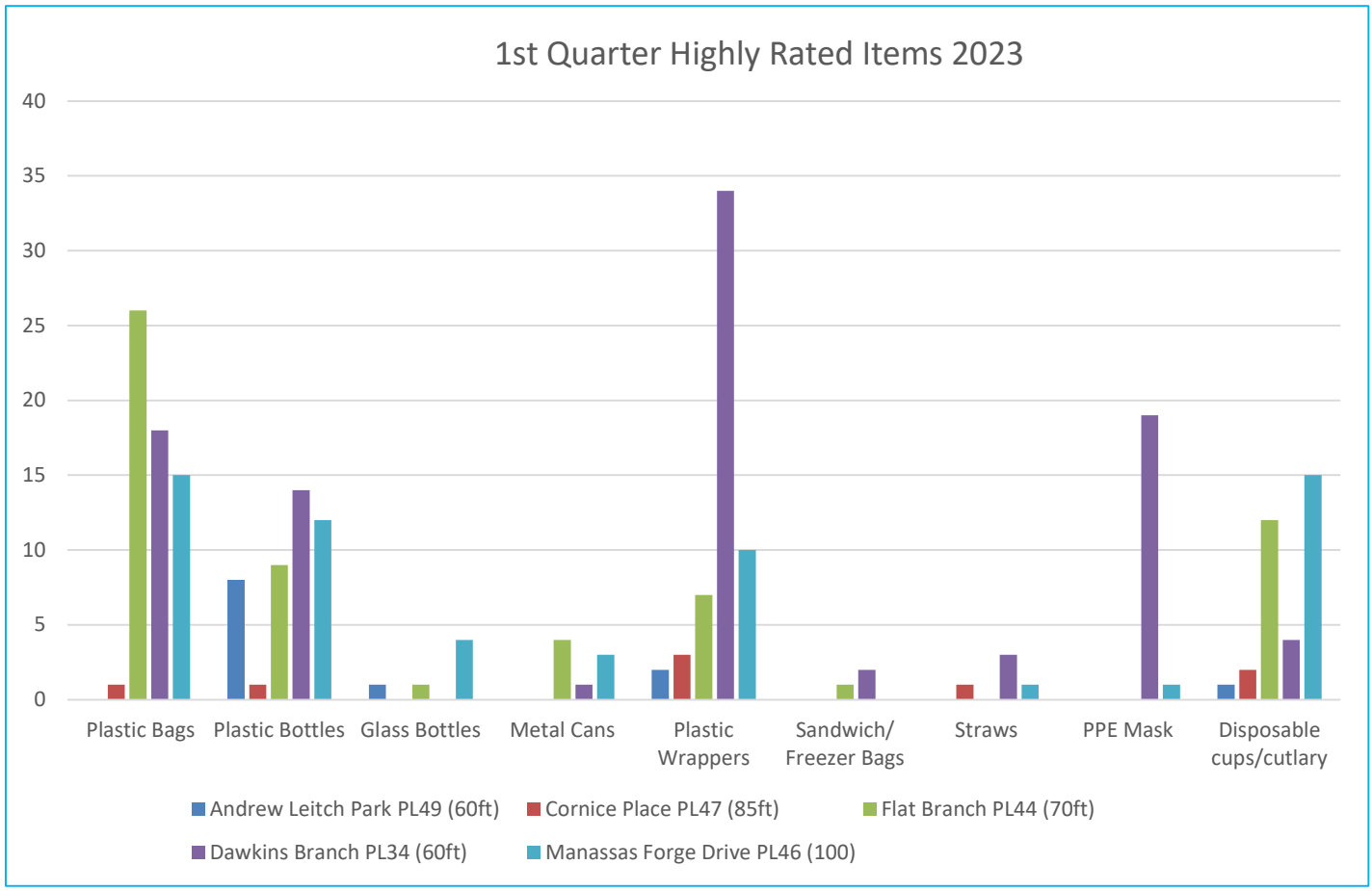
PRINCE WILLIAM SOIL AND WATER CONSERVATION DISTRICT

8850 Rixlew Lane, Manassas, VA 20109 Tel. 571.379.7514 Fax. 571.379.8305 www.pwswcd.org

Prince William County Floatable Survey

2023 Fiscal Year Report

Figure 1. Top on the list of floatable Items collected during the 1st Quarter



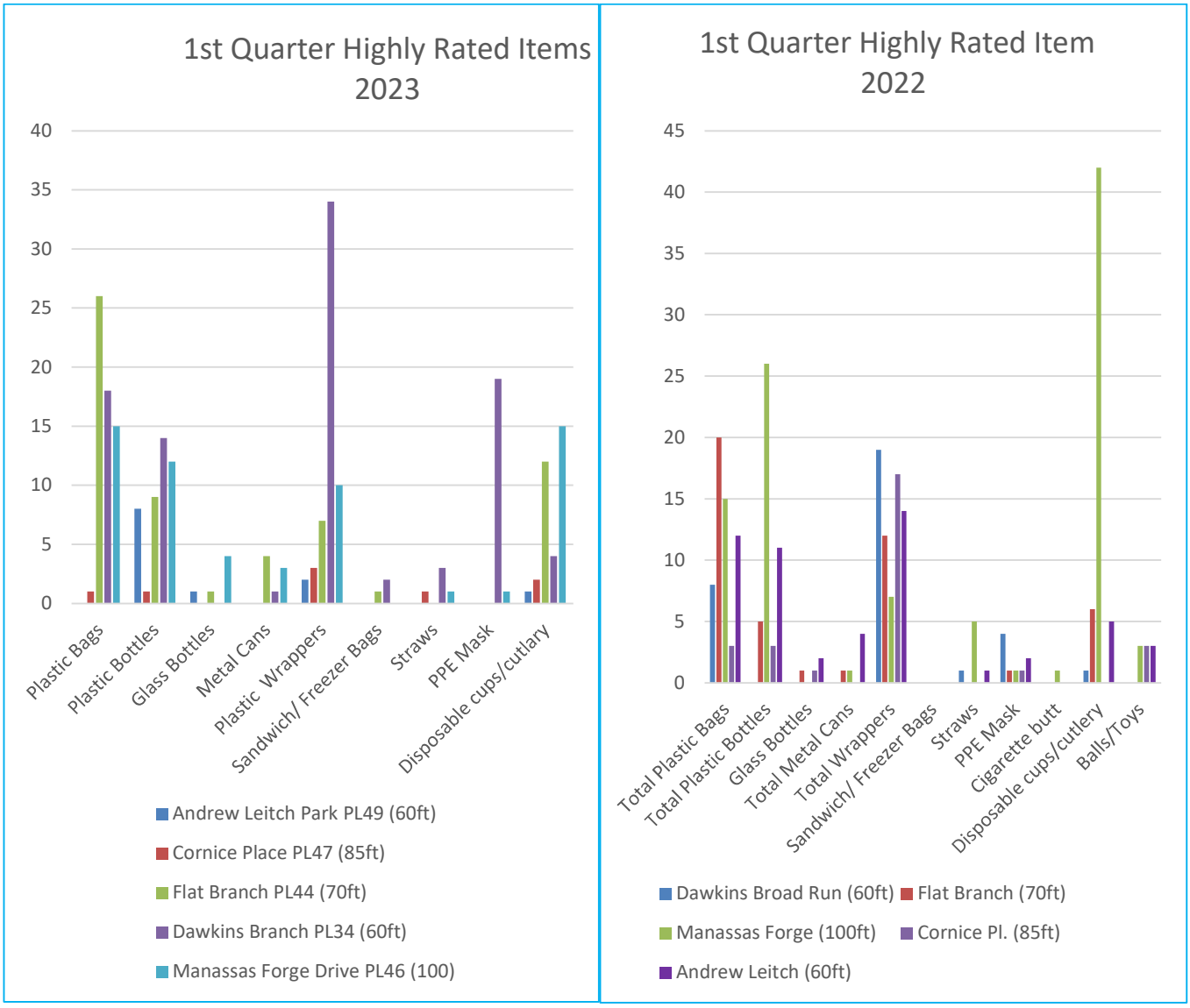
Monitoring during the 1st Quarter showed a high number of plastic bags, plastic wrappers, plastic bottles, and disposable cups/cutlery at all five sites. This has been the same trend recorded in 2021 and 2022. While plastic bags were dominant at Flat Branch, plastic bottles, plastic wrappers, and PPE were dominant at Dawkin's Branch. Manassas Forge had a variety of items with plastic bags, bottles, wrappers, and disposable cups/cutlery significantly present.

Comparing 1st Quarter of 2022 and 2023 Fiscal year

Comparing the items collected during the 1st Quarter of 2023 to that of the 2022 Fiscal year, Dawkin's Branch registered the highest number of plastic wrappers. Flat Branch was dominant in plastic bags. Dawkin's

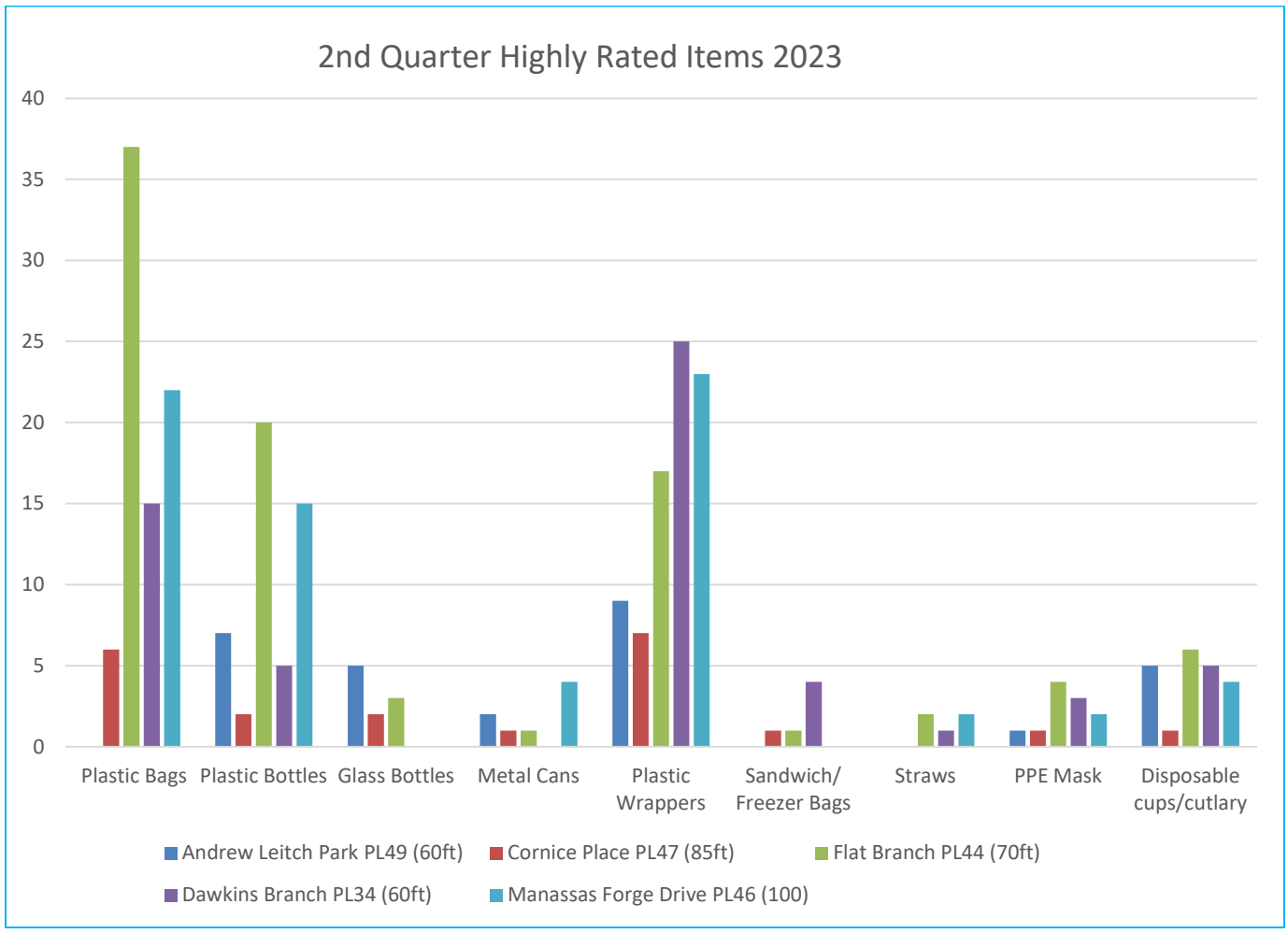
Branch had the highest number of plastic bottles, wrappers, and PPE. Disposable food items were also significant as was the case registered in 2022.

Figure 1a. Comparing 2022 and 2023



Phase 2

Figure 2. Top on the list of Floatable Items collected during the 2nd Quarter



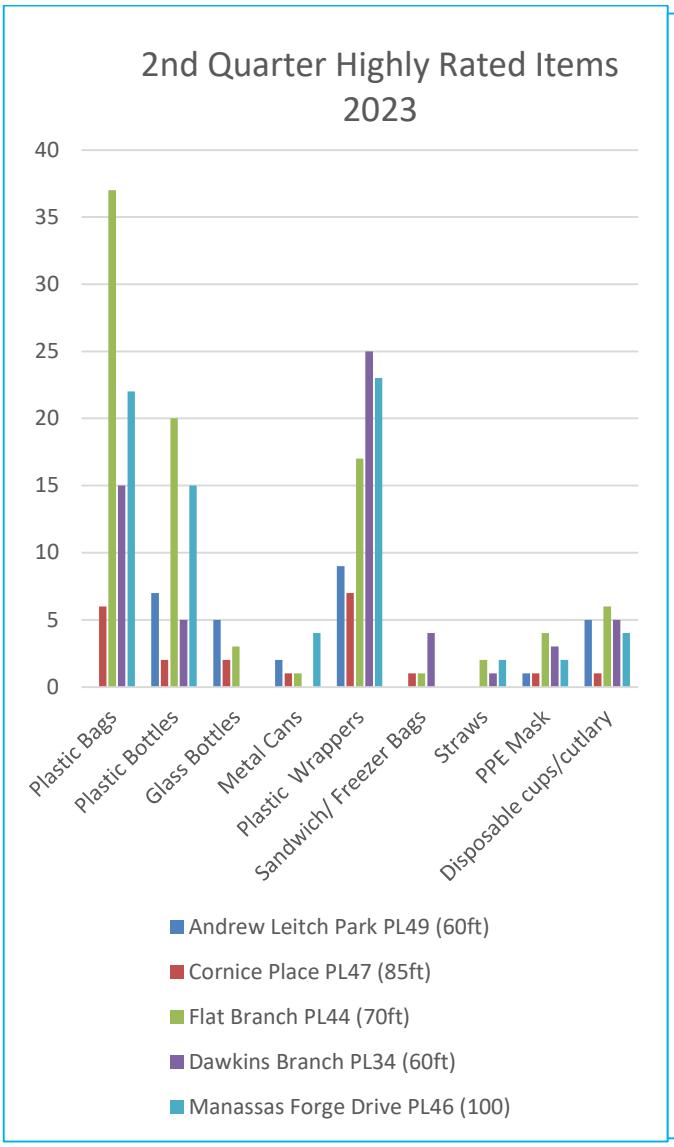
The 2nd Quarter of 2023 registered plastic bags, plastic wrappers, and plastic bottles as the most dominant items respectively. Disposable food items and PPE were also registered at all five sites.

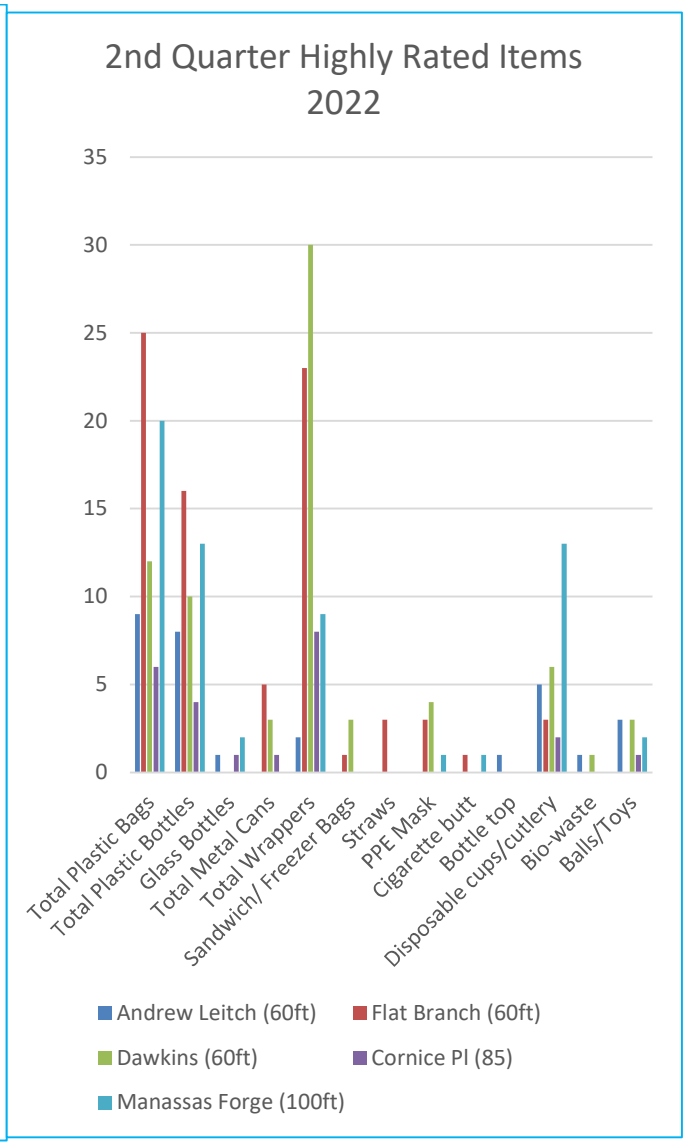
Comparing the 2nd Quarter 2023 and 2022 Fiscal year

Dawkin's Branch, Flat Branch, and Manassas Forge registered a significantly high number of plastic bags, plastic bottles, and plastic wrappers again in 2023 as has been the case for the past three years (2020, 2021, and

2022) (Fig 2a). Cornice Place as usual stayed in all floatable items registered in 2023. Manassas Forge, Flat Branch, Dawkin's Branch, and Andrew Lietch remained dominant in all the varieties of floatable items.

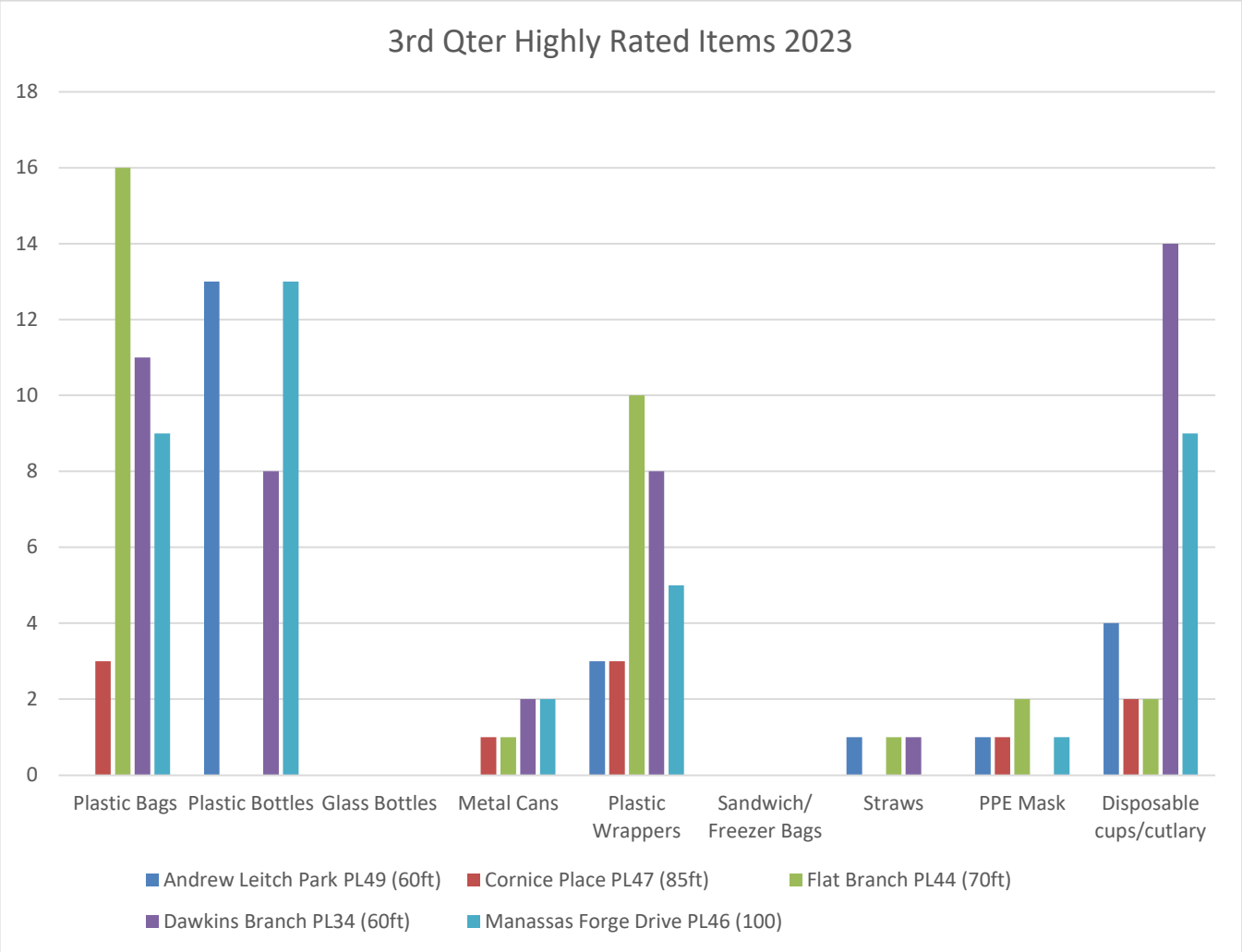
Figure 2a. Comparing 2022 and 2023





Phase III

Figure 3. Top on the list of Floatable Items collected during the 3rd Quarter



During the the 3rd Quarter of 2023 plastic bags, plastic bottles, plastic wrappers, and disposable cups/cutlery were the dominant items collected. However, plastic bottles were not recorded at Flat Branch and Cornice Place. This could be attributed to the fact that with less vegetation and heavy rainfall during this time of the year, floatables were easily transported downstream with fewer obstructions. The diversity in the collected items during this time also showed the increased presence of folks outdoors as they gained some relief from the lesser severity of the pandemic.

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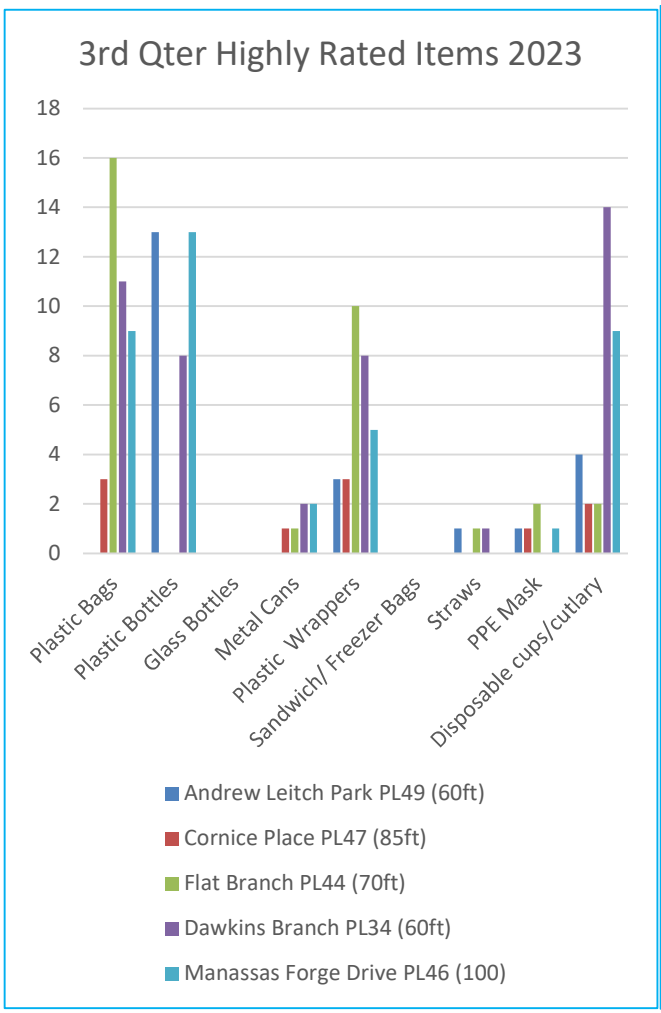
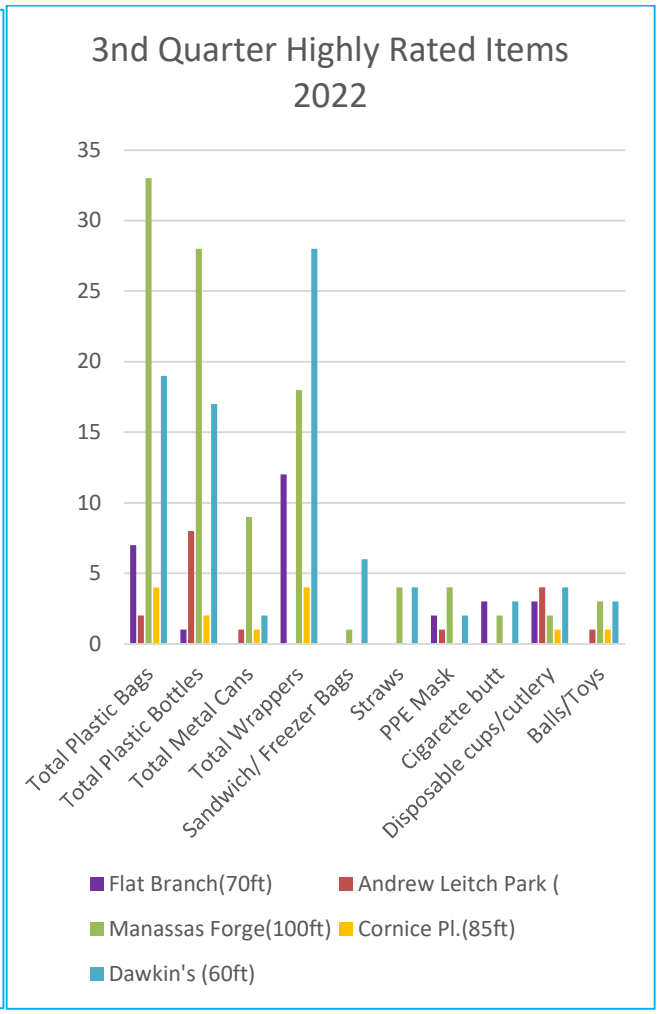
Comparing 3rd Quarter of 2023 and 2022 Fiscal year

Figure 3a. Comparing 2021 and 2022

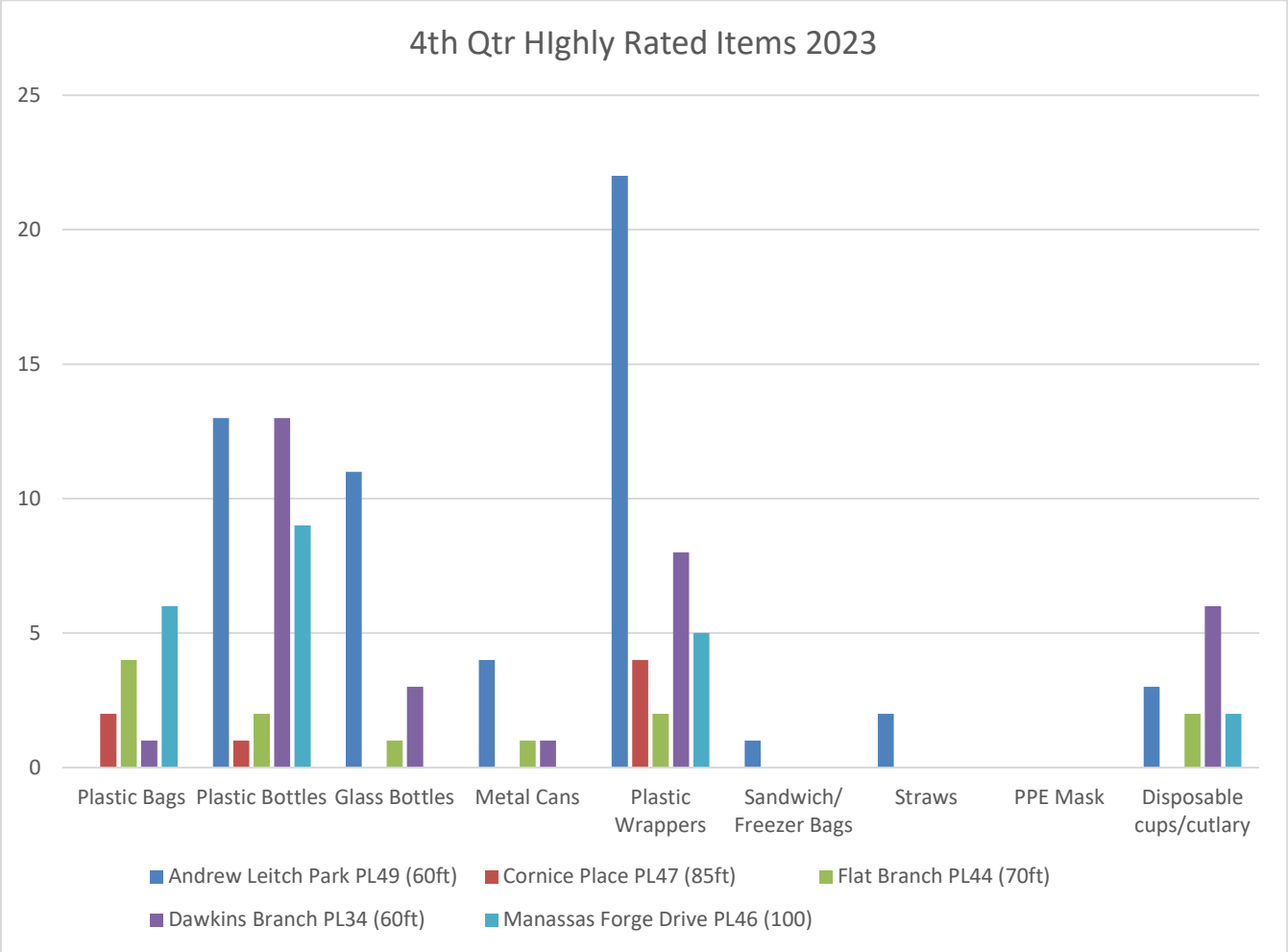




Comparing 3rd Quarter plastic bags, wrappers, and bottles were significantly high at all five sites in 2023 as was the case in 2022. However, the number of disposable fast-food items thought present at all five sites, Dawkin's branch and Manassas forge registered the highest. It is worth noting that Dawkin's branch is very close to a playground and Manassas Forge is close to a business shopping area.

PHASE IV

Figure 4. Top on the list of Floatable Items collected during the 4th Quarter

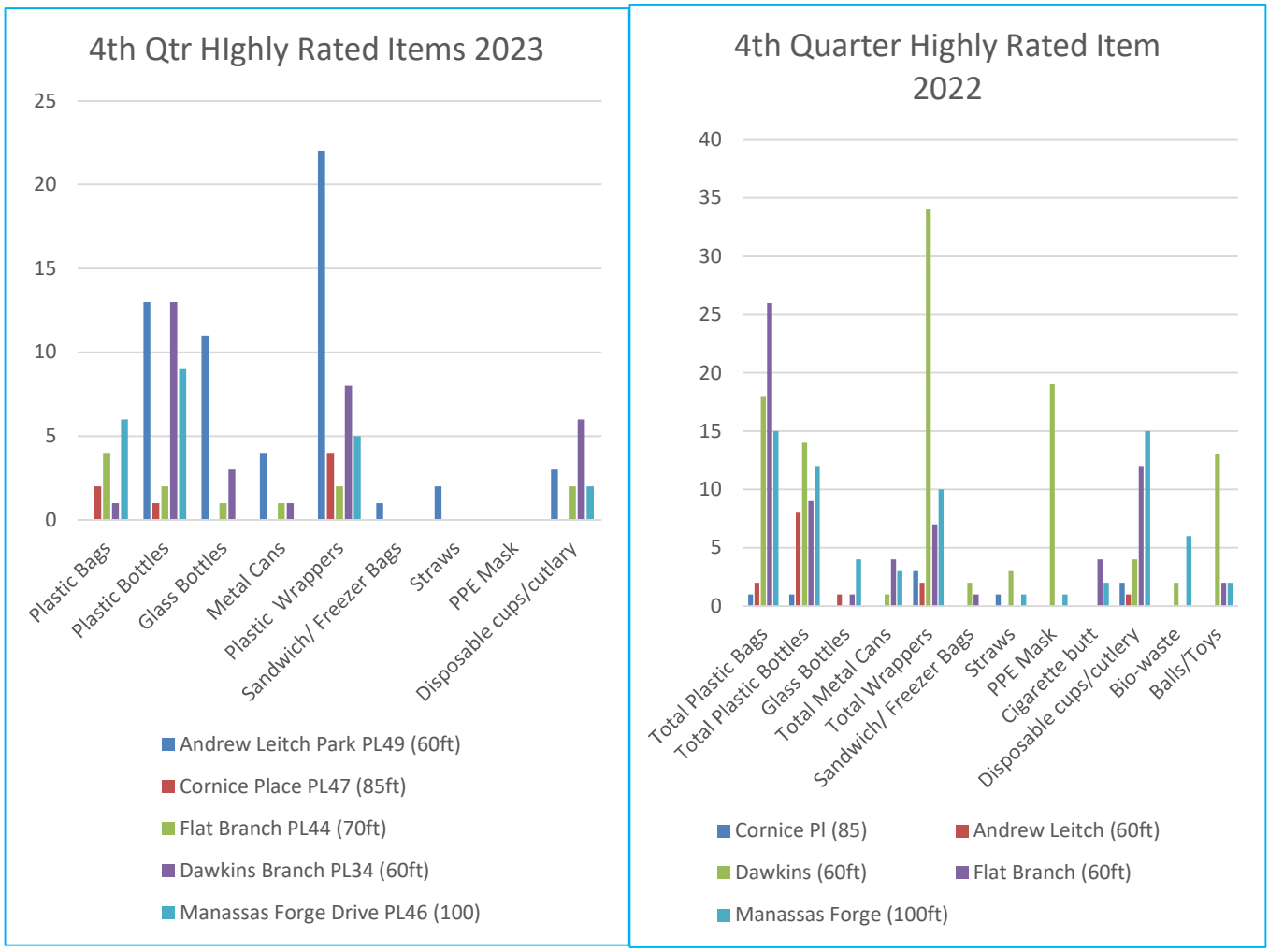


Comparing the 4th Quarter of 2023 and 2022 Fiscal year

The 4th Quarter of 2023 showed a smaller number of floatable items from the different sites due to low water in streams as a result of high temperatures. However, Andrew Leitch, Manassas Forge, and Dawkin's Branch remained dominant in the number of monitored floatable items registering a high number of plastic wrappers, plastic bags, and plastic bottles.

Overall, plastic bags, plastic bottles, wrappers, and disposable items (cups and cutlery) were significantly high at all the monitoring sites. This followed a similar trend in the past years. However, in 2023, PPE was absent in the streams which was a significant change in the data compared to 2001 and 2022 reports which was the peak of the COVID-19 Pandemic (Figure 4a).

Figure 4a. Comparing 2023 and 2022



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General Analysis of Floatable Items Collected in 2023

PHASES

This report covers five sites that are monitored quarterly on plastic floatable items. Phase I (July 2022 – September 2022), Phase II (October 2022 – December 2022), Phase III (January 2023 – March 2023) and Phase IV (April 2023 – June 2023).

The data collected in 2023 has again laid more emphasis and attention on the dominant floatable items which has been the same in the previous years. These items can be presented in a range to reflect their pollution levels in Prince William County waterways as shown be the table below.

Items	***Rating (Top 10 items)***	***Comments/Field Observation***
Plastic Wrappers	*1st Position*	*Most dominant of all types. Snack wrappers are significant overall*
Plastic bags	*2nd Position*	*Very high especially the T-Shirt bags from different businesses*
Plastic Bottles	*3rd position*	*Dominated by plastic water bottles followed by beverage bottles.*
Disposable food items	*4th Position*	*Significantly high and branded*
Personal Protective Equipment (PPE	*5th Position*	*Significant because of the COVID-19 pandemic but at a decreasing rate*
Metal Cans	*6th Position*	*Significant; mostly beverage cans*
Straws	*7th Position*	*Significant*
Glass Bottles	*8th Position*	*Significant; mostly broken bottles*

Table 1. The trend of floatable items in Prince William County's Waterways.

Some recommendations:

- More education is needed in schools and the community on the negative effect of plastic items on water quality. This will help create more awareness on littering which is a big problem in a suburban community like Prince William County.
- Fines should be enforced on those littering, especially from cars and other highway users. This will help bring a change in public littering and behavior.

Conclusion

Prince William County is making great progress in promoting clean water and waterways for future generations. The nature of its floatable monitoring program stands out as noted by the Clean Virginia Waterways Program of Longwood University. As Prince William County advances in its floatable monitoring program, the hope of bringing change in littering as a social behavior will be supported by this data as it presents meaningful results to help address the challenges of water quality and plastic pollution.

As shown by the data, plastic wrappers, plastic bags, and plastic bottles are the most collected items in local waterways. This therefore calls for more support in the efforts to help address the issue of littering and the negative effects plastic has on humans, which disrupts the flourishing of many living organisms and interferes with the food chain in general. Today, the negative impact of plastics on human health is a great call for concern especially when we talk about "Forever chemicals".

It is worth noting that efforts to help tackle the issue of plastic pollution in relation to water quality and human health will also go a long way to protect the rich biodiversity in the Chesapeake Bay Watershed.

Appendix S

Chesapeake Bay TMDL Reductions Summary

Chesapeake Bay Watershed TMDL

Prince William County submitted the required Chesapeake Bay TMDL Action Plan (TMDL Action Plan) on December 16, 2016, which was subsequently approved on June 28, 2017. The TMDL Action Plan documents how the County intends to meet the requirements of the Chesapeake Bay Special Condition included in the MS4 Permit.

In Section I.D.1, Chesapeake Bay Special Condition, the County is required to document the means and methods that will be utilized to meet the required reductions of specific Pollutants of Concern (POCs) allocated in the Special Condition of the Commonwealth of Virginia's Phase I and II Chesapeake Bay Total Maximum Daily Load (TMDL) Watershed Implementation Plans (WIPs). These reductions are based on the Level 2 (L2) scoping run of the Chesapeake Bay Watershed Model for existing developed lands (pervious and impervious regulated urban lands developed prior to July 1, 2009). Level 2 implementation equates to an average reduction of 9% of nitrogen loads, 16% of phosphorous loads, and 20% of sediment loads from impervious regulated areas and 6% of nitrogen loads, 7.25% of phosphorous loads, and 8.75% of sediment loads from pervious regulated acres beyond the 2009 progress run loadings.

As part of this effort, Virginia Department of Environmental Quality (VADEQ) has committed to a phased approach for MS4 permittees to implement necessary reductions. Permittees will have up to three, five-year permit cycles to achieve required reductions. Prince William County's first permit cycle (December 17, 2014 – December 16, 2019) represents implementation of 5% of the L2 as specified in the 2010 Phase I WIP. The second permit cycle will require an additional 35% of total L2 reductions (40% cumulative), while the final permit cycle will require implementation of the remaining 60% of reductions (100% cumulative).

The total reductions planned to be achieved during the first permit cycle, as identified in the approved Action Plan, are listed in Table 1. The table also identifies the percentage of the L2 scoping run reductions that will be achieved after implementation of the Action Plan.

Table 1 - Planned Reductions per Approved Action Plan

Pollutant of Concern	Planned 1st Permit Cycle Load Reductions (lbs/yr)	Percentage of L2 Reduction Achieved After Implementation
Total Nitrogen (TN)	6,706.58	33.5%
Total Phosphorus (TP)	1,370.40	62.0%
Total Suspended Solids (TSS)	893,286.63	49.4%

Prince William County has a comprehensive watershed improvement program, which aims to improve water quality through the implementation of water quality improvement projects such as stormwater facility retrofits, stream restorations, and reforestation projects.

During the reporting period, construction of Powells Creek Phase 2 stream restoration commenced and is scheduled to be completed in 2024.

Based on the reductions achieved through implementation of the water quality improvement projects identified in the approved Action Plan, Table 2 summarizes the cumulative progress toward meeting the compliance targets. The permit requires that 5% of the L2 reductions be achieved during the first permit cycle. As shown in the table below, this requirement has been exceeded and additional reductions will be applied toward the next permit cycle required reductions.

Table 2 - Cumulative Progress Toward Meeting Compliance Targets

Pollutant of Concern	Previous Reductions Achieved (lbs/yr)	FY20 Reductions (lbs/yr)	Total Reductions to Date (lbs/yr)	Percent of L2 Reduction Achieved to Date
Total Nitrogen (TN)	7,391.31	249.49	7,640.80	38.12%
Total Phosphorus (TP)	1,528.93	105.12	1,634.05	73.97%
Total Suspended Solids (TSS)	857,916.96	426,147.42	1,284,064.38	71.07%

During the next reporting period, two projects are planned for implementation. Please refer to Table 3 for the pollutant reductions associated with this project.

Table 3 - Planned Projects for FY24 Implementation

Project Name	Project Type	TN Reduction (lbs/yr)	TP Reductions (lbs/yr)	TSS Reduction (tons/yr)
SWM Facility #416	Retrofit	284.51	35.84	13.81
Powells Creek Phase 2	Stream	270.94	245.65	81.07
	Total	**555.45**	**281.49**	**84.88**

Prince William County has received nutrient and sediments credits from both UOSA and PWCSA. The County is reporting these credits as a “Reserve” and the credits have not counted towards required deductions.

FY22 Report-Stream Restoration: Stream Restoration Projects Beginning July 1, 2009

WMB Number	Project Name	Status	Installation FY	Latitude	Longitude	Length	Pollutant Removal Rate	Physiographic Province	Estimated Total Pollutant Reduction (lbs/yr)			Percent Unregulated Area	Baseline Adjustment for Unregulated Areas (lbs/yr)			Total Pollutant Reduction Achieved After Baseline Adjustment (lbs/yr)		
									TN	TP	TSS		TN	TP	TSS	TN	TP	TSS
	Completed Projects																	
76	Cow Branch Phase I	Completed	2011	38.62637	-77.27779	1,600	Interim Approved	Coastal Plain	120	108.8	24,208.00	36%	613.55	88.90	77,864.74	77.38	70.16	15,609.85
78	Cow Branch Phase II	Completed	2012	38.63309	-77.27754	1,086	Interim Approved	Coastal Plain	81.45	73.848	16,431.18	37%	533.87	77.39	67,792.77	51.44	46.64	10,377.70
81	Lower Cabin Run	Completed	2012	38.55637	-77.31275	1,073	Interim Approved	Coastal Plain	80.475	72.964	16,234.49	3%	5.42	0.57	463.86	78.40	72.39	15,815.83
11	Northgate	Completed	2013	38.60703	-77.32944	300	Interim Approved	Piedmont	22.5	20.4	13,464.00	19%	1,084.44	100.84	77,953.88	18.31	16.60	10,954.81
82	Deerfield Estates	Completed	2013	38.72890	-77.41942	225	Interim Approved	Piedmont	16.875	15.3	10,098.00	5%	2.40	0.25	204.70	16.10	15.05	9,893.30
79	Cow Branch III	Completed	2015	38.63026	-77.27800	1,000	Interim Approved	Coastal Plain	75	68	15,130.00	39%	604.15	87.75	76,896.67	45.88	41.60	9,255.93
268	Oak Street	Completed	2015	38.78353	-77.43967	200	Interim Approved	Piedmont	15	13.6	8,976.00	80%	232.74	23.42	18,609.81	3.02	2.74	1,806.18
43	Hylbrook Park	Completed	2016	38.65086	-77.26413	1,268	Interim Approved	Coastal Plain	95.1	86.224	19,184.84	27%	67.25	8.06	6,752.78	68.99	78.16	13,918.49
49	East Longview - Route 1 Restoration	Completed	2017	38.64522	-77.26070	925	Interim Approved	Coastal Plain	69.375	62.9	13,995.25	68%	95.00	11.94	10,119.16	22.52	50.96	4,543.39
100	Dewey's Creek Reach 4	Completed	2017	38.56467	-77.31045	400	Interim Approved	Coastal Plain	30	27.2	6,052.00	29%	342.39	38.66	31,845.39	21.20	19.22	4,276.94
158	Reach 5	Completed	2017	38.68478	-77.29637	2,100	Interim Approved	Piedmont	157.5	142.8	94,248.00	12%	10.24	1.25	1,056.83	147.26	141.55	93,191.17
102	Dewey's Creek Reach 1	Completed	2018	38.57572	-77.31094	1,270	Protocols	Coastal Plain	180	66	19,200.00	28%	277.11	32.85	27,422.95	68.35	61.97	13,788.21
99	Dewey's Creek Reach 2	Completed	2020	38.56572	-77.30986	4,865	Protocols	Coastal Plain	956	353	102,800.00	29%	334.00	38.01	31,377.59	622.00	314.99	71,422.41

FY22 Report - SWM Retrofits: Stormwater Facility Retrofits Beginning July 1, 2009

WMB Number		Status	Installation FY	Latitude	Longitude	BMP Practice	Area Treated (Ac)	Impervious Area (Ac)	Pervious Area (Ac)	Forested Area (Ac)	Calculation Method	Estimated Total Pollutant Reduction (lbs/yr)			Precent Unregulated Area	Baseline Adjustment for Unregulated Area (lbs/yr)			Total Pollutant Reduction Achieved after Baseline Adjustment (lbs/yr)		
												TN	TP	TSS		TN	TP	TSS	TN	TP	TSS
	Completed Projects																				
1	SWM Facility #257	Completed	2010	38.70846	-77.42804	Extended Detention	4.28	1.09	1.91	1.28	CBP Established Efficiency, Incremental	7.33	0.35	223.44	13.52%	0.53	0.06	52.90	6.80	0.29	170.54
21	Pond 51 - Hammill Mill Park SWMF	Completed	2011	38.66706	-77.26875	Extended Detention	7.13	2.10	2.76	2.27	CBP Established Efficiency, Incremental	12.41	0.63	406.44	3.06%	0.21	0.03	21.60	12.20	0.60	384.84
23	SWM Facility #154 - Dawson Ridge	Completed	2011	38.64959	-77.26743	Extended Detention	6.48	2.44	2.89	1.15	CBP Established Efficiency, Incremental	12.60	0.69	449.74	9.17%	0.61	0.08	69.64	11.99	0.61	380.09
24	SWM Facility #157 - Dawson Ridge	Completed	2011	38.64802	-77.26509	Extended Detention	4.86	1.56	1.46	1.83	CBP Established Efficiency, Incremental	8.38	0.44	290.67	7.23%	0.36	0.05	40.57	8.03	0.39	250.11
83	SWM Facility #363	Completed	2013	38.73062	-77.41825	Extended Detention	35.42	8.54	14.34	12.53	CBP Established Efficiency, Incremental	58.53	2.77	1,758.43	0.52%	0.18	0.02	19.30	58.35	2.75	1,739.13
129	SWM Facility #318	Completed	2013	38.56811	-77.30660	Extended Detention	17.48	3.27	9.46	4.75	CBP Established Efficiency, Incremental	28.95	1.27	763.03	0.00%	0.00	0.00	0.00	28.95	1.27	763.03
145	SWM Facility #494	Completed	2013	38.78569	-77.53199	Constructed Wetland	38.27	15.26	22.13	0.88	CBP Retrofits Expert Panel, ST, Incremental	99.20	14.00	5,442.51	5.70%	2.20	0.29	244.38	97.00	13.72	5,198.13
69	SWM Facility #77	Completed	2014	38.74038	-77.42235	Extended Detention	54.12	6.38	22.48	25.26	CBP Established Efficiency, Incremental	77.15	2.97	1,747.72	14.09%	5.89	0.55	424.59	71.26	2.42	1,323.13
85	SWM Facility #505	Completed	2014	38.56390	-77.30522	Extended Detention	16.26	4.28	7.77	4.22	CBP Established Efficiency, Incremental	28.49	1.39	872.77	3.07%	0.35	0.03	19.68	28.14	1.36	853.09
59	SWM Facility #99	Completed	2015	38.78563	-77.51022	Constructed Wetland	8.89	5.14	3.74	0.00	CBP Retrofits Expert Panel, ST, Incremental	40.20	4.84	4,319.55	81.51%	7.90	1.10	955.15	32.31	3.74	3,364.40
80	SWM Facility #98	Completed	2015	38.62455	-77.27419	Extended Detention	7.70	2.70	2.51	2.50	CBP Established Efficiency, Incremental	13.86	0.74	494.46	0.41%	0.03	0.00	3.52	13.83	0.74	490.94
169	SWM Facility #28	Completed	2017	38.68411	-77.27122	Wet Pond, L1	74.97	21.10	34.63	19.24	CBP Retrofits Expert Panel, ST, Incremental	67.40	5.81	5,409.80	8.34%	5.74	0.68	566.70	61.65	5.13	4,843.10
16	SWM Facility #147	Completed	2018	38.61010	-77.31428	Constructed Wetland, L1	45.24	15.28	24.02	5.93	CBP Retrofits Expert Panel, ST, Incremental	68.18	6.61	5,808.09	10.44%	4.17	0.47	388.79	64.01	6.14	5,419.30
173	SWM Facility #489	Completed	2018	38.68457	-77.29579	Extended Detention	82.12	32.67	36.52	12.92	CBP Established Efficiency, Incremental	162.85	9.05	5,943.86	15.04%	11.28	1.33	1,105.74	151.57	7.72	4,838.12
190	SWM Facility #109	Completed	2018	38.72093	-77.41199	Wet Pond, L1	72.52	9.79	21.94	40.78	CBP Retrofits Expert Panel, ST, Incremental	167.29	12.72	10,334.53	11.36%	7.00	0.75	611.50	160.29	11.97	9,723.03
191	SWM Facility #424	Completed	2020	38.57761	-77.30891	Constructed Wetland	92.01	39.01	41.88	11.11	CBP Retrofits Expert Panel, ST, Incremental	239.05	37.64	28,053.69	19.75%	21.34	3.14	2,763.32	217.71	31.22	25,290.37
	SWM Facility #232	Completed	2021	38.78560	-77.51020	Wet Pond	14.77	3.20	8.24	3.32	CBP Retrofits Expert Panel, ST, Incremental	47.59	4.22	3,365.39	0.00%	0.00	0.00	0.00	47.59	4.22	3,365.39

FY22 Report - Reforestation: Reforestation Projects (LUC) Beginning July 1, 2009

WMB Number	Project Name	Status	Installation FY	Latitude	Longitude	BMP Type	Existing Land Use	New Land Use	Area (Ac)	Total Pollutant Reduction (lbs/yr)		
										TN	TP	TSS
	Completed Projects											
229	Innovation - Area 1D	Completed	2011	38.74008	-77.53709	Land Use Change	Pervious	Forest	0.22	1.58	0.08	29.25
233	Ben Lomond Park Area A	Completed	2012	38.79833	-77.47860	Land Use Change	Pervious	Forest	0.15	1.07	0.06	19.94
234	Ben Lomond Park Area B	Completed	2013	38.79833	-77.47860	Land Use Change	Pervious	Forest	3.81	27.28	1.45	506.58
235	Ben Lomond Park Area C	Completed	2013	38.79833	-77.47860	Land Use Change	Pervious	Forest	0.23	1.65	0.09	30.58
73	Sudley Place Reforestation	Completed	2014	38.79188	-77.50187	Land Use Change	Pervious	Forest	3.17	22.70	1.20	421.48
236	Ben Lomond Park Area D	Completed	2015	38.79833	-77.47860	Land Use Change	Pervious	Forest	0.12	0.86	0.05	15.96
5	Hope Hill Crossing	Completed	2015	38.61801	-77.37752	Land Use Change	Pervious	Forest	5.09	36.44	1.93	676.77
237	Garner Drive	Completed	2016	38.78738	-77.50875	Land Use Change	Pervious	Forest	0.40	2.86	0.15	53.18
258	Hunter Ridge Estates Area A	Completed	2016	38.63727	-77.38444	Land Use Change	Pervious	Forest	5.65	40.45	2.15	751.22
269	Hunter Ridge Estates Area B	Completed	2017	38.63427	-77.38747	Land Use Change	Pervious	Forest	4.75	34.01	1.81	631.56
231	Bristoe Station Battlefield Phase 1	Completed	2017	38.72238	-77.54464	Land Use Change	Pervious	Forest	13.99	100.17	5.32	1,860.11
270	Bristoe Station Battlefield Phase 2	Completed	2018	38.72238	-77.54464	Land Use Change	Pervious	Forest	4.50	32.22	1.71	598.32
	Bristoe Station Battlefield Phase 3	Completed	2021	38.72238	-77.54464	Land Use Change	Pervious	Forest	10.20	73.03	3.88	1,356.19

Appendix T

Local TMDL Action Plan Implementation

Local TMDL Action Plan Implementation FY23

Benthic TMDL Action Plan

The Benthic TMDL Action Plan includes stream restoration projects, reforestations (LUC), stormwater retrofit projects completed in the Bull Run Watershed. The following table summarizes the projects that have been implemented as well as planned projects in FY22.

Project Name	Project Type	Status	TSS Reduction (lbs/yr)
Ben Lomond Park Area A	Reforestation	Completed	19.94
Ben Lomond Park Area C	Reforestation	Completed	30.58
Ben Lomond Park Area B	Reforestation	Completed	506.58
Sudley Place Reforestation	Reforestation	Completed	421.48
Ben Lomond Park Area D	Reforestation	Completed	15.96
Garner Drive	Reforestation	Completed	53.18
SWM Facility #99	Retrofit	Completed	4,273.97
Oak Street	Stream Restoration	Completed	49,591.16
SWM Facility #77	Retrofit	Completed	1,323.13
SWM Facility #386	Retrofit	Completed	8,314.92
		Total Completed	**64,550.90**
SWM Facility #416	Retrofit	Implementation	27,611.25
Ben Lomond Reforestation (LUC)	Reforestation	Implementation	425.47
		Total Planned for FY24	**28,036.72**

The status of other implementation items from the Benthic TMDL Action Plan are summarized below:

Implementation Item	Description	Implementation Status
MS4 Program Plan	The County will continue to implement the MS4 Program Plan, including elements related to sediment, in accordance with the schedule provided for in the MS4 Program Plan.	The County continues to implement its MS4 Program Plan.
Chesapeake Bay TMDL Action Plan	The County will continue to leverage the projects selected to meet the Chesapeake Bay TMDL Action Plan to reduce sediment in the Bull Run watershed. The County will include whether a project will help meet Bull Run sediment load reductions in its project selection prioritization process.	The County continues to implement the Chesapeake Bay TMDL Action Plan. See above summary.
County Owned or Operated Property	The County will consider potential retrofits of property assessed in Appendix A for inclusion in lists of projects to meet the Chesapeake Bay TMDL. The County will address minor erosion issues identified during the assessment of properties as described in Appendix A.	Projects currently planned for implementation: • Reforestation at Ben Lomond Park • Water quality retrofit of SWM Facility #416 • Mayhew Park Stream Restoration

Local TMDL Action Plan Implementation FY23

Implementation Item	Description	Implementation Status
Redevelopment	The County will continue to enforce provisions that require redevelopment to reduce phosphorus from existing conditions (20% one acre and greater; 20% less than one acre). Reductions in phosphorus also result in reductions in sediment.	The county continues to implement Section 23.2 of the Prince William County Code.
Enhanced Education, Outreach, and Training	The County will continue to implement enhanced education, outreach, and training for sediment in accordance with the MS4 permit and the MS4 Program Plan.	The County is implementing its enhanced education, outreach and training for sediment in accordance with the MS4 Program Plan

Bacteria TMDL Action Plan

The status of implementation items from the Bacteria TMDL Action Plan are summarized below:

Program Element	Description	Implementation Status
Pet Waste Brochure Distribution	The County will provide pet waste brochures (see Appendix A) for distribution at the private facilities listed in Table 2.H.	The County determined that distribution of brochures at private facilities is not an effective method of outreach. In FY21, the County updated the pet waste brochure and is distributing to HOA's and other community partners for distribution.
Pet Waste Clean-Up Signage	The County will assess the trail system within the MS4 portion of affected watersheds for opportunities to install signage reminding pet owners to clean up pet waste.	The County assessed County-owned properties in FY18 and determined no need for signage. The assessment of County properties was repeated in FY21 with HOA common areas added to the scope. The County is currently evaluating opportunities to work with HOA's and Parks to provide signage and other outreach materials to users.

PCB TMDL Action Plan

The status of implementation items from the PCB TMDL Action Plan are summarized below:

Implementation Item	Description	Implementation Status
Enhanced training on good housekeeping and pollution prevention practices	Training materials will be revised in PY3 to include information relevant to potential PCB sources and steps to take if a source of PCBs is discovered at a County-owned property. The training will be implemented in PY4 as part of the ongoing biennial training program.	The online PWC University training materials were revised in FY22 to include information related to sources of PCB discharges.
Enhanced training on recognition and reporting of illicit discharges by field personnel	The County's Illicit Discharge Identification and Elimination Program Manual will be updated in PY3 to include information on potential sources of PCBs, safety precautions and notifications.	The Illicit Discharge Identification and Elimination Program Manual was revised in FY22 to include information related to sources of PCB discharges.

Appendix U

Roles and Responsibilities

Prince William County FY23 Annual Report
Roles and Responsibilities (I.A.2)

Agency	Permit Section	Responsibilities
Department of Facilities & Fleet Management (DFFM)	I.B.2.c	Roadways
	I.B.2.d	Pesticide, Herbicide, and Fertilizer Application
	I.B.2.i	County Facilities
	I.B.2.k.2	Training: good housekeeping during road, street and parking lot maintenance
	I.B.2.k.3	Training: good housekeeping at maintenance and public works facilities
	I.B.2.k.4	Training: tracking of pesticides, herbicides and fertilizer certifications
Department of Finance (DF), Risk Management Division (RMD)	I.B.2.k.9	Training: coordination of training documentation
Department of Fire and Rescue (DFR)	I.B.2.f	Spill Prevention and Response
	I.B.2.k.8	Training: spill response for emergency response employees
Department of Parks, Recreation & Toursim (DPRT)	I.B.2.d	Pesticide, Herbicide, and Fertilizer Application
	I.B.2.i	County Facilities
	I.B.2.j.1.c	Public Education: golf courses
	I.B.2.k.2	Training: good housekeeping during road, street and parking lot maintenance
	I.B.2.k.4	Training: tracking of pesticides, herbicides and fertilizer certifications
	I.B.2.k.7	Training: good housekeeping at county recreation facilities
Department of Public Works (DPW), Environmental Management Division (EMD) & Construction and Operations Division (COD)	I.A.	MS4 Program Coordination
	I.B.1.	Planning
	I.B.2.a	Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands
	I.B.2.b	Retrofitting on Prior Developed Lands
	I.B.2.e	Illicit Discharges and Improper Disposal
	I.B.2.g	Industrial & High Risk Runoff
	I.B.2.h	Storm Sewer Infrastructure Management
	I.B.2.j	Public Education/Participation

Prince William County FY23 Annual Report
Roles and Responsibilities (I.A.2)

Agency	Permit Section	Responsibilities
	I.B.2.j.1.a	Public Education: illicit discharges
Department of Public Works (DPW), Environmental Management Division (EMD) & Construction and Operations Division (COD)	I.B.2.j.1.b	Public Education: individual and group involvement in local water quality improvement initiatives
	I.B.2.j.1.e	Public Education: household yard waste
	I.B.2.j.1.f	Public Education: litter prevention program
	I.B.2.j.1.g	Public Education: residential car washing
	I.B.2.j.1.h	Public Education: pesticides, herbicides, and fertilizers
	I.B.2.j.1.i	Public Education: voluntary stormwater management techniques
	I.B.2.j.1.j	Public Education: commercial, industrial, and institutional entities
	I.B.2.k.1	Training: illicit discharges
	I.B.2.k.5	Training and certifications per Virginia Erosion and Sediment Control Law
	I.B.2.k.6	Training and certifications per Virginia Stormwater Management Act
	I.B.2.l	Water Quality Screening Programs
	I.B.2.m	Infrastructure Coordination
	I.C.1.	Biological Stream Monitoring
	I.C.2.	In-Stream Monitoring
	I.C.3.	Floatables Monitoring
	I.D.1.	Chesapeake Bay Special Condition
	I.D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL
Department of Public Works (DPW), Solid Waste Division (SWD)	I.B.2.i	County Facilities
	I.B.2.j.1.d	Public Education: used oil and household hazardous waste
	I.B.2.k.2	Training: good housekeeping during road, street and parking lot maintenance

Agency	Permit Section	Responsibilities
	I.B.2.k.3	Training: good housekeeping at maintenance and public works facilities

Appendix V

Annual Program Budget

Public Works

Mission Statement

The goal of the Prince William County Department of Public Works is to improve the wellbeing of our community by creating and sustaining the best environment in which to live, work, and play. We protect and improve our natural resources, adopt and enforce codes and regulations, and build and maintain environmental infrastructure in our community.

Community Development Expenditure Budget: $153,189,339

Expenditure Budget: $50,983,124

33.3% of Community Development

Programs:

- Director's Office: $859,952
- Stormwater Infrastructure Management: $4,666,580
- Site Development: $4,648,387
- Watershed Improvement: $5,280,974
- Sign Shop: $340,830
- Small Project Construction: $1,992,377
- Mosquito & Forest Pest Management: $1,811,919
- Solid Waste: $26,623,662
- Neighborhood Services: $4,373,156
- Service Districts: $385,287

Mandates

Public Works provides mandated services for solid waste management and recycling and maintains existing street name signs. Public Works is liaison to the state-mandated Chesapeake Bay Preservation Area Review and Wetlands Boards. The Board of County Supervisors has enacted additional local mandates for which Public Works has responsibility.

Federal Code: 33 U. S. C. Section 1251 (Clean Water Act)

State Code: 9VAC20-130 (Solid Waste Management Regulations), 33.2-328 (Street Name Signs), 28.2-1303 (Local Wetlands Board), 62.1-44.15:74 (Chesapeake Bay Preservation Areas), Chapter 870 (Virginia Stormwater Management Regulation), Chapter 3.1 (State Water Control Law)

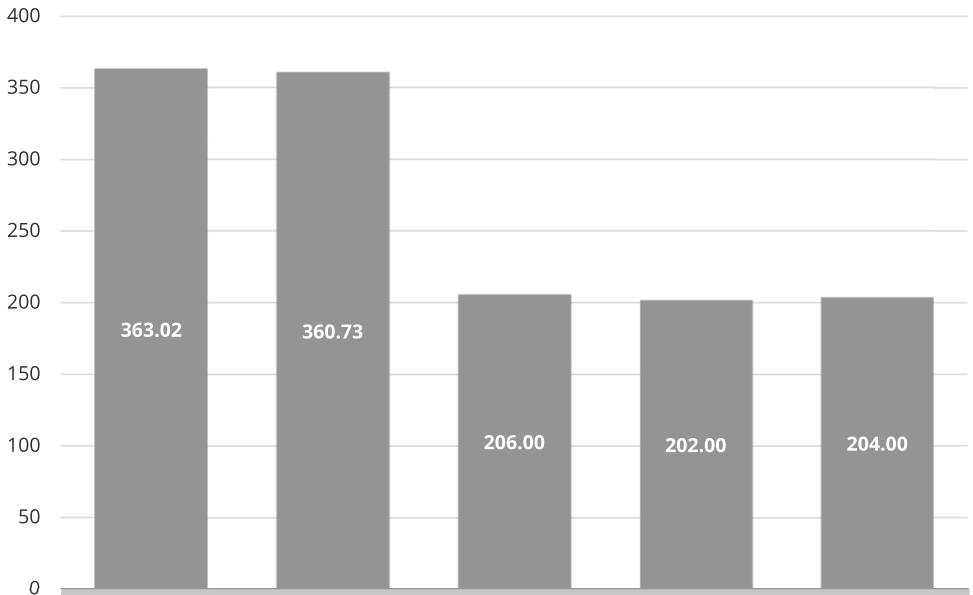
County Code: Chapter 2 Article VII (Wetlands Areas), Chapter 3 (Amusements), Chapter 5 Article VI (Building Maintenance Code), Chapter 12 (Massage Establishments), Chapter 13-320.1 (Designation of watercraft, boat trailer, motor home, and camping trailer "restricted parking" zones), Chapter 14 (Noise), Chapter 16-56 (Graffiti Prevention and Removal), Chapter 22 (Refuse), Chapter 23 Article II (Public Sanitary Sewers), Chapter 23.2 (Stormwater Management), Chapter 25 Article II (Subdivisions - Minimum Requirements), Chapter 29 Article II (Weeds & Grass), Chapter 32 (Zoning), Chapter 33 (Expedited Land Development Plan Review)

Expenditure and Revenue Summary

Expenditure by Program	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted	% Change Budget FY22/ Budget FY23
Director's Office	$1,582,998	$1,699,705	$1,083,575	$414,725	$859,952	107.35%
Historic Preservation	$1,374,848	$0	$0	$0	$0	-
Stormwater Infrastructure Management	$3,486,111	$4,196,209	$3,796,641	$3,953,462	$4,666,580	18.04%
Site Development	$3,637,468	$3,726,041	$3,877,265	$3,845,456	$4,648,387	20.88%
Watershed Improvement	$4,905,025	$4,934,270	$4,824,029	$5,040,855	$5,280,974	4.76%
Fleet Management	$11,973,810	$11,378,827	$170,417	$0	$0	-
Facilities Construction Management	$105,473	$906,645	$0	$0	$0	-
Sign Shop	$265,403	$309,478	$304,018	$260,373	$340,830	30.90%
Small Project Construction	$3,183,649	$3,386,728	$3,121,571	$2,096,798	$1,992,377	(4.98%)
Mosquito & Forest Pest Mgmt	$1,546,708	$1,592,212	$1,503,837	$1,753,825	$1,811,919	3.31%
Solid Waste	$26,295,132	$17,556,951	$25,994,524	$29,086,357	$26,623,662	(8.47%)
Buildings & Grounds	$12,140,167	$11,789,803	($44,730)	$0	$0	-
Property Management	$13,398,677	$12,723,852	$0	$0	$0	-
Neighborhood Services	$3,813,251	$3,919,053	$3,887,213	$4,074,508	$4,373,156	7.33%
Service Districts	$291,740	$321,101	$379,414	$365,287	$385,287	5.48%
Total Expenditures	**$88,000,461**	**$78,440,874**	**$48,897,773**	**$50,891,645**	**$50,983,124**	**0.18%**
Expenditure by Classification						
Salaries & Benefits	$29,259,394	$30,410,528	$17,439,217	$18,557,251	$20,033,685	7.96%
Contractual Services	$14,162,645	$13,150,486	$6,995,363	$6,487,405	$7,384,405	13.83%
Internal Services	$3,745,202	$4,450,125	$2,877,104	$2,608,458	$3,282,283	25.83%
Purchase of Goods & Services	$13,097,756	$12,436,219	$3,889,936	$4,734,281	$4,727,602	(0.14%)
Capital Outlay	$4,394,195	$2,251,850	$138,953	$1,959,861	$2,931,861	49.60%
Leases & Rentals	$7,405,620	$7,802,962	$191,296	$183,597	$184,897	0.71%
Reserves & Contingencies	($3,099,401)	($2,189,773)	($130,574)	($168,490)	($168,490)	0.00%
Amortization	$2,614,265	$2,786,571	$2,602,689	$2,085,793	$2,085,793	0.00%
Depreciation Expense	$1,485,477	$1,294,760	$1,520,050	$2,158,713	$2,158,713	0.00%
Transfers Out	$14,935,308	$6,047,146	$13,373,739	$12,284,776	$8,362,375	(31.93%)
Total Expenditures	**$88,000,461**	**$78,440,874**	**$48,897,773**	**$50,891,645**	**$50,983,124**	**0.18%**
Funding Sources						
Revenue from Federal Government	$0	$0	$9,707	$0	$0	-
Permits & Fees	$2,974,499	$2,802,106	$2,932,953	$3,002,522	$3,071,754	2.31%
Fines & Forfeitures	$12,308	$155	$2,146	$0	$0	-
Use of Money & Property	$1,571,051	$1,402,337	$747,705	$1,526,000	$1,526,000	0.00%
Miscellaneous Revenue	$501,021	$403,642	$219,909	$290,000	$170,000	(41.38%)
Non-Revenue Receipts	$308,498	$327,775	$134,603	$0	$0	-
General Property Taxes	$1,840,171	$1,903,249	$2,041,726	$1,870,287	$2,010,287	7.49%
Charges for Services	$41,105,372	$41,860,466	$32,619,568	$30,870,061	$32,471,913	5.19%
Revenue from Commonwealth	$371,278	$125,857	$66,668	$86,000	$86,000	0.00%
Transfers In	$1,010,234	$857,626	$3,060,020	$2,194,667	$2,742,689	24.97%
Total Designated Funding Sources	**$49,694,432**	**$49,683,211**	**$41,835,004**	**$39,839,537**	**$42,078,643**	**5.62%**
Use/(Contribution) of Fund Balance	**$4,505,491**	**($2,288,054)**	**$2,757,318**	**$7,269,080**	**$4,435,011**	
Net General Tax Support	**$33,800,538**	**$31,045,717**	**$4,305,452**	**$3,783,028**	**$4,469,470**	**18.15%**
Net General Tax Support	**38.41%**	**39.58%**	**8.81%**	**7.43%**	**8.77%**	

An FY19 expense misclassification of $104,025 exists between Facilities Construction Management (FCM) and Solid Waste. The correct FY19 expense for FCM is $1,448, and the expense for Solid Waste is $26,399,221.

Staff History by Program



	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Director's Office	6.27	6.27	6.37	3.27	5.15
Historic Preservation	14.55	0.00	0.00	0.00	0.00
Stormwater Infrastructure Management	26.44	27.01	23.58	24.18	25.01
Site Development	27.50	29.23	28.74	27.95	29.08
Watershed Improvement	11.22	10.92	10.98	11.27	10.30
Fleet Management	35.15	44.41	0.00	0.00	0.00
Facilities Construction Management	10.00	10.00	0.00	0.00	0.00
Sign Shop	4.16	4.16	4.06	4.06	4.12
Small Project Construction	14.43	12.43	16.42	16.42	14.23
Mosquito & Forest Pest Management	14.00	14.00	14.02	14.02	13.73
Solid Waste	62.72	65.72	65.72	65.72	67.38
Buildings & Grounds	80.47	81.47	0.00	0.00	0.00
Property Management	19.00	19.00	0.00	0.00	0.00
Neighborhood Services	37.11	36.11	36.11	35.11	35.00
Full-Time Equivalent (FTE) Total	363.02	360.73	206.00	202.00	204.00

Future Outlook

Labor Shortages – A shortage of skilled labor is having direct effects on construction costs and hiring of qualified construction and maintenance personnel. High demand and increases in pay for truck drivers and heavy equipment operators in the private sector have made it difficult to hire and retain qualified staff. Regular compensation reviews for these skilled positions should be considered so the department can continue to recruit and retain qualified personnel.

Solid Waste Issues – Solid Waste Fees have remained the same since 1998, and revenues are insufficient to cover operational and capital costs, as well as the construction of infrastructure required for the Phase IV landfill area, which requires the building of access roads, new scale facilities, crew offices, and a new heavy equipment shop. Debt financing for future Phase IV infrastructure should also be considered and analyzed. A review of the Solid Waste Fee and proposed alternatives to increase revenue should be considered as recommended in the recent audit of the solid waste system.

Dredging and Aging Infrastructure – Continuing cost increases in dredging stormwater management ponds and facilities is anticipated as the next phase of the County's stormwater management program. With over 1,000 ponds and facilities in the inventory – and the number continues to grow – along with the high cost of dredge material disposal, this activity has an impact on the stormwater management fee. In addition, as County stormwater infrastructure (pipes and culverts and easements) grows and ages, more maintenance and repairs will be needed to prevent localized flooding.

COVID-19 Pandemic Lasting Effects – The effects of the COVID-19 pandemic will be permanently felt. Work methods and protocols, schedules, and the way work is completed by both those whose work is in an office setting and those whose work is in the field have changed, many of which will be long lasting. County policies and procedures being developed and implemented shifting more employees to remote work continue to evolve. This will have impacts on recruitment, management and retention of existing staff using more than one work location, and planning for work locations in future years. In addition, the pandemic has made the procurement of some construction materials more difficult and expensive, resulting in increased project costs, neither of which show signs of returning to pre-pandemic levels in the short-term.

General Overview

A. **Redistribution of Internal Service Fund (ISF) Technology Budget** – The County annually allocates all information technology (IT) costs to agencies through an ISF, using the approved cost basis for each technology activity. Technology activities include computer support (hardware replacement, software licenses, and helpdesk customer services), IT security, business systems support (public safety communications, financial systems, human services systems, etc.), geographic information system, web services, capital equipment replacement, messaging, cloud storage, network and infrastructure services, telecommunications, and radio. The cost basis is calculated through a formula derived from the Department of Information Technology's (DoIT) ISF fee schedule.

For FY23, ISF costs have been revised to align and more accurately reflect overall technology activities with current department specific technology services. Costs are adjusted to reflect agency technology usage more accurately, as tracked by DoIT billing systems using the updated methodology. In FY23, the Public Works technology bill increases by $662,061. No technology service levels are changed, and there is no impact to the technology services individual agencies currently receive. For additional information on the countywide impact and methodology of redistributing technology charges, please see the Budget Highlights section of this document.

B. **Increase/Decrease Indirect Cost Transfer to the General Fund** – Indirect costs are expenditures charged by one part of the County government for services rendered by another part of the County government, for example, the cost of office space, utilities, and other basic agency support.

- The indirect cost transfer amount reimbursing the general fund for Solid Waste increases by $85,137 from $1,417,718 in FY22 to $1,502,855 in FY23.
- The indirect cost transfer amount reimbursing the general fund for Mosquito & Forest Pest Management decreases by $16,767 from $262,607 in FY22 to $245,840 in FY23.
- The indirect cost transfer amount reimbursing the general fund for Stormwater Infrastructure Management increases by $194,706 from $999,722 in FY22 to $1,194,428 in FY23.

C. Adjustments to Land and Building Development Fee Schedules – The FY2023 Budget includes a 3.0% across the board fee increase to the Land Development fee schedule. Land Development revenue supports expenditures in each of the four land development agencies: Development Services, Planning, Public Works, and Transportation. Of the total $411,545 increase, the net revenue budget increase to Public Works is $147,084. This addition adjusts the Land and Building Development fee schedules to align development fees with activity costs and current revenue projections.

D. Base Revenue Adjustments – The FY2023 Budget includes the following base budget revenue adjustments:

- Solid Waste – Increase the Solid Waste revenue budget $480,000 to accurately reflect historical revenue trends. This is not a result of changes to the solid waste fees. There is no impact to the general fund.
- Mosquito & Forest Pest Management – Increase the Mosquito & Forest Pest Management revenue budget $120,000 to accurately reflect historical revenue trends. This is not a result of changes to the Mosquito and Forest Pest Management real estate tax rate. There is no impact to the general fund.

E. Position Shifts to Public Works (Director's Office) – In FY22, 2.00 FTEs were transferred within Public Works. A Deputy Director and a Senior Human Resource Analyst were shifted from various funds within Public Works to the Public Works' Director's Office. In FY21, the Deputy Director and Senior Human Resource Analyst (previously titled Senior Business Services Analyst) residing in Public Works shifted to Facilities & Fleet Management as a result of splitting Public Works into two agencies, Public Works and Facilities & Fleet Management. To fill these needs, positions from elsewhere within Public Works were identified and shifted into the Public Works' Director's Office. The total shifted FY22 salaries and benefits of these two positions was a general fund cost of $154,352. However, the majority of the general fund expenses in the Director's Office are reimbursed by the indirect cost transfer from the Solid Waste, Mosquito & Forest Pest Management, Site Development, and Stormwater Management fee-supported funds within Public Works.

F. Removal of One-Time Costs in Solid Waste –

- A total of $4,950,000 in expenditures has been removed from the Public Works Solid Waste Program for FY22 one-time costs associated with the Phase II Sequence 5 Landfill Cap capital project.
- A total of $1,105,000 in expenditures has been removed from the Public Works Solid Waste Program for FY22 one-time costs associated with the replacement of equipment and vehicles. In FY22, Solid Waste replaced an Articulated Dump Truck ($550,000), a Fuel Truck ($200,000), a Kenworth Roll-Off ($165,000), a tractor ($150,000), and a John Deere Gator ($40,000).
- A total of $530,000 in expenditures has been removed from the Public Works Solid Waste Program for FY22 one-time costs associated with the landfill Part A Department of Environmental Quality mandated permit update.
- A total of $80,000 in expenditures has been removed from the Public Works Solid Waste Program for FY22 one-time costs associated with the Landfill Traffic Control Building.

G. Transfer to Closure and Post-Closure Reserve Accounts in Solid Waste – Increase the transfer from the Solid Waste operating account to the Solid Waste Closure account by $417,700 from $1,440,496 to $1,858,196. Increase the transfer from the Solid Waste operating account to the Solid Waste Post Closure account by $130,322 from $614,171 to $744,493. These amounts are updated annually as required by the Virginia Department of Environmental Quality (DEQ). The County's consultant, Solid Waste Services, LLC, follows DEQ methodology in deriving these calculations for the future needs in the Closure and Post-Closure accounts, and contributions to these sinking funds (closure and post-closure) are made to ensure sufficient funding is available when closure and post-closure activities must be conducted in accordance with mandated environmental regulations. These transfers follow the consultant's recommendations.

Budget Initiatives

A. Budget Initiatives

1. Replace Solid Waste Equipment and Vehicles – Solid Waste

Expenditure	$1,670,000
Use of Fund Balance	$1,670,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the replacement and purchase of solid waste equipment and vehicles. The Solid Waste Enterprise fund balance supports these one-time expenditures. The equipment includes:

- $580,000 to replace a 2005 Volvo Articulated Hauler (SW2683). The articulated hauler has reached its end of life, with service hours exceeding 12,922. The articulated hauler is required for daily transport of soil and other materials to the landfill's working face and other earthwork projects at the facility.
- $650,000 to replace the 2006 Al-Jon 525 Trash Compactor (SW4031). One of the two compactors must be replaced as it has reached its end of life due to service hours (>11,157 hours). The compactor is necessary on the landfill's working face to bury trash and maintain operational efficiency by reducing waste volumes. Two compactors are required to ensure continued burial operations while one is undergoing monthly maintenance or repair. This equipment is not available for rental.
- $200,000 to replace 2006 Kenworth Roll-Off Truck. The truck has reached the end of its service life due to service hours (>22,740 hours) and miles (>134,200 miles). This truck is used daily to transport containers of trash from the customer service areas at the Landfill and Balls Ford Facility to the working face for burial. Equipment replacement is required to support trash removal from the residential customer service areas at the County Landfill and Balls Ford Facility, as well as special refuse collection events.
- $180,000 to replace the 2006 Peterbilt Street Flusher Truck (SW2721) that has reached its end of life due to service hours (>7,848 hours). The flusher truck is used to spray water in an effort to maintain dust control during the spring, summer, and fall. Use of the flusher truck to dispense water spray is part of routine operations and required per DEQ to meet state requirements for dust suppression at the landfill.
- $60,000 to replace the 2011 Silverado 2500HD Truck (SW3378) that has reached its end of service life due to age. This vehicle is used to pull specialized equipment associated with maintenance of buildings and roadways at the Landfill and Balls Ford Road Composting Facility.

The Solid Waste Enterprise fund balance supports these one-time expenditures. There is no general fund impact.

b. **Service Level Impacts** -

- **Rental equipment cost (Hauler)**
  FY23 w/o Addition | $91,500 per year
  FY23 w/ Addition | $0
- **Support special refuse collection events (Roll-Off Truck)**
  FY23 w/o Addition | 0%
  FY23 w/ Addition | 100%
- **Support weekend residential refuse collection at Balls Ford Facility (Roll-Off Truck)**
  FY23 w/o Addition | 0%
  FY23 w/ Addition | 100%
- **Equipment rental cost (Street Flusher Truck)**
  FY23 w/o Addition | $44,000 per year
  FY23 w/ Addition | $0

2. Phase IV Part B Permit Design and Wetland Permit Application – Solid Waste

Expenditure	$700,000
Use of Fund Balance	$700,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the Phase IV Part B Permit design and wetland permit application. State mandates require a Part B Permit prior to constructing additional landfill disposal space. The County must permit and construct additional landfill space in accordance with regulatory requirements to continue accepting and managing trash. Disposal capacity in the existing landfill is estimated to be exhausted by 2030. Design and construction of additional disposal

space (Phase IV) will be required to continue managing waste generated by the County's residents and businesses. A wetlands permit will also be required. The Part A Permit for Phase IV was developed during FY22. The Solid Waste Enterprise fund balance supports this one-time expenditure. There is no general fund impact.

b. **Service Level Impacts** –

- **Period of time landfill can be used for disposal (landfill life)**
  FY23 w/o Addition | 10 years
  FY23 w/ Addition | Estimated 58 to 94 years (depending on permitted design years)

3. Milling and Sealing Landfill's Residential Convenience Center Asphalt Pad – Solid Waste

Expenditure	$400,000
Use of Fund Balance	$400,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the asphalt replacement in the landfill's residential service area to maintain quality service to over 1,200 customers per day. An adequate surface is vital to provide safe conditions for customers entering/exiting their vehicles and walking to disposal containers. The existing asphalt pad is cracked, breaking apart, and no longer in serviceable condition. Upkeep of the existing area would cost more per square foot than replacement of the existing area. The Solid Waste Enterprise fund balance supports this one-time expenditure. There is no general fund impact.

b. **Service Level Impacts** –

- **Maintain safe customer conditions**
  FY23 w/o Addition | Asphalt will require annual patchwork repair
  FY23 w/ Addition | Service life for replaced asphalt is six to eight years

4. Street Sweeper – Solid Waste

Expenditure	$200,000
Use of Fund Balance	$200,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the purchase of a street sweeper to ensure roadways and paved areas at the Landfill are frequently swept clean of dirt and debris, maintaining safe conditions and compliance with air quality regulations at the Landfill and Balls Ford Road. Sweeping is currently performed by a contracted company twice a month. Frequency and quality of service is not adequate to maintain residential service areas, meeting only the minimum standard of cleanliness. Between contractor visits, staff currently uses shovels and brooms to clean large areas of asphalt pads which is an inefficient use of labor. The sweeper may also be used by other Public Works divisions. The Solid Waste Enterprise fund balance supports this one-time expenditure. There is no general fund impact.

b. **Service Level Impacts** –

- **Contracted services 24 times per year**
  FY23 w/o Addition | $38,207
  FY23 w/ Addition | $0

5. Fiscal Technician/Lead Scale House Operator – Solid Waste

Expenditure	$58,287
Revenue	$58,287
General Fund Impact	$0
FTE Positions	1.00

a. **Description** – This initiative provides funding for 1.00 FTE. The new lead scale house operator will provide direct oversight of two shifts, ensure consistent customer service, and assist with problem resolution. The employee will also backfill at the Landfill and Balls Ford Facility to maintain adequate

staffing levels and to reduce overtime within the workgroup. Because the number of customers has increased, the Scale House workgroup was paid more than 1,000 hours of overtime in FY21. With this hire, the Solid Waste overtime budget is decreased by $25,000. This initiative is funded from the Solid Waste Enterprise fee. There is no general fund impact.

b. **Service Level Impacts** –

- **Reduction of annual overtime hours for workgroup**
  FY23 w/o Addition | 0 hours
  FY23 w/ Addition | >500 hours

6. Landfill Maintenance and Operations Worker – Solid Waste

Expenditure	$49,731
Revenue	$49,731
General Fund Impact	$0
FTE Positions	1.00

a. **Description** – This initiative provides funding for 1.00 FTE. The new landfill maintenance and operations worker who will provide consistency of customer service and safety at the Landfill's residential convenience center. This employee will also backfill, as needed, to maintain adequate staffing levels and reduce overtime within the workgroup. Because the number of customers using the residential convenience center has increased, the workgroup was paid more than 1,000 hours of overtime in FY21. With this hire, the Solid Waste overtime budget is decreased by $25,000. This initiative is funded from the Solid Waste Enterprise fee. There is no general fund impact.

b. **Service Level Impacts** –

- **Reduction of annual overtime hours for workgroup**
  FY23 w/o Addition | 0 hours
  FY23 w/ Addition | 500 hours

7. Replace Litter Crew Vehicles – Neighborhood Services

Expenditure	$87,000
Use of Fund Balance	$87,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the replacement of two Litter Crew trucks. Both trucks are 2005 Chevrolet Blazers transferred to the Litter Crew from Property Code Enforcement. Both trucks will be 17 years old by the end of 2022, with obsolete safety equipment, poor gas mileage, and hard to find repair parts. Due to COVID-19 crew spacing requirements, pickup trucks will be purchased as a replacement. The Solid Waste Enterprise fund balance supports these one-time expenditures. There is no general fund impact.

b. **Service Level Impacts** – Existing service levels are maintained.

8. Innovation Clearing & Mowing – Neighborhood Services

Expenditure	($120,000)
Revenue	($120,000)
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative decreases both the revenue and expense budget to reflect privatization of Innovation properties. As Innovation properties are sold to private companies, landscaping costs decrease to reflect privately-owned landscaping. Bushhogging will remain until all County property is sold. This activity is in the Innovation Enterprise fund. There is no impact to the general fund.

b. **Service Level Impacts** – Existing service levels are maintained.

9. Stormwater Management Fee Increase – Watershed Improvement and Stormwater Infrastructure Management

Expenditure	$1,044,000
Revenue	$1,044,000
General Fund Impact	$0
FTE Positions	0.00

a. Description – This initiative increases the stormwater management fee 12% generating $1,044,000 to address state and federal mandates as follows:

- Drainage Maintenance – The drainage maintenance budget increases $400,000 to meet federal and legal mandates required to maintain the County's Municipal Separate Storm Sewer System (MS-4) permit. The County's stormwater infrastructure is aging as evidenced by a recent engineering study that revealed 45 storm ponds require dredging. A Department of Environmental Quality (DEQ) requirement mandates dredging ponds with 50% or more of silt and sediment. The cost of dredging and disposing dredge materials can cost more than $800,000. In addition, replacing aging corrugated drainage pipe will be required especially in older communities now and in the future.
- Watershed Improvements – Investment in watershed improvements will increase $644,000 in the County's Capital Improvement Program (CIP). Previously, a portion of the annual investment relied upon stormwater management fee fund balance which is not sustainable in the future. The annual capital investment funds stream assessments and restorations, best management practice retrofits of residential stormwater management facilities, culvert modifications, development of sub-watershed management plans, dam safety program requirements, and drainage systems maintenance.
- Fee Schedule – The following table shows the FY23 stormwater management fee changes:

	FY2022 Adopted	FY2023 Adopted	Change
Single Family	$39.36	$44.08	$4.72
Townhouse	$29.52	$33.06	$3.54
Mobile Home	$29.52	$33.06	$3.54
Multi-Family (Apt./Condo.)	$29.52	$33.06	$3.54
Business/Non-Res.	$39.36	$44.08	$4.72

b. Service Level Impacts – Stormwater management fee activities support the County's Environmental Conservation strategic goal by improving protections for streams, other water bodies, and drinking water quality (Objective EC-2). It also reduces and mitigates the impacts of flooding in communities (Objective EC-5). The following service level improvements will also be realized from the increases to the stormwater fee:

- **Major maintenance cases completed/closed**
  FY23 w/o Addition | 150 per year
  FY23 w/ Addition | 500 per year
- **Linear feet of stream assessments completed**
  FY23 w/o Addition | 50,000 per year
  FY23 w/ Addition | 60,000 or greater per year
- **Drainage infrastructure projects completed/closed**
  FY23 w/o Addition | 150
  FY23 w/ Addition | 500

10. Replace Camera Inspections Van – Site Development

Expenditure	$200,000
Use of Fund Balance	$200,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the replacement of the 2008 camera van which provides inspections for developers to be released from their bond. The van will be 15 years old in 2023 and operates continuously when on site. The van has little downtime unless in the shop for maintenance, which continues to increase. Maintenance costs were $82,325 for FY18 through FY20, and $22,207 in FY21. Developers pay in advance for Camera Van Inspections (CCTV) and expect the work to be performed timely. The Site development fee fund balance supports this one-time expenditure. There is no general fund impact.

b. **Service Level Impacts** – This initiative reduces camera van downtime and improves availability for developer paid inspections.

11. Lake Jackson Roads Service District – Service Districts

Expenditure	$20,000
Revenue	$20,000
General Fund Impact	$0
FTE Positions	0.00

a. **Description** – This initiative increases the revenue and expenditure budget as requested by the Lake Jackson Service District Advisory Committee to fund additional tar and chip road projects within the district. This increase will initially be dedicated principally to tar and chip resurfacing on a maintenance schedule recommended by the Department of Public Works. There is no impact to the general fund.

b. **Service Level Impacts** – Existing service levels are maintained.

Program Summary

Director's Office

Sets department vision and expectations through regular strategic planning. Provide overall leadership and management oversight for all Public Works activities. Review department-related complex issues and how they impact the community and implement recommendations.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Key department program measures met	64%	66%	82%	86%	88%
Public Works Days Away Restricted or Transferred	5.01	3.33	5.25	4.67	4.38

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Leadership & Management	**$1,583**	**$1,700**	**$1,084**	**$415**	**$860**
BOCS agenda items	33	23	34	17	30

Stormwater Infrastructure Management

Ensure that the County's stormwater infrastructure complies with state and federal environmental regulations, standards, and policies, including County standards, the Chesapeake Bay Total Maximum Daily Load (TMDL), and the County's Municipal Separate Storm Sewer System (MS4) permit regulations, along with Virginia Stormwater Management Program (VSMP) regulations. The program consists of the inspection of existing infrastructure, such as storm drain inlets, storm sewers, and stormwater management facilities within County easements, as well as major maintenance of County-maintained facilities to prevent flooding and protect local water quality and the Chesapeake Bay.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Drainage assistance requests responded to within five business days	99%	100%	99%	97%	97%

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Stormwater Management Infrastructure Inspection	**$759**	**$813**	**$831**	**$958**	**$927**
County-maintained facilities inspected and/or re-inspected	1,036	1,243	1,337	900	1,100
Privately-maintained facilities inspected and/or re-inspected	241	342	256	200	240
Stormwater Management Infrastructure Maintenance	**$2,727**	**$3,383**	**$2,965**	**$2,996**	**$3,740**
Major maintenance cases completed/closed	543	467	447	350	400

Site Development

Review all site and subdivision land development plans and document inspection of active construction sites to ensure compliance with environmental regulations, standards, and policies related to stormwater management, best management practices, erosion and sediment control, resource protection areas, floodplains, and geotechnical engineering.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Site development plan submissions reviewed within County standards	99%	100%	100%	100%	100%
Lot grading plan submissions reviewed within 10 business days	100%	100%	100%	100%	100%

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Plan Review	**$1,876**	**$2,004**	**$2,057**	**$1,918**	**$2,291**
Site development plan submissions reviewed	356	565	472	350	400
Lot grading lots reviewed	1,012	1,246	1,151	1,000	1,000
Site Inspections	**$1,761**	**$1,722**	**$1,821**	**$1,928**	**$2,357**
VSMP & erosion & sediment control inspections	21,561	27,777	25,736	22,000	22,000

Watershed Improvement

Ensure that the water quality of local streams within each of the County's watersheds follows environmental regulations, standards, and policies, including the Chesapeake Bay TMDL and the County's MS4 permit. The program focus is to prevent downstream and localized flooding impacts, protect water quality from illicit pollution discharges into the storm drainage system, prevent discharge of pollutants from industrial activities, and prevent sediment release associated with stream erosion, as well as the reduction of nitrogen, phosphorous, and sediment loads from stormwater runoff. The program includes the assessment of streams and other natural resources within each watershed, identification of problem areas, and implementation of water quality improvements. In addition, environmental education, outreach, and technical assistance to citizens, both in urban areas as well as within the agricultural community, are components of this program.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Industrial or high risk inspections conducted	81	26	79	50	75
Linear feet of stream restorations completed	3,100	3,143	1,552	3,000	3,000

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Watershed Monitoring	**$4,495**	**$4,458**	**$4,317**	**$4,530**	**$4,755**
Linear feet of stream assessments completed	61,454	67,522	60,136	60,000	60,000
Dry weather outfalls monitored and inspected	1,092	761	805	700	700
Watershed Improvements	**$410**	**$476**	**$507**	**$511**	**$526**
Pounds of phosphorus reduction achieved	211	248	109	200	200

Sign Shop

Inspect, fabricate, install, and maintain all street name signs as mandated by Code of Virginia. In addition, the program produces high quality graphics for County vehicles and creates custom-designed original graphic designs for interior and exterior signs, banners, posters, and displays for County agencies, outside jurisdictions, and developers.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Street signs completed within 10 days of request	96%	92%	100%	85%	90%

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Street Name Signs	**$211**	**$260**	**$247**	**$229**	**$283**
Intersections requiring street name signs	9,797	7,298	9,797	7,300	9,800
Street name signs fabricated for maintenance	1,060	1,318	1,133	1,000	1,000
Signs and Graphics	**$54**	**$50**	**$57**	**$31**	**$58**
Signs and graphics fabricated for revenue	20,372	25,497	9,251	17,500	15,000

Small Project Construction

Provide support for a variety of County projects, including stormwater management infrastructure maintenance and inspections, stream restorations, drainage improvements, and parks and transportation improvements.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Community improvement projects completed within 10% of estimated cost	100%	100%	100%	97%	95%

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Small Community Improvement Construction	**$3,184**	**$3,387**	**$3,122**	**$2,097**	**$1,992**
Drainage infrastructure inspected (% of easement miles)	56%	76%	56%	45%	45%
Drainage infrastructure projects completed/closed	543	467	447	350	400
Responsive to project estimate requests within 30 days	100%	100%	100%	90%	95%

Mosquito & Forest Pest Management

Survey, reduce, and manage mosquitoes and certain forest pest populations. Program objectives include minimizing mosquito-transmitted disease such as West Nile Virus and Zika Virus by reducing mosquito populations and breeding sites, minimizing tree defoliation and mortality caused by the Gypsy Moth and Fall Cankerworm, conducting surveillance and outreach for Emerald Ash Borer, Asian Longhorned Beetle, Thousand Cankers Disease, and Sudden Oak Death, and minimizing adverse environmental and human health impacts resulting from the treatment of these pests.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Mosquito traps processed within 48 hrs to detect West Nile & Zika virus	100%	100%	100%	98%	98%
High priority mosquito habitat applications	91%	92%	86%	90%	90%
Citizen site visit requests responded to within 24 hours	100%	100%	96%	95%	95%
Gypsy moth surveys conducted to determine if spraying is needed	1,050	1,054	1,050	1,050	1,050

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Mosquito/Forest Pest Surveillance	**$849**	**$905**	**$873**	**$994**	**$1,001**
Larval mosquito habitat inspections	5,587	7,059	5,468	5,500	5,500
Pest Suppression	**$697**	**$687**	**$631**	**$759**	**$810**
Mosquito larvicide applications	1,528	1,489	1,184	1,500	1,500
Community engagement and outreach	40	25	41	40	50
Breeding and habitat sources reduced	87	98	71	-	100

Solid Waste

Provide integrated, efficient, and regulatory compliant solid waste management services to residents, institutions, and businesses in Prince William County and the Towns of Dumfries, Haymarket, Occoquan, and Quantico. Promote waste reduction, reuse, and recycling programs designed to extend the useful life of the landfill. Develop long-term plans for management of solid waste that maintain or improve service levels and ensure adequate infrastructure to accommodate future residential and commercial growth.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
County-wide recycling rate	35%	35%	34%	35%	34%
Tons of waste buried at the landfill	392,630	365,615	402,790	400,000	400,000

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Solid Waste Management & Administration	**$2,992**	**$3,268**	**$9,003**	**$5,916**	**$6,199**
Non-residential accounts processed	4,576	4,414	4,969	4,600	4,800
Yard & Food Waste Composting	**$2,931**	**$2,555**	**$2,835**	**$3,616**	**$3,878**
Tons of yard & food waste managed at Balls Ford	26,053	24,885	28,256	28,000	28,000
Solid Waste Facilities Operation	**$19,854**	**$11,072**	**$13,556**	**$11,455**	**$13,440**
Inspections of refuse truck loads	5,448	5,158	4,094	5,000	4,200
Pounds of Household Hazardous Waste and eWaste collected	1.3M	0.9M	1.3M	1.3M	1.3M
Customer trips to Solid Waste facilities	609,720	662,435	673,726	630,000	650,000
Recyclable Materials Collection	**$622**	**$662**	**$600**	**$1,063**	**$1,021**
Tons of recyclables collected at customer convenience centers	1,747	1,928	2,266	2,000	2,100
Revenue generated from sale of recyclables	$651,778	$538,375	$739,214	$600,000	$650,000
Landfill Closure	**$0**	**$0**	**$0**	**$7,036**	**$2,086**

Neighborhood Services

Provide a safe, clean, and healthy community through education, community support, and Property Code Enforcement (PCE). Provide programs that teach residents and business owners how to properly maintain their properties, and work with neighborhood leaders to enforce property codes that go to the heart of the County's quality of life.

Key Measures	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Founded PCE cases resolved or moved to court action within 100 calendar days	95%	95%	97%	92%	95%
First inspection of complaint within five business days	99%	98%	98%	97%	97%
Average time to resolve cases (business days)	35	37	38	-	38
Average time to resolve cases (calendar days)	36	38	57	38	-

Program Activities & Workload Measures *(Dollar amounts expressed in thousands)*	FY19 Actuals	FY20 Actuals	FY21 Actuals	FY22 Adopted	FY23 Adopted
Litter Control	**$694**	**$732**	**$834**	**$753**	**$1,051**
Illegal signs removed from State right-of-way	11,805	5,682	5,428	6,000	6,000
Lane miles cleaned	-	1,185	1,478	1,200	1,300
Landscaping	**$509**	**$605**	**$548**	**$717**	**$589**
Landscaping areas maintained	48	48	51	48	44
Acres of medians and rights-of-way maintained	234	234	234	234	234
Property Code Enforcement	**$2,610**	**$2,583**	**$2,505**	**$2,605**	**$2,734**
Total cases resolved	4,079	3,219	3,183	4,200	3,500
Total inspections conducted	10,761	8,652	9,673	10,000	10,500

Appendix W

Summary of Storm Water and Erosion & Sediment Control Programs

FY23 Stormwater Management and E&S Control Programs Summary

Prince William County continues to implement the erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq. During DEQ's audit of Prince William County in November of 2017, the E&S program was thoroughly inspected and found to be in compliance. The EPA also audited Prince William County's E&S program in August of 2019 and found the program to be in compliance. An E&S permit is required when the land disturbance exceeds 2,500 square feet.

Our stormwater management program is consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq. The Virginia Stormwater Management Program (VSMP) regulations became effective on July 1, 2014. These regulations are contained in Section 700 of the County's Design & Construction Standards Manual (DCSM), and Chapter 23.2, Article IV – Storm Water Management in Prince William County Code. The SWM requirements for Development on Prior Developed Lands are consistent with the State regulations. The County's SWM regulations are more stringent than the State regulations only in certain areas as described below.

VSMP regulations allowed the localities to adopt criteria more stringent than VSMP with proper justification based on specific watershed studies. Alternatively, more stringent regulations that pre-existed prior to January 1, 2013, were exempt. Based on this exemption, Prince William County retained more stringent regulations on flood control in critical watersheds to control the 25-year storm to prevent localized flooding events. In addition, the County retained its authority to require the control of the 100-year flood, for proposed developments located upstream of existing residential developments with required minimum lot sizes less than one acre and adjoining special flood hazard areas. These requirements are in addition to the required control of 2- and 10-year frequency storms per state regulations.

Prince William County employs 11 full-time site inspectors and an E&S Program Manager. In addition, the County has five full-time engineers to review the land development plans for E&S and SWM requirements. All our site inspectors and plan reviewers are duly certified for erosion and sediment control and SWM. In Prince William County, maintaining these certifications is a condition for continued employment. Prince William County is committed to providing continuing education and training to its employees on E&S and SWM. For a list of site inspector certifications, please see Appendix A.

The land development plan review, inspection, and enforcement of E&S and SWM regulations are performed by a single agency in Prince William County. The Environmental Services Division of the Department of Public Works is directly responsible for administering the program. Having a streamlined program under one agency is very helpful in ensuring the consistent interpretation and enforcement of applicable ordinances. The County continues to require the Responsible Land Disturbance (RLD) certifications prior to issuing the land disturbance permits. The County's E&S Administrator conducts periodic joint meetings with the plan reviewers and the site inspectors for the continued improvement of the programs.

Prince William County has developed a mobile application for E&S and VSMP inspections. This system runs on tablet devices provided to each site inspector. Follow up inspections, violation notices, and inspection checklists are all managed through the mobile application. This application has enhanced the inspection efficiency and brought added consistency among all site inspectors.

Prince William County continues to implement a robust program to address the post-construction discharges from new developments and redevelopments by ensuring the long-term operation and maintenance of these SWM controls. All the county-maintained and the county-owned facilities are inspected annually. The County inspects all the privately-maintained SWM facilities once within the 5-year permit cycle. The owners of these facilities receive the County's inspection reports along with the identification of deficiencies that must be corrected within the specified deadline. Staff conduct follows-up inspections to ensure maintenance and seek the County Attorney's assistance as necessary for enforcement.

Appendix X

Public Outreach Summary

FY23 Public Outreach Summary

Promote Public Reporting and Recognition of Illicit Discharges: Prince William County Public Works offers information to define an illicit discharge, possible sources of pollutants that can enter our stormwater systems, how to prevent runoff and how to report incidents of improper dumping.

o Residents

1. Maintain several references on our website with pages focused on the MS-4 permit, TMDLs, illicit discharge, illegal dumping, storm water runoff and erosion.
2. Placed articles in newsletter to HOAs and neighborhood leaders about cleaning up after pets, native plants, and proper disposal of wastes.
3. Established a hotline and email address to report illegal dumping into storm drains.
4. Placed informational markers at selected stormwater drains throughout the community and hand out information door hangers explaining the concerns with placing materials in the storm drain.

o Businesses and Industries

1. Provide online guidance for developers to protect water quality.
2. Share informational materials when visiting sites in the field.
3. Send educational materials with warning and violation letters.

o County Government

1. Created online training about illicit discharge and pollution prevention for employees (required for some and encouraged for others).
2. Established a SWPPP at four facilities identified as high-risk including park sites and Fleet.
3. Established protocol for outdoor storage of equipment, materials, and chemicals.
4. Expanded program for proper collection and disposal of batteries, universal waste, printer cartridges, electronic accessories, chemicals, and hazardous waste generated by County employees.
5. Worked with an independent vendor to inspect and make repairs to all above-ground fuel storage tanks located at PWC facilities.

Continue to Promote Involvement in Local Water Quality Improvement Projects: Prince William County Public Works will continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs groups, meetings, and other opportunities for public involvement. Public Works takes the lead on water quality improvement initiatives by facilitating projects and educational events, as well as providing funds to partner agencies in the community to support public involvement and awareness.

o Residents

1. Create and maintain educational web pages on sound practices around the home to prevent pollution and runoff, protect streams, rivers and wetlands, planting native species, safeguarding trees, and managing waterfront property.
2. Create and maintain informational web pages on opportunities to help families volunteer, take steps to go green and reduce their impact on the environment, get outdoors and learn about conservation agencies in the community.
3. Provide residents with the opportunity to drop off household hazardous waste and electronics twice a week year-round at no charge to reduce inclination to pour liquids down the storm drain, illegally dump items or throw them away in regular trash collection.

4. Provide residents with the opportunity to drop off motor oil, anti-freeze, and car batteries at no charge every day to reduce inclination to pour down the storm drain.
5. Provide funding to the Prince William Soil and Water Conservation District to run an Adopt-a-Stream program.
6. Provide funding to the Prince William Soil and Water Conservation District to monitor floatables in the community (volunteers monitored five sites each quarter).
7. Provide funding to the Prince William Soil and Water Conservation District to monitor water quality at 15 active sites and four sites to monitor E.coli, as well as offer monitoring events and outreach events for residents).
8. Provided funding to Keep Prince William Beautiful to work with volunteers to apply adhesive markers to storm drains that remind residents that the drain leads to local waters and eventually the Chesapeake Bay.
9. Provide funding to the Virginia Tech Cooperative Extension Office to provide training for residents on a variety of environmental topics including horticulture, best lawn practices, natural resources, and other lawn care recommendations.
10. Provide funding to the Virginia Tech Cooperative Extension office to help homeowners, businesses, and houses of faith to adopt an urban nutrient management plan.

o Businesses and Industry

1. Work with local businesses to properly maintain their stormwater management ponds.
2. Work with local businesses to recruit volunteers to help with cleanup projects, particularly near their business or when companies have a corporate philosophy to volunteer in the community.
3. Recognize volunteers, individuals, and groups, with an annual Green Community Award.
4. Provide funding to Keep Prince William Beautiful to conduct quarterly litter surveys in the community to identify problem areas with reports sent to nearby businesses asking for their assistance in cleanups and management of potential sources of litter or runoff.
5. Provide funding to Keep Prince William Beautiful to conduct shopping center surveys and provide feedback to property manager to help them better maintain their center (103 shopping centers currently participate).

o County Government

1. Created online training for compliance with Resource Conservation and Recovery Act, Spill Prevention, Control and Countermeasure plans and Illicit Discharge Detection and Elimination.
2. Encourage staff to conduct regular good housekeeping efforts and inspections to ensure environmental compliance as well as safety in Public Works facilities.
3. Created training for staff on the best salt management practices.
4. Enforce the County's Environmental Policy Statement
5. Continue a robust Environmental Management System that includes facilities awarded E2, E3, E4 and SP status by DEQ and an EMS Council that manages and expands the environmental compliance program.
6. Host an annual Earth Day Festival for County Employees
7. Provide spill kits for all fuel tanks and generators at County facilities and train staff how to respond.
8. Maintain compliant Spill Prevention, Control and Countermeasure plans for facilities when required and maintain training requirements for the program.
9. Continue to improve housekeeping practices that will help protect water quality.

<u>Promote Integrated Management Practice (IMP) Plans for Public and Private Golf courses: Prince William County Public Works will reach out to public and private golf courses located within the county that discharge to the permittee's MS4 that would encourage implementation of integrated management</u>

practice (IMP) plans and techniques to reduce runoff of fertilizers and pesticides. Public Works has established a relationship with local golf course managers, particularly the public courses, to ensure they have the tools and knowledge to reduce the impact of their operations.

- o Required all golf courses to have a current nutrient management plan
- o Required all golf course managers to ensure staff is properly trained in IPM plans
- o Required all golf course managers to ensure staff is trained in application techniques to reduce runoff

Continue to Promote Public Good Housekeeping Practices: Prince William County Public Works will promote and publicize good housekeeping practices including the proper disposal of pet waste, household yard waste and washing vehicles to minimize water quality impacts.

o Residents

1. Provide information online about picking up after your pets.
2. Provide a pamphlet about picking up after your pets.
3. County-owned compost facility accepts yard waste from residents for composting and mulching (product available for purchase from private vendor that operates the compost)
4. Provide tips and steps for grass cycling and composting at home.
5. Host an annual event to highlight the benefits of composting and provide information to the community.
6. Created a page on the website with tips on good practices to protect water quality.
7. Created a seven steps tip sheet on protecting water quality.
8. Created a flyer encouraging residents to maintain good housekeeping practices regarding yard waste and distributed it at the landfill.

o Businesses and Industries

1. Created a flyer encouraging landscapers to maintain good housekeeping practices in regard to yard waste and distributed it at the landfill.
2. Created a flyer encouraging restaurants and shopping centers to maintain good housekeeping practices regarding cooking oil and dumpsters/compactors.

o County Government

1. Require all standard vehicles be washed at commercial facilities.
2. Established protocol for properly washing non-standard vehicles and equipment in such a way as to prevent runoff.

Encourage Private Property Owners to Implement Voluntary Stormwater Management Techniques and/or Retrofits: Prince William County will continue to develop programs to encourage private property owners to implement voluntary stormwater management retrofits. Currently, the County partners with the Prince William County Soil and Water Conservation District (PWSWCD) to encourage private property owners to implement voluntary stormwater management retrofits through the Virginia Conservation Assistance Program. This program promotes cost share incentives for private property owners looking to implement BMPs. As part of this partnership, PWSWCD has a goal to coordinate the installation of at least two retrofit projects per year. Two VCAP projects were completed in FY22. Prince William County helps private property owners implement voluntary stormwater management techniques and/or retrofits with strategies including protecting sensitive areas, reducing run off and saving trees.

o Residents

1. Created brochures for owners with waterfront property.
2. Hosted a conference with information for owners with waterfront property.

3. Created a brochure about the Chesapeake Bay Resource Protection Areas for distribution at events and site visits.
4. Created a pamphlet on the benefits of rain gardens.
5. Encourage residents to reduce turf on property and replace with native species and forested areas.
6. Hosted a symposium about establishing native plants on private property.

o Businesses and Industries

1. Encourage businesses and industries to replace turf areas with native species and forested areas to reduce use of herbicides and fertilizers, as well as reduce mowing costs.
2. Offer funding through the Virginia Conservation Assistance Program for nonagricultural lands to support best management practices to protect local water quality.

o County Government

1. Establish a reforestation practice for all new County construction to leave as many mature trees as feasible, save soil for planting projects and replace disturbed areas with trees and native plants to save mowing costs and reduce use of fertilizers and herbicides.
2. Establish meadows and gardens at County historic sites and public facilities.
3. Undertake stream restoration projects.
4. Retrofit existing stormwater management structures with improved structures and strategies during retrofits, repairs, or maintenance.

Continue to Promote Commercial, Institutional, and Industrial Good Housekeeping Practices: Prince William County Public Works will share specific information and strategies with local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts, including illicit discharge and illegal dumping concerns.

o County Government

1. Inspect facilities and areas at high risk for runoff to ensure best management practices in place.
2. Improve best management practices by continuous review and upgrades as needed.
3. Place spill kits and provide training for staff to use spill kits at all vulnerable locations.
4. Conduct regular inspections of our above ground tanks to ensure there are no leaks or spills.
5. Enforce and promote protocol for staff and volunteers for safety when they find tanks, suspicious bottles/jars and oil/fluid spills during inspections and cleanups Prince William County Public Works posts a copy of this state permit on its web page no later than 30 days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.

o Public Works has posted a copy of the state permit on its website. It resides on our Environmental Management Division page at the following link: Community MS-4 Program (pwcva.gov)

o A printed copy of the state permit is kept in our offices for any citizen to review upon request at our service counter.