

October 2020

Annual Stormwater Management Report
VSMP Permit No. 0088595 – FY 2020



Submitted by:
Prince William County
Department of Public Works

Table of Contents


- I. Program Implementation.....4**
 - 1. MS-4 Program Review and Updates4**
 - 2. Planning4**
 - 3. MS4 Program Implementation4**
 - a. Construction Site Runoff and Post Construction Runoff4**
 - b. Retrofitting on Prior Developed Lands.....6**
 - c. Roadways.....7**
 - d. Pesticide, Herbicide, and Fertilizer Application13**
 - e. Illicit Discharge and Improper Disposal.....17**
 - f. Spill Prevention and Response.....37**
 - g. Industrial and High Risk Runoff.....38**
 - h. Storm Sewer Infrastructure Management41**
 - i. County Facilities.....47**
 - j. Public Education and Participation49**
 - k. Training57**
 - l. Water Quality Screening Programs58**
 - m. Infrastructure Coordination64**
- II. Monitoring Requirements65**
 - 1. Biological Stream Monitoring65**
 - 2. In-stream Monitoring67**
 - 3. Floatables Solids Monitoring76**
 - 4. Structural and Source Controls Compliance Monitoring80**
- III. TMDL Action Plan Implementation80**
 - 1. Chesapeake Bay Watershed TMDL Planning.....80**
 - 2. TMDL Action Plans other than the Chesapeake Bay TMDL.....83**
- IV. Additional Reporting Requirements83**
 - 1. Roles and responsibilities.....83**
 - 2. Non Compliance84**
 - 3. Budget.....84**
 - 4. Permit Fees.....84**

Appendices

Appendix A – Construction Site Runoff and Post Construction Runoff.....	I
Appendix B – Retrofitting on Prior Developed Lands	II
Appendix C - Roadways	III
Appendix D – Pesticide Herbicide and Fertilizer Application	IV
Appendix E – Illicit Discharges and Improper Disposal.....	V
Appendix F – Spill Prevention and Response.....	VI
Appendix G – Industrial and High Risk Runoff.....	VII
Appendix H – Stormsewer Infrastructure Management	VIII
Appendix I – County Facilities	IX
Appendix J – Public Education/Participation.....	X
Appendix K - Training	XI
Appendix L – Water Quality Programs.....	XII
Appendix M – Infrastructure Coordination.....	XIII
Appendix 1 – Biological Stream Monitoring.....	XIV
Appendix 2 – In-Stream Monitoring.....	XV
Appendix 3 – Floatables and Solids Monitoring.....	XVI
Appendix 4 – Structural and Source Controls.....	XVII
Appendix III – Administrative and Programmatic	XVIII

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.”



Marc Aveni
Chief, Environmental Services Division

October 1st, 2020

Date

I. Program Implementation

1. MS-4 Program Review and Updates

The Prince William County MS-4 Program plan describes all programs and actions taken by the County to ensure compliance with Virginia Stormwater Management Program (VSMP) MS-4 Permit # VA0088595. Prince William County permit expired on December 16th, 2019 and the County is presumably operating under the administrative continuance of the existing Permit. The County is looking forward to working with DEQ on the upcoming new Permit.

2. Planning

The updated Program Plan can be found online at the following website:

<https://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>

3. MS4 Program Implementation

a. Construction Site Runoff and Post Construction Runoff

BMP 1 – Continue to implement an Erosion and Sediment Control Program

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 also 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 12 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 additional information on certifications for plan reviewers and inspectors, 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 in E&S and VSMP inspections. This system runs on tablet devices (iPad) 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.

For the period July 1, 2019 thru June 30, 2020, Prince William County approved a total of 139 land development plans with a cumulative land disturbance of 3,778.8 acres.

Table 1, presented below, summarizes the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken for Erosion & Sediment Control.

Table 1 – FY20 Erosion and Sediment Control Program Summary

FY20	Site Inspections	Inspection Notice	Violations	Notice to Comply	Stop Work
Total	26,732	186	68	8	1

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.

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. We have a dedicated team for the inspection and maintenance of all county maintained SWM facilities. 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. Our staff follows-up to ensure maintenance and seek the County Attorney’s assistance as necessary for enforcement.

Prince William County’s strategies to address the stormwater controls that are designed to treat the stormwater runoff solely from individual residential lot are summarized in the BMP Table included in Appendix A. The Table summarizes the party responsible for the maintenance and the applicable deed restrictions and agreements. For the individual infill lots outside the common plan of development, the County allows the use of the “Agreement in lieu of a SWM Plan”.

b. Retrofitting on Prior Developed Lands

BMP 1 – Implementation of TMDL priority Projects

The County has completed the process of implementing all of its priority projects. A list of these projects can be found in Table 2 below. For a detailed summary, please see Section III.1.

Table 2 – Priority Projects by Completion Year

Number	Project Name	Completion Year
1	SWM Facility No. 99 – Water Quality Retrofit	FY16
2	Hylbrook Park	FY16
3	SWM Facility No. 28 – Water Quality Retrofit	FY17
4	Reach 5 Stream Restoration	FY17
5	Dewey’s Creek Reach 4	FY17
6	East Longview	FY17
7	SWM Facility No. 489	FY18

BMP 2 – Implementation of Non-Priority Projects

During FY20 two additional non-priority projects were completed. See Section III for more information.

c. Roadways

BMP 1 – Maintain Accurate List of Prince William County Owned Roadways

Although the Virginia Department of Transportation (VDOT) maintains a majority of the roadways and right of way areas within Prince William County, the County is responsible for the maintenance of some roadways and parking lots. VDOT operates under its own phase II stormwater permit, and coordination regarding issues with MS-4 physical-interconnectivity is required as part of both permittee's MS-4 requirements (see section II.m). The County currently operates and maintains parking lots associated with County facilities.

As part of its permit responsibilities PWC has generated a list of all County maintained parking lots, streets, and roadways and the acres treated/not treated by BMPs. This list was updated in May, 2019 in congruence with the Program Plan. The County has 94 total parcels with impervious parking lots or roads. There are 50 parcels containing County maintained impervious roadways totaling 12.8 miles or 42.9 acres, in addition, there are 87 parcels with impervious parking lots totaling 132.5 acres. Some parcels may contain both sections of impervious roadway and parking lot space.

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	0.00	0.17
13001	CHINN PARK	DR	77.003	CHINN PARK	0		1	97	0.05	1	0	0.05	0.02	0.00
13131	PUBLIC SAFETY	DR	12.081	PUBLIC SAFETY FACILITY - ACREAGE	0		1	585	0.15	1	0	0.15	0.11	0.00
5049	WATERWAY	DR	8.210	MONTCLAIR LIBRARY (UNDER CONSTRUCTION)	0		1	716	0.801	1	0	0.801	0.14	0.00
8636	WELLINGTON	RD	0.857	PWC JUVENILE CTR	0		1	284	0.16	1	0	0.16	0.05	0.00
1040	EXPRESS	DR	2.538	VRE TRAIN STATION WOODBRIDGE	0		1	483	0.65	1	0	0.65	0.09	0.00
7625	AARON	LN	15.264	ELLIS L BARRON PARK	1	0.29	0			1	0.29	0	0.00	0.00
12560	ADEN	RD	97.074	NOKESVILLE COMMUNITY PARK	1	1.87	1	4393	1.4	1	1.87	1.4	0.83	0.00
5901	ANTIOCH	RD	3.800	FIRE STATION ANTIOCH ROAD/ DOMINION VALLEY	1	1.17	1	897	0.62	1	1.17	0.62	0.17	0.00
8051	ASHTON	AV	4.177	BULL RUN LIBRARY	1	1.94	1	231	0.15	1	1.94	0.15	0.04	0.00
7500	BEN LOMOND PARK	DR	240.607	BEN LOMOND PARK	1	1.92	1	1010	0.86	1	1.92	0.86	0.19	0.00
14730	BIRCHDALE	AV	8.656	BIRCHDALE PARK	1	0.77	0			0	0	0	0.00	0.00
14998	BIRCHDALE	AV	0.836	VFD FIRE STATION	1	0.33	1	58	0.038	0	0	0	0.00	0.01
15011	BIRCHDALE	AV	4.146	BIRCHDALE PARK	1	0.165	0			0	0	0	0.00	0.00
15520	BLACKBURN	RD	42.452	RIPPON LODGE	1	0.48	1	1050	0.58	1	0.48	0.58	0.20	0.00
12401	BRAEMAR	PY	15.172	BRAEMAR PARK	1	0.55	0			1	0.55	0	0.00	0.00
14418	BRISTOW	RD	132.734	HELWIG PARK & LIBRARY	1	6.5	1	3,800	2.18	1	6.5	2.18	0.72	0.00
14422	BRISTOW	RD	1.500	HELWIG PARK ENTRANCE	0		1	167	0.32	1	0	0.32	0.03	0.00
13065	CHINN PARK	DR	14.647	CHINN PARK COMPLEX (Library, Aquatic Center)	1	4.86	1	509	0.29	1	4.86	0.29	0.10	0.00
13850	CHURCH HILL	DR	5.086	COMMUNITY CENTER	1	0.49	1	547	0.25	0	0	0	0.00	0.10
15150	CLOVERDALE	RD	30.190	CLOVERDALE PARK	1	1.57	1	1122	0.49	0	0	0	0.00	0.21

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10501	COPELAND	DR	2.974	SUDLEY MANOR COMMUNITY CENTER	1	0.74	0			0	0	0	0.00	0.00
12380	COTTON MILL	DR	4.770	LAKE RIDGE MARINA	1	1.02	1	1163	0.65	1	1.02	0.65	0.22	0.00
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	0.00
12390	COTTON MILL	DR	4.675	LAKE RIDGE PARK	1	1.15	1	2430	1.16	1	1.15	1.16	0.46	0.00
7	COUNTY COMPLEX	CT	65.547	STADIUM COMPLEX	1	4.88	1	950	0.54	1	4.88	0.54	0.18	0.00
1	COUNTY COMPLEX	CT	40.676	McCOURT & DEVELOPMENT SERVICES BUILDINGS	1	7.03	1	5085	4.8	1	7.03	4.8	0.96	0.00
5180	DALE	BL	7.161	PARKS SKATE NATION	1	1.48	0			1	1.48	0	0.00	0.00
5070	DALE	BL	6.179	BOYS AND GIRLS CLUB	1	0.38	0			1	0.38	0	0.00	0.00
5100	DALE	BL	3.500	BOYS/ GIRLS CLUB/COMMUTER PARKING LOT	1	2.61	1	338	0.24	1	2.61	0.24	0.06	0.00
5301	DALE	BL	218.234	ANDREW LEITCH PARK	1	1.95	1	933	0.46	1	1.95	0.46	0.18	0.00
4249	DALE	BL	0.478	DALE CITY LIBRARY	1	0.1	0			0	0	0	0.00	0.00
14012	DAWSON BEACH	RD	6.230	COMMUNITY CENTER	1	0.16	1	1444	0.47	0	0	0	0.00	0.27
15941	DONALD CURTIS	DR	17.091	FERLAZZO BLDG	1	4.9	1	600	0.5	1	4.9	0.5	0.11	0.00
13712	DUMFRIES	RD	9.540	COLES FIRE STATION	1	0.98	0			1	0.98	0	0.00	0.00
4100	EXETER	DR	5.688	BRITTANY PARK	1	0.96	1	334	0.16	1	0.96	0.16	0.06	0.00
15611	FARM CREEK	DR	2.427	FARM CREEK VRE COMMUTER LOT	1	1.22	0			1	1.22	0	0.00	0.00
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	0.00
12993	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 1	1	0.09	0			1	0.09	0	0.00	0.00
12997	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 2	1	0.05	0			1	0.05	0	0.00	0.00
8900	FREEDOM CENTER	BL	15.398	WESTERN POLICE STATION	1	4.15	1	1453	1.03	1	4.15	1.03	0.28	0.00
18809	FULLER HEIGHTS	RD	42.260	FULLER HEIGHTS PARK	1	0.86	1	1137	0.52	1	0.86	0.52	0.22	0.00
13030	HARBOR	DR	2.293	COMMUTER LOT - TACKETTS MILL	1	1.47	0			1	1.47	0	0.00	0.00

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13509	HILLENDALE	DR	3.426	COMMUTER LOT - HILLENDALE RD	1	2.23	0			1	2.23	0	0.00	0.00
13499	HILLENDALE	DR	21.901	JOHN JENKINS PARK	1	0.16	1	413	0.26	1	0.16	0.26	0.08	0.00
12940	HUNTING	CO	2.520	BROAD RUN PARK	1	0.31	0			1	0.31	0	0.00	0.00
4603	JAMES MADISON	HY	163.633	JAMES LONG PARK	1	3.55	1	3025	2.02	1	3.55	2.02	0.57	0.00
15904	JEFFERSON DAVIS	HY	0.960	EASTERN FUELING STATION	1	0.74	0			1	0.74	0	0.00	0.00
14945	JEFFERSON DAVIS	HY	5.065	HILDA BARG HOMELESS CENTER	1	0.3	1	468	0.25	1	0.3	0.25	0.09	0.00
14450	JOHN MARSHALL	HY	3.847	FIRE STATION	1	0.86	1	435	0.26	1	0.86	0.26	0.08	0.00
9250	LEE	AV	2.307	OLD COURTHOUSE/PARKING	1	0.67	0			1	0.67	0	0.00	0.00
9254	LEE	AV	0.201	OLD COURTHOUSE/PARKING	1	0.07	0			1	0.07	0	0.00	0.00
9252	LEE	AV	0.186	OLD COURTHOUSE/PARKING	1	0.05	0			1	0.05	0	0.00	0.00
9256	LEE	AV	0.154	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0.00	0.00
9258	LEE	AV	0.163	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0.00	0.00
9300	LEE	AV	8.502	OLD COURTHOUSE/PARKING	1	2.2	0			1	2.2	0	0.00	0.00
9301	LEE	AV	4.680	OLD COURTHOUSE/PARKING	1	2.03	0			1	2.03	0	0.00	0.00
14870	LIGHTNER	RD	4.248	GAINESVILLE LIBRARY	1	1.1	0			1	1.1	0	0.00	0.00
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	0.00
8460	MAPLEWOOD	DR	27.478	JOSEPH READING PARK	1	0.4	1	1162	0.62	1	0.4	0.62	0.22	0.00
8601	MATHIS	AV	2.748	CENTRAL LIBRARY MANASSAS	1	1.25	0			0	0	0	0.00	0.00
14716	MINNIEVILLE	RD	26.333	HOWISON HOMESTEAD PARK	1	1.3	1	899	0.53	1	1.3	0.53	0.17	0.00
14400	MINNIEVILLE	RD	0.367	DALE CITY RECREATION CENTER PARKING LOT	1	0.23	0			1	0.23	0	0.00	0.00
14300	MINNIEVILLE	RD	30.862	DALE CITY RECREATION CENTER	1	1.4	1	164	0.31	1	1.4	0.31	0.03	0.00
9320	MOSBY	ST	4.759	COURTHOUSE PARKING	1	1.85	0			1	1.85	0	0.00	0.00

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9350	MOSBY	ST	9.452	COURTHOUSE PARKING	1	0.05	0			1	0.05	0	0.00	0.00
2081	OLD BRIDGE	RD	0.700	OLD BRIDGE COMMUTER LOT	1	0.39	0			1	0.39	0	0.00	0.00
2095	OLD BRIDGE	RD	1.138	OLD BRIDGE COMMUTER LOT	1	1.12	0			1	1.12	0	0.00	0.00
2201	OPITZ	BL	3.778	POTOMAC REGIONAL LIBRARY	1	0.93	1	53	0.038	0	0	0	0.00	0.01
9212	PEABODY	ST	3.740	COURTHOUSE PARKING	1	1.51	0			1	1.51	0	0.00	0.00
9307	PEABODY	ST	0.228	COURTHOUSE PARKING	1	0.18	0			0	0	0	0.00	0.00
9305	PEABODY	ST	0.151	COURTHOUSE PARKING	1	0.15	0			0	0	0	0.00	0.00
9303	PEABODY	ST	0.276	COURTHOUSE PARKING	1	0.12	0			0	0	0	0.00	0.00
10699	PIPER	LN	40.330	AIRPORT VRE STATION & COMMUTER LOT	1	4.44	1	1902	1.3	1	4.44	1.3	0.36	0.00
13800	POP MOUBRY	PL	20.880	LANCASTER PARK	1	0.17	1	258	0.13	1	0.17	0.13	0.05	0.00
14700	POTOMAC MILLS	RD	3.580	PRTC POTOMAC MILLS	1	1.78	1	419	0.34	1	1.78	0.34	0.08	0.00
14730	POTOMAC MILLS	RD	0.787	PRTC - HOMELESS SHELTER	1	0.35	0			1	0.35	0	0.00	0.00
14716	POTOMAC MILLS	RD	5.507	PRTC POTOMAC MILLS	1	1.9	0			1	1.9	0	0.00	0.00
13161	PUBLIC SAFETY	DR	8.276	PUBLIC SAFETY TRAINING FACILITY - PCL B	1	0.4	0			1	0.4	0	0.00	0.00
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	0.00
12731	RIDGEFIELD VILLAGE	DR	4.400	EARL CUNARD PARK	1	0.18	0			1	0.18	0	0.00	0.00
17301	RIVER RIDGE	BL	6.262	LACEY COMPTON PARK - WAYSIDE VILLAGE	1	0.35	0			1	0.35	0	0.00	0.00
16530	RIVER RIDGE	BL	5.656	RIVER OAKS FIRE STATION	1	1.03	1	854	0.57	1	1.03	0.57	0.16	0.00
16198	SILVER LAKE	RD	43.753	SILVER LAKE - EQUESTRIAN CENTER	1	0.8	0			1	0.8	0	0.00	0.00
15960	SINDLINGER	WY	4.400	FERLAZZO CENTER	1	1.42	0			1	1.42	0	0.00	0.00
13455	TELEGRAPH	RD	24.609	HORNER RD COMMUTER PARKING LOT	1	10.9	1	1531	2.3	1	10.9	2.3	0.29	0.00
12051	TYGART LAKE	DR	42.074	BROAD RUN LINEAR PARK - PUMP STATION	1	0.38	0			1	0.38	0	0.00	0.00

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11930	VALLEY VIEW	DR	125.626	VALLEY VIEW PARK	1	5.4	1	3644	2.8	1	5.4	2.8	0.69	0.00
14300	VETERANS	DR	78.114	VETERANS MEMORIAL PARK	1	3.21	1	4221	2.3	1	3.21	2.3	0.80	0.00
14631	VINT HILL	RD	165.000	PRINCE WILLIAM GOLF COURSE	1	0.8	1	1736	0.804	1	0.8	0.804	0.33	0.00
4450	WATERWAY	DR	13.802	ANN MONCURE WALL PARK	1	1	1	1373	0.66	1	1	0.66	0.26	0.00
8642	WELLINGTON	RD	1.263	PWC JUVENILE CENTER	1	0.17	1	357	0.204	1	0.17	0.204	0.07	0.00
2430	WEST LONGVIEW	DR	4.156	HYLBROOK PARK	1	0.59	0			0	0	0	0.00	0.00
14811	DUMFRIES	RD	1061.984	FLEET BUILDING PARKING LOT ONLY	1	2.09	0			0	0	0	0.00	0.00
				TOTALS	87	132.5	50	67,302	42.9	78	122.9	41.2	12.0	0.8

BMP 2 – Good Housekeeping Practices on County Maintained Roadways

Prince William County contracts out maintenance activities for County maintained parking lots, streets, and roadways. These activities include sweeping, line painting, and asphaltting. No aggregate materials are stored as part of B&G roadway maintenance activities at this time.

Asphalt maintenance to parking lots and roadways are scheduled to be performed cyclically, with the average asphalt lifespan of 17 years. Each lot and roadway is listed for evaluation every fiscal year. Paint maintenance to parking lots is performed every 4 years. Street sweeping to parking lots is scheduled to be performed every 2 years. All maintenance activities are designed to conform to good housekeeping and pollution prevention practices in a manner to minimize the discharge of pollutants.

Buildings and Grounds maintenance vehicles are stored in a manner to reduce the discharge of pollutants. Vehicles are serviced and repaired by PWC Fleet Management Division and are tracked by GPS to provide feedback on fuel usage and routing. This is designed to improve efficiency and minimize pollutant discharge.

Prince William County established a county-wide IDE (Illicit Discharge Elimination) policy to promote good housekeeping practices across all municipal facilities. A full copy of this policy can be found in Appendix I.

BMP 3 – Good Housekeeping Practices for Winter Weather Maintenance

Prince William County Buildings and Grounds and Construction Services are 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 activities 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. A full copy of this policy can be found in Appendix I.

d. Pesticide, Herbicide, and Fertilizer Application

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.

Working with the Virginia Cooperative Extension Service, their staff 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.

There is an annual collection to properly dispose of the materials in the state. It is held in a different region each year. The Cooperative Extension works with our local applicators and distributors to ensure they are aware of the collection.

BMP 1 – Identify Nutrient Applied over County Lands

Prince William County is dedicated to minimizing the effects of pesticides, herbicides, and fertilizer use on the Chesapeake Bay. The County has identified all lands of which nutrients are applied to a contiguous area of more than one acre. The latitude and longitude of these lands will be reported to DEQ as requested. This data will be used to determine where Nutrient Management plans need to be developed. This list is displayed in the following section, along with the current status of implementation for each site.

BMP 2 – Develop and Implement Turf and Landscape Management Plans

The County has finished implementing Turf and Landscape nutrient management plans for 100% of County lands where nutrients are applied to greater than one contiguous acre. Table 4 below provides a summary of lands of which nutrients are applied to greater than one contiguous acre and the progress of the County’s NMP.

Table 4 – Nutrient Management Plan Implementation

Plan Name	Area Requiring Plan (Acres)	Latitude	Longitude	Plan Area (Acres)	Initial Plan Date	Current Plan Expiration Date
H.L. Mooney Plant	4.98	38.6144	-77.2683	4.98	9/28/2015	11/15/2021
Spittle Building	2.48	38.6811	-77.3492	2.48	9/30/2015	11/15/2021
Anne Wall	2.25	38.6039	-77.3442	2.25	10/1/2018	9/30/2021
Ben Lomond	24.04	38.7975	-77.4936	24.04	12/1/2018	11/30/2021
Ben Lomond Community	1.86	38.7894	-77.5061	1.86	7/1/2017	6/30/2023
Braemar	2.46	38.7339	-77.5692	2.46	9/1/2017	8/31/2023
Catharpin	9.03	38.8544	-77.5656	9.03	4/1/2017	3/31/2023
Chinn	11.52	38.6706	-77.3303	11.52	12/1/2018	11/30/2021
Cloverdale	8.66	38.6222	-77.3194	8.66	12/1/2018	11/30/2021
Dale City Rec	3.16	38.6431	-77.3450	3.16	12/1/2018	11/30/2021
Fairmont	4.01	38.7817	-77.4908	4.01	10/1/2018	9/30/2021
Fuller Heights Park	5.39	38.5425	-77.3300	5.39	12/1/2018	11/30/2021
Forest Greens Golf	105.42	38.5431	-77.3539	105.42	11/26/2014	10/16/2024
Hellwig	36.84	38.6389	-77.4500	36.84	4/1/2017	3/31/2023
Howison	9.82	38.6339	-77.3825	9.82	4/1/2017	3/31/2023

Plan Name	Area Requiring Plan (Acres)	Latitude	Longitude	Plan Area (Acres)	Initial Plan Date	Current Plan Expiration Date
Independent Hill Park	3.81	38.6361	-77.4286	3.81	7/1/2017	6/30/2023
James Long	17.87	38.8536	-77.6347	17.87	4/1/2017	3/31/2023
Lake Ridge Golf	21.29	38.6919	-77.3208	21.29	5/4/2016	5/3/2021
Leitch	9.24	38.6572	-77.3711	9.24	12/1/2018	11/30/2021
Locust Shade	6.52	38.5333	-77.3511	6.52	12/1/2018	11/30/2021
Mayhew	6.95	38.8067	-77.4914	6.95	10/1/2017	9/30/2023
Nokesville	21.85	38.6856	-77.5775	21.85	11/1/2018	10/31/2021
Prince William Golf	114.33	38.7475	-77.6306	114.33	2/5/2016	2/5/2021
Stadium	14.60	38.6836	-77.3514	14.60	10/1/2018	9/30/2021
Turley	1.23	38.6278	-77.3094	1.23	12/1/2018	11/30/2021
Valley View	34.50	38.7011	-77.5394	34.50	11/1/2018	10/31/2021
VEPCO	4.47	38.6481	-77.3636	4.47	10/1/2018	9/30/2021
Veterans	35.41	38.6422	-77.2497	35.41	11/1/2018	10/31/2021
Barg Homeless	5.07	38.6267	-77.2756	5.07	10/15/2017	10/15/2020
Human Services/ Boys Home	1.92	38.6306	-77.2953	1.92	10/30/2015	10/29/2021
Bull Run Library	1.56	38.7867	-77.5206	1.56	10/30/2015	10/21/2021
Central Library	1.48	38.7686	-77.4553	1.48	4/11/2016	5/12/2022
Dawson Beach	4.08	38.6481	-77.2450	4.08	8/1/2019	12/15/2022
Fire 20	1.59	38.6475	-77.3064	1.59	5/17/2017	5/17/2023
Fire 4	1.53	38.8039	-77.6194	1.53	10/30/2016	10/24/2022
Garfield Ferlazzo	5.90	38.6081	-77.2944	5.90	5/16/2017	5/17/2023
Manassas Court	7.21	38.7525	-77.4789	7.21	6/18/2018	6/19/2021
Government Center	12.32	38.6803	-77.3522	12.32	3/15/2015	1/20/2022
PWC Safety Training Center	4.95	38.6644	-77.5853	4.95	6/25/2018	6/24/2021
Western PD	7.27	38.7625	-77.5172	7.27	4/1/2015	2/11/2022
Total	578.87			578.87		

Staff certified in nutrient management planning develop turf and landscape management plans. These certifications are summarized in Table 5.

Table 5 – Name, certificate number, and expiration date of all nutrient management planners for Prince William County

Plan Writer	Certificate number	Expiration date
Julie Flanagan	#772	2/2022
Clay Morris	#757	8/2022
Paige Thacker	#759	8/2022

Plan Writer	Certificate number	Expiration date
Nancy Berlin	#801	8/2022
Thomas Bolles	#732	2/2022
Kevin Flickinger	#842	8/2022

BMP 3 – Develop and Employ Good Housekeeping Practices for storage transport and disposal of pesticides, herbicides, and fertilizers.

The County works with its Mosquito Forest Pest Management, Buildings and Grounds, and Parks and Recreation departments to ensure good housekeeping practices are followed. This includes the storage, transport, and disposal of pesticides, herbicides, and fertilizers. All County staff working with pesticides, herbicides, insecticides, and fertilizers are trained and maintain required certifications. Good housekeeping practices are further defined in the Illicit Discharge Elimination (IDE) policy. The County evaluated each of these departments for compliance with this policy through IDE compliance reports. These reports and the policy can be found in Appendix I. They are also described further in SOPs found in Appendix D.

In addition, the County works with various volunteer organizations to ensure the proper use and storage of pesticides, herbicides, and fertilizers. For instance, the Environment and Natural Resources program of Virginia Cooperative Extension Service (VCE) provides research based information to help citizens improve their lawns and landscapes without negatively impacting the environment. Services include:

- Horticulture Help Line and Plant Clinics at local Garden Centers and farmer’s market to answer questions about insect, disease or gardening problems
- BEST Lawns is a lawn education program that provides lime and fertilizer recommendations based on a soil test and lawn measurements, as well as best practices for lawn care
- Free lectures to the public
- Education for businesses and non-profit organizations in the management of storm water runoff
- Training for interested citizens who wish to become Master Gardener volunteers
- Low maintenance gardening techniques demonstrated at the Teaching Garden
- Plant a Row for the Hungry collections at local Farmer’s Markets
- Cooperative Extension agent is on the board of the Prince William Soil & Water Conservation District
- Emergency management assistance to local agricultural producers
- Pesticide Safety training and best management educational workshops for the Green Industry

VCE conducts a post survey gauging awareness and behavior changes made through educational programming. It tracks program effectiveness and reach by evaluating the number of people educated and the number of people that implement the practices they learn.

The County will continue to define and promote good housekeeping practices for storage transport and disposal of pesticides, herbicides, and fertilizers.

BMP 4 – Develop and Employ Integrated Pest Management Plans

The County will track and employ Integrated Pest Management Plans where applicable. Currently the county maintains all lands under IPM with the mission of the program to survey, reduce, and control populations when possible, of mosquitoes and forest pests. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. The data gathered in the process is analyzed and used to track population trends, determine appropriate control measures and evaluate effectiveness of the control efforts. Reduction and response consists of implementing IPM pest control measures to suppress populations of mosquitoes, gypsy moths and fall cankerworms. Selective application of environmentally-compatible, EPA-registered products are utilized to control these pests. Several factors from our surveillance program and other environmental factors help in determining treatment options.

During the reporting period, the County applied larvicide to a total of 28.07 acres including 11.33 acres of stormwater management facilities and 16.74 acres of lands not designated as stormwater management facilities. In addition, the Mosquito and Forest Pest Management Branch applied adulticide to a total of 4.9 acres, bringing the total County lands treated by IPM to 32.97 acres.

e. Illicit Discharge and Improper Disposal

BMP 1 – Elimination of Illicit Discharges and Improper Disposal

The 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. This includes the dumping or improper disposal of motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes. 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) in permit #VA0088595 in Article II sec. 23.2-4.1 of Prince William County's Code of Ordinances. By issuance of a Notice of Violation, illicit 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.

Table 6 below summarizes the results of the Illicit Discharge Program. The program is broken into 2 elements; Dry weather outfall inspections (see section II.1 for more details); and reported and observed discharges.

Table 6 – Illicit Discharge Program Overview (County-Wide)

Type	No.	Percentage	
Dry Weather Outfall Inspections	Non-flowing	621	81.71%
	Flowing	132	17.37%
	Illicit Discharges	7	0.92%
	Total:	760	
Reported and Observed Discharges	Nonfounded/minor	17	37%
	Illicit Discharges	29	63%
	46		
Total illicit Discharges	Closed Cases	28	97%
	Active Cases	1	3%
	Total:	29	

During the reporting period, Prince William County responded to 46 complaints of illicit discharge, a slight decrease from the 55 reported discharges from the previous reporting period. One case from this fiscal year has yet to be resolved. See Table 7 below for more detail on reported Illicit Discharge cases handled by the County in FY20.

Table 7 – Reported Illicit Discharges for FY20

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
7/15/2019	Oil run off from the facility	1041 Cannons Ct	7/15/2019	NA	7/15/2020	The citizen complaint was also received on 3/29/2019. Particular violator could not confirm since there are multiple busuness running in catchment drainage areas. The case is found to be handled by DEQ on May 14th 2019. In Woodbridge Metal Recycling INC, Curb and Gutter inlets were found to block with aggregate and diverted runoff flow path somewhere else rather than storm sewer system. It is a VPDES permitted facility. The case will be over looked by DEQ.	Closed
7/26/2019	Clippings	14605/ 14607 Tazewell Ct	7/30/2019	NA	7/31/2019.	Prince William County Illicit Discharge Detection and Elimination Staff got a citizen complaint regarding blowing clippings into storm sewer system with video. The curb and gutter inlet is located at property boarder line of 14605 and 14607 Tazewell Ct. Manhole was opened at arrival, There was no noticeable clippings inside. The interaction was made with Mrs. Everett Alley, the owner of 14607 in order to educate her about illicit discharge. Even though there was minimum impact on storm sewer system, blowing clippings into storm sewer system is an unlawful activity. Business card were hand over her to pass out her neighbor and requested her to share the information talked about. I received a phone call from Mr. Christian Galeano, the owner of 14605 on 7/31/2019 and shared the same information to educate him about illicit discharge.	Closed
8/19/2019	Petroleum Spill	15687 Pike Trail	8/19/2019	Yes, NA	8/19/2019	Petroleum spill was seemed to be prudently captured before reaching to the storm sewer system. There was no impact on downstream creek and river.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
9/6/2019	Dumping Diesel at Pond	6933 Colchester Dr.	9/6/2019	Yes, NA	9/6/2018	The case of Hazmat spill was received from Internal Alart Portal today. Upon arrival on site in the noon, the effort of capturing petroleum substance was observed by employing hydrocarbon absorbent booms across the flow path at the surface of ponding water of the storm water management facility. One of the witnesses said that Prince William County Hazmat team, DEQ Staff and professional Cleaning Company were employed to take the mitigation effort instantly in the morning. The violator could not identify. The pond water was retained into the facility without releasing out so there was no bad impact on downstream creek.	Closed
9/9/2019	Clippings	Opal Lane X Oakland Court	9/10/2019	NA	9/10/2019	The violator was identified Mr Abraham living at 6375 Oakland Ct (Phone: 5713318673) Interaction made with him. He said most of clippings were bagged up after collection in a certain areas and minor amount may be blown into storm sewer system. The impact was very minor so he was verbally warned to stop blowing clippings into storm sewer system in future.	Closed
9/9/2019	Paint Spill	Road nearby 12724 Occoquan road	9/10/2019	NA	9/10/2019	Upon arrival, the spot was dry and paint did not reach to storm sewer system. The violator could not identify.	Closed
9/10/2019	Discharge having dumpster Juice into storm drain	10703 Balls Ford Rd	9/10/2019	NA	9/10/2019	Discharge was totally controlled. Potholes were observed on parking lot and drive way. Interaction was made with Manager on duty. He said discharge has been controlled by closing the valve of water main and maintenance work is under process. There was no leakage on compactor. Minor stains were present on pavement.	Closed
9/18/2019	Spill of pet grooming discharge	Road in front of 15504 Laurel Ridge Rd	9/20/2019	NA	9/20/2019	Upon arrival, the reported area was observed dry and hard to recognize the spot. Try to reach out business owner after getting contact phone number on mobile van but unable to contact. The impact on storm sewer system did not find during inspection.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
9/20/2019	Green discharge	9460 Hawkins Dr.	9/23/2019	Yes, NOV#1-2020	10/10/2019	After getting information about green discharge at SWMP 862, Inspection was made and found hydroseeding discharge generating by flushing trucks from Muller E & S Service Inc. located at 9460 Hawkins Drive. Discharge is promoting high nutrition level at storm water management facility located at downstream of storm water management system. NOV has issued on 9/24/2019. The case was resolved by stopping hydroseeding discharge into storm sewer system.	Closed
10/2/2019	Yard Waste Dumping	8636 Bannerwood Drive	10/2/2019	Yes, NA	10/3/2019	Upon arrival, pruning tree branches and mowing grass were found dumping in concrete swale behind of 8636 Bannerwood Drive. Interaction was made with home owner requesting to remove and stop further dumping. Education materials were hand over. The deficiency was found to resolve on nextday.	Closed
10/25/2019	Mothballs	16742 Flotilla Way	10/25/2019	Yes, NA	11/26/2019	Upon arrival, mothballs were found to spread out at front and back yard of 16742 Flotilla Way in order to repel snakes and other insects. It is an apartment. The resident of upper level had complained about application of mothballs. Mothballs were applied unprofessionally having strong smell and dangerous if somebody swallow it. Meeting made with the person who applied it and ask him to remove it as soon as possible. The case was reported to Ms. Lynnett Harris the Property Manager to take an immediate action. Property Manager reported that mothballs were completely removed and threw them away immediately. Follow up inspection will be made soon for assurance. After getting complaint again, the facility was inspected with the staff of property management staff. Some of mothballs left over in previous were recollected and disposed properly.	Closed
11/6/2019	Leaf Clippings	Stormwater Inlet nearby 5922 Harvest Sun Road	11/7/2019	Yes, NA	11/20/2019	Upon arrival, leaf clippings were observed at Stormwater Inlet located nearby 5922 Harvest Sun Road. Due to lack of strong evidence, notice of violation did not issue but the courtesy notice was left to the home owner of 5922 Harvest Sun Road with education materials. Request made to him for deficiency mitigation if it has been done by him. Follow up inspection was made [11/20] and the deficiencies found to be resolved.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
11/10/2019	Gas Spill	Drop Inlet ID: 11457	11/10/2019	Yes, NA	11/10/2019	Prince William County DFR team has inspected and took resolution work instantly after getting complaint but violator could not identify. It was reported that spill did not reach to water course.	Closed
11/12/2019	Sediment Discharge	12521 Lee Highway	11/12/2019	Yes, NA	11/21/2019	Prince William County received a complaint regarding sediment flow through Battlefield National Park on 11/12/2019. Follow up inspection was made [11/13] and suspected to be generated from I-66 road expansion project. The case had forwarded to VDOT for their investigation and got response [11/21/2019] with not belongs to road expansion. For further investigation, the case has forwarded to Mr. Vijay. and erosion and sediment control team.	Closed
11/14/2019	Firefighting Discharge	12357 Dillingham Square Lake Ridge, VA 22192	11/14/2020	NA	11/14/2020	Prince William County Department of Fire and Rescue HAZMAT responded to an incident. American Disposal trash truck noticed smoke coming from the rear of the truck. Operator dropped his load in the street and called 911. Arriving units extinguished the fire with water only. Water runoff from firefighting operations entered the storm drain.	Closed
11/26/2019	Pool Water	13207 Keystone Drive	11/26/2019	NA	11/26/2019	Upon arrival, the land of complainant had been soggy. The door was knocked but nobody at home. Then next inspection was made to potential discharger but there was no one at home. Talked to adjacent neighbor. She said, the busted pipe was noticed by Ms. Diane, the homeowner after being back to home from work. She immediately notified her and took a step to fix the problem. The education material has been left her door asking contact county ASAP. She made call at 3:03 PM. She repeated the same. The incident was happened unintentionally and resolved. The resolution message was left to complainant.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
12/4/2019	Oil and Grease	13211 Touchstone Circle behind Los Toltecos Mexican Grill	12/4/2019	Yes,	1/15/2020	During routine inspection, waste cooking oil and grease were found to spread on parking lot nearby storm water inlet. The containers were found to be placed nearby storm sewer system. The location is designated for parking. The case has been forwarded to NSD to review from zoning prospective. NSD has responded to take an action for removal of container from existing spot to designated areas on 12/10/2019. NOV has been issued to the owner on 12/11/2019. Follow up inspection made [1/15/2020] and deficiencies were resolved.	Closed
1/6/2020	unsafe and hazardous environment condition with water pollution	14823 Dumfries Rd	1/6/2020	NA	1/6/2020	Upon arrival, big junk pile was observed at the facility which may be unsafe and hazardous for employees but water pollution control practice seemed to be taken seriously. We handle water pollution issues rather than unsafe and hazardous working environments. I have visited that site on January 6th. The issue seemed to be OSHA related. I have asked Lisa to transfer this message to the complainant with contact info of reporting agency OSHA.	Closed
1/17/2020	Grey Water	13815 Botts Avenue	1/22/2020	Yes, NOV#2-2020	3/17/2020	Upon arrival on 1/22/2020, discharge was found to be released through a drain pipe in the back yard with waste food grains and detergent. The house was rented and I left a message to contact the county office to the owner. The complainant has reported the repetition of the same incident again on 01/27/2020. The tenant called on 1/28/2020 and gave the contact info of the owner. A phone call was made to the owner and informed about the violation and its consequences. Follow up inspection was made on 03/17/2020. Deficiencies were found to be mitigated temporarily stopping further discharge. As per the home owner, the case has been filed against the tenants since they did not allow him to go inside to fix the problem.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
2/6/2020	Oil Spill	12109 Aden Rd, Nokesville	2/6/2020	Yes	NA	PWCPS MS4 Coordinator Mr . Andrew Uglow has reported about hazmat incident happened at Brentsville High School in the morning on 2/6/2020. According to him the petroleum gas was spilled on parking lot and it case was prudently resolved with the help of PWC Hazmat Spill responding team employing hadrocarbon absorbent booms and sheets at the flow path. I have provided the the contact information of Mr. Alan M Lacy of DEQ is a responsible person for handling record of Hazmat spill.	Closed
2/12/2020	Pollutant discharge to County's MS4	Through french drain located nearby infront of 3007 Albany Court at road Curb and Gutter	2/13/2020	NA	2/13/2020	I visited the property 3007 on 2/13/2020. Upon arrival, observed french drain constructed by homeowner taking permit. I did not observe the source of illicit discharge polluting County's MS4 system during my visit. I met and talked with homeowner. She seemed to be frustrated because of follow up action taken by multiple county's department one after another.	Closed
2/15/2020	Spill of oil into storm sewer system	3641 Morgan Court Dumfries	2/15/2020	Yes	NA	The case was recorded as it is received from Marc Aveni from the PWC portal system. The report of Hazmat team is waiting for more detail information.	Closed
2/18/2020	Discharge of sumpump contained sewage	9500 Damascus Drive	2/18/2020	NA	2/18/2020	Discharge generating by flushing bathroom and washer dryer did not found to be connected with sump pump. The discharge was not as reported by Mr. Norman.	Closed
2/27/2020	Discharge of oil and Grease	SWMP 645	2/28/2020	Yes, NOV# 4-2020	3/17/2020	Prince William County, Illicit Discharge Detection and Elimination staff has received the information of petroleum spill directed towards storm water management pond (ID#: 645). Upon arrival, Oil and Grease stains were discovered on the ground from the storage used for parking Ram Hauling vehicles in eastern side of the pond. The flow path was directed towards the storm water management pond. The spot appeared to be from junked vehicle parked for long time. Notice of violation is issued to the owner to correct deficiencies. Follow up inspection made (3/17/2020), Junk vehicle were removed, grease and oil spill was captured and resurface the ground.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
3/5/2020	Paint dumping into stormwater system	9722 Granary Place	3/5/2020	NA	NA	Upon arrival, white paint was found to dump into road curb and gutter inlet located nearby 9722 Granary Place. Paint was in dry condition and seemed to be reached partly upto the bottom of inlet structure. The outfall and downstream creek were not affected with the spill. An incident is seemed to be happened one time. Violator could not identify.	Closed
3/5/2020	Drainage system affected with trash, litters, sediments and flushing discharge	13249 Occoquan Rd	3/5/2020	Yes, NOV# 5-2020		During routine inspection, food waste found to be accumulated in stagnant water due to complete blockade of stormwater drainage system. The pavement around receptacles placed behind the restaurant and fast food stores were observed with grease and waste food debris. It was discovered that cleaning and flushing chemicals and water used to discharge into stormwater system. Litter and trash were observed all around the complex. Owner contacted tenants to inform them of how to maintain good housekeeping practices. Dumpster contractor was also contacted and increased pickup frequency was arranged. Owner hired Muller to clear stormsewer blockage but was unable to complete. There were delays in scheduling contractor due to COVID. This case is ongoing.	Running
3/10/2020	Dumping household waste into stormwater system	14708 Bell Tower Rd	3/10/2020	NA	4/14/2020	Upon arrival, oily stains were observed on gratings, the lid of stormwater Drop inlet located at 14708 Bell Tower Rd. According to complainant the incident was happened on 3/8/2020. Storm sewer system was tracked and found to extend stain up to first downstream manhole and second was observed clear. Drop inlet has been accessible for all residents living around so that it was hard to point out the violator. Education materials were hand over to the residents who were available and left over at the doors of rest of houses of the community. Follow up inspection will continue to identify the violator. Follow up inspection was made[4/14/2020] and the incident did not find to be repeated.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
3/11/2020	Creek contaminated by milky discharge nearby intersection of Rollins Ford Rd and Linton Hall Rd	13150 University Blvd	3/11/2020	NA	NA	The creek was tracked and the source of milky white discharge was discovered from the SWMP#1 of 13th High School. pH of outfall discharge was 9.0. The discharge was alkaline. The source turbid discharge found to be generated from active construction site so that the case has forwarded to the team working for erosion and sediment control.	Closed
3/20/2020	Runoff with petroleum waste into stormwater system	13708 Dabney Rd	3/23/2020	Yes, NOV# 6-2020	4/28/2020	Upon arrival, the property 13708 Dabney Rd is used for repair of truck and other vehicles out of the roof. The petroleum waste was found to be stored out of the roof without securing the lid and highly potential for wash away during rainfall. Follow up inspection was made [4/28/2020] and the property found to be vacate with removing all petroleum waste and debris.	Closed
4/7/2020	Discharge of pool water with white substance into Rocky Branch Stream	9101 Braided Stream Dr	4/7/2020	Yes, NA	4/7/2020	Upon arrival, community pool was found to be completely emptied and white substance was discovered at discharge point. The pool was under maintenance. The inner lining surface made with cement sand and lime was being chiseled for repair. The white substance was the result of pumping and discharging water having those white particles. At the mean time, the contractor, Mr Jeff Allen arrived. He said, the pool water holding for a long time without clorination was dewatered on the ground and cleaned without using chemicals. The white substance is a tiny particles mixed with shallow water while peeling out cracked plaster. Mr Allen immediately scraped out white debris and collected for proper disposal.	Closed
4/8/2020	Yard debris being dumping in storm drain	14110 Fallbrook Ln, SWMP-547	4/9/2020	Yes, NA	4/23/2020	Inspection was made. The illegal dumping was discovered in SWMF 547. Mattress, bicycle, four bag of household trash including litter were observed into the facility. I met one of the HOA Board members Mrs. Bennett and got phone conversation with HOA President Ms. Debbi Riggins. Ms. Debbi has mobilized the landscaper to remove those trash from the facility. Follow up inspection made [4/23/2020] and the case did not find to be repeated.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
4/24/2020	White discharge with debris from pool	12184 Chaucer Ln	4/24/2020	Yes, NA	4/24/2020	<p>County received a complaint regarding discharge of white discharge with debris into stormwater system from the pool. Inspection was made. Upon arrival, most of the white discharge was already passed over into downstream creek and diluted with runoff. Some debris were accumulated at the outfall located beside the parking lot. The pool was still under maintenance for repair and resurfacing.</p> <p>Contact made with Mr. Brodie Freer of Lakeridge HOA and asked to remove white debris from the channel and control further illicit discharge into stormwater system.</p>	Closed
4/29/2020	Discharge of fat, waste cooking oil and debris	1920 Daniel Stuart Square	4/29/2020	Yes. NOV#7-2020	6/1/2020	<p>Prince William County (PWC) Illicit Discharge Detection and Elimination staff discovered a stormwater inlet discharging fat, oil and debris from the fast food restaurant Checkers at 1920 Daniel Stuart Square. The incident seemed to happen due to overflowing receptacles located nearby. PWC staff met with the restaurant manager Ms. Judy Coffenberry. After interaction, notice of violation was issued to the property owner and vender running business. Follow up inspection was made [6/1/2020] and the deficiencies were found to be resolved.</p>	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
4/29/2020	Paint running into Terrapin lake	5173 Lake Terrapin Dr, Outfall (ID: 53424)	4/29/2020	Yes, NA	4/29/2020	<p>Prince William County Watershed Staff received a call from Fire & Rescue about paint running into Terrapin lake nearby 5243 daybreak lane. Upon arrival, a discharge was observed through outfall (ID:53424) with white bubbles. The discharge directly connects with Lake Terrapin (SWMP-442). Petroleum smell was noticed at discharge point. Some dead fish were observed, less than 10 were visible. The Hazmat team placed hydrocarbon absorbent booms at the outfall immediately upon arrival to hold and capture the petroleum surfactant.</p> <p>Ms. Tiffany called Atlas Environmental Services to mitigate and cleanup the lake. Mr. Matt Culwell of Atlas Environmental Services arrived with coworker and barricaded a portion of the lake with hydrocarbon absorbent sheets to capture surfactant from larger areas.</p> <p>The discharge was tracked along stormwater structures. The source of discharge was confirmed ground water seepage since the volume of discharge was gradually reducing in upstream sewer, and the discharge disappeared at the middle of the system. Tracking was continued to much further upstream points even though storm sewer system was not flowing.</p> <p>The catchment drainage area (CDA) includes the street Gopher Turtle Way, Tortoise place and parking lot which was maintained last week by resurfacing with new asphalt layer.</p> <p>The asphalt emulsion is also a petroleum product, so the investigation was focused on that area, but there was no evidence of discharge into storm sewer system. Follow up inspections will continue in an attempt to find repeated discharges.</p>	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
5/11/2020	Dumping grass clippings	14304 Fullerton Rd	5/14/2020	Yes, NA	5/14/2020	Follow up inspection was made after getting the citizen complaint regarding dumping grass clippings into a storm drain on 14304 Fullerton Road (intersection of Folsome Ct) in Dale City. The violator was discovered to be associated with Perla's Landscaping of Woodbridge Virginia, and they were servicing the lawn at 14304 Fullerton. The contact made with landscaper. The landscaper staff instantly came and pull out 3 plastic bags clipping from drain. He said, the mistake has happened due to new crews assigned for the job.	Closed
5/15/2020	Pollution of water in a creek	Creek behind the community of 3524 Caledonia Circle	5/18/2020	NA	5/20/2020	Prince William County IDDE staff received a citizen complaint regarding polluted discharge from outfall 3787. Upon arrival, outfall was in submerged condition and significant algae growth was observed in downstream. Sample was taken from upstream manhole. pH found to be acidic i.e,5.0.Discharge tracked and ultimate source is found to be CSWMP 5009 outflow. Tracking continued at inflow of CSWMP. Outfall 6867 had a trickle flow but successive upstream Manholes were observed dry. Cross-connection of sanitary sewer did not find during inspection. The source of discharge confirmed ground water.	Closed
5/19/2020	Paint dumped behind tennis court in 2 foot pond	16500 Edgewood Dr	5/20/2020	NA	5/20/2020	Upon arrival, paint brush and containers were found to be washed in private property. The paint was dry and there was no chance of flowing into storm water system.	Closed
6/2/2020	Petroleum Spill	14601 Lee Hwy	6/3/2020	Yes, NA	6/3/2020	The case was handled by Department of Fire and Rescue(DFR). As per DFR report, Foam was used to extinguish a front-loading tractor fire. Approximately 55 gallons of diesel fuel and approximately 30 gallons hydraulic fluid released with the foam runoff and into a retention pond on-site. The product was contained to the retention pond with no release into a nearby waterway. APEX was contracted for cleanup by responsible party.	Closed
6/4/2020	Petroleum Spill	Linton Hall Overpass	NA	Yes, NA	6/4/2020	Department of Fire and Rescue reported the case. The DFR unit commanded by the Captain Steven J Brubaker had responded for a hazard to a dump truck that struck the jersey wall and is actively leaking fuel. Approx 100 gallons in tank. The case was resolved by DFR.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
6/5/2020	Salt open for runoff	7301 STREAM WALK LN	6/8/2020	Yes, NOV# 8-2020	6/30/2020	Fairfax County Inspector Mr. Steve Strackbein forwarded the case regarding salt leaching into the storm drain located along Balls Ford Rd. ~1/2 mile SW of Rt 234 received from the citizen. Upon arrival, salt pile was observed non-confined and leaching out on parking lot. White salt stain observed directed towards storm sewer system. Notice of violation (NOV) has issued to the property owner to correct the deficiency until 6/23/2020. Follow up inspection was made [6/30/2020] and deficiencies were found to be mitigated.	Closed
6/18/2020	Green Floatables	Broad Run nearby 12026 Parkriver Drive	6/19/2020	NA	NA	Upon arrival a bright green discharge floating on top of the water backing up at Broad Run from the intersection of Cedar Run. The floatables were easily broken in particles. By the evidence it seemed to be algae. The algae may bloom at vernal pool which ultimately intermingle with the main river during raising water level after heavy rain.	Closed
6/22/2020	Petroleum Spill	10701 Bulloch Drive	6/22/2020	Yes, NA	NA	The Technician Mr. Steve of Department of Fire and Rescue reported the case of Diesel spill at the intersection of Sudly Road and Bulloch Drive which was flowing into the stormwater system. The cleaning and abatement work was resolved by employing APEX Environmental. DFR staff reported, approx 40 gallons gas was spilled on the road. The case was handled by DFR.	Closed
6/22/2020	Spill out discharge from white Plastic Tank	13030 Harbor Drive	6/22/2020	NA	NA	Follow up inspection was made and discharger was discovered Rivas Design Landscaping. The discharge was confirmed residual tank water saved from lawn watering. The volume of discharge was insignificant. Call made and left voice message to the landscaping company messaging that large volume or water mixing with chemical is not allowed to discharge into storm sewer system.	Closed

Date	Discharge Description	Discharge Location	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status
6/22/2020	Sanitary Sewer	16000 block of Hayes Lane	6/22/2020	NA	NA	Service Authority responded to a Sanitary Sewer Overflow (SSO) in the 16000 block of Hayes Lane, Woodbridge, on Sunday, June 21. An SSO is an overflow of untreated or partially treated sewage from a sanitary sewer system. Service Authority crews completed repairs to the force main at 11:15 p.m. on Sunday. It is reported that The Service Authority has collected water samples from the SSO site and along the stormwater channel and placed signs in English and Spanish at this location, warning of potential public health risks. The Service Authority reported the incident to the Virginia Department of Environmental Quality.	Closed
6/27/2020	Transformer hit and run by unknown vehicle	13040 Worth Avenue	6/29/2020	Yes, NA	NA	DFR reported, NOVEC transformer box was hit by tractor trailer. Mineral oil reservoir was ruptured and discharged into storm drain. Product traveled through storm drains and was traced to large retention pond. Prince William County Department of Fire and Rescue HAZMAT responded to an incident. Upon arrival, capture and abatement works were going on by APEX Environmental.	Closed
6/29/2020	Salt open for runoff	13040 Worth Ave	6/29/2020	Yes, NOV#9-2020	7/16/2020	During routine inspection, salt pile was observed non confined, partly covered and leaching out with runoff and flowing into stormwater system. Contact made with Ms. Debbie Keating the Manager of Kimco Realty. Notice of violation (NOV# 9) has issued to the property owner to correct the deficiency until 7/15/2020. Follow up inspection made [7/16/2020] and deficiencies were found to be resolve.	Closed

Reports for the Illicit Discharge cases above are presented in Appendix E. In FY16 the County created a hotline and email for residents to report illicit discharges. Since then these hotlines have been distributed on outreach materials and has resulted in a significant increase in the reported number of discharges occurring in the County. The potential impact of COVID on the number of reported discharges received by the County in the next fiscal year remains to be seen. This impact could be due to COVID keeping people indoors more than usual.

BMP 2 – Sanitary Sewer Exfiltration Abatement Program

Prince William County contains a mix of sanitary sewer systems and septic fields within its jurisdiction. The sanitary sewer system is maintained and operated by the Prince William County Sanitary Sewer Service Authority (PWCSA) and Virginia American Water (formally Dale Services Corporation), both which operate under their own VPDES permit. Prince William County is not responsible for the inspection and maintenance of the sanitary sewer system; however, PWC works closely with the PWCSA to identify and correct deficiencies within the sanitary sewer network. A summary of inspection types and results can be found in Appendix M. Prince William County Service Authority has an ongoing program, the infiltration and inflow check program, for identifying and correcting defects in the County’s sanitary sewer systems, such as:

- Performing detailed engineering studies to locate defects in the gravity sewer system and recommend corrective action.
- Preparing construction documents for repair of the identified defects.
- Constructing necessary improvements.

The identification and correction of deficiencies is aided by Prince William County through its Dry Weather Monitoring, Stormsewer Maintenance, General Stormwater Discharge, and Stream Restoration Programs. Cross connections, leaks, and other maintenance issues are discovered as non-stormwater discharges within the storm sewer network through the County’s Dry Weather Monitoring and Stormsewer Maintenance Programs. Citizens can report leaks and cross connections discovered discharging through the storm sewer system through the County’s General Discharge program. Sanitary sewer infrastructure exposed to potential damage as a result of degrading streams and waterways are protected through projects associated with the County’s Stream Restoration Program. Prince William County continues to identify and report concerns to the PWCSA when sanitary sewer system maintenance and repairs are needed. The PWCSA oversees all new construction on sanitary sewer system components and is responsible for the proper installation and operation of the system.

Prince William County is actively working on establishing working relationships with Virginia American Water with regards to their Infiltration and Inflow Program as well as with all Phase II MS-4 systems within the County’s Jurisdictional area.

The Prince William Health District is responsible for the oversight and regulation of certain sewage and water environmental health issues within Prince William County. The Health

department oversees the permitting and inspection of septic systems. The Health District inspects and permits septic systems and requires onsite sewage disposal systems not requiring a Virginia Pollution Discharge Elimination System (VPDES) permit shall have pump-out accomplished at least once every five years. The Health District also provides valuable public outreach to septic system owners, including information on septic system maintenance.

BMP 3 – Reduce the Discharge of Floatables

The Adopt-A-Spot program is a litter cleanup and recycling program sponsored by the Virginia Department of Waste Management. The Prince William County Soil & Water Conservation District (SWCD) undertakes stream cleanups under their Adopt-A-Stream program. Some stream clean-ups are done on an individual occasion basis rather than an on-going project, and these sites are often done for specific programs or purposes (Alice Ferguson Foundation, Earth Day, etc.). Adoptable areas under this program include parks, schools, vacant land and neglected public areas. Stream sites are located in the various sub-watersheds in Prince William County and some of cleaned up more than once per year.

The locations selected for the Adopt-A-Stream (AAS) clean-ups are selected from mainly public or park riparian properties, which have experienced historical problems with trash accumulation or have had specific problems in the past. Some private sites are also found in the areas. A list of potential sites is also maintained for future clean-up sites. This program not only identifies locations where floatables and trash are a concern in the County. It follows that assessment with a volunteer cleanup, which temporarily removes the trash and debris. The County's Litter Control and landfill personnel also provide assistance with picking and weighing of the trash after a cleanup to document the amount of trash removed from the site. If the cleanup is included in the AAS program, periodic clean-ups on a biannual or annual basis are conducted, thereby revisiting sites to see if the floatables condition has improved over time.

PWSWCD also administers the County's Floatables Monitoring Program. This program is designed to assess refuse loading to 5 selected stream sites throughout the County. More information on this program can be found in section II.3.

Prince William County, in coordination with the Keep Prince William Beautiful (KPWB) Organization, developed a program dedicated to the labeling of storm drains throughout the County. These labels identify a storm drain as discharging to the Chesapeake Bay, as well as remind citizens not to dump items, fluids, etc., down the storm drain. Included in this program will be public outreach initiatives focused on eliminating illicit discharge and litter. KPWB partners with local volunteers to complete program objectives, involving local citizens and providing educational services.

Prince William County Public Works play a leadership role in controlling litter, as well as promote and publicize opportunities for citizens to help with local cleanup efforts.

Public Works has established a Litter Control Crew to pick up highly traveled roadways of the county, handle cleanups of illegal dumpsites and haul material from community clean up events. In FY20, the Litter Control Crew picked up over 74.6 tons of trash and debris along 1185.3 miles of roadway. They also collected 3,435 roadside signs. Public Works also provides funding to

Prince William Soil and Water Conservation District and Keep Prince William Beautiful to lead volunteers in cleaning up litter at designated locations and along streams.

- Residents
 - Encourage residents to use litter bags and dispose of waste properly through messages on web site, local government channel and through partner agencies
 - Offer community “dumpster days” where residents can drop off unwanted items from their home
 - Recruit residents to adopt a stream through the Prince William Soil and Water Conservation District
 - Recruit residents to participate in floatables monitoring at five sites monitored quarterly conducted by the Prince William Soil and Water Conservation District
 - The Soil & Water Conservation District implemented two Virginia Conservation Assistance Program (VCAP) projects in 2020—conservation landscapings that converted turf to native plants. They plan additional projects in the future.
 - Recruit residents to adopt a spot or participate in an organized cleanup event sponsored by Keep Prince William Beautiful
 - Conduct litter survey four times a year
 - Enforce anti-littering laws
 - Ask community to report illegal dump sites so we can send Litter Control Crew out to clean them up
 - Pick up litter along highly traveled roadways on a regular annual schedule
 - Pick up trash and debris from community volunteer cleanups at a designated location after the event
 - Enforce property code requirements to eliminate dump heaps, overgrown grass and unkempt structures on residential properties
- Businesses and Industries
 - Encourage businesses and industries to provide volunteers to clean up community
 - Enforce property code requirements to eliminate dump heaps, overgrown grass and unkempt structures on commercial properties

BMP 4 – Proper Disposal of 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

- 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 (in FY20, citizens delivered 245.29 tons of household hazardous waste and electronics to our County Landfill and 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
- ~~Host an annual special event at the County landfill for Prince William Recycles Day to share information on handling household hazardous waste and recycling used oil~~ CANCELLED DUE TO COVID

Future efforts: The online system created for residents will also be a useful reference for business and industry managers

- County Government
 - Provide extensive training on the proper handling and disposal of chemicals and potentially hazardous materials
 -
 - Provide extensive training on how to respond 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

The following summarizes the County's solid waste, household hazardous waste, and recycling programs for FY20:

FY20	OTHER REFUSE						TOTAL REFUSE TO LANDFILL TONS	TIRES		TOTAL MONTHLY REVENUE
	KEEP PW BYUL TONS	"Overs" B.F. TONS	INCEN. ASH TONS	CONTAM. SOIL TONS	REFUSE FROM B.F. TONS	COUNTY ROAD CLUP TONS		TONS	REVENUE	
Jul-19	0.48	653.52	278.57	-	669.36	-	35,061.02	409.34	\$ 44,071.00	\$ 388,913.85
Aug-19	1.97	455.83	319.08	-	651.39	-	31,425.11	205.57	\$ 38,355.00	\$ 290,620.05
Sep-19	4.97	456.40	-	-	604.65	-	29,290.02	258.75	\$ 1,482.00	\$ 217,452.83
Oct-19	22.19	728.62	282.05	-	564.09	-	29,984.99	252.66	\$ 30,247.00	\$ 199,373.18
Nov-19	15.16	677.76	-	-	517.71	-	28,981.62	178.42	\$ 25,997.50	\$ 208,965.48
Dec-19	7.96	326.36	115.21	-	476.39	-	30,277.77	178.38	\$ 22,214.00	\$ 170,909.75
Jan-20	-	518.39	171.20	-	483.12	-	30,112.11	144.94	\$ 23,028.00	\$ 221,565.38
Feb-20	1.30	457.47	97.00	-	486.13	-	25,767.57	200.63	\$ 26,776.50	\$ 186,244.73
Mar-20	-	786.15	188.15	-	630.95	-	31,561.87	159.07	\$ 26,091.50	\$ 191,409.25
Apr-20	11.42	463.58	382.03	-	404.81	-	29,200.10	116.14	\$ 15,971.11	\$ 148,465.14
May-20	8.84	1,318.36	402.88	-	540.52	-	31,688.15	160.30	\$ 19,836.20	\$ 164,652.17
Jun-20	-	279.80	-	33.22	538.51	-	32,265.35	191.22	\$ 26,088.00	\$ 176,747.80
TOTAL	74.29	7,122.24	2,236.17	33.22	6,567.63	-	365,615.68	2,455.42	\$ 300,157.81	\$ 2,565,319.61

Figure 1 – PWC Landfill Refuse Reduction Statistics for FY20

FY20	SCRAP METAL		ELECTRONICS		TEXTILES OUT	DONATION PLACE OUT	USED OIL			CAR BATTERIES			ANTIFREEZE	
	OUT	REVENUE	LANDFILL OUT	BALLS FORD OUT			L.F. OUT	B.F. OUT	REVENUE	L.F. OUT	B.F. OUT	REVENUE	L.F. OUT	B.F. OUT
Jul-19	340.56	\$ 52,727.60	45.37	-	0.77	19.74	4,244	1,061	\$ (471.58)	314	94	\$ 1,535.40	770	39
Aug-19	380.72	\$ 55,059.28	36.21	-	0.69	17.99	5,364	1,345	\$ (407.96)	270	50	\$ 1,809.40	547	111
Sep-19	301.69	\$ 42,506.63	35.54	-	0.93	16.20	4,645	872	\$ (244.90)	272	57	\$ 1,666.30	330	65
Oct-19	387.73	\$ 46,703.20	39.33	-	1.12	19.81	4,696	1,076	\$ (425.32)	93	30	\$ 1,790.10	579	107
Nov-19	193.50	\$ 24,001.24	32.80	-	1.06	14.41	3,435	770	\$ (47.74)	285	41	\$ 1,188.10	-	77
Dec-19	205.12	\$ 27,254.38	38.74	-	0.91	11.22	4,603	597	\$ (322.90)	165	35	\$ 1,204.60	481	39
Jan-20	310.69	\$ 48,435.94	40.95	-	0.97	20.22	2,752	1,065	\$ (304.42)	233	29	\$ 1,211.60	406	85
Feb-20	218.83	\$ 32,109.29	33.09	-	0.85	9.47	3,739	941	\$ (311.24)	171	34	\$ 1,411.70	404	98
Mar-20	389.58	\$ 56,026.50	37.37	-	0.00	0.00	4,371	1,039	\$ (44.02)	278	45	\$ 979.30	-	71
Apr-20	324.21	\$ 39,650.71	5.89	-	0.00	0.00	1,577	941	\$ (320.54)	264	38	\$ 1,560.00	415	102
May-20	280.18	\$ 38,448.16	-	-	0.00	0.00	4,705	985	\$ (421.60)	263	34	\$ 1,697.30	568	112
Jun-20	399.45	\$ 52,364.79	-	-	0.00	0.00	2,197	735	\$ (18.60)	290	40	\$ 1,494.90	-	30
TOTAL	3,732.26	\$ 515,287.72	345.29	-	7.30	129.06	46,328	11,427	\$ (3,340.82)	####	527	\$ 17,548.70	4,500	936

Figure 2 – PWC Landfill Recycling Statistics for FY20

FY20	MONTHLY REVENUES		NEWS-PAPER	CARD-BOARD	MIXED PAPER	CO-MINGLED	GLASS	TOTAL TONS
	COMPOST FACILITY	RECYCLABLE PROCESSING	TO Republic & American	TO Republic & American	TO Republic & American	TO Republic & American	Outbound	
	REVENUE	REVENUE	TONS	TONS	TONS	TONS	TONS	
Jul-19	\$ 58,907.95	\$ 53,791.42	-	65.74	0.92	79.28	24.60	170.54
Aug-19	\$ 44,099.74	\$ 56,460.72	-	57.88	2.08	75.73	27.29	162.98
Sep-19	\$ 40,594.39	\$ 43,928.03	-	51.93	-	64.83	25.21	141.97
Oct-19	\$ 49,083.44	\$ 48,067.98	-	45.63	-	68.66	29.60	143.89
Nov-19	\$ 45,501.05	\$ 25,141.60	-	42.87	-	70.79	30.39	144.05
Dec-19	\$ 28,125.95	\$ 28,136.08	-	54.26	-	65.93	40.04	160.23
Jan-20	\$ 61,218.74	\$ 49,343.12	-	70.96	-	90.08	38.40	199.44
Feb-20	\$ 23,486.14	\$ 33,209.75	-	42.89	-	69.05	31.98	143.92
Mar-20	\$ 40,328.94	\$ 56,961.78	-	54.83	-	64.24	-	119.07
Apr-20	\$ 37,591.36	\$ 40,890.17	-	54.90	-	75.65	22.90	153.45
May-20	\$ 33,823.04	\$ 39,723.86	-	58.35	-	66.08	93.65	218.08
Jun-20	\$ 65,698.42	\$ 53,841.09	-	69.18	-	79.02	22.33	170.53
TOTAL	\$ 528,459.16	\$ 529,495.60	-	669.42	3.00	869.34	386.39	1,928.15

Figure 3 – PWC Recycling Statistics for FY20 (cont.)

BMP 5 - Discharge Elimination Programs

Prince William County hosts several programs under its Illicit Discharge Detection and Elimination (IDDE) program dedicated to the detection, identification, and elimination of unauthorized discharges to its MS-4 system. These programs include the Dry Weather Monitoring, General Discharge, Wet Weather Monitoring, Service Authority’s Inflow and Infiltration program, and Industrial and High Risk Monitoring Programs. For more information on these programs, including program background and reporting, see section II.3.1 water quality screening programs.

f. Spill Prevention and Response

BMP 1 – Coordination with FMO

The County’s Department of Fire and Rescue is the lead County agency responsible for all aspects of spill response. Accordingly, 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 1 HAZMAT Team for emergency response.

The County’s Department of Fire & Rescue (DFR) 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 the Virginia American Water will be contacted. The complaints on the malfunctioning 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.

For this reporting period there were 110 calls for hazardous materials response service, many of these instances involved discharges impacting the MS-4. The Department of Fire and Rescue HAZMAT team responded to these instances and provided mitigation and response services at each. Discharge Reports for these incidents are included in Appendix F.

g. Industrial and High Risk Runoff

BMP 1 – Identify all Industrial and High Risk Dischargers

The monitoring of VPDES permitted areas of Prince William County is accomplished as part of the County's IDDE program. On a semi-annual basis, PWC examines lists provided by DEQ to assess new permitted facilities discharging to the County's stormsewer system along with their permit, and registration form. These facilities are then added to a GIS layer, and their outfalls identified for use in monitoring efforts. Outfalls are identified using a combination of facility registration statements, DMR reports, and GIS desktop analysis. Having identified its MS-4 service area, a GIS desktop analysis was completed and Permittees that discharge into the County's MS-4 service area were identified. Maps of these facilities can be seen in Appendix G.

High Risk and Industrial VPDES permitted facilities are found to be contributing significant pollutants to the stormsewer system will be referred to DEQ for compliance review. Table 8 below shows the VPDES facilities discharging into the County's MS-4 area.

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 account an assumed potential for a 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 yearly.

Table 8 – VPDES Permitted Facilities that Discharge into the County’s MS-4

	Permit No	Facility	Location Address 1	Type	Location City	Location Zip5
1	VAR052243	234 Auto and Truck Salvage Limited Liability Co.	14843 Dumfries Rd	SWGP	Manassas	20112
2	VAR051949	Chemung Contracting Corporation - Gainesville	7201 Rail Line Ct	SWGP	Gainesville	22013
3	VAR052372	Swift Auto Recycling and Salvage, Inc	14832 Dumfries Rd	SWGP	Manassas	20112
4	VAR051477	First Transit Incorporated	14700 Potomac Mills Rd	SWGP	Woodbridge	22192
5	VAR052115	Penny's Used Auto Parts	13059 Minnieville Rd	SWGP	Woodbridge	22192
6	VAR051639	Potomac Disposal Services of Virginia, LLC	9650 Hawkins Dr	SWGP	Manassas	20109
7	VAG110100	Virginia Concrete Company Inc - Gainesville	7300 Rail Line Ct	Concrete	Gainesville	20156
8	VAG110368	Superior Properties Inc.	5547 Wellington Rd	Concrete	Gainesville	20155
9	VAR052463	Landfill – PWCBCS	14811 Dumfries Rd	SWGP	Woodbridge	20112

BMP 2 – Develop Prioritized Schedule for Monitoring VPDES and High Risk Outfalls

Outfalls identified as VPDES and High Risk non-VPDES as described above are inspected according to specific protocols outlined in the 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 Dry Weather Monitoring Program, those which are determined to have a high potential for pollutant discharge are identified as High Risk and added to the prioritized schedule the next time it is updated.

BMP 3 – Develop Program to Monitor VPDES and High Risk Outfalls

VPDES and High Risk outfalls are scheduled for inspection according to the methods described in BMP 2. 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 (follow-up inspections are scheduled according to IDDE protocols) are referred to DEQ for compliance review (see BMP 6). Outfalls of VPDES permitted facilities are inspected once a year, while High Risk outfalls are inspected once a permit cycle (due to high volume).

Table 9 – VPDES Outfalls

Number	Outfall ID	Facility
1	49124	Chemung Contracting Corporation
2	49117	Chemung Contracting Corporation
3	49119	Chemung Contracting Corporation
4	49121	Chemung Contracting Corporation
5	53541	Chemung Contracting Corporation
6	47233	First Transit Inc
7	47271	First Transit Inc
8	35905	Potomac Disposal Services
9	35901	Potomac Disposal Services
10	35896	Potomac Disposal Services

BMP 4 – Obtain DMR Reports from VPDES Permitted Facilities

PWC receives Discharge Monitoring Reports (DMRs) from applicable (non-exempt) VPDES permitted facilities that discharge into the County’s MS-4.

BMP 5 – Identify High Risk Dischargers Not Covered Under VPDES Program

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 identified. These facilities 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 a high 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 stormsewer system are identified and added to the list of high risk discharges. These outfalls are then added to the High Risk outfall prioritization (BMP 2) list the next time it is updated. As with VPDES permitted facilities, as the County's GIS based stormsewer layer is updated, the analysis of outfalls associated with High Risk facilities will be updated. The list of high risk facilities can be found in Appendix G.

Outfalls from these facilities are included in the prioritized outfall inspection schedule described in BMP 2. Any facility found to be discharging significant pollutants to the stormsewer system will be required to adopt control measures to prevent these discharges from entering the County's MS-4 under appropriate regulatory ordinance, since they cannot be referred to DEQ for VPDES compliance review. If access to facilities that fall under these conditions cannot be obtained by watershed staff, assistance from the PWC Fire Marshal's office will be requested.

BMP 6 – Refer Facilities in Noncompliance to DEQ for Review

PWC is required to refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for DEQ compliance review under the Virginia State Water Control Law:

- Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit;
- 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.
- Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.
- Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES industrial stormwater permit.

During the reporting period no facilities were deemed necessary to report to DEQ for compliance review.

h. Storm Sewer Infrastructure Management

BMP 1 – Identify MS-4 Service Area and Regulated Outfalls

An integral part of developing the County's Chesapeake Bay TMDL action plan is determining the MS-4 regulated area. Prince William County maintains a comprehensive GIS database of SWM facilities and its stormsewer system. Included in this system are approximately 633 miles of storm drainage easements, approximately 9,413 stormwater outfalls, and 2,120 private and

publicly maintained SWM facilities; however, not all these facilities are served by MS-4 regulated areas. The total number of miles of storm drainage easements that were inspected for FY20 is 487.1.

In May of 2019 the County updated its MS4 service area. This included the Regulated Outfalls and their associated drainage area. Information for each outfall included the individual ID number, local watershed, HUC and receiving water, and latitude/longitude for each MS-4 structure. The number of pervious and impervious acres served by the MS-4 and treated by MS-4 controls were also updated. Prince William County has a total MS-4 service area of 23,933.35 acres, with 7,127.10 acres of impervious and 16,806.24 acres of pervious area.

BMP 2 – Continue Inspection of Publicly Maintained SWM Facilities

Prince William County continues a program for the inspection and maintenance of SWM facilities maintained by the County. Publicly 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 County staff. As of June 30, 2020 the County is responsible for the maintenance of approximately 996 facilities, most of which are dry ponds, wet ponds, infiltration trenches, or sand filter facilities. The County maintains a number of Bioretention and proprietary BMP facilities.

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 on publicly maintained SWM facilities is performed by Prince William County Construction Services as necessary. All applicable permitting requirements will be met during maintenance activities.

During the reporting period, the County staff conducted 969 routine inspections and 125 re-inspections of publicly maintained facilities. A list of these facilities and their inspection date are included in Appendix H.

BMP 3 – Continue Inspection of Privately Maintained SWM Facilities

The County has a program in place to inspect more than 20 percent of the privately maintained facilities annually and to pursue enforcement actions in instances where maintenance is needed. All privately maintained facilities will be inspected within the five year permit cycle. As of June 30, 2020 Prince William County encompasses approximately 1,124 privately maintained facilities. These facilities are comprised of dry ponds, wet ponds, constructed wetlands, bioretention facilities, proprietary stormwater inlet BMP facilities, underground storage facilities, infiltration trenches, and many more.

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 period allotted 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.

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 requires the owner to perform the inspection and maintenance at a frequency identified in the Agreement. For those facilities that do not have Maintenance Agreements, our County Attorney has determined that the maintenance note on the plan is still enforceable.

During the reporting period a total of 359 inspections (including re-inspections) were conducted. Facilities are expected to be brought into compliance. A table describing inspection, maintenance, and enforcement of privately maintained facilities for the reporting period can be found in Appendix H.

BMP 4 – Continue Inspection of MS-4 Stormsewer System

Prince William County conducts routine inspection of its storm drainage system, inspecting 20% of the MS-4 annually. Stormsewer 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.

BMP 5 – BMP/SWM Inventory

Prince William County maintains an inventory of all SWM/BMP facilities installed in the County. This list is updated as new facilities come on line, and old facilities are removed or retrofitted. 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.

In addition, 57 facilities were added to the County’s inventory during the reporting period. These facilities are listed below.

Table 10 – BMPs added to County Inventory in FY20

FAC ID	FAC TYPE	FAC DESC	DATE INVEN	MAINT	COMMENTS	SWM AGREE	VAHUC6	VAHUC12 NAME
988	SWMP/BMP	D	8/5/2019	P	9'x11' RISER, 3" BMP ORIFICE AT RISER	N	PL51	Powells Creek
989	SWMP	D	8/8/2019	P	4'x4' RISER, 6" DRAWDOWN PIPE W/ SLUICE GATE	N	PL32	Broad Run-Catletts Branch

FAC ID	FAC TYPE	FAC DESC	DATE INVEN	MAINT	COMMENTS	SWM AGREE	VAHUC6	VAHUC12 NAME
990	BMP	B	8/8/2019	P	BIORETENTION BASIN	N	PL32	Broad Run-Catletts Branch
991	BMP	B	8/8/2019	P	BIORETENTION BASIN	N	PL32	Broad Run-Catletts Branch
992	SWMP/BMP	W	9/12/2019	P	PWSE=254.48', 10'x4' RISER W/ SLUICE GATE	N	PL41	Occoquan River-Lake Jackson
993	SWMP/BMP	D	9/12/2019	P	5'x5' RISER, 3" BMP ORIFICE AT RISER	N	PL41	Occoquan River-Lake Jackson
995	SWMP/BMP	D	9/18/2019	P	10'x14' RISER, 4" BMP ORIFICE AT RISER	N	PL44	Middle Bull Run
996	SWMP/BMP	D	9/24/2019	P	2.5" BMP ORIFICE AT RISER	N	PL52	Quantico Creek
997	SWMP/BMP	D	10/1/2019	P	1" BMP ORIFICE AT EW	Y	PL44	Middle Bull Run
998	SWMP/BMP	D	1/23/2020	P	3" BMP ORIFICE AT EW	N	PL43	Little Bull Run
999	SWMP/BMP	W	1/28/2020	P	PWSE=374.88', SLUICE GATE AT RISER	N	PL32	Broad Run-Catletts Branch
1000	SWMP/BMP	D	1/28/2020	P	3" BMP ORIFICE AT EW	N	PL32	Broad Run-Catletts Branch
1001	SWMP/BMP	D	2/26/2020	P	64"x68" RISER, 3" BMP ORIFICE AT RISER	N	PL49	Neabsco Creek
1002	SWMP/BMP	D	2/26/2020	P	63"x63" RISER, 3" BMP ORIFICE AT RISER	N	PL49	Neabsco Creek
1003	SWMP/BMP	D	3/5/2020	P	2.5" BMP ORIFICE AT EW	N	PL47	Occoquan River-Occoquan Reservoir
1004	SWMP/BMP	D	3/12/2020	C	4'x4' RISER, 3" BMP ORIFICE AT EW	N	PL49	Neabsco Creek
1005	SWMP/BMP	D	4/16/2020	P	10'x12' RISER, 3.5" BMP ORIFICE AT RISER	N	PL51	Powells Creek

FAC ID	FAC TYPE	FAC DESC	DATE INVEN	MAINT	COMMENTS	SWM AGREE	VAHUC6	VAHUC12 NAME
1006	SWMP/BMP	D	5/22/2020	P	1.2" BMP ORIFICE AT RISER	N	PL48	Occoquan River-Belmont Bay
5096	CSWMP/BMP	U	5/1/2020	C	STORMTECH SC-160LP W/ 2 ISOLATOR CHAMBERS	Y	PL46	Lower Bull Run
5750	CSWMP/BMP	W	1/21/2020	C	PWSE=288.58', WEIR IS CONTROL STRUCTURE	Y	PL43	Little Bull Run
6124	CBMP	O	7/9/2019	C	ADS FLEXSTORM INLET FILTER	Y	PL44	Middle Bull Run
6125	CBMP	O	7/9/2019	C	ADS FLEXSTORM INLET FILTER	Y	PL44	Middle Bull Run
6126	CBMP	B	7/9/2019	C	BIORETENTION FACILITY	Y	PL44	Middle Bull Run
6127	CBMP	B	7/9/2019	C	BIORETENTION FACILITY	Y	PL44	Middle Bull Run
6128	CSWMP/BMP	U	7/9/2019	C	CONTECH CHAMBERMAXX SYSTEM	Y	PL44	Middle Bull Run
6129	CSWMP/BMP	D	7/9/2019	C	1" BMP ORIFICE AT RISER	Y	PL44	Middle Bull Run
6130	CSWMP/BMP	D	7/12/2019	C	PWSE=280.48', 3" BMP ORIFICE AT EW, MARSH	Y	PL34	Broad Run-Rocky Branch
6131	CBMP	U	9/26/2019	C	PERMEABLE PAVEMENT W/ 4" UNDERDRAIN	Y	PL44	Middle Bull Run
6132	CBMP		9/26/2019	C	GRASSED SWALE, CONTAINS CHECK DAMS	Y	PL44	Middle Bull Run
6133	CBMP		9/26/2019	C	GRASSED SWALE, CONTAINS CHECK DAMS	Y	PL44	Middle Bull Run
6134	CBMP		9/26/2019	C	GRASSED SWALE	Y	PL44	Middle Bull Run
6135	CBMP		10/7/2019	C	GRASS SWALE W/ FILTER STRIP	Y	PL34	Broad Run-Rocky Branch
6136	CBMP	B	10/7/2019	C	BIORETENTION AREA	Y	PL34	Broad Run-Rocky Branch

FAC ID	FAC TYPE	FAC DESC	DATE INVEN	MAINT	COMMENTS	SWM AGREE	VAHUC6	VAHUC12 NAME
6137	CSWMP/BMP	U	10/7/2019	C	STORMTECH SC-160LP W/ ISOLATOR CHAMBER	Y	PL34	Broad Run-Rocky Branch
6138	CBMP	U	12/11/2019	C	STORMCEPTOR (STC 3600)	N	PL41	Occoquan River-Lake Jackson
6139	CSWMP/BMP	D	12/11/2019	C	4.5'x5.5' RISER; 4" PERF PVC STAND PIPE	Y	PL41	Occoquan River-Lake Jackson
6140	CBMP	B	2/10/2020	C	BIORETENTION FACILITY	Y	PL47	Occoquan River-Occoquan Reservoir
6141	CBMP	O	2/10/2020	C	DRY SWALE W/ CHECK DAMS	Y	PL47	Occoquan River-Occoquan Reservoir
6142	CSWMP/BMP	U	2/10/2020	C	STORMTECH MC-4500 W/ 3 ISOLATOR CHAMBERS	Y	PL47	Occoquan River-Occoquan Reservoir
6143	CBMP	U	2/10/2020	C	BAYFILTER VAULT W/ FLEXSTORM INLET FILTER	Y	PL47	Occoquan River-Occoquan Reservoir
6144	CBMP	U	5/1/2020	C	BAYFILTER VAULT (522 BAYFILTER)	Y	PL46	Lower Bull Run
6145	CSWMP/BMP	U	5/13/2020	C	STORMTECH SC-740 W/ 2 ISOLATOR CHAMBERS	Y	PL52	Quantico Creek
6146	CSWMP/BMP	D	5/15/2020	C	3.25" BMP ORIFICE AT EW, PORTION IN ROW	Y	PL51	Powells Creek
6147	CBMP	U	6/3/2020	C	TWIN 8'x22' STORMFILTERS W/ HIGH FLOW BYPASS	Y	PL49	Neabsco Creek
6148	CBMP	U	6/3/2020	C	8'x11' STORMFILTER W/ HIGH FLOW BYPASS	Y	PL49	Neabsco Creek
6149	CSWMP/BMP	U	6/3/2020	C	8 CMP CHAMBERS W/ 2 MANIFOLDS	Y	PL49	Neabsco Creek
6150	CBMP	O	6/3/2020	C	FLO-GARD +PLUS FILTER INSERT	Y	PL49	Neabsco Creek
6151	CBMP	O	6/3/2020	C	FLO-GARD +PLUS FILTER INSERT	Y	PL49	Neabsco Creek

FAC ID	FAC TYPE	FAC DESC	DATE INVEN	MAINT	COMMENTS	SWM AGREE	VAHUC6	VAHUC12 NAME
9041	CSWMP/BMP	D	7/22/2019	C	4" BMP ORIFICE AT RISER, APR PLAN DATA	N	PL51	Powells Creek
9042	CSWMP/BMP	T	8/20/2019	C	11.5' WIDE STONE FILLED TRENCH	N	PL44	Middle Bull Run
9043	CSWMP/BMP	U	8/20/2019	C	STORMTECH SC-740 W/ ISOLATOR CHAMBER	N	PL44	Middle Bull Run
9045	CBMP	B	11/21/2019	C	BIORETENTION FACILITY	N	PL49	Neabsco Creek
9046	CBMP	B	11/21/2019	C	BIORETENTION FACILITY	N	PL49	Neabsco Creek
9047	CSWMP/BMP	D	2/4/2020	C	1.75" BMP ORIFICE AT EW	N	PL34	Broad Run-Rocky Branch
9048	SSWMP/BMP	D	2/4/2020	S	2" BMP ORIFICE AT RISER	N	PL34	Broad Run-Rocky Branch
9049	CSWMP/BMP	D	2/14/2020	C	2.75" BMP ORIFICE AT EW, 6" DRAWDOWN PIPE	N	PL46	Lower Bull Run
9701	SWMP/BMP	D	9/18/2019	P	10'x14' RISER, 4" BMP ORIFICE AT RISER	N	PL34	Broad Run-Rocky Branch

i. County Facilities

BMP 1 – Promote Good Housekeeping Practices for Municipal Facility Operations

Prince William County promotes good housekeeping practices throughout all its municipal facilities through its Environmental Management System (EMS) program and other methods. PWC Watershed Management in partnership with PWC Risk Management enforces good housekeeping at County municipal facilities. 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.

The following list shows some of the public buildings or facilities that have the Extraordinary Environmental Enterprise (E-2/E-3/E-4) certification:

- E4 – PWC Solid Waste Sanitary Landfill and PWC Balls Ford Road Recycling & Composting Facility
- E3 – PWC Fleet Management Facility
- E3 – PWC Environmental Services Construction Services
- E3 – PWC Buildings & Grounds
- E3 – Mosquito & Forest Pest Management
- E3 – Historic Preservation
- E3 – PWC Fire & Rescue
- E2 – PWC Police
- E2 – PWC Libraries
- E2 – PWC Parks & Recreation

In addition to the EMS program, Prince William County promotes good housekeeping activities for parks and rec facilities. These 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 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.

BMP 2 – Identify High Priority Municipal Facilities

The County operates many 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 it’s 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. The following four facilities have been identified as being high risk, and are currently maintaining a SWPPP:

Table 11 – High Priority Municipal Facilities

Facility Name	SWPPP Needed	SWPPP Developed
Fleet Administration	Yes	Developed
Ben Lomond Maintenance Building	Yes	Developed

Hellwig Maintenance Building	Yes	Developed
PWC Stadium Maintenance Building	Yes	Developed

BMP 3 – Develop SWPPPs for Selected High Priority Municipal Facilities

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 Table 11 located in the above section.

j. Public Education and Participation

Prince William County strives to share relevant and useful information with our community to help protect our local waterways and natural environment. We undertake a number of 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.

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.

In FY20, Prince William County began posting monthly social media messages to encourage citizens to maintain a variety of good housekeeping practices. These messages are tailored to match common pollution sources by time of year. These messages can be found in Appendix J. The County also created flyers for both residents and landscapers encouraging them to exercise proper disposal of yard waste. These flyers were distributed at the landfill, and mailed out to registered landscapers throughout the County. Additionally, flyers were made to raise awareness of how to handle used cooking oil as well as dumpsters/compactors. These flyers are handed out routinely as inspections reveal potential illicit discharges.

BMP 1 – 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.

- Residents
 - Maintain several references on our website with pages focused on the MS-4 permit, TMDLs, illicit discharge, illegal dumping, storm water runoff and erosion
 - Placed articles in newsletter to HOAs and neighborhood leaders about cleaning up after pets, native plants, and proper disposal of wastes
 - Established a hotline and email address to report illegal dumping into storm drains (Staff received, inspected and took action on 47 complaints through the hotline and email in FY20)
 - Placed 1000 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
 - Continue to air a public service announcement video about preventing pollution that appears on the local government channel and the website at <http://www.pwcgov.org/government/dept/publicworks/environment/pages/default.aspx>
 - Host displays for community at ~~Prince William Recycles Day, Earth Day and Compost Awareness events~~ Cancelled due to COVID

Future efforts: Create outreach materials and distribute to businesses with high potential to discharge pollutants.

- Businesses and Industries
 - Provide online guidance for developers to protect water quality
 - Share informational materials when visiting sites in the field
 - Send educational materials with warning and violation letters

Future efforts: Create a special sign for industries that practice best management practices for them to display, working on a program to recognize businesses with Green Business Award and seek opportunities to present information at industry meetings and educational events

- County Government
 - Created online training about illicit discharge and pollution prevention for employees (required for some and encouraged for others)
 - Established a SWPPP at four facilities identified as high-risk including park sites and Fleet
 - Established protocol for outdoor storage of equipment, materials and chemical

- Expanded program for proper collection and disposal of batteries, universal waste, printer cartridges, electronic accessories, chemicals and hazardous waste generated by County employees
- Worked with an independent vendor to inspect and make repairs to all above-ground fuel storage tanks located at PWC facilities

BMP 2 - 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.

- Residents

- ~~Sponsor an annual Youth Conference on the Environment and Parent Symposium on a variety of Environmental Topics (we have hosted the event for 18 years and average 100 participants and 30 high school student leaders each year).~~ This event was cancelled this year due to COVID.
- ~~Sponsor Six Weeks to Make a Difference Conservation Projects for Families to participate in a weekly project from April through mid May including projects to pick up litter, reforest areas and help along streams (we have undertaken projects for the past 11 years with an average of 20 volunteers at each of the six events)~~ This event was cancelled this year due to COVID.
- Recognize volunteers, individuals and groups, with an annual Green Community Award (since 2014, we have recognized 50 individuals and 38 groups, as well as the family volunteers at the conservation projects)
- Create and maintain educational web pages on sound practices around the home to prevent pollution and runoff, protecting streams, rivers and wetlands, planting native species, safeguarding trees, and managing waterfront property
<http://www.pwcgov.org/government/dept/publicworks/environment/pages/default.aspx>
- 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
<http://www.pwcgov.org/government/dept/publicworks/gogreen/pages/go-green.aspx>

- 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
- 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 (57,755 gallons of motor oil, 5,436 gallons of anti-freeze and 3,425 car batteries collected in 2020)
- Provide funding to the Prince William Soil and Water Conservation District to run an Adopt-a-Stream program.
- Provide funding to the Prince William Soil and Water Conservation District to monitor floatables in the community (volunteers monitored five sites each quarter)
- 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)
- Provided funding to Keep Prince William Beautiful to work with volunteers to apply 1,000 adhesive markers to storm drains that remind residents that the drain leads to local waters and eventually the Chesapeake Bay
- Provide funding to Keep Prince William Beautiful to organize litter clean-ups throughout the community
- 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
- Provide funding to the Virginia Tech Cooperative Extension office to help homeowners, businesses and houses of faith to adopt an urban nutrient management plan (There is a total of 633 active plans covering 165.25 acres under nutrient management)

Future efforts: Provide tips for inclusion in newsletters distributed by the Board of County Supervisors, and attend local festivals and farmer markets to distribute materials about illicit discharge and protecting water quality

- Businesses and Industry
 - Work with local businesses to properly maintain their stormwater management ponds
 - 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
 - Recognize volunteers, individuals and groups, with an annual Green Community Award

- 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
- 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)

Future efforts: Provide sign for businesses to post that indicate they help protect local water quality and investigate creating a Green Business Award program

- County Government
 - Created online training for compliance with Resource Conservation and Recovery Act, Spill Prevention, Control and Countermeasure plans and Illicit Discharge Detection and Elimination
 - Increased overall rate of environmental training of all County personnel by over 50%
 - Encourage staff to conduct regular good housekeeping efforts and inspections to ensure environmental compliance as well as safety in Public Works facilities
 - Enforce the County’s Environmental Policy Statement
 - 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
 - Host an annual Earth Day Festival for County Employees
 - Provide spill kits for all fuel tanks and generators at County facilities and train staff how to respond
 - Maintain compliant Spill Prevention, Control and Countermeasure plans for facilities when required and maintain training requirements for the program
 - Continue to improve housekeeping practices that will help protect water quality

Future efforts: Provide additional training and increase awareness about actions we can take as county employees to improve local water quality by implementing additional good housekeeping practices

BMP 3 – 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 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.

- Required all golf courses to have a current nutrient management plan
- Required all golf course managers to ensure staff is properly trained in IPM plans
- Required all golf course managers to ensure staff is trained in application techniques to reduce run off

BMP 4 - 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.

- Residents
 - Provide information online about picking up after your pets
 - Provide a pamphlet about picking up after your pets
 - Provided posters and pamphlets about picking up after pets to local Veterinarians
 - County-owned compost facility accepts yard waste from residents for composting and mulching (product available for purchase from private vendor that operates the compost)
 - Provide tips and steps for grasscycling and composting at home
 - Host an annual event to highlight the benefits of composting and provide information to the community
 - Created a page on the website with tips on good practices to protect water quality
 - Created a seven steps tip sheet on protecting water quality
 - Created a flyer encouraging residents to maintain good housekeeping practices in regards to yard waste and distributed at the landfill
- Businesses and Industries
 - Created a flyer encouraging landscapers to maintain good housekeeping practices in regards to yard waste and distributed at the landfill
 - Created a flyer encouraging restaurants and shopping centers to maintain good housekeeping practices in regards to cooking oil and dumpsters/compactors.
- County Government
 - Require all standard vehicles be washed at commercial facilities

- Established protocol for properly washing non-standard vehicles and equipment in such a way as to prevent runoff

Future efforts: Expand composting and collection of yard waste from residents and continue to work on program to compost food wastes

BMP 5 - 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 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 PWCSWCD looks to install at a minimum two voluntary retrofit projects per year. Two VCAP projects have been completed in FY20. We completed two conservation landscaping projects.

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.

- Residents
 - Created brochures for owners with waterfront property
 - Hosted a conference with information for owners with waterfront property
 - Created a brochure about the Chesapeake Bay Resource Protection Areas for distribution at events and site visits
 - Created a pamphlet on the benefits of rain gardens
 - Offer funding through the Virginia Conservation Assistance Program for non-agricultural lands to support best management practices to protect local water quality
 - Encourage residents to reduce turf on property and replace with native species and forested areas
 - Hosted a symposium about establishing native plants on private property
- Businesses and Industries
 - 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
 - Offer funding through the Virginia Conservation Assistance Program for non-agricultural lands to support best management practices to protect local water quality
- County Government

- 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
- Establish meadows and gardens at County historic sites and public facilities
- Undertake stream restoration projects
- Retrofit existing stormwater management structures with improved structures and strategies during retrofits, repairs or maintenance

Future efforts: Increase efforts to identify opportunities to use VCAP for residential, commercial or county projects if state continues grants

BMP 6 - 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.

- Businesses and Industries
 - Offer an education program on Fats, Oils and Grease from food service establishments through the Prince William County Service Authority
 - Created brochures and flyers explaining good housekeeping practices to targeted businesses such as landscapers, restaurant owners, and shopping centers.
 - Met with representatives from Valley Proteins, Inc. to discuss possible ways to raise awareness to customers on how to maintain used cooking oils properly.
- County Government
 - Inspect facilities and areas at high risk for runoff to ensure best management practices in place

Future efforts: Identifying industries for future education and awareness campaign

- County Government
 - Improve best management practices by continuous review and upgrades as needed
 - Place spill kits and provide training for staff to use spill kits at all vulnerable locations
 - Conduct regular inspections of our above ground tanks to ensure there are no leaks or spills

- 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
- Businesses and Industries
 - Continue to work with Valley Proteins, Inc to generate outreach materials

Future efforts: Increase awareness of all staff to recognize potential spill hazards and report any spills or runoff to the proper staff

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.

- Public Works has posted a copy of the state permit on its Public Works web site within the County Government pwcgov.org website. It resides on our Environmental Services pages and has its own direct link from our navigational bar at: <http://www.pwcgov.org/government/dept/publicworks/environment/pages/ms-4-permit.aspx>
- A printed copy of the state permit is kept in our offices for any citizen to review upon request at our service counter.

k. Training

BMP 1 – Continue to Train Staff in the Recognition of Illicit Discharges and Good Housekeeping Practices

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 on 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 FY20, 1,119 employees were trained on various environmental compliance topics.

Table 12 – Training Provided During FY20

ILT Course Title	Completed
Chemical Spill Response FY2020 (EHS 401)	15

EMS Annual Refresher Training FY2020 (EHS 441)	52
Environmental Regulation Overview (EHS 450) FY2018	78
Environmental Regulation Overview For Fire and Rescue (EHS 450) FY2020	651
IDDE: Illicit Discharge Detection and Elimination FY2020 (EHS 451)	112
RCRA/ Universal Waste for Generators (EHS 146) FY2020	58
Spill Prevention, Control and Countermeasure Plan Annual Training FY2020 (EHS 435)	46
Fluorescent Bulb Handling and Recycling Online Training (EHS 456)	39
Introduction to RCRA Online Training(EHS 462)	22
Watershed Illicit Discharge Prevention Online Training (EHS460)	34
Spill Prevention Control and Countermeasures Plan (SPCC) Online Training EHS461	12

BMP 2 – Continue to ensure pesticide and Herbicide Application Occurs in Accordance With Pesticide Control Board Regulations

All County staff and County contractors receive appropriate training in pesticide and herbicide application. These include staff of Parks and Recreation, as well as Environmental Services Mosquito and Forest Pest Management staff. All staff are required to stay current in applicable trainings and certifications.

BMP 3 – Continue to ensure County Staff are Trained and Certified in DEQ Stormwater, E&S, and Plan Review Courses

All our engineering staff who review E&S, SWM and VSMP plans have certifications. All our site inspectors and stormwater management facility inspectors have erosion and sediment control inspector and stormwater management inspector certifications.

BMP 4 – Continue to ensure Emergency Response Staff are Trained in Spill Response

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. There are 100 HAZMAT technicians or specialists 688 career personnel and over 300 volunteer personnel who 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.

I. Water Quality Screening Programs

BMP 1 – Develop and Maintain a Dry Weather Monitoring Program

During the reporting period, Prince William County conducted 760 Dry weather Monitoring inspections. Of the 760 outfalls monitored, 132 (17.37%) outfalls were found to be flowing; and

7 were found to be illicit in nature. Descriptions of these discharges and of follow-up can be found below. Discharge reports for each instance can be found in Appendix L. As outfalls are screened through our dry weather monitoring program, those that are found to be contributing a significant load of pollutants are toggled as being high risk.

Table 13 – Dry Weather Monitoring Illicit Discharge Summary

Outfall	Date of inspection	Description of Disharge	Conclusion	Case Status
22011	7/2/2019	Algae Growth at outfall	Source of discharge was confirmed ground water seepage into storm sewer system. Algae developed due to ground water and it is a natural phenomenon.	Closed
47310	7/2/2019	Algae Growth at outfall	Source of algae was confirmed surface water. Formation of algae is a natural phenomenon.	Closed
297	7/25/2019	Algae Growth at outfall	Source of discharge was discovered ground water from saturated landscape. Source of Algae was confirmed ground water.	Closed
24391	7/25/2019	Clear	Source of discharge was discovered non point pond outflow.	Closed
36972	7/25/2019	Algae Growth at outfall	Source of discharge was confirmed ground water seepage into storm sewer system. Algae developed due to ground water and it is a natural phenomenon.	Closed
54211	7/25/2019	Discharge with Lime	Source of discharge was discovered ground water seepage. Lime stains were developed on down stream channel with natural oxidation and reduction process.	Closed
9840	7/30/2019	Discharge with Algae	Source of discharge was confirmed ground water seepage. Development of Algae is a natural phenomenon developed due to bacteria with ground water.	Closed
53192	8/6/2019	Discharge with Algae	Source of discharge confirmed ground water seepage into storm sewer system.	Closed
7710	8/8/2019	Discharge with Algae	Source of discharge was confirmed from three different sources and were water main leakage, foundation drain and outflow of SWMP. The case will inform to PWCSA for maintenance of watermain leakage.	Closed
19348	8/13/2019	Clear	After investigation, source of discharge was confirmed ground water seepage into storm sewer system.	Closed
19375	8/13/2019	Clear	After investigation, source of discharge was confirmed water main leakage with ground water seepage. The case will inform to PWCSA for maintenance of watermain leakage.	Closed
646	8/16/2019	Clear	After investigation, source of discharge was discovered ground water from	Closed

Outfall	Date of inspection	Description of Dishcharge	Conclusion	Case Status
			foundation drain entering into storm sewer system via upstream inlet.	
3872	8/16/2019	Clear	After investigation, source of discharge was confirmed ground water seepage into storm sewer system.	Closed
57613	8/23/2019	Discharge with Algae	After investigation, source of discharge was confirmed foundation discharge into storm sewer system	Closed
57472	8/23/2019	Clear	After investigation, source of discharge was discovered outflow of Prince William County Public School stormwater management pond.	Closed
764	8/26/2019	Clear	After investigation, source of discharge was discovered ground water seepage into storm sewer system.	Closed
34852	8/29/2019	Clorinated Discharge	The volume of discharge was small and diluted with creek water. Warning made to company crews and education materials were hand over to literate them about declorination.	Closed
63128	9/5/2019	Algae with suds	The source of discharge was confirmed ground water. Algae and suds developed due to ground water with high vertical drops in different sections. It is a natural phenomenon.	Closed
24686	9/5/2019	Algae	The source of discharge was confirmed combine effect of overflow from pool refill and saturated infiltration of BMP. Algae was developed due to ground water seepage due to overflow from SWMP after being saturated infiltration process. It is a natural phenomenon.	Closed
19488	9/11/2019	Clear	The source of discharge was confirmed combine effect of spring water and ground water seepage into storm sewer system.	Closed
17343	9/11/2019	Clear	The source of discharge was confirmed surface water.	Closed
2349	9/11/2019	Algae	The source of discharge was confirmed VDOT pond discharge. Discharge observed at outfall was very common and further investigation is not needed.	Closed
2608	9/20/2019	Algae	The source of discharge was confirmed ground water seepage. The source of algae was suspected from ground minerals. Discharge was seemed very common and no further investigation is needed.	Closed
31197	9/18/2019	Color and Odor	The black color and bad odor could be generated due to eutrophication.	Closed

Outfall	Date of inspection	Description of Dishcharge	Conclusion	Case Status
			Follow up inspection was done but the outfall found to be dry.	
59795	9/25/2019	Clear	The source of discharge was ground water seepage. Further investigation is not needed. Follow up inspection will continue in future.	Closed
59810	9/25/2019	Algae	The source of discharge was ground water seepage. Algae was found to develop at outfall due to ground water. Further investigation is not needed. Follow up inspection will continue in future.	Closed
14	9/27/2019	Clear	The source of discharge was grounds water, is non-illicit discharge. Further investigation is not needed.	Closed
4	9/27/2019	Clear	The source of discharge was surface water, is non-illicit discharge. Further investigation is not needed.	Closed
54391	9/27/2019	Clear	The source of discharge was discovered surface water with ground water seepage, is non-illicit discharge. Further investigation is not needed.	Closed
54350	9/27/2019	Orange Algae	The source of discharge was discovered surface water with ground water seepage, is non-illicit discharge. Further investigation is not needed.	Closed
16340	10/3/2019	Clear	The source of discharge was discovered ground water from foundation drain, is non-illicit discharge. Further investigation is not needed.	Closed
9965	11/21/2019	Clear	The case was forwarded to American Water for further investigation at 4142 Glendale Rd. The staff of Virginia American Water reported that there is no watermain leakage at aforementioned location.	Closed
57731	2/19/2020	Orange Algae	The source of discharge was discovered foundation drain with channel inflow, is considered a non-illicit discharge.	Closed
9002	2/19/2020	Orange Algae	The source of discharge was discovered foundation drain with channel inflow, is considered a non-illicit discharge.	Closed
10143	2/20/2020	Orange Algae	The source of discharge was discovered foundation drain with ground water seepage, is considered a non-illicit discharge.	Closed
17531	2/20/2020	Orange Algae	The source of discharge was discovered upstream pond discharge, from a non-point source is a non-illicit discharge.	Closed

Outfall	Date of inspection	Description of Dishcharge	Conclusion	Case Status
17365	2/20/2020	Orange Algae	The source of discharge was confirmed ground water, is a non-illicit discharge.	Closed
25067	2/20/2020	Clear	The source of discharge was confirmed ground water, is a non-illicit discharge.	Closed
23232	2/24/2020	Clear	The source of discharge was confirmed ground water seepage into storm sewer system, is a non-illicit discharge.	Closed
32527	2/24/2020	Clear	The source of discharge was confirmed ground water seepage into storm sewer system, is a non-illicit discharge.	Closed

All cases of Illicit Discharge were completed satisfactorily.

BMP 2 – Develop and Maintain a Wet Weather Screening Program

Prince William County’s Wet Weather Screening Program began at the end of FY16, with first sample occurring in September of 2017. Two sites were selected for sampling and sampling will occur during qualifying storms on a quarterly basis.

The year’s sampling has shown fewer exceedances than most previous years. This could be a result of the outreach IDDE staff performed in those areas. In FY19, IDDE staff visited site #941 and provided educational materials to the occupants of nearby parcels. They were also advised on how to maintain good housekeeping practices. Much of the drainage area for site #4684 is an impervious parking lot. IDDE staff performed a shopping center survey at this location to identify any potential pollution sources. The shopping center survey was found to have good housekeeping practices. PWC will consider relocating this monitoring station in the future, as further action at this location is limited in scope. Dry weather monitoring will also occur in these areas in order to trackdown pollutant sources. A description of site selection and final site locations, as well as Wet Weather Monitoring procedures and results are located in Appendix L.

Figure 4 – Exceedance tracking for the Wet Weather Monitoring Program

		2019		2020	
		Q3	Q4	Q1	Q2
Manassas (#941)	Copper	X	X	X	X
	Lead				
	Nickel				
	Zinc			X	X
	Total Suspended Solids			X	X
	Total Nitrogen				
	Phosphorus, Total				
	Chemical Oxygen Demand			X	
	pH				
Dale City (#4684)	Copper				
	Lead				
	Nickel				
	Zinc				
	Total Suspended Solids				
	Total Nitrogen				
	Phosphorus, Total				
	Chemical Oxygen Demand				
	pH				

No infrastructure or outfall repairs resulted from wet weather screening in FY20.

m. Infrastructure Coordination

BMP 1 – Implement Annual Coordination Meeting with VDOT

Prince William County met with VDOT on December 17th 2019. The main discussion involved comparing and contrasting VDOT and Prince William County’s MS-4 Service area. VDOT and the County also exchanged demonstrations of software applications used for stormwater management and illicit discharge inspections.

In addition to the discussion on MS-4 service area, VDOT and Prince William County shared procedures and capabilities for the reporting of Illicit Discharges.

Finally, we had preliminary discussions on TMDL action plan and implementation credits. The County has developed its TMDL action plan, but an understanding was made to look for

potential projects where mutually beneficial outcomes could be made during the development process.

A meeting minutes and attendees list is included in Appendix M. The County and VDOT plan to meet in FY21 in accordance with MS-4 permit requirements.

BMP 2 – Coordinate with VDOT on MS-4 Initiatives

During annual meetings with VDOT the County will discuss MS-4 interconnectivity issues such as:

Mapping – Status of mapping program and the ownership of MS-4 components

Chesapeake Bay TMDL – Means Methods and Schedule for reductions under the Chesapeake Bay TMDL special condition where impacts may occur to interconnected MS-4 areas.

Other TMDL Action Plans – Means Methods and Schedule for reductions under the other TMDL special conditions where impacts may occur to interconnected MS-4 areas.

TMDL Implementation Credit – Ensure BMP retrofits do not encounter double crediting. Discuss sharing of BMP credit if applicable.

Illicit Discharge – Share information pertaining to the County’s IDDE program and coordinate with VDOT on the identification of high risk facilities. Establish procedures for reporting discharges identified from the VDOT MS-4 system.

Water Quality Monitoring – Discuss and present results of the County’s water quality monitoring programs. This includes monitoring data collected from areas where the physically-interconnected MS-4 discharges to or flow is received from the VDOT MS-4.

II. Monitoring Requirements

1. Biological Stream Monitoring

Prince William County continued its Biological Monitoring Program in FY20 with its monitoring taking place in Q2 and Q4 of the reporting period. Sample collection occurred from October 2 to 3, 2019, and May 11 to 13, 2020 on five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch. Benthic sampling was conducted in accordance with the Sampling Plan. The multiple habitat sampling method was used for each of the sites, consisting 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 Wood’s benthic macroinvertebrate laboratory in Gainesville, Florida.

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.

Table 14 below summarizes the results of the spring sampling session.

Table 14 – Fall 2019 Field Condition and Benthic Macroinvertebrate Results

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	36	35	32	33
Abundance	196	171	234	172	179
EPT Index	5	7	8	5	7
EPT/EPT+ Chironomidae	0.88	0.75	0.80	0.72	0.78
Percent Dominant Taxon	64.29	14.04	24.36	22.67	33.52
Percent Chironomidae	10.20	9.94	13.68	19.77	15.64
BI	6.61	6.52	6.24	5.63	5.59
BI Category	Fairly poor	Fairly Poor	Fair	Fair	Fair
PMA	39.08	56.90	80.34	52.33	50.67
PMA Category	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
VSCI	42.95	62.99	67.99	56.10	60.76
VSCI Category	Stress	Good	Good	Stress	Good

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. However, there were elevated *E. coli* levels at each of the sites in exceedance of the Virginia Water Quality standard, which could be indicative of sewage or animal waste contributions following storm events.

Table 15 – Spring 2020 Field Condition and Benthic Macroinvertebrate Results

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Bull Neabsco Creek	Purcell Branch
Taxa Richness	24	20	25	33	29
Abundance	248	202	183	239	201
EPT Index	2	4	2	6	6
EPT/EPT+ Chironomidae	0.12	0.43	0.12	0.24	0.17
Percent Dominant Taxon	34.68	62.87	21.86	20.08	34.83
Percent Chironomidae	44.35	15.84	67.21	59.41	55.72
BI	7.20	5.25	5.49	5.69	5.23
BI Category	Fairly Poor	Good	Good	Fair	Good
PMA	36.69	40.79	49.67	49.64	56.44
PMA Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly impacted
VSCI	34.52	41.42	42.77	47.02	47.53
VSCI Category	Severe Stress	Severe Stress	Stress	Stress	Stress

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. However, the *E. coli* levels at Purcell Branch were above the Virginia Water Quality standard. Stressed conditions remain apparent, consistent with seasonal variation during spring season collections.

The measured field and laboratory water quality parameters from the fall 2019 and spring 2020 sampling results are generally comparable to the baseline sampling results, and are within the usual ranges. Monitoring efforts will be targeted to avoid collection periods following storm events to characterize the benthos and ambient water quality conditions.

Biological metrics, habitat assessments, and evaluations of the benthic macroinvertebrate communities at each site have indicated a marginal level of improvement compared to baseline conditions. Seasonal fluctuation in benthic macroinvertebrate assessments has still shown an upward trend for most sites.

This seasonal trend allows for clear distinctions from baseline levels in fall sampling, while spring sampling only shows slight improvement in benthic health. Based on the fall 2018 and spring 2019 sampling results, stream conditions have shown slight improvement from baseline conditions. The results of this report indicate that the health of these representative monitoring sites from across Prince William County are in stable condition.

2. In-stream Monitoring

The County has maintained an in-stream water quality monitoring program for the past 25 years. In partnership with the Virginia Tech Occoquan Laboratory, the County maintains 5 in stream water quality stations, 2 stations (Little Bull Run and Neabsco Creek) have been in operation since the early 1990s, and the remaining three stations were put on line during FY16:

1. The “Dawkins Branch Station”, with drainage to be comprised of older industrial and warehouse type of land uses. This station is to represent industrial land use in the County.
2. The “Cow Branch Station” with drainage area for the proposed station originating from commercial developments, such as, Potomac Mills Mall and several other commercial and residential uses along I-95 corridor. This represents a relatively high density and highly impervious area corridor.
3. The “Purcell Branch Station” was picked to represent large-acre residential lots, which is also a representative land use in the County.
4. Neabsco Creek at Delaney Rd. – Neabsco Creek is one of the most developed watersheds in the County. This station has drainage areas from several new and much older developments in Dale City area. Continuing this station will help us further establish the water quality trends for an older developed watershed.
5. Little Bull Run at Catharpin Road – Little Bull Run has drainage areas from major known developments such as Piedmont, Dominion Valley Country Club, etc. This Station represents the current development trends of well-planned subdivisions constructed with golf course amenities in the fast growing western part of the County. Continuing this station will help us further establish water quality trends.

a. Neabsco Creek Station

The Neabsco Creek water quality monitoring station has been in operation since 1990s. It is the County’s longest running water quality monitoring station for instream monitoring.

Table 16 – Neabsco Creek Station Water Quality Results

DATE	FLO cfs	TOTFLO cubic feet	OP mg/L	TP mg/L	NH3_ N mg/L	TKN mg/L	NO2_ N mg/L	OX_ N mg/L	COD mg/L	BOD5 mg/L	TSS mg/L	FCOLI org/ 100mL	ECOLI org/ 100mL
Oct-19	26.91	941,500	0.03	0.13	0.07	1.00	0.01	0.30	22.3	4.3	59.6		
Oct-19	18.15	1,080,000	<0.01	0.05	<0.01	0.66	<0.01	0.06	26.4	6.7	21.2	5400	1730
Dec-19	46.53	1,332,000	0.02	0.10	0.01	0.80	0.01	0.24	25.2	6.5	64.5	790	921
Feb-20	31.00	1,768,000	0.02	0.12	0.04	0.69	0.01	0.23	20.8	2.8	67.5	1700	1470
Mar-20	17.54	450,400	<0.01	0.05	0.06	<0.50	<0.01	0.25	16.6	2.7	24.8		
Apr-20	65.35	5,333,000	0.02	0.17	0.06	1.54	0.01	0.18	36.0	5.5	134	490	185

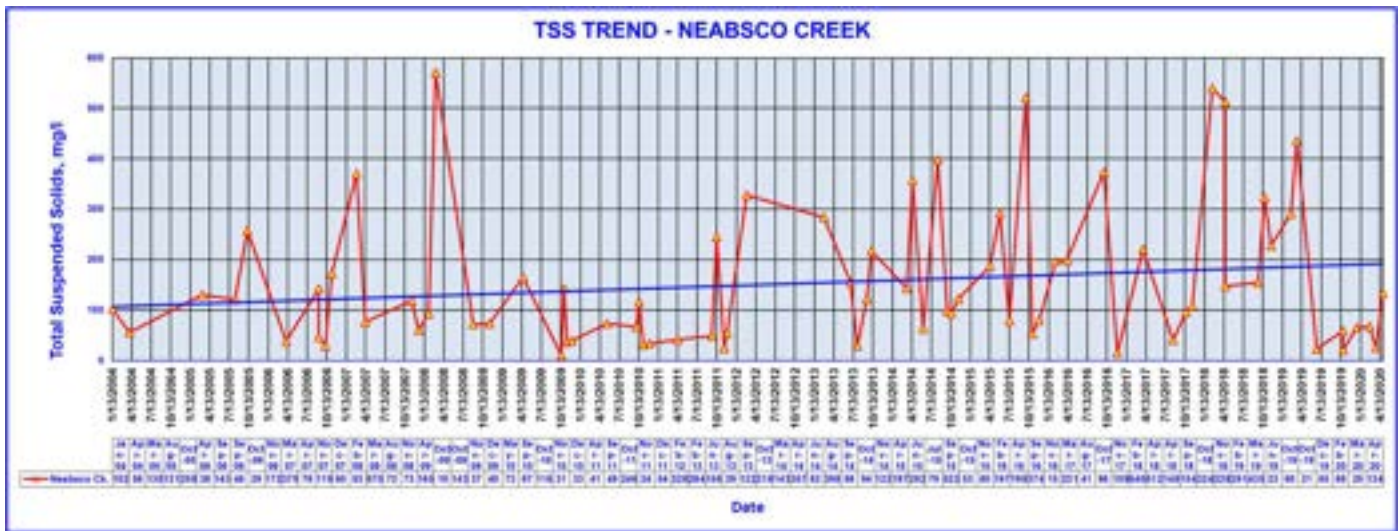


Figure 5 – Long Term TSS trends in Neabsco Creek Watershed

TSS samples show an increasing trend in the Neabsco Creek Watershed.

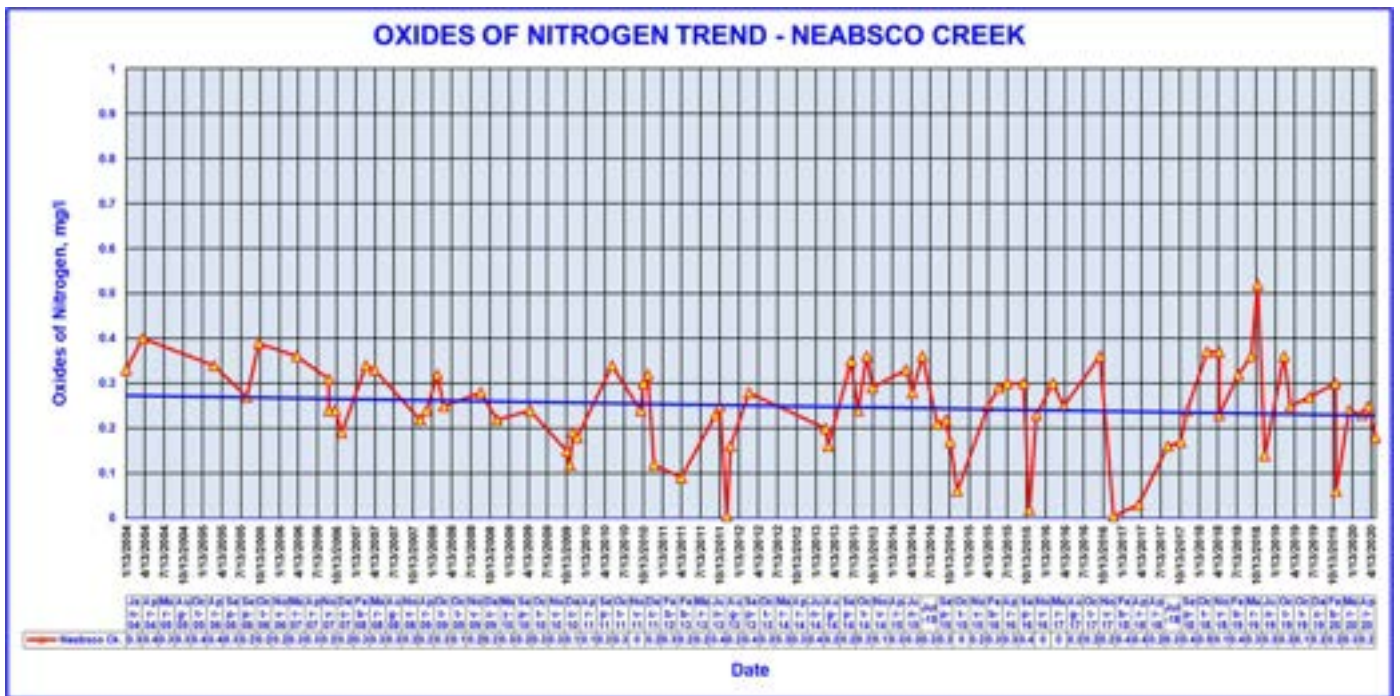


Figure 6 – Long Term Oxides of Nitrogen trends in Neabsco Creek Watershed

Nitrogen is showing a decreasing trend within the Neabsco Creek Watershed. This can be interperated that stormwater control measures are making an impact within the watershed;

however, with increases in TSS it may not be the case. With stream restoration and other projects the County has undertaken, the County anticipates decline in TSS over time.

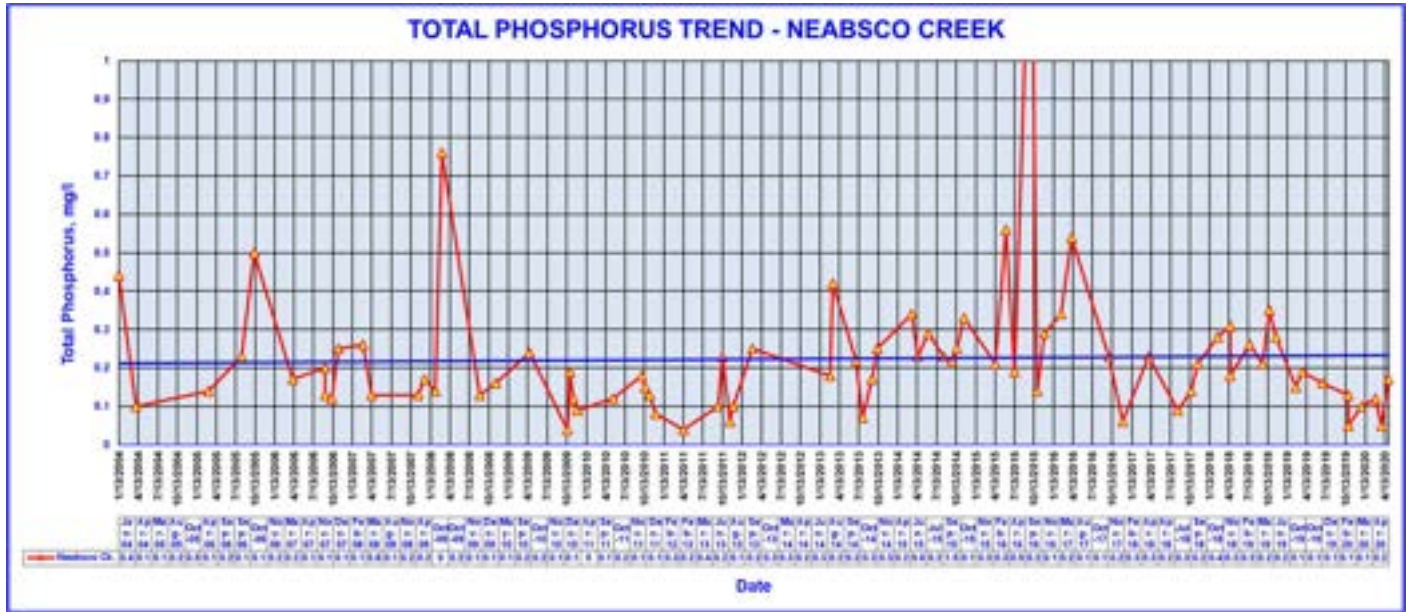


Figure 7 – Long Term TP trends in Neabsco Creek Watershed

Total Phosphorous shows an increasing trend within the Neabsco Creek Watershed. This data may be skewed more towards an increase due to several outlying peaks caused during large storm events. With stream restoration and other projects the County has undertaken in the watershed, the County anticipates a decline in TSS, and consequently, a decline in phosphorous over time.

b. Little Bull Run

The Neabsco Creek water quality monitoring station has been in operation since 2007. It is the County’s Second longest running in stream water quality monitoring station.

Table 17 – Little Bull Run Station Water Quality Results

DATE	FLO cfs	TOTFLO cubic feet	OP mg/L	TP mg/L	NH3_ N mg/L	TKN mg/L	NO2_ N mg/L	OX_N mg/L	COD mg/L	BOD5 mg/L	TSS mg/L	FCOLI org/ 100mL	ECOLI org/ 100mL
Oct-19	18.49	983,000	0.03	0.07	0.02	0.70	<0.01	0.78	18.7	3.7	5.9	1300	980
Dec-19	11.97	837,000	<0.01	0.05	0.03	0.65	<0.01	0.42	16.6	4.1	9.2	2400	1410
Feb-20	26.00	3,520,000	0.01	0.05	0.10	0.58	<0.01	0.56	14.2	<2.0	9.6	2400	1200
Apr-20	117.2	13,530,000	0.03	0.16	0.03	1.15	0.01	0.35	27.4	4.9	122	9200	1120
Jun-20	162.5	5,625,000	0.05	0.27	0.01	1.88	0.01	0.17	39.4	6.6	212		

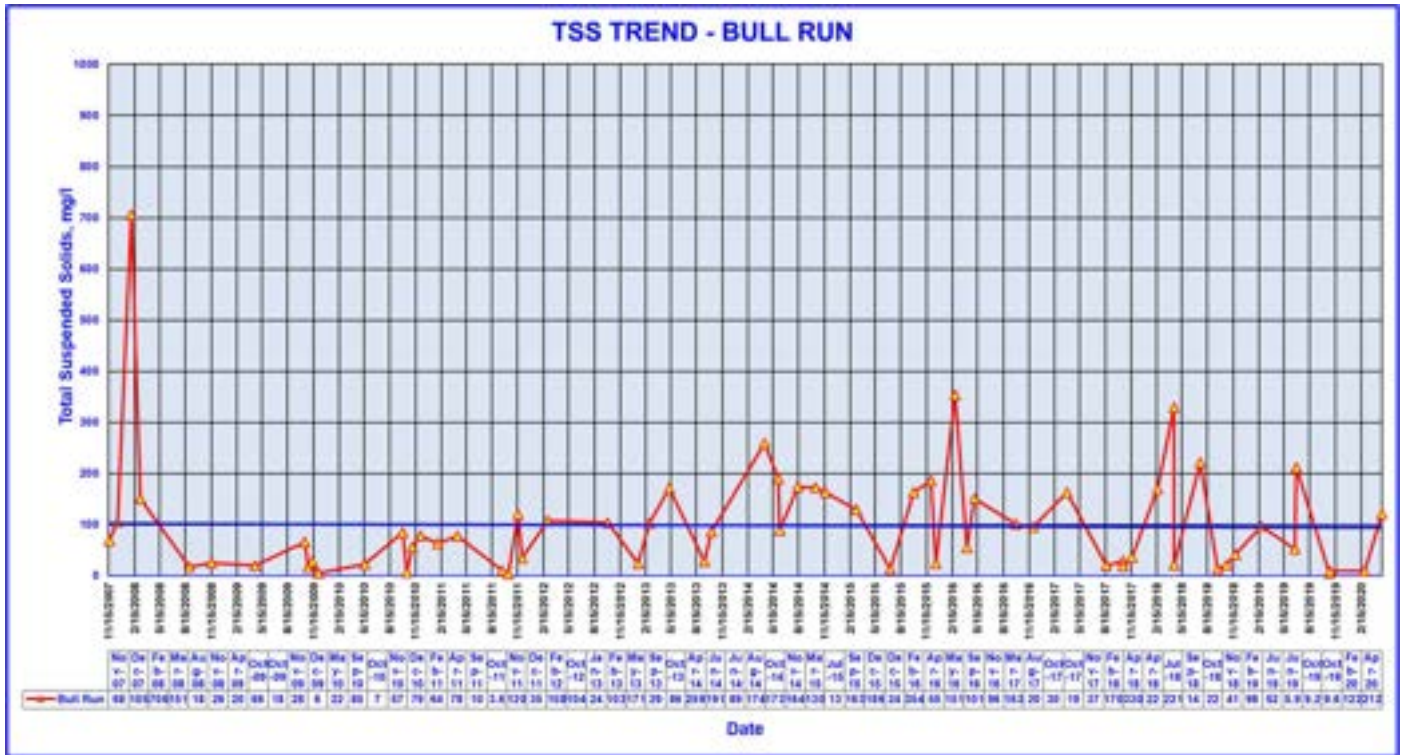


Figure 8 – Long Term TSS trends in the Bull Run Watershed

TSS in the Bull Run watershed trend is steady. This year’s results showed a slight decrease in TSS.

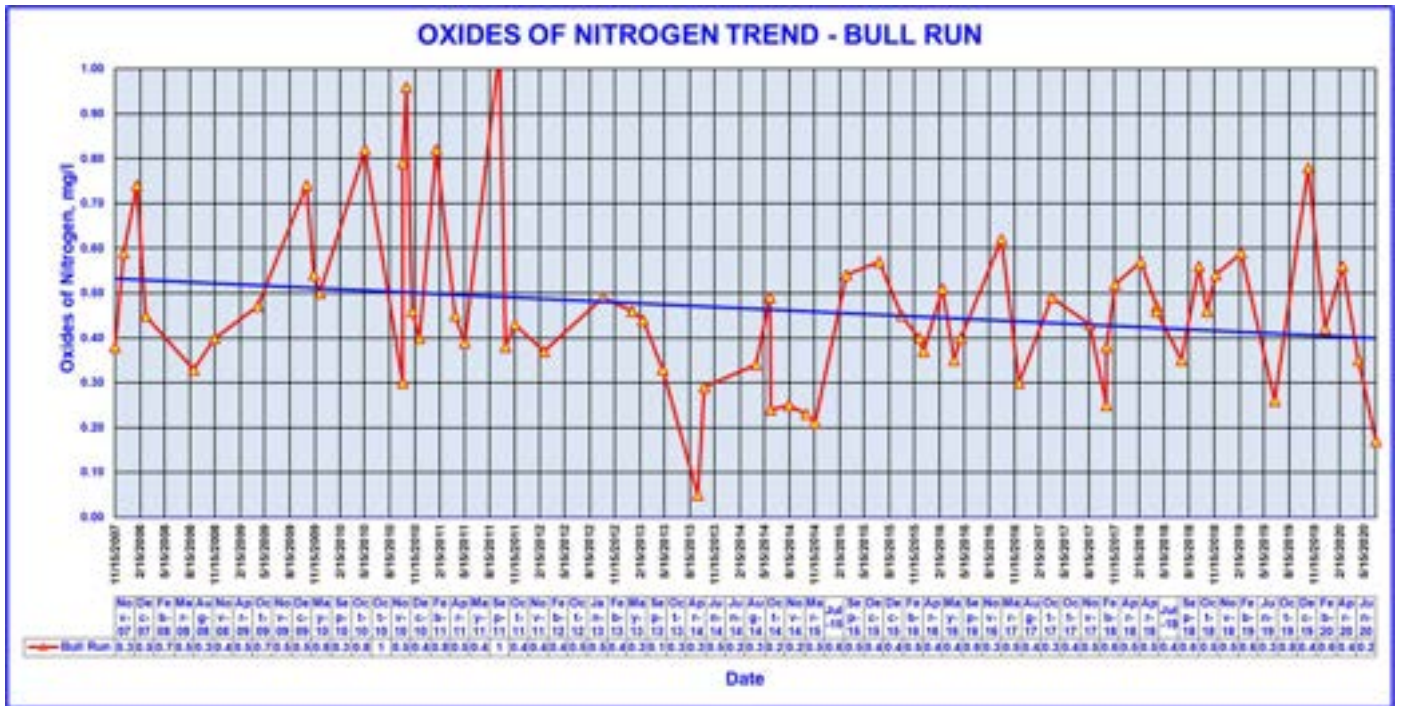


Figure 9 – Long Term Oxides of Nitrogen trends in the Bull Run Watershed

As with the Neabsco Creek watershed, Oxides of nitrogen show a strong decreasing trend. This could indicate the effectiveness of stormwater controls.

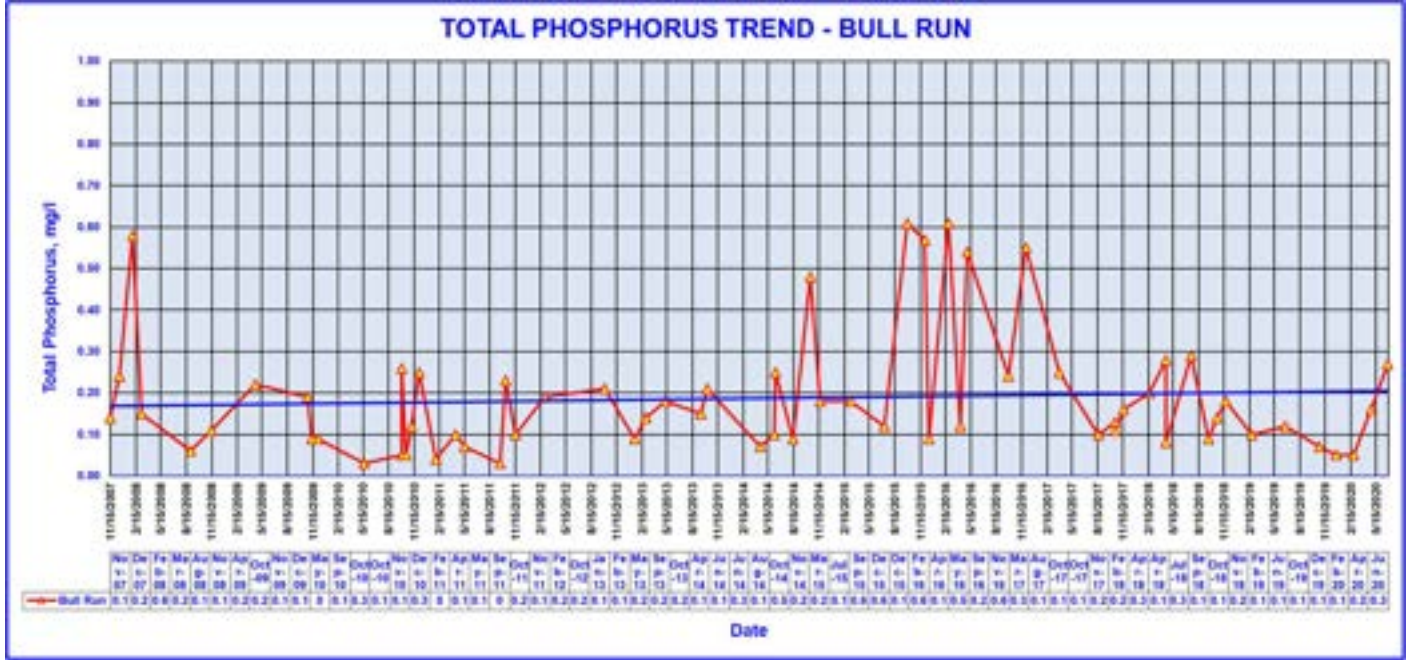


Figure 10 – Long Term TP trends in the Bull Run Watershed

TP has an increasing trend within the Bull Run watershed. The volatility observed in the Neabsco Creek watershed is again observed here.

c. Dawkins Branch

The Dawkins Branch water quality monitoring station was installed during FY16, and produced 4 samples in FY20.

Table 18 – Dawkins Branch Water Quality Results

DATE	FLO cfs	TOTFLO cubic feet	OP mg/L	TP mg/L	NH3_N mg/L	TKN mg/L	NO2_N mg/L	OX_N mg/L	COD mg/L	BOD5 mg/L	TSS mg/L	FCOLI org/100mL	ECOLI org/100mL
Oct-19	3.59	130,200	<0.01	0.06	0.02	0.96	<0.01	0.13	25.2		24.0		
Dec-19	2.43	89,780	0.18	0.24	0.04	0.83	<0.01	0.18	24.8	7.5		330	1410
Apr-20	33.12	2,164,000	0.02	0.14	0.03	0.98	0.02	0.20	28.2	6.0	138		
Jun-20	12.39	473,200	0.02	0.11	<0.01	1.05	0.01	0.08	27.8	5.3	73.0	5400	3450



Figure 11 – Long Term TSS trends in the Dawkins Branch Watershed

TSS shows a stable to slightly decreasing trend.



Figure 12 – Long Term Oxides of Nitrogen trends in the Dawkins Branch Watershed

Oxides of Nitrogen show a significant decreasing trend.



Figure 13 – Long Total Phosphorus trends in the Dawkins Branch Watershed

Total phosphorus shows a slightly decreasing trend.

d. Cow Branch

The Cow Branch Water Quality Monitoring Station was installed during FY16, and produced 4 samples in FY20.

Table 19 – Cow Branch Water Quality Results

DATE	FLO cfs	TOTFLO cubic feet	OP mg/L	TP mg/L	NH3_ N mg/L	TKN mg/L	NO2_ N mg/L	OX_ N mg/L	COD mg/L	BOD5 mg/L	TSS mg/L	FCOLI org/100m L	ECOLI org/100m L
Oct-19	29.99	1,500,000	<0.01	0.11	0.02	0.62	<0.01	0.25	18.2	3.2	76.0		
Oct-19	18.58	941,100	0.01	0.08	<0.01	0.53	0.01	0.26	20.2	6.0	37.7		
Dec-19	14.47	979,100	0.01	0.08	0.06	0.70	<0.01	0.23	19.2	5.1	60.0	1700	1550
Mar-20	15.83	719,600	<0.01	0.07	0.01	<0.50	<0.01	0.18	14.1	2.2	31.2		



Figure 14 – Long Term TSS trends in the Cow Branch Watershed

TSS shows a decreasing trend.

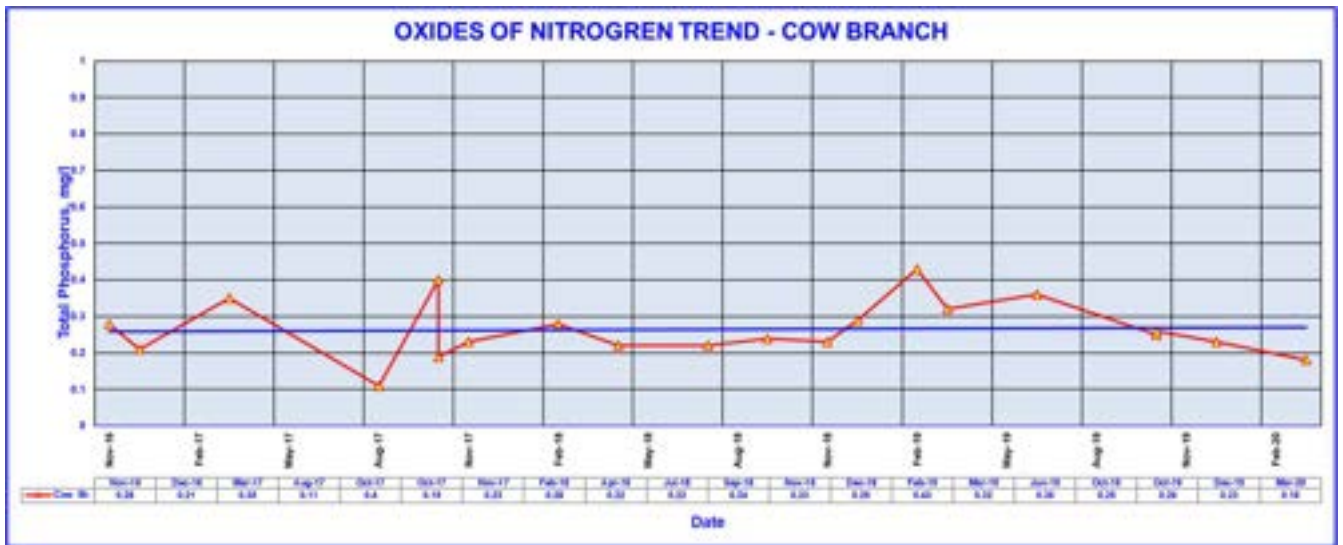


Figure 15 – Long Term Oxides of Nitrogen trends in the Cow Branch Watershed

Oxides of Nitrogen show a stable trend.

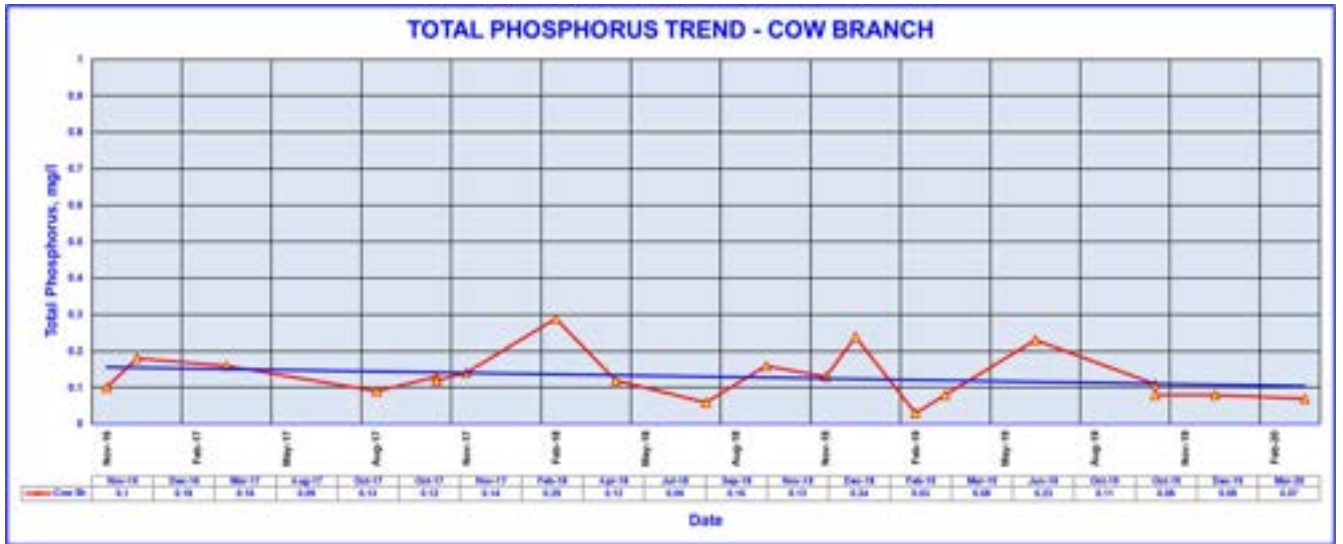


Figure 16 – Long Term Total Phosphorus trends in the Cow Branch Watershed

Total phosphorus appears to be on the decline since monitoring began.

e. Purcell Branch

The Purcell Branch Water Quality Monitoring Station was installed during FY16, and produced 4 samples in FY20.

DATE	FLO cfs	TOTFLO cubic feet	OP mg/L	TP mg/L	NH3_ N mg/L	TKN mg/L	NO2_ N mg/L	OX_N mg/L	COD mg/L	BOD5 mg/L	TSS mg/L	FCOLI org/ 100mL	ECOLI org/ 100mL
Oct-19	8.36	376,200	0.01	0.04	0.01	0.61	<0.01	0.24	34.4	9.0	12.0	2200	2610
Dec-19	11.87	538,400	0.01	0.06	0.01	0.82	<0.01	0.40	28.6	7.0	20.0		
Feb-20	16.8	1,448,000	0.02	0.06	0.03	0.66	<0.01	0.28	24.8	3.7	27.7	790	921
Apr-20	30.09	2,602,000	0.02	0.10	0.01	1.27	<0.01	0.25	35.8	4.4	61.2	3500	6130

No long term trends analysis is available for this site as not enough data points are available.

3. Floatables Solids Monitoring

The County has developed protocols for its Floatables Monitoring Program. The program began during FY17, with a pilot study used to complete the first round of monitoring during Q1. Monitoring will be completed at 5 sites throughout the County on a quarterly basis.

Table 20 – Floatable Monitoring from July-September 2020

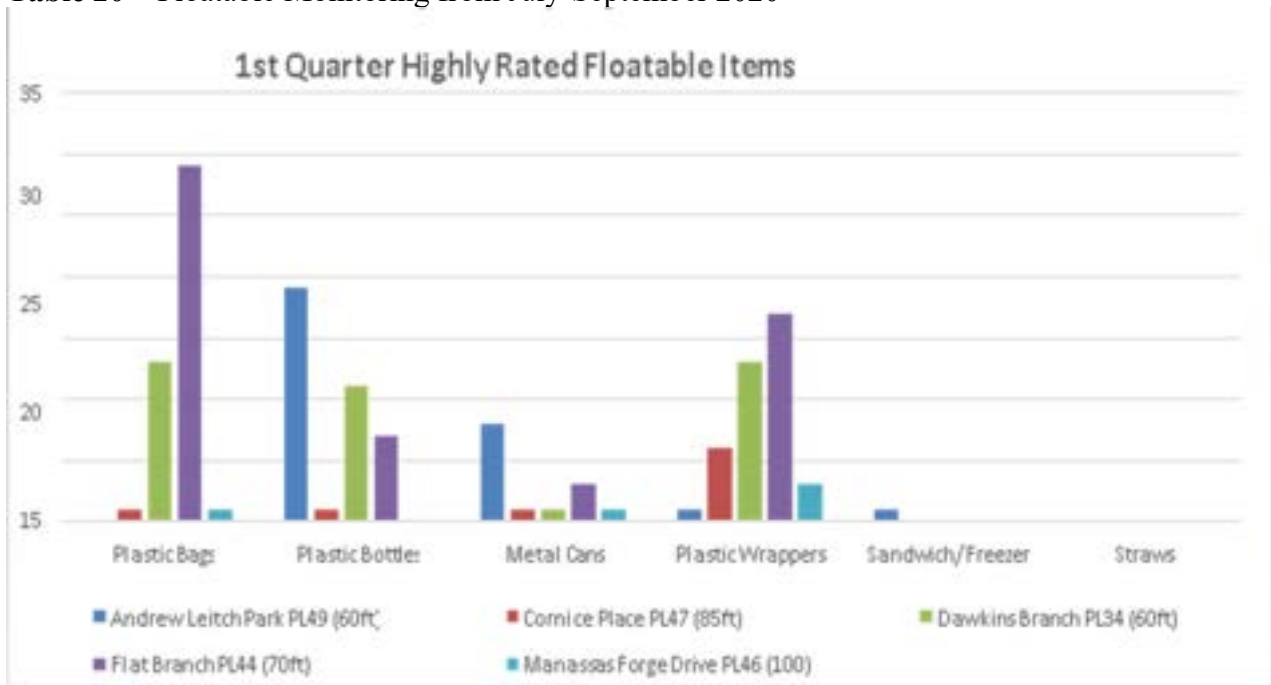


Table 21 – Floatable Monitoring from October-December 2020

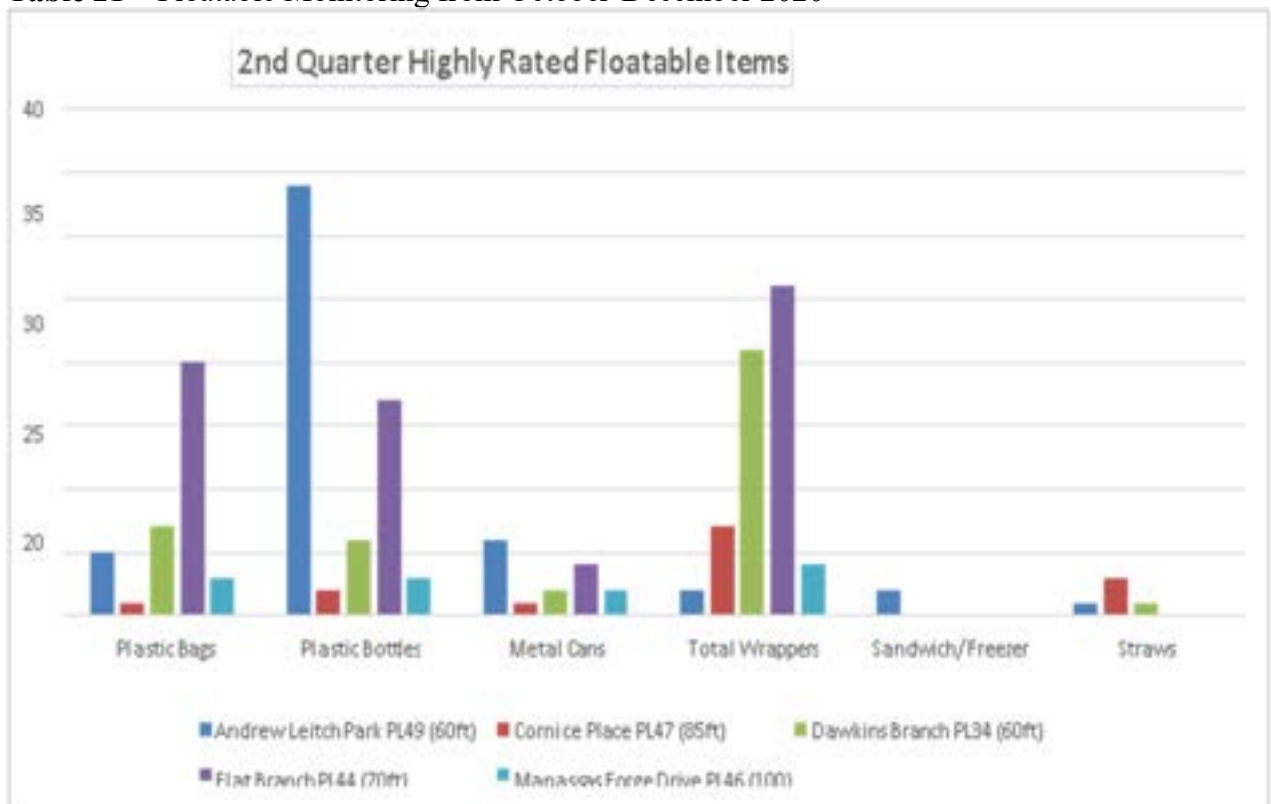


Table 22 – Floatable Monitoring from January-March 2020

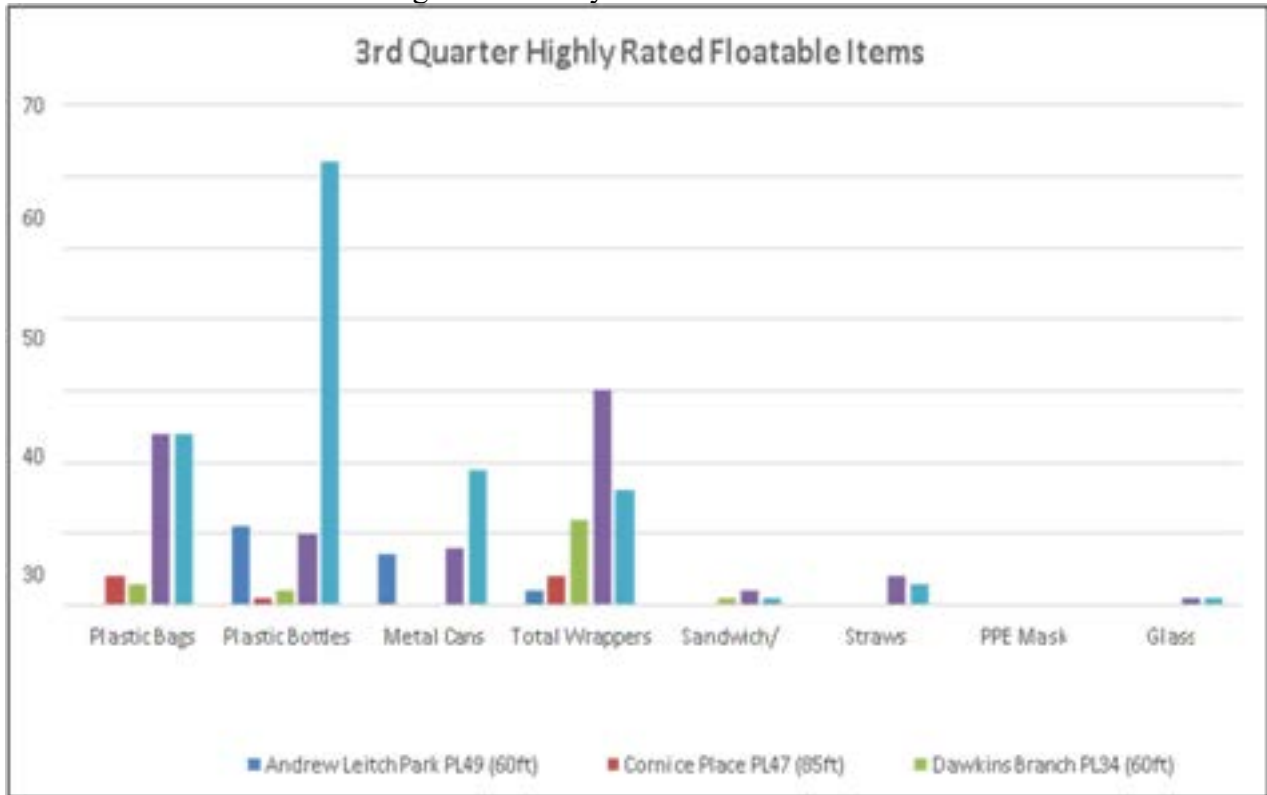
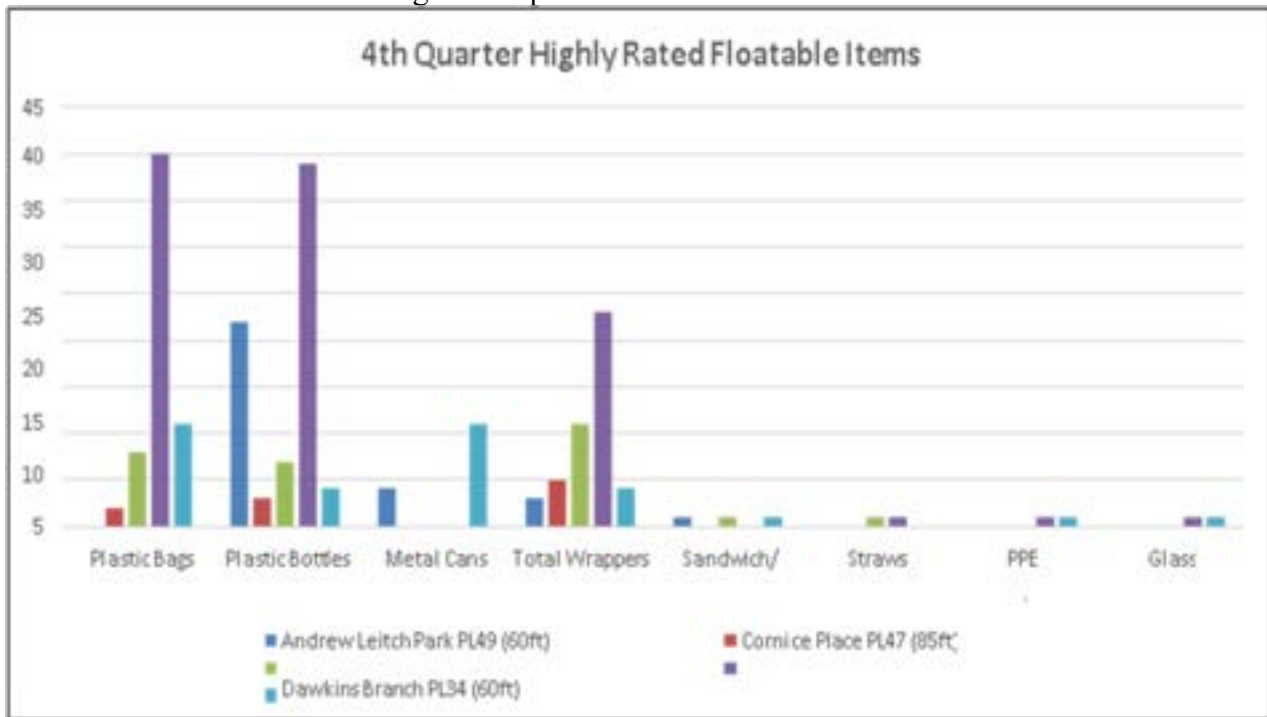


Table 23 – Floatable Monitoring from April-June 2020



The Prince William County Floatable Monitoring program which started in July 2016, has seen progress in applied techniques to help capture meaningful data that will support the County's Green Community Goals.

Every year, lessons and knowledge gained from the previous years are put in place to for a better for a better structure. For example, the 2019 report laid more emphases on plastic bags and plastic bottles from the list of dominant items recorded.

The 2020 report has gone further to added plastic wrappers, beverage cans and Personal Protective Equipment.(PPE). This is because there is need to learn more about micro plastics and its impact on water pollution. The COVID-19 pandemic is made PPE is a growing floatable item in waterways. It is important to examine this new PPE trend in waterways with the current virus crises.

In the 1st Quarter of the FY20, Flat Branch recorded the highest number of plastic bags (61%) and plastic wrappers (50%). While Andrew Leitch recorded the highest in plastic bottles and beverage cans. Manassas Forge and Cornice Place recorded the least number of floatable items, respectively. Dawkins branch recorded a high amount of all the plastics related items especially in the number of plastic wrappers which is more significant (See Figure 1, 1a,1b, 1c and 1d).

In the 2nd Quarter of FY20, the trend of floatable items recorded reflected the same trend as in the 1st Quarter. Flat Branch record the highest number of plastic bags followed by Andrew Leitch and Dawkins Branch. Andrew Leitch maintained its highest trend in both plastic bottles and beverage cans while Dawkin's Branch recorded the highest number of plastic wrappers.

Although Cornice Place showed a significant amount of low floatable items, the occurrence of straws is a significant item at the site (See Figure 2, 2a, 2b, 2c and 2d).

In the 3rd Quarter of the FY20, Manassas Forge recorded a high amount of all the top-rated floatable items, followed by Flat Branch and Andrew Leitch (See Figure 3, 3a, 3b, 3c and 3d).

The 4th Quarter data left Flat Branch, Andrew Leitch and Manassas Forge respectively at the top of the list with the most floatable items. Dawkin's Branch showed a significant number of plastic bags, bottles and wrappers. As often the case, Cornice Place recorded the lowest number of floatable items.

A significant occurrence of PPE (masks and gloves) was also noticed during this phase as recorded at Flat Branch and Manassas Forge. It becomes interesting to watch the trend of PPE items with the current COVID -19 environment (See Figure 4, 4a, 4b. 4c and 4d).

Conclusion

As Prince William County advances in floatable monitoring, the data collected is getting more meaning in addressing the growing challenges around water quality and plastic pollution.

Water pollution is an important topic relating to human vitality. Therefore, there is great need to promote this awareness for a sustainable Prince William County. This will also get more folks engage in building the County's Green Community Goals.

4. Structural and Source Controls Compliance Monitoring

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.

Prince William County maintains a program for the inspection and maintenance of permittee and privately maintained SWM/BMP facilities. More information on these inspection programs, and a list of newly constructed SWM facilities, can be found in section II.f of this document.

III. TMDL Action Plan Implementation

1. Chesapeake Bay Watershed TMDL Planning

Prince William County submitted the required Chesapeake Bay TMDL Action Plan (Action Plan) on December 16, 2016, which was subsequently approved on June 28, 2017. A copy of the approval letter is included in Appendix III. The 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 24. The table also identifies the percent of the L2 scoping run reductions that will be achieved after implementation of the Action Plan.

Table 24. 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, Dewey’s Creek Reach 2 stream restoration was completed, restoring 4,865 linear feet of stream channel and achieving the following reductions: 259.17 TN (lbs/yr), 292.81 TP (lbs/yr) and 52,283.42 TSS (lbs/yr). These reduction were previously reported in the FY19 Annual Report. In addition, the water quality retrofit of SWM Facility # 424 was completed in FY20 and the pollutant reductions as shown in Table 25.

Table 25. Pollutant Reductions Achieved During Reporting Period

Project Name	Project Type	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	TSS Reduction (lbs/yr)
SWM Facility #424	Retrofit	217.71	31.22	25,290.37
Total Reductions		217.71	31.22	25,290.37

For a project description, as well as before and after photographs of the project implemented this period, please refer to the next section. In addition, the updated reduction summary tables and associated reduction calculation worksheets are included as Appendix III.

Based on the reductions achieved through implementation of the above listed water quality improvement project and the previous reductions identified in the approved Action Plan, Table 26 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 the additional reductions will be applied toward the second permit cycle required reductions.

Table 26. 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)	6,580.80	217.71	6,798.51	33.9%
Total Phosphorus (TP)	1,414.83	31.22	1,446.05	65.5%
Total Suspended Solids (TSS)	808,766.02	25,290.37	834,056.39	46.2%

During the next reporting period, one project is planned for implementation. Please refer to Table 27 for the pollutant reductions associated with this project.

Table 27. Planned Projects for FY21 Implementation

Project Name	Project Type	TN Reduction (lbs/yr)	TP Reductions (lbs/yr)	TSS Reduction (lbs/yr)
SWM Facility #232	Retrofit	35.47	3.09	2,451.41
SWM Facility #386	Retrofit	284.51	35.84	27,611.25
Powells Creek Phase 1	Stream	200.14	181.46	119,764.84
Bristoe Station Battlefield Phase 3	Reforestation	64.44	3.42	1,196.64
Total		584.56	223.81	151,024.14

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.

SWM Facility #424

The water quality retrofit of SWM Facility #424 was completed in FY20 and entailed the conversion of a dry detention pond to a level 1, wet pond. The existing detention pond did not have a water quality BMP, lacked a sediment forebay as well as a micropool. The enhanced facility meets the level 1, wet pond standard with sediment forebay and micropool. The area treated is 92 acres and with 42% impervious surface area.

Before



After



Before



After



2. TMDL Action Plans other than the Chesapeake Bay TMDL

The County submitted Action Plans for bacteria, benthic, and PCB TMDL's in December of 2016. DEQ provided comments to the County on May 4th, 2018. The County provided responses to DEQ on June 29th, 2018. A copy of this response letter is included in Appendix III.

IV. Additional Reporting Requirements

1. Roles and responsibilities

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.

2. Non Compliance

There were no instances of non-compliance to record during the Reporting period.

3. Budget

Environmental Services Division - Watershed Management Branch FY20 Annual Budget Summary by Activity

Stormwater Infrastructure Management	\$	4,056,120
Site Development	\$	3,892,739
Watershed Improvement	\$	5,232,116
Total FY20 Expenditure Budget	\$	13,180,975

4. Permit Fees

Prince William County has not yet received an invoice for permit fees for FY21.

Appendix A – Construction Site Runoff and Post Construction Runoff

4. Clay Morris – Engineer III

Authority	Title	Certification #	Expiration

5. Julia Flanagan – Arborist

Authority	Title	Certification #	Expiration
International Society of Arboriculture	ISA-Certified Arborist	MA-0045A	6/30/2021
International Society of Arboriculture	TRAQ – Tree Risk Assessment Qualified	n/a	7/16/2020
Dept. of Conservation & Recreation	Urban Nutrient Management Planner	#772	2/28/2020

SITE INSPECTOR SUPERVISORS:

6. Vijay Dindigal – Site Inspection Program Manager

Authority	Title	Certification #	Expiration
Commonwealth of Va., State Water Control Board	Dual Program Administrator	DPA0139	11-12-22
Commonwealth of Va., Dept. of Professional and Occupational Regulation – Board for Architects, Professional Engineers – Land Surveyor License	Professional Land Surveyor License	0403002810	6-30-2020
Commonwealth of Va., Dept. of Professional and Occupational Regulation – Board for Architects, Professional Engineers – Professional Engineer License	Professional Engineer License	0402048764	6-30-2021
Virginia State Water Control Board	Dual Plan Reviewer	DPR0135	10-5-23

7. Robert Cook (West County Site Inspector Supervisor)

Authority	Title	Certification #	Expiration
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN05333	7-11-22
Commonwealth of Va., State Water Control Board	Program Administrator	374	5-31-22
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Inspector	1465	11-30-22
Va., DEQ	Stormwater Management (Basic)		10-30-22
Va., DEQ	Stormwater Management (Inspector)		5-20-22

8. Shawn Wray – East County Site Inspector Supervisor

Authority	Title	Certification #	Expiration
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0927	10-15-2021
Commonwealth of Va., State Water Control Board	Program Administrator for Erosion and Sediment Control	ESPA0257	11/8/22
Americans with Disabilities Act	All Employee Online Training 1- 13-17		
Commonwealth of Va., State Water Control Board	Stormwater Management (Inspector)	SWIN0360	10-15-21
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Inspector	3774	11-30-19
PWC Supervisor Equivalency Credit Program			Completed 12-14-16

SITE INSPECTORS:

9. Jalal Qaradaghi – Area 1 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0536	11-30-22
Commonwealth of Va., State Water Control Board	Stormwater Management Inspector	SWIN0871	11-2-19
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Inspector	3063	11-30-19

10. Stefan Gitchev – Area 2 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0535	10-3-22
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Inspector	ESIN0351	2-23-19

11. Arjun Dhungel – Area 3 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Erosion & Sediment Control Inspector	ESIN0591	3-18-23
Commonwealth of Va., State Water Control Board	Stormwater Management Inspector	SWIN1097	9-6-23
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Program Administrator	ESPA0253	11-1-22
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Plan Reviewer	ESPR0253	11-7-22

12. Doo Lee – Area 4 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0968	10-16-23
Commonwealth of Va., State Water Control Board	Stormwater Management Inspector	SWIN0580	2-18-19

13. Richmond Sagoe – Area 5 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Virginia, State Water Control Board	Dual Inspector	DIN1233	1-12-22
Commonwealth of Virginia, State Water Control Board	Stormwater Management Inspector	SWIN1560	1-12-22
Commonwealth of Virginia, State Water Control Board	Erosion and Sediment Control Inspector	ESIN0991	8-9-21

14. Philip Darko – Area 6A & 6B Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Stormwater Program Administrator	SWPA0214	8-4-21
Commonwealth of Va., State Water Control Board	Plan Reviewer for SWM		4-11-20
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0538	1-28-22
Commonwealth of Va., State Water Control Board	Stormwater Management (Inspector)	SWIN0528	1-28-19

15. Jeremiah Goodman – Area 6C Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Stormwater Management Program Administrator	SWPA0236	2-7-22
Commonwealth of Va., State Water Control Board	Stormwater Management Plan Reviewer	SWPR0335 VA DEQ 002127	7-13-21
Commonwealth of Va., State Water Control Board	Dual Combined Administrator	DCA0415	2-19-22
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control – Plan Reviewer	ESPR0197	11-5-21
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0537	11-28-19
Commonwealth of Va., State Water Control Board	Stormwater Management Inspector	SWIN0889	11-28-19
PWC Supervisor Equivalency Credit Program			Completed 8/30/2017

16. Brian Srey – Area 7 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN0306	2-23-22
Va., DEQ	Erosion and Sediment Control - Program Administrator		
Va., DEQ	Stormwater Management Program Administrator		

17. Michael “Mick” Tilley – Area 8 Site Inspector

<u>Authority</u>	<u>Title</u>	<u>Certification #</u>	<u>Expiration/Completion Date</u>
Commonwealth of Va., State Water Control Board	Erosion and Sediment Control Inspector	ESIN1224	3-13-22
Commonwealth of Va., State Water Control Board	Stormwater Management Inspector	SWIN1799	11-4-22
Commonwealth of Va., State Water Control Board	Dual Inspector	DIN1234	11-4-22
FRACO	Platform Erection	Cert. 00107000	Expiration 8/2023
OSHA Education Center and American Safety Council	OSHA 30 Hour	OEC1030-7047399	Graduation date 1/28/2018

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
CLARKE PROPERTY 07-00461R01S02 LND2014-00123	8193-82-5028 3709 OLD BRIDGE RD	MULLEN ENGINEERING PLLC	7033300407	6.830	01/22/2020
CHESTNUT HILL 13-00001R00S03 LND2014-00280	7897-33-6906 7627 CHESTNUT ST	COMSTOCK YORKSHIRE LC	5712388039	3.720	04/15/2020
FALLS GROVE SUBDIVISION 13-00034R00S03 LND2014-00281	7897-33-5770 7601 CHESTNUT ST	COMSTOCK HOMES OF WASHINGTON LC	7038831700	3.333	04/15/2020
MIDWOOD EAST - SWM 15-00045R00S01 LND2020-00116	7298-11-7292 15805 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE GROUP		4.120	10/07/2019
MIDWOOD WEST - SWM 15-00068R00S01 LND2020-00117	7298-12-7311 15805 JOHN MARSHALL HY HAYMARKET, VA 20169	PULTE GROUP		3.920	10/07/2019
CARTERS MILL - ROUTE 55 IMPROVEMENT SDR2018-00016 LND2020-00133	7298-12-7311 15805 JOHN MARSHALL HWY HAYMARKET, VA 20169	WILFONG, JONATHAN & STEPHANIE		9.920	11/12/2019
CARTERS MILL PH 1A SDR2018-00032 LND2020-00156	7298-12-7311 15805 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE GROUP		19.000	11/14/2019
BRIARWOOD IIB SDR2018-00047 LND2020-00210	8289-05-7697 3400 BRIARWOOD DR DUMFRIES, VA 22026	NVP INC	7033690691	5.100	03/03/2020
CARTERS MILL PH 1B SDR2018-00068 LND2020-00177	7298-42-4228 15505 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE HOME CORPORATION	7039349369	21.160	11/20/2019

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
MEADOWS AT SLATE RUN - EROSION CONTROL SDR2019-00002 LND2019-00224 LND2020-00226 LND2020-00254	7592-57-7342 13401 ADEN RD NOKESVILLE, VA 20181	ATLANTIC BUILDERS, LTD.	5408918540	3.050	02/04/2020
BRIGHTWOOD FOREST PH 3 SEC 1 SDR2019-00025 LND2020-00097 LND2020-00276	8291-30-1096 15255 BALLERINA LOOP WOODBIDGE, VA 22193	HYLTON ENTERPRISES INC	7035901111	32.800	08/20/2019
MAGNOLIA MEADOWS - EROSION CONTROL PLAN SDR2019-00034 LND2020-00053	7400-71-3987 3911 SANDERS LN CATHARPIN, VA 20143	SANDERS LANE LLC		9.800	08/08/2019
BRADLEY SQUARE SEC 10 SDR2019-00054 LND2020-00074	7794-99-4082 10425 GRANT AVE MANASSAS, VA 20110	STANLEY MARTIN HOMES	7039320071	12.650	09/02/2019
HARBOR STATION PH 2A SEC 3 SDR2019-00058 LND2020-00214	8289-86-5639 2500 POTOMAC RIVER BLVD DUMFRIES, VA 22026	HARBOR STATION COMMUNITIES	7035050796	0.200	03/24/2020
BEACON PARK TOWNS AT BELMONT BAY SEC 1 SDR2019-00061 LND2020-00205 LND2020-00266	8492-33-9511 610 WATERMANS DR WOODBIDGE, VA 22191	MILLER AND SMITH	703821250014	3.090	02/21/2020
POTOMAC SHORES TOWN CENTER LAND BAY 9 BLOCK 1 SDR2019-00068 LND2020-00078	8389-35-7828 17270 BRANCHED OAK RD DUMFRIES, VA 22026	HARBOR STATION COMMUNITIES, LLC	9492418466	0.030	08/12/2019
MIA'S MEADOW SDR2019-00076 LND2020-00182	8091-55-2400 14633 MINNIEVILLE RD WOODBIDGE, VA 22193	NVP INC	7033694993	15.720	12/26/2019

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
OLD DOMINION HUNT ESTATES SDR2020-00007 LND2020-00049	7794-79-7277 8868 OLD DOMINION HUNT CIR MANASSAS, VA 20110	STANLEY MARTIN HOMES	7039320071	11.750	08/07/2019
RICHMOND STATION LANDBAY B SEC 1 SDR2020-00009 LND2020-00154	7896-20-7838 9150 RICHMOND STATION DR MANASSAS, VA 20110	MILLER & SMITH AT RICHMOND STATION, LLC		8.560	12/11/2019
CURRIE FARM - MODEL HOME PARKING LOT SDR2020-00010 LND2020-00094	7297-37-9610 15539 CLOVERLAND LN HAYMARKET, VA 20169	SETTLE LAND LLC	7038871351	0.462	09/30/2019
RICHMOND STATION LANDBAY B SEC 2 SDR2020-00012 LND2020-00128	7896-30-5279 8160 QUARRY RD MANASSAS, VA 20110	SMITH ENGINEERING	7039566204	7.650	10/22/2019
CURRIE FARM - VIRGINIA CROSSING SDR2020-00015 LND2020-00216	7297-45-2481 7107 CURRIE FARM DR HAYMARKET, VA 20169	TIMBER RIDGE AT HAYMARKET LLC	7038871351	100.800	10/28/2019
WOODBORNE PRESERVE SDR2020-00016 LND2021-00020	7297-43-1982 15503 THOROUGHFARE RD GAINESVILLE, VA 20155	STANLEY MARTIN COMPANIES, LLC	7039645000	44.320	06/30/2020
BLACKBURN LANDBAY 2B SDR2020-00017 LND2020-00215	7597-80-8176 7531 BETHLEHEM RD MANASSAS, VA 20109	WALSH, COLUCCI, LUBELEY & WALSH, PC		9.250	02/24/2020
HUNTER AT HAYMARKET SDR2020-00019 LND2020-00191 LND2020-00218	7297-59-8225 6704 JAMES MADISON HWY HAYMARKET, VA 20169	TIMBER RIDGE MANAGMENT LLC	4438454146	10.900	03/17/2020

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
AMC ENTERPRISES STORAGE/OFFICE LOT SPR2017-00188 LND2020-00229	7597-12-1035 7874 DELINSKI WAY MANASSAS, VA 20109	AMC ENTERPRISES, LLC	7034776678	3.110	02/10/2020
MERIDIAN BAY APARTMENTS (FORMERLY FOX RUN APTS) SPR2017-00330 LND2021-00002	8290-52-1605 2944 FOX LAIR DR WOODBIDGE, VA 22191	JTD FOX RUN LTD	8044534974	4.780	04/21/2020
GRACE CHURCH SPR2017-00392 LND2020-00274	8189-67-8233 17150 VAN BUREN RD DUMFRIES, VA 22025	WALSH, COLUCCI, LUBELEY & WALSH, PC	7036804664	12.240	05/14/2020
BETHLEHEM ROAD - STORAGE YARD SPR2018-00068 LND2020-00095	7597-72-7231 7512 BETHLEHEM RD MANASSAS, VA 20109	M&F CONCRETE INC.	5713798761	15.860	09/30/2019
DUMFRIES ROAD SIDEWALK- COUNSEL DR TO TAYLOE DR SPR2018-00102 LND2020-00051	7892-56-9634 13405 DUMFRIES RD MANASSAS, VA 20112	PRINCE WILLIAM COUNTY TRANSPORTATION	7037926347	0.640	07/08/2019
OPITZ BOULEVARD SIDEWALK - PI SPR2018-00129 LND2020-00175	8391-06-6615 14575 POTOMAC BRANCH DR WOODBIDGE, VA 22191	PRINCE WILLIAM COUNTY TRANSPORTATION	7037925276	0.430	12/19/2019
RIPPON CENTER SPR2018-00215 LND2020-00197	8390-89-3527 15524 FARM CREEK DR WOODBIDGE, VA 22191	PK BIG CRIST LEAN LLC		9.440	02/05/2020
CARTERS MILL ROUTE 55 - EARLY GRADING SPR2018-00339 LND2019-00032	7298-12-7311 15805 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE GROUP	7039349369	7.850	11/04/2019
ANNAPOLIS WAY APARTMENTS - PI SPR2018-00412	8492-08-4286 1101 ANNAPOLIS WAY WOODBIDGE, VA 22191	BUSH CONSTRUCTION CORP		5.850	03/27/2020

Land Plans with Disturbed Area that have Land Permits Issued
07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2020-00157					
CHICK-FIL-A AT SUDLEY MANOR DR SPR2019-00013	7697-30-3786 10677 SUDLEY MANOR DR MANASSAS, VA 20109	CHICK-FIL-A INC	4043057623	0.430	07/10/2019
LND2020-00035					
PANERA BREAD AT CROSSING WEST SHOPPING CENTER SPR2019-00036	8292-93-2055 2400 PRINCE WILLIAM PKWY WOODBIDGE, VA 22192	PANERA LLC		1.100	07/01/2019
LND2020-00085					
7-ELEVEN AT SUDLEY ROAD AND LOMOND DRIVE SPR2019-00064	7696-49-2558 10601 LOMOND DR MANASSAS, VA 20109	7-ELEVEN, INC	9728284930	1.130	10/07/2019
LND2020-00225					
RAMINPOUR AUTO SALES SPR2019-00072	8290-88-5838 15620 JEFFERSON DAVIS HWY WOODBIDGE, VA 22191	ARLINGTON MOTORS		0.770	07/17/2019
LND2020-00091					
POSSUM PT PWR STA PONDS ABC&E CLOSURE BY REMOVAL SPR2019-00092	8288-96-2368 19000 POSSUM POINT RD DUMFRIES, VA 22026	DOMINION ENERGY		98.500	03/09/2020
LND2020-00079					
LND2020-00269					
POSSUM POINT - OILY WATER BASIN SPR2019-00145	8288-96-2368 19000 POSSUM POINT RD DUMFRIES, VA 22026	GOLDER ASSOCIATES INC	8043487900	0.140	09/10/2019
LND2020-00044					
POTOMAC SHORES - ATHLETIC FIELDS SPR2019-00165	8289-91-8537 2400 RIVER HERITAGE BLVD DUMFRIES, VA 22026	ARGENT MANAGEMENT	7039671572	28.300	12/11/2019
LND2020-00253					
HAYMARKET JUNCTION SELF STORAGE CENTER SPR2019-00166	7298-61-4312 15345 JOHN MARSHALL HWY HAYMARKET, VA 20169	1555VA LLC	7033890253	11.240	02/24/2020
LND2020-00206					

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
TEXAS ROAD HOUSE AT POTOMAC FESTIVALS SPR2019-00175 LND2020-00084	8291-76-1385 14609 POTOMAC MILLS RD WOODBIDGE, VA 22192	RAPPAPORT	5713821238	0.420	07/15/2019
PRINCE WILLIAM COMMERCE CENTER PH 2 SPR2019-00181 LND2020-00120	7895-24-5376 9845 LIBERIA AVE MANASSAS, VA 20110	PROGRESSIVE INVESTMENTS		16.100	09/30/2019
JNBS HOLDINGS SPR2019-00182 LND2020-00188	8193-21-0235 12740 BLACK FOREST LN WOODBIDGE, VA 22192	JNBS HOLDINGS LLC	7036253340	0.430	11/04/2019
CHERRY HILL COMMUNITATIONS TOWER SPR2019-00211 LND2020-00100	8388-17-9370 18260 COCKPIT POINT RD DUMFRIES, VA 22026	PWC FIRE & RESCUE	7037926388	0.100	10/07/2019
PRINCE WILLIAM COUNTY ANIMAL SHELTER SPR2019-00216 LND2020-00213	7991-09-6721 14811 DUMFRIES RD MANASSAS, VA 20112	PWC PUBLIC WORKS FACILITIES CONSTRUCTION	7037926674	6.000	11/19/2019
JAMES MADISON BUSINESS PARK - MEMORY CARE FACILITY SPR2019-00228 LND2020-00041	7297-01-9920 7775 JAMES MADISON HWY GAINESVILLE, VA 20155	GAINESVILLE VA SENIOR REALTY LLC	7038015848	5.160	07/11/2019
GARFIELD HIGH SCHOOL AUXILIARY GYMNASIUM ADDITION SPR2019-00231 LND2020-00194	8292-40-2562 14000 SMOKETOWN RD WOODBIDGE, VA 22192	PRINCE WILLIAM COUNTY SCHOOL BOARD	7037917308	1.420	10/28/2019
PARKWAY 66 SPR2019-00241 LND2020-00118	7597-03-6372 7413 CUSHING RD MANASSAS, VA 20109	MATAN AQUISITIONS 2, LLC	3016949200	12.440	10/17/2019
WOODBIDGE HIGH SCHOOL - AUXILIARY GYM ADDITION SPR2019-00245	8293-43-3723 3001 OLD BRIDGE RD WOODBIDGE, VA 22192	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037917308	1.160	10/28/2019

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2020-00193					
PRINCE WILLIAM COMMERCE CENTER SPR2019-00246	7895-25-7088 9775 LIBERIA AVE MANASSAS, VA 20110	PROGRESSIVE INVESTMENTS		1.650	10/01/2019
LND2020-00132					
JOHN JENKINS PARK SPR2019-00251	8192-45-4901 13499 HILLENDALE DR WOODBIDGE, VA 22193	PRINCE WILLIAM COUNTY PARKS & RECREATION	7037924217	0.170	08/06/2019
LND2020-00059					
TNL SQUARE SPR2019-00253	7897-26-7519 7216 CENTREVILLE RD MANASSAS, VA 20111	TNL SQUARE LLC		0.459	12/17/2019
LND2020-00064					
HARPERS STATION LOT 10A SPR2019-00264	7297-11-5315 15901 LOVES MILL LN GAINESVILLE, VA 20155	SAGE DEVELOPMENT GROUP	8502388526	7.560	09/16/2019
LND2020-00115					
HOADLY ROAD RETAIL CENTER SPR2019-00267	8093-72-5347 12869 GALVESTON CT MANASSAS, VA 20112	ESCAPE SALON AND DAY SPA 3, INC	5714329229	0.310	07/22/2019
LND2020-00199					
KAISER PERMANENTE SOUTH NORTHERN VIRGINIA HUB SPR2019-00269	8292-65-4454 13285 MINNIEVILLE RD WOODBIDGE, VA 22192	KAISER FOUNDATION HEALTH PLAN	3015526700	10.600	10/17/2019
LND2020-00160					
APPLE FEDERAL CREDIT UNION AT LAKE RIDGE SPR2019-00276	8192-59-3296 4201 OLD BRIDGE RD WOODBIDGE, VA 22192	APPLE FEDERAL CREDIT UNION	7037884860	1.750	07/17/2019
LND2020-00062					
SHEETZ @ NOBLE POND SPR2019-00280	8292-31-5455 3300 NOBLE POND WAY WOODBIDGE, VA 22193	SHEETZ, INC		2.690	11/18/2019
LND2020-00142					

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
JIFFY LUBE LIVE MERCHANDISE KIOSK SPR2019-00289 LND2020-00003	7497-30-1758 7800 CELLAR DOOR DR BRISTOW, VA 20136	NVA CONTRACTING - NOVA BUILD GROUP	7032016026	0.110	07/01/2019
BEL AIR MOBILE HOME PARK SPR2019-00295 LND2020-00146	8391-49-6753 1800 BEL AIR RD WOODBIDGE, VA 22191	A.J. DWOSKIN & ASSOCIATES	7032739320	0.055	08/08/2019
MILESTONE - T-MOBILE @ WOODBRIDGE HIGH SCHOOL SPR2019-00303 LND2020-00023	8293-43-3723 3001 OLD BRIDGE RD WOODBIDGE, VA 22192	MILESTONE TOWER LIMITED PARTNERSHIP IV D.B.A. MILESTONE COMMUNICATIONS	7038654697	0.150	07/22/2019
MONTCLAIR - RETAINING WALL REPLACEMENT SPR2019-00308 LND2020-00228	8191-50-3644 15449 CLIFFVIEW DR DUMFRIES, VA 22025	NOB HILL FOREST TOWNHOME ASSOC	7036702376	0.050	04/10/2020
STONEWALL MIDDLE SCHOOL PARKING LOT ADDITION SPR2019-00310 LND2020-00124	7697-70-8563 10100 LOMOND DR MANASSAS, VA 20109	PRINCE WILLIAM COUNTY SCHOOL BOARD	7037917308	1.180	10/03/2019
PWC MCOART BUILDING - OWENS SPR2019-00316 LND2020-00092	8193-02-7682 5 COUNTY COMPLEX CT WOODBIDGE, VA 22192	PWC PUBLIC WORKS	7037926386	0.010	07/09/2019
MOUNT HIGH PARCEL A-8 SPR2019-00327 LND2020-00190	8393-52-2577 12603 HALL ST WOODBIDGE, VA 22192	IBRAHIMI, ABDULHADI		0.172	12/03/2019
PROJECT BB SPR2019-00332 LND2020-00032	7696-21-7764 9000 FREEDOM CENTER BLVD MANASSAS, VA 20110	MANASSAS NCP LLC	3038939500	16.750	07/23/2019
MOUNTAIN VIEW ELEMENTARY SCHOOL SPR2019-00349	7398-18-2499 5600 MCLEOD WAY HAYMARKET, VA 20169	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037818717	0.270	07/08/2019

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2020-00105					
BROAD RUN INDUSTRIAL PARK LOT 2D - EARLY GRADING SPR2019-00350 LND2020-00033	7595-59-7124 9341 INDUSTRIAL CT MANASSAS, VA 20109	SUNRISE SITE DEVELOPMENT INC	7033691011	5.360	07/11/2019
CLOVERDALE PARK - PEDESTRIAN BRIDGE SPR2019-00352 LND2020-00163	8291-01-2650 15150 CLOVERDALE RD WOODBIDGE, VA 22193	PWC PARKS & RECREATION	703-792-4217	0.885	06/30/2020
INNOVATION - ATCC - PARKING LOT EXPANSION SPR2019-00354 LND2020-00099	7695-28-5256 10801 UNIVERSITY BLVD MANASSAS, VA 20110	RINKER DESIGN ASSOCIATES PC	7033687373	0.730	09/09/2019
INDEPENDENT HILL BARRACKS 1 & 2 SPR2019-00356 LND2020-00171	7891-63-1898 14800 JOPLIN RD MANASSAS, VA 20112	PWC PUBLIC SCHOOLS	7037917308	0.210	11/13/2019
FOREST PARK HS - STORAGE BUILDING SPR2019-00361 LND2020-00039	8090-78-1048 15721 FOREST PARK DR WOODBIDGE, VA 22193	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037917308	0.031	07/18/2019
MIDWOOD CENTER I SPR2019-00363 LND2020-00107	7298-41-4524 15411 JOHN MARSHALL HY HAYMARKET, VA 20169	LANDSERVICES DEVELOPMENT CORP	7037547700	36.220	10/08/2019
PARKSIDE MIDDLE SCHOOL STORAGE BUILDING SPR2019-00365 LND2020-00038	7896-05-3215 8602 MATHIS AVE MANASSAS, VA 20110	PWC PUBLIC SCHOOLS	5712441545	0.031	07/18/2019
HAYMARKET JUNCTION SELF STORAGE CTR EARLY GRADING SPR2019-00373 LND2020-00113	7298-61-2713 15345 JOHN MARSHALL HWY HAYMARKET, VA 20169	1555VA LLC	7033890253	8.970	09/10/2019

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
MARSHALLS AT BULL RUN PLAZA SPR2019-00383 LND2020-00164	7697-21-9518 10630 SUDLEY MANOR DR MANASSAS, VA 20109	BOHLER ENGINEERING	5403494500	2,400.000	10/15/2019
TRUE SHRED LOT 1-A-1-B-2 SPR2019-00392 LND2020-00271	7597-02-4482 12321 RANDOLPH RIDGE LN MANASSAS, VA 20109	ST. DOMINIC, LLC	8887508783	1.110	02/05/2020
HAMMILL MILL PARK IMPROVEMENTS SPR2019-00393 LND2020-00089	8392-47-0558 1723 CARTER LN WOODBIDGE, VA 22191	PWC PARKS & RECREATION	5713242340	0.930	11/13/2019
GEORGE HELLWIG MEMORIAL PARK SPR2019-00395 LND2020-00006	7891-37-1504 14420 BRISTOW RD MANASSAS, VA 20112	PWC PARKS & RECREATION	5713242340	0.016	07/03/2019
AVANTI @ INNOVATION - GRADING (PHASE 1) SPR2019-00397 LND2020-00047	7595-76-7903 9604 HORNBAKER RD MANASSAS, VA 20109	TPC HORNBAKER	7036317518	72.780	07/30/2019
SNVMC PET PAD AT SENTARA/POTOMAC HOSPITAL SPR2020-00001 LND2020-00088	8391-06-1497 2280 OPITZ BLVD 100 WOODBIDGE, VA 22191	POTOMAC HOSPITAL CORP OF PRINCE WM		0.050	09/17/2019
WOODBINE PRESCHOOL SPR2020-00012 LND2020-00170	7892-57-7449 13225 CANOVA DR MANASSAS, VA 20112	PRINCE WILLIAM COUNTY SCHOOL BOARD	7037917308	0.110	08/07/2019
ATCC ADMINISTRATIVE WING EXPANSION SPR2020-00017 LND2020-00083 LND2020-00104	7695-28-5256 10801 UNIVERSITY BLVD MANASSAS, VA 20110	ATCC	7033652755	1.290	10/11/2019

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
PAVILION DEVELOPMENT SPR2020-00030 LND2020-00086 LND2020-00126	7595-93-8025 11015 NOKESVILLE RD MANASSAS, VA 20110	PAVILION DEVELOPMENT COMPANY	7049445962	3.700	09/23/2019
LEONARD BUILDINGS & TRUCK ACCESSORIES SPR2020-00036 LND2020-00143	7696-57-3492 8136 SUDLEY RD MANASSAS, VA 20109	LEONARD BUILDINGS & TRUCK ACCESSORIES	5408169858	0.290	10/28/2019
VIRGINIA SOCCER ASSN. BLDG. @ JAMES S. LONG PARK SPR2020-00050 LND2020-00187	7399-04-0983 4693 JAMES MADISON HWY HAYMARKET, VA 20169	DEPARTMENT OF PARKS AND RECREATION	7037924217	0.410	12/31/2019
FREESTATE FARMS LLC SPR2020-00074 LND2020-00127	7497-91-4658 13000 BALLS FORD RD MANASSAS, VA 20109	FREESTATE FARMS LLC	7035424540	15.880	11/06/2019
PATRIOT BUSINESS CENTER PH 1 BLDG B SPR2020-00078 LND2020-00108	7597-42-1456 11800 BREWERS SPRING RD MANASSAS, VA 20109	W E BOWERS & ASSOCIATES INC	2403755988	0.110	08/29/2019
MANASSAS CORPORATE CENTER DATA CENTER BLDG 2 SPR2020-00080 LND2020-00192	7694-87-3694 10100 HARRY J PARRISH BLVD MANASSAS, VA 20110	BOURZOU VENTURES, LLC	7033934000	21.700	01/27/2020
FORTUNA CENTER PLAZA - BANK OF AMERICA ATM SPR2020-00089 LND2020-00152	8190-62-6732 4418 FORTUNA CENTER PLZ DUMFRIES, VA 22025	MOSAIC FORTUNA OWNER LLC		0.010	11/15/2019
MILESTONE - T-MOBILE @ STONEWALL MIDDLE SCHOOL SPR2020-00094 LND2020-00167	7697-70-8563 10100 LOMOND DR UAN001 MANASSAS, VA 20109	MILSTONE COMMUNICATIONS	7038654697	0.210	01/14/2020

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
MIDWOOD CENTER I SPR2020-00097 LND2020-00189	7298-41-4524 15425 JOHN MARSHALL HWY HAYMARKET, VA 20169	EE REED CONSTRUCTION EAST COAST LLC	7039250700	36.220	02/20/2020
NOVEC MINNIEVILLE KIOSK SPR2020-00105 LND2021-00018	8091-96-6561 14500 MINNIEVILLE RD WOODBIDGE, VA 22193	NORTHERN VIRGINIA ELECTRIC COOPERATIVE	7033951592	0.046	10/29/2019
VIRGINIA MEADOWS LOT 16A SPR2020-00110 LND2020-00247	7596-26-8037 8461 VIRGINIA MEADOWS DR MANASSAS, VA 20109	BECKNELL INDUSTRIAL LLC	7084439300	0.650	12/10/2019
BRICKYARD - BUILDING A & E SPR2020-00116 LND2020-00174	7695-62-8723 10201 TANNER WAY MANASSAS, VA 20110	VADATA, INC		90.170	01/10/2020
PRINCE WILLIAM WINERY LLC SPR2020-00117 LND2020-00233	7199-43-4890 4970 ANTIOCH RD HAYMARKET, VA 20169	BULL RUN BUILDERS, LLC	7038879482	0.998	04/01/2020
BRIARWOOD IIA SPR2020-00142 LND2020-00159	8289-15-4457 3520 BRIARWOOD DR	NVP INC	7033690691	7.260	01/09/2020
PATRIOT BUSINESS CENTER PH 1 SPR2020-00149 LND2020-00122	7597-42-2107 11801 BREWERS SPRING RD MANASSAS, VA 20109	SYTE CORPORATION	7732765192	0.010	11/01/2019
AT&T @ JAMES MADISON / SAWGRASS - FA 12924966 SPR2020-00156 LND2020-00136	7399-04-0983 4603 JAMES MADISON HWY HAYMARKET, VA 20169	SMARTLINK, LLC	4436151773	0.010	11/05/2019
EQUINIX DC14 FIRELINE SPR2020-00158 LND2020-00273	7697-47-7005 7400 INFANTRY RIDGE RD MANASSAS, VA 20109	EQUINIX	7037262401	0.054	04/01/2020

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
BRENTSVILLE HIGH SCHOOL SPR2020-00159 LND2020-00180	7493-86-8825 12109 ADEN RD NOKESVILLE, VA 20181	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037917308	0.150	12/03/2019
POTOMAC SHORES - TEMPORARY OFFICE TRAILER SPR2020-00171 LND2020-00255	8389-44-9146 1740 DUNNINGTON PL DUMFRIES, VA 22026	ARGENT MANAGEMENT LLC	5719316265	0.460	05/07/2020
RIVERGATE PH 2 BUILDING 2 SPR2020-00181 LND2021-00022	8492-18-1453 1000 ANNAPOLIS WAY WOODBIDGE, VA 22191	RIVERGATE PHASE II LLC	7035587300	6.450	06/15/2020
CARTERS MILLS PH 1A - SALES TRAILER SPR2020-00183 LND2020-00169	7298-11-7292 15805 JOHN MARSHALL HWY HAYMARKET, VA 20169	PULTE GROUP		0.500	01/03/2020
SOUTHPOINT BUSINESS CENTER SPR2020-00184 LND2020-00222	7596-17-3979 7060 WELLINGTON RD MANASSAS, VA 20109	DC-12-14 DE, LLC	7036733449	29.150	04/09/2020
PARKWAY 66 SPR2020-00189 LND2020-00246	7597-03-6372 7413 CUSHING RD MANASSAS, VA 20109	MATAN PARKWAY 66 LLC	3018159984	12.560	04/16/2020
SHEETZ @ SUDLEY MANOR DRIVE SPR2020-00190 LND2020-00179	7696-29-3086 11774 SUDLEY MANOR DR MANASSAS, VA 20109	D.F. OSBORNE CONSTRUCTION, INC	7856085190	0.001	01/09/2020
VIRGINIA MEADOWS - LOT 15 SPR2020-00191 LND2020-00258	7596-26-3446 7258 WELLINGTON RD MANASSAS, VA 20109	BECKNELL INDUSTRIAL LLC	7084439300	8.620	04/20/2020

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
BETHLEHEM ROAD - STORAGE YARD SPR2020-00197 LND2020-00251	7597-72-7231 7512 BETHLEHEM RD MANASSAS, VA 20109	EURO GROUP LLC	5712200185	15.730	05/11/2020
FOREST PARK HIGH SCHOOL - STADIUM TURF CONVERSION SPR2020-00209 LND2021-00027	8090-78-1048 15721 FOREST PARK DR WOODBIDGE, VA 22193	WETLAND STUDIES AND SOLUTIONS INC	7036795600	3.320	03/10/2020
TEXAS ROAD HOUSE AT POTOMAC FESTIVALS SPR2020-00215 LND2020-00155	8291-76-1385 14609 POTOMAC MILLS RD WOODBIDGE, VA 22192	BOHLER ENGINEERING	5403494500	0.420	01/10/2020
BATTLEFIELD HIGH SCHOOL - TURF FIELD CONVERSION SPR2020-00218 LND2021-00026	7399-02-2640 15050 GRADUATION DR HAYMARKET, VA 20169	WETLAND STUDIES AND SOLUTIONS INC	7036795600	3.320	03/05/2020
QUANTICO CENTRE - EARLY GRADING SPR2020-00224 LND2021-00031	8189-68-5008 16826 DUMFRIES RD DUMFRIES, VA 22025	QUANTICO CENTRE LLC	7035035555	5.560	06/23/2020
LAKE RIDGE PARK MARINA DOCKS SPR2020-00228 LND2020-00158	8293-08-2987 12380 COTTON MILL DR WOODBIDGE, VA 22192	PWC PARKS & RECREATION	7037924234	0.210	03/19/2020
BUILDING VA2B1 SPR2020-00236 LND2021-00010	7596-56-3489 11650 HAYDEN RD MANASSAS, VA 20109	KH DATA CAPITAL DEVELOPMENT LAND, LLC	2012479751	13.510	06/12/2020
IGLESIA DEL NOMBRE DE JESUS SPR2020-00237 LND2020-00240	8188-63-8780 18701 OLD TRIANGLE RD TRIANGLE, VA 22172	CRUZ, OMAR & ESTER		0.013	04/23/2020
STONEWALL JACKSON HIGH SCHOOL SPR2020-00247	7696-53-0246 8820 RIXLEW LN MANASSAS, VA 20109	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037917308	0.290	05/11/2020

Land Plans with Disturbed Area that have Land Permits Issued
07/01/2019 Through 06/30/2020

Plan Name / Plan Number / Permit Number	Parcel Number / Address	Developer / Owner	Phone	Disturbed Area	Plan Approval Date
LND2020-00245					
STONEWALL HIGH SCHOOL SPR2020-00256	7696-53-0246 8820 RIXLEW LN MANASSAS, VA 20109	PWC SCHOOL BOARD		0.030	02/13/2020
LND2020-00184					
VIRGINIA CROSSING (CURRIE FARM) - TEMP PARKING LOT SPR2020-00268	7297-57-3553 7005 SAINT HILL CT HAYMARKET, VA 20169	DREES	7033661541	0.200	03/16/2020
LND2020-00238					
AIRPORT GATEWAY COM CTR I & II - MANASSAS CORP CTR SPR2020-00271	7694-84-3044 10951 AIRMAN AVE MANASSAS, VA 20112	CLOUD HQ	2026790683	90.760	06/10/2020
LND2021-00033					
MIAS MEADOW - TEMPORARY PARKING LOT SPR2020-00276	8091-55-1332 14874 HEATHER BLOOM DR WOODBIDGE, VA 22193	NVP INC.	7033094238	0.200	03/16/2020
LND2020-00224					
BEACON PARK TOWNS - EARLY GRADING SPR2020-00280	8492-33-9511 611 WATERMANS DR WOODBIDGE, VA 22191	BLOCKS J&K, LLC	7036153565	18.050	04/09/2020
LND2020-00257					
SHEETZ @ CATON HILL ROAD SPR2020-00284	8292-84-4450.00 2500 CATON HILL RD WOODBIDGE, VA 22192	D.F. OSBORNE CONSTRUCTION, INC	7858622100	0.010	04/16/2020
LND2020-00230					
MARKET SQUARE AT DOMINION VALLEY - ADA SPR2020-00291	7299-71-8564 5200 MERCHANTS VIEW SQ HAYMARKET, VA 20169	RAPPAPORT	5713821238	0.010	04/16/2020
LND2020-00252					
UNITED BANK AT MANAPORT PLAZA SPR2020-00311	7696-77-3723 8323 SUDLEY RD MANASSAS, VA 20109	UNITED BANK	7032194836	0.057	04/13/2020
LND2020-00268					

Land Plans with Disturbed Area that have Land Permits Issued

07/01/2019 Through 06/30/2020

<u>Plan Name / Plan Number / Permit Number</u>	<u>Parcel Number / Address</u>	<u>Developer / Owner</u>	<u>Phone</u>	<u>Disturbed Area</u>	<u>Plan Approval Date</u>
WELLINGFORD INDUSTRIAL PARK LOT 6A SPR2020-00323 LND2020-00256	7596-29-9291 11995 LIVINGSTON RD NANASSAS, VA 20109	11995 LIVINGSTON LLC	7038031400	2.300	05/21/2020
DR A J FERLAZZO BUILDING SPR2020-00331 LND2020-00223	8290-76-8095 15941 DONALD CURTIS DR WOODBIDGE, VA 22191	PWC PROPERTY MANAGEMENT	7034796419	0.020	04/17/2020
MERRITT I-66 BUSINESS PARK SPR2020-00335 LND2021-00028	7597-25-1404 7370 MERRITT PARK DR MANASSAS, VA 20109	MERRITT CONSTRUCTION SERVICES	7038582725	43.500	06/18/2020
JAMES MADISON MARKET PLACE SPR2020-00346 LND2020-00260	7298-52-5158 15410 JOHN MARSHALL HWY HAYMARKET, VA 20169	HOME DEPOT USA, INC	7703844442	23.330	06/09/2020
CHINN LIBRARY PARKING ADA IMPROVEMENTS SPR2020-00369 LND2020-00250	8192-69-1531 13065 CHINN PARK DR WOODBIDGE, VA 22192	PWC PROPERTY MANAGEMENT	7034796419	0.130	06/02/2020

Total Number of Land Plans: 139

Total Number of Disturbed Acres: 3,778.802


END OF REPORT

Appendix B – Retrofitting on Prior Developed Lands


Appendix C - Roadways



Standard Operating Procedure
Department of Public Works
Buildings and Grounds

Title:	Grounds Maintenance Supervisor Manual
Number:	2.037.1
Subject:	Adoption of the Grounds Maintenance Supervisor Manual
Cross Reference:	APWA Management Practice <u>Chapters 19,26 & 34</u>
Date Issued:	December 14, 2015
Date Revised:	December 14, 2015
Date Last Reviewed:	February 28, 2012
Signature of Issuer:	 Robert M. Weiss, Buildings and Grounds Division Chief
Applicability:	Buildings and Grounds
Effective Date:	December 14, 2015



	SOP Title: Ground Maintenance Supervisor Manual	SOP No.: 2.037.1
	Effective Date: 12/14/2015	Supersedes Policy Dated: 2/28/2012

- A. **Purpose**
The purpose of this Standard Operating Procedure (SOP) is to adopt the Grounds Maintenance Supervisor Manual, referred to here after as the Manual. The Manual encompasses many of the operational procedures and business practices of the Grounds staff and the Division’s snow removal procedures.
- B. **Applicability**
This SOP is applicable to the employees within the Buildings & Grounds Division.
- C. **Manual Adoption**
This manual formally adopts the Grounds Maintenance Supervisor Manual.
- D. **Authority**
Any deviations or changes to or from this SOP must be approved by the Buildings & Grounds Division Chief.
- E. **Administration**
Administration of this SOP shall be the responsibility of the Buildings & Grounds Division Chief.



GROUNDS MAINTENANCE SUPERVISOR MANUAL

**Department of Public Works
Buildings & Grounds Division
Prince William County, Virginia
December 1, 2015**



This manual is updated as needed with the input of grounds maintenance workers. Grounds maintenance practices and processes are evaluated and assessed to determine the most efficient and effective means of accomplishing the County's mission of keeping exterior grounds safe while embracing the Vision to make our community the best.

TABLE OF CONTENTS

SECTION	APWA CROSS REFERENCE	PAGE #
1. PURPOSE STATEMENT	19.1 & 26.1	5
2. GOALS / MISSION / FUNCTIONS		5
3. B&G DIVISION POINT OF CONTACT LISTING		6
4. NEW EMPLOYEE INFO		7
5. REPORTS		9
a. Performance Measures		9
b. Winter Shelter Costs		9
6. PAYROLL		9
a. Time Sheets & Request for Leave		10
b. Authorization of Overtime		10
c. Pay advices		10
7. MEETINGS		10
a. B&G Management Staff		10
b. Quarterly		10
8. TRAINING		10
a. Calendar		10
b. Classes		11
9. PPE (Personal Protective Equipment)		11
10. VEHICLE AND EQUIPMENT LISTING		12
11. UNDERGROUND UTILITY LINES		12

SECTION	APWA CROSS REFERENCE	PAGE #
12. GROUNDS MAINTENANCE WORKERS		14
13. CONTRACTING		14
Asphalt Maintenance	34.3	15
Pavement Markings	34.3	15
Sweeping	34.3	15
Concrete Maintenance		15
Fence Maintenance	19.18	16
Grounds Maintenance & Landscaping Services	19.1, 19.5, 19.14, 19.15	17
Transplants	19.6	22
Disease and Insect Control in Trees	19.7	22
Removal of Diseased and Hazardous Trees	19.8	22
Site Assessment Checklist	19.13	23
Turf Management	19.10	23
Turf Inventory	19.12	23
Horticultural Services (Interior)		23
14. EXTERIOR FACILITY SIGNS		23
15. SNOW REMOVAL	Chapter 26	24
APPENDIX	APWA CROSS REFERENCE	
A. Grounds Maintenance Performance Measure Report		
B. Performance Measure Sample		
C. Winter Shelter Cost Info Report		
D. WS Cost Info Sample		
E. Authorization for Overtime		
F. January 2015 Training		
G. Employee Training Sample		
H. Vehicles		
I. Equipment IS		
J. Fleet Maintenance Sample		
K. Miss Utility		
L. Contract Information		

APPENDIX	APWA CROSS REFERENCE
M. Cyclic Updates – Pavement	34.3
N. Asphalt	34.3
O. Markings	34.3
P. Sweep	34.3
Q. Tree and Shrub Planting Guidelines	19.6
R. Grounds Maintenance – Site Assessment Checklist	19.13
S. Facility Information	
T. Exterior Signage Request	
U. Environmental Services Sign Shop	
V. Notification List	26.4
W. Personnel	26.4
X. In-House West Schedule	26.8
Y. PWC Sites Sample	26.8
Z. B&G Snow and Emergency Response Plan Coversheet	26.1 & 26.4
AA. Contractor Schedule	26.4 & 26.8
BB. 24-hour Locations	26.8
CC. Road Chemical Distribution Log	
DD. Map Sample	26.8
EE. Point of Contact for Weather Warnings Memo	26.2
FF. Snow Removal Operations Memo	26.1
GG. Ice Melt Directions/Winter Weather Safety	26.5
HH. FAQ's Snow Removal	26.1
II. Buildings & Grounds Snow Removal Equipment	26.6 & 26.7

1. PURPOSE STATEMENT

The purpose of the Grounds Maintenance Supervisor Manual is to document the processes and procedures of Grounds Maintenance. This manual is a tool for the Grounds Maintenance Supervisor for the management of Grounds Maintenance activities. Also this manual is used to document the Buildings & Grounds (B&G) landscape and snow removal management plans.

2. GOALS/MISSION/FUNCTIONS OF THE GROUNDS MAINTENANCE SUPERVISOR

GOALS

- ◆ Effectively combine and utilize in-house and contract personnel to maximize services in the most cost-effective manner
- ◆ Increase efficiency through the application of new technology and procedures
- ◆ Improve customer awareness of grounds maintenance priorities and costs.

MISSION

The mission of the Grounds Maintenance Supervisor is to provide County agencies and the public with safe, well-maintained grounds around County facilities and to coordinate the transference of property within and between facilities and event locations in the most expedient and cost-effective way possible.

FUNCTIONS

- ◆ Provide responsive action to resolve customer and grounds maintenance situations
- ◆ Accomplish planned, unplanned, and emergency grounds maintenance functions
- ◆ Accomplish special projects (landscape renovations and special event ceremonies) as assigned
- ◆ Administer contracts and monitor execution of services
- ◆ Effectively utilize the personnel, physical, and fiscal resources available
- ◆ Procure supplies and vendor services through the application of purchasing procedures; coordinate requirements to insure proper allocation of resources
- ◆ Supervise subordinate staff while providing for their training, discipline, recognition, and evaluations

3. BUILDINGS & GROUNDS DIVISION POINT OF CONTACT LISTING

Division Chief	(x6379)	Robert Weiss
Administrative Support Assistant III	(x6393)	Carol Stanton
Administrative Support Assistant II	(x6390)	Cheryl Harris
Administrative Support Assistant II	(x7010)	Kristen Yoakum
Accounting Assistant II	(x6377)	Shafali Nagpal
Contract Administrator	(x6386)	Don Flory
Custodial Services Coordinator - Day	(x6391)	Laurel Rolley
Custodial Services Coordinator - Night	(x6411)	Albert Rowe
Custodial Supervisor	(x6411)	Jens Kjar
Grounds Maintenance Supervisor	(x4207)	Jill Holley
Mailroom Supervisor	(x5633)	John Blair
Management & Fiscal Analyst II	(x8179)	Erica Surratt
Print Shop Supervisor	(x8359)	Bill Goswellen
Building Operations Supervisors (BOS)		
Central	(x7199)	Andy Negvesky
Eastern	(x6355)	Gary Morrison
Independent Hill	(x5381)	Mark Leshar
Judicial	(x6397)	Roosevelt "Phil" Phillips
Manassas	(x6795)	Mike Rose
Western	(x6686)	Mark Leshar
Building Operations Technician (BOT)	(x6686)	Nick Williams

4. NEW EMPLOYEE INFO

Listed below is the process and items that are issued to a new Grounds Maintenance employee. The list shows what they should receive and from whom.

a) County Issued Items

- 1) Form from ASA III (x6393)

b) Cell Phone

- 1) Request from ASA II (x6390)
- 2) E-mail B&G staff with new numbers for Grounds staff members (if ASA II does not)

c) Uniforms

- 1) Request from CSC (x6391)
 - i) Rental items
 - (1) Sizes needed from employee
 - (a) Shirts (S/M/L/XL...); Qty. = 11 short-sleeved or 11 long-sleeved
 - (b) Pants (waist inches x inseam inches); Qty. = 11
 - (c) Jackets (S/M/L/XL...); Qty. = 2
 - (2) Grounds Uniform Colors
 - (a) Shirts light gray
 - (b) Pants dark blue
 - (c) Jackets dark blue
 - (3) Name
 - (a) Full – First and Last for invoice
 - (b) Preference for nametag
 - ii) Coveralls Qty. = 1 (Southern States)
- 2) Request from ASA II (x6390) as available
 - i) B&G items
 - (1) Polo shirts (5)
 - (2) Windbreaker jacket (1)
 - (3) Winter jacket w/ hood (1)
 - (4) Ball cap, summer/winter (1 of each)

d) Safety Shoes

- 1) Request from ASA II (x6390)
- 2) Give primary and secondary shoe choices
- 3) Cost over \$150 paid by employee
- 4) One per year

e) Hard Hat

- 1) Request from CSC (x6391)
- 2) Standard are stocked in storeroom
- 3) Chainsaw hard hat with ear protection and face shield attached – order from Stihl

f) Safety Vest

- 1) Request from CSC (x6391)
- 2) Stocked in storeroom

g) ID Badges

- 1) County
 - i) Request from Human Resources
 - ii) Full-time – during orientation
- 2) Police
 - i) Request from Police Admin WH Property Evidence (x6597)
 - (1) 9039 Euclid Avenue
 - (2) Bring PWC ID
 - (3) Before 4PM
- 3) **Sheriff**
 - i) Request from Sheriff's Office (x6077)
 - (1) Complete "Key Card Access Request Form"
 - (2) Note that this is for a building badge only
 - (3) Send completed form to JU130 for review; they will contact B&G when approved and picture ID can be scheduled
 - (4) "Blue" card is temporary (for 1 year); after employee completes first year, schedule for "Green" card (no expiration date)

h) Hand Tools: N/A

i) Keys

- 1) Request copies of keys
 - i) #116 – B&G Front Door
 - ii) #0536 – Storage lock
 - iii) #190 and #0356 – B&G WH storage
 - iv) #385 – PM WH storage

j) Additional items:

1) Training

- i) Driver Training – Risk Management website (Smith System)
- ii) Employee Emergency Response Guide - supervisor
- iii) Bloodborne Pathogens – Custodial Services Coordinator (x6391)
- iv) Annual Review of Personnel Policy Section 14 – Rules of Conduct (memo)
- v) "PWC New Hire" initiative – PWC University

2) Fuel System

- i) Request from Fleet (x5313; Mike Clark)
- ii) Submit name of employee

3) Building Listing info

- i) Print from database

4) Folder: post name; see BOS Manassas Hub (x6795) for label maker

- 5) **Security code:** see Contract Administrator (x6386)
- 6) **E-Mail Set-Up (DOiT Customer Service)**
 - i) Have the employee login to the computer.
 - ii) From the “Start” Menu, open “E-Mail: Microsoft Office Outlook”
 - iii) Click “Next”
 - iv) Click “Next”
 - v) Click the circle for “Microsoft Exchange Server”, then click “Next”
 - vi) For the name of the Microsoft Exchange Server Computer, enter “exchange.pwc.ad”
 - vii) For the User Name, enter the employee’s last name, and then click the “Check Name” button. Find the employee name that you are trying to setup the e-mail system for. Highlight the correct name and click “OK”. Click “Next”
 - (1) NOTE: if you cannot find the employee name under the “Check Name” button, they may not be in the system yet.
 - viii) You should receive a screen showing that the account has been set-up correctly. Click “Finish”.
 - ix) The e-mail system will open automatically for that employee.
 - (1) To check e-mail from home: mail.pwcgov.org
- 7) **Performance Evaluation**
 - i) Set evaluation goals within first thirty (30) days

5. REPORTS

The Grounds Maintenance Supervisor is responsible for compiling performance reports each month for the overall performance of grounds maintenance and for the work specifically completed at the Winter Shelter.

a) Performance Measures

- 1) “Performance Measure” report **Appendix A**
 - i) Due to others as directed each month
 - ii) Excel spreadsheet composed of information needed must be updated with information compiled from work orders for each month
Appendix B “Performance Measures sample”

b) Winter Shelter Costs

- 1) “Winter Shelter Cost” report **Appendix C**
- 2) Due to the Residential Services Division Chief (Levi Bass x4315) each month
- 3) Excel spreadsheet with needed information must be updated with information compiled from work orders for each month
 - i) **Appendix D** “WS Cost info sample”

6. PAYROLL

The Grounds Maintenance Supervisor is responsible for compiling payroll information for the Grounds Maintenance staff.

a) Timesheets & Request for Leave

- 1) Payroll is done every two weeks.

- i) Collect the completed time sheets from the crew, confirm the hours reported, and sign.
- ii) Turn in all timesheets/leave slips to the ASA III (x6393) no later than 8:30 a.m. Tuesday of pay week or as directed.
- iii) Latest version of Time Sheet & Leave Approval Forms are available on-line through PWC Connects: Finance, Payroll, Time Sheets
 - (1) Reference Personnel Policy Section #15

b) Authorization for Overtime

- 1) “Authorization for Overtime” forms **Appendix E**
 - i) E-mail to the ASA II (x6390), with a copy to ASA III and ASAAII (x6373 and x7010) by noon on Thursdays.
 - (1) Reference Personnel Policy Section #16

c) Pay Advices

- 1) “Pay Advices”
 - i) Payroll information is available electronically through the Employee Portal.
 - ii) Instructions available on-line through PWC Connects: Finance, Payroll, For Employees to Access the Employee Portal to View and/or Print your Pay Advice.

7. MEETINGS

All crew members are required to meet with you at the start and end of the day for updates and adjustments to priorities.

a) B&G Management Staff

- 1) Every Wednesday at 8:30AM
- 2) Administrative staff will forward the latest staff notes to print and bring
- 3) The Division Chief will relay pertinent info for you to give to your staff
- 4) Written updates are to be e-mailed to the Division Chief, ASA III, and both ASA II personnel by Noon the day before scheduled staff meeting
- 5) Round table style updating from everyone will occur at the meeting

b) Quarterly

- 1) One-on-one with each individual staff member
 - i) Primary purpose: employees to express concerns or issues for action. “They Talk, I Listen, We Take Action”.
 - ii) Secondary purpose: update evaluation target goals and measures.

8. TRAINING

a) Calendar

- 1) For the crew to complete daily information review.
- 2) Updated every month. Each day covers a new topic with info taken from the Personnel Manual, Risk Management Manual, VA Cooperative Extension Agricultural and Natural Resource publications, Risk Management Safety briefs, and an outside organizations safety information (ex. OSHA, SFM, FEMA, etc.)
- 3) Due to the timing of preparing the calendar before the end of the previous month, the final Risk Management Safety Brief for the month is usually printed after the calendar is created.

- 4) The completed calendar is consolidated at the beginning of the following month. A hard copy is added to each employees working file (kept by the supervisor)
 - i) Employees are expected to initial on the calendar once the review is completed, and are responsible for having a general understanding of the information
 - ii) **Appendix F** “January Training”
- 5) Video training is incorporated into the schedule – as needed. Timing should be coordinated to make sure that all staff will be on site that day

b) Classes

- 1) Employees are expected to provide a copy of the training certificate to the supervisor.
- 2) Records for each employee should be updated as soon as the certificate is received.
 - i) Add hard copy to each employee working file (kept by the supervisor) and Division file (kept by the ASA III (x6393).
 - ii) **Appendix G** “Employee Training Sample”
- 3) Additional training requirements listed under “New Employee Information”
- 4) PWC University Pre-Registration Instructions are available on-line through PWC intranet

9. PERSONAL PROTECTIVE EQUIPMENT

*All items can be found at [www. OSHA.gov](http://www.OSHA.gov)

1. Eye and Face Protection
 - a. Safety spectacles / goggles
 - b. Face shield attached to chain saw hard hat
 - c. Dust mask
2. Head Protection - Class C chainsaw hard hat with ear protection and face shield attached
3. Foot and Leg Protection
 - a. Safety shoes (steel toe)
 - b. Leggings (chainsaw work)
4. Hand and Arm Protection – Gloves
5. Body Protection
 - a. Uniform
 - b. Reflective safety vests
 - c. Coveralls
6. Hearing Protection - Ear protection attached to chain saw hard hat
7. Vehicular items
 - a. Seatbelt
 - b. First aid kit
 - c. Fire extinguisher
8. Traffic cones

***Also see Risk Management Manual 1201Personal Protective Equipment**

10. VEHICLE AND EQUIPMENT LISTING

- a) Grounds Maintenance vehicle mileage should be compiled on the last work day of the month. Target measure – 4000 miles per year per vehicle
 - 1) **Appendix H** “Vehicles”
- b) ASA II (x6390) is responsible for maintaining the official listing of B&G vehicles. A listing of B&G in-service equipment (to include vehicles) should be updated whenever you are notified that changes occurred
 - 1) **Appendix I** “Equipment IS”
- c) Vehicles are turned in to Fleet for all service needs and repairs. The attachment tracks time for repairs to Grounds Maintenance items.
 - 1) **Appendix J** “Maintenance Schedule Sample”
- d) All B & G can be tracked using Networkfleet GPS system (www.Networkfleet.com). This system allows the Grounds Supervisor to track the location and speed of vehicles.

11. UNDERGROUND UTILITY LINES

Underground utility lines must be located before any work begins on County property. This must be done in conjunction with SOPs 1.004.1 Excavation and Trenching Procedures & SOP 1.004.2 Safe Excavation Around Utilities.

1. PUBLIC LINES

“Miss Utility” form **Appendix K**

- a. Complete with the information for the area to be marked for location of underground utility lines.
- b. Area is to be marked clear of utilities; usually there is no boring, no blasting, no trenchless technology.

2. Private Lines

Office of Information Technology (DoIT)

If they believe there are County lines in the area that need to be located prior to work being done, a private locator must be contacted and the associated charges from the company are the responsibility of the agency having the work done.

3. Building Operations Supervisor (BOS)

4. Aerial Pictures / Owner Information

Property owner information can be accessed from the OIT website

- a. GIS => Interactive GIS => County Mapper => “I Agree” at the disclaimer message => click on the down arrow next to the “Search” box => highlight the “Locate Parcel by Address” option => input the address information
- b. As long as the property is within the County, you can find owner information. NOTE: City of Manassas/Manassas Park property will not show owner info from this website.

Grounds Maintenance

**PUBLIC WORKS
BUILDINGS & GROUNDS DIVISION
9412 Peabody Street
Manassas, VA 20110**

**Robert Weiss
Buildings & Grounds
Division Chief
PCN: 897043**

**Jill Holley
Grounds Maintenance
Supervisor
PCN: 891209**

**Vacant
Grounds Technician
PCN: 154002**

**James Morehead
Maintenance Worker
PCN: 891201**

**Santos Sanchez
Maintenance Worker
PCN: 891207**

**Chris Hancock
Maintenance Worker
PCN: 763010**

**Steven Horn
Maintenance Worker
PCN: 763003**

Buildings & Grounds

Provide building maintenance services to over 125 owned facilities and selected leased properties; landscaping, grounds maintenance, paving repair and installation, and moving services; custodial services for over one million square feet; and mail and printing services supporting the needs of the County government. Provide 24/7 operation and responsive emergency support to address natural or manmade disasters. Snow removal to keep the County functional is a major effort. Our work is done with an efficient combination of in-house and contract staff.

12. GROUNDS MAINTENANCE WORKERS

- a) Grounds Maintenance Crew Composition
 - 1) Five (5) full-time employees
 - 2) All Grounds Maintenance staffers are considered “Essential Personnel”
 - 3) Standard hours are Monday through Friday, 8AM-5PM
 - i) Staff times are staggered to allow complete coverage during the 7.50 hour workday with one hour lunch break
- b) Employees respond to requests for assistance that are approved through the B&G Work Request system and for which a Work Order (WO) has been created. Additional information is available on line through the PWC Connects: Interoffice Services, Public Works, Custodial & Maintenance, and Work Requests Procedures.
- c) Routine: transfers; maintenance of asphalt, concrete, landscape, signs, and turf; snow removal; special event support; other duties as assigned. Estimated completion is fourteen (14) calendar days or less.
- d) Contract: routine work orders that require contractor assistance to complete. Estimated completion is thirty (30) calendar days or less, once all required contract and Purchasing items have been finalized.
- e) Standing WO: work found and acted upon by the crew while on site; repetitive tasks. As of September 2015:
 - 1) Administrative: daily paperwork and prep; daily training calendar readings; quarterly meeting with supervisor – SWO Grounds
 - 2) EOM: monthly installation and removal of Employee of the Month sign
 - 3) Flag: delivery of one (1) PWC flag to Manassas Airport every seven (7) months
 - 4) Fleet: delivery and pickup of Fleet inventoried equipment for maintenance
 - 5) Hubs (6): one per maintenance hub – Central, Eastern, IH, Manassas, Western, Judicial
 - 6) Leave: approved time off / holiday during a month
 - 7) Mow/Weed: non-contract
 - 8) Training: classroom; on-line; video/DVD
 - 9) Trash: F&R containers once/week
 - 10) Water: Annuals; newly planted landscape plants (first year only)
 - 11) Clean Plaza Stage – every two (2) weeks April – October
 - 12) Deliver Items to #116 Buildings & Grounds – 2nd Saturday of every month
 - 13) Transfer Money Bag – from Buildings & Grounds to Finance once a week
 - 14) Health Department – Deliver cones every 3rd Wednesday of every month

13. CONTRACTING

- a) “Contract Information” form [Appendix L](#)
 - 1) Updated throughout the year as contracts expire and changes are noted.
 - 2) “CONTRACTS” notebook is maintained in the Grounds Maintenance Supervisor’s office for reference to the hard copy documents.
 - i) CSA (x6386) can help with contract questions and is the B&G liaison with Purchasing.
 - ii) Actual amount of work completed is based on available resources.

- b) Standard procedure once an area has been selected for maintenance:
 - 1) Contact current contractor; latest information is available from the Purchasing contract listing on-line
 - 2) Schedule site visit with the contractor to review the area, mark/paint damaged areas requiring special attention, and discuss opportunities to improve
 - 3) Contractor should provide their written estimate to complete the job (turn key operation)
 - 4) Review contractor's estimate for accuracy
 - 5) Create a Task Order (TO) based on the contractor's estimate for signature
 - 6) Forward signed original TO information to the AA II (x6377) for the creation of a Purchase Order (PO)
 - 7) Upon receipt of the approved PO, schedule start date with the contractor
 - 8) Notify the area user's of work schedule and estimated timeframe for completion

ASPHALT MAINTENANCE

- a) "Cyclic Updates – Pavement" form **Appendix M**
 - 1) Update annually for budget process
 - 2) Asphalt maintenance to parking lots and roadways are scheduled cyclically.
 - 3) Average lifespan is 15 years
 - 4) Approximately fifty (50) parking lots and roadways are currently listed for evaluation and prioritization each fiscal year
 - i) Rough estimate cost planning formula : \$16.50/SY
 - ii) **Appendix N** "Asphalt"

PAVEMENT MARKINGS

- a) Paint maintenance to parking lots is scheduled every four (4) years.
 - 1) **Appendix O** "Markings"

SWEEPING

- a) Sweeping maintenance to parking lots is scheduled every two (2) years.
 - 1) **Appendix P** "Sweep"

CONCRETE MAINTENANCE

- a) Concrete maintenance is scheduled as needed.
- b) Rough estimate cost planning formula: \$55.00/SY

FENCE MAINTENANCE

- a) Fence maintenance is scheduled as needed. NOTE: this is a Fairfax County contract
- 1) Dumpster Enclosures: there should be at least one at each building
 - 2) Locations without dumpster enclosures
 - 102 - F&R
 - 115 – Health Department
 - 116 - B&G
 - 117 - Senior Center at Manassas
 - 311 - Central
 - 390 - WD Fuel Pumps
 - 401 - McCoart
 - 402 - Owens
 - 420 – Animal Shelter
 - 440 - Juvenile Detention Center
 - 620 - Human Services
 - 701 – Senior Center at Woodbridge
 - 721 - Potomac
 - 3) Additional structures
 - Human Services – wooden wall
 - ES – chain link complex enclosure
 - Ferlazzo – chain link tennis courts
 - Gar-Field Police – brick behind building; chain link and vinyl complex enclosure
 - Gar-Field Pumps – chain link and vinyl complex enclosure
 - HPC – wooden fence behind building & chain link fence
 - IHNL – wooden PA fencing
 - JDC – chain link yard enclosure
 - JC – vinyl vent enclosure
 - Senior Center at Manassas – chain link SWMP
 - Senior Center at Woodbridge – chain link safety (lower) and security (upper) fence
 - WDP – brick and open design complex enclosure
 - WD Fuel Pumps – wooden security enclosure
 - Sam’s – wooden barrier fence around junkyard
 - Pedestrian Bridge – chain link safety fence
 - Fleet – chain link security enclosure

GROUNDS MAINTENANCE & LANDSCAPING SERVICES

- a) **Parks & Recreation (P&R)**
- 1) Twenty-six (26) sites covered by the (P&R) Memo of Understanding (MOU)
 1. Human Services (HS)
 2. Bull Run Regional Library (BRRL)
 3. Central Community Library (Central)
 4. Chinn Park Regional Library (Chinn)
 5. Dale City Neighborhood Library (DCNL)
 6. Environmental Services (ES)
 7. Ferlazzo, Dr. A.J. (Ferlazzo)
 8. Gainesville Neighborhood Library (GNL) (closing 2015)
 9. Gar-Field Police (Gar-Field)

10. Gar-Field Pumps (Pumps)
11. Gypsy Moth Mosquito Control (GMMC)
12. Homeless Prevention Center, Hilda Barg (HPC)
13. Independent Hill Neighborhood Library (IHNL)
14. Juvenile Detention Center (JDC)
15. Molinari Juvenile Shelter (MJS)
16. Manassas Complex (Manassas)
17. McCoart
18. Nokesville Neighborhood Library (NNL)
19. Potomac Community Library (Potomac)
20. Public Safety Training Facility (PSTC)
21. Senior Center at Woodbridge (Sr. Ctr.)
22. Western District Police (WDP)
23. Winter Shelter Hypothermia Unit (WS)
24. Animal Shelter (AS)
25. Fleet
26. Police Impound Lot (PIL)

Pending Locations:

27. Haymarket-Gainesville Community Library (10/1/15)
28. Montclair Community Library (11/1/15)
29. Central District Station

2) Some sites include multiple buildings

i) Gar-Field Pumps

- Juvenile Court Services Unit
- Tower lot

ii) Manassas Complex

- Old Courthouse
- Fire & Rescue
- Voter Registration
- Bennett
- Judicial Center
- Adult Detention Center (ADC) Annex
- Police Evidence
- Health Department
- Buildings & Grounds
- Senior Center at Manassas
- ADC Main Facility
- ADC Modular Facility
- ADC Expansion

iii) McCoart

- Owens
- Development Services
- Plaza

iv) PSTC Main

- PSTC Annex
- Burn Building
- Range
- Shoot House

FY16 Groupings	Site/Complex	Site Acronym	Turf Sq. Footage	Turf Acres	Soil Test (pH)	Lime (lbs/1000 SF)
Priority	Bull Run Regional Library	BRRL	140,000	3.21	6.6	None
Priority	Chinn Park Regional Library	Chinn	80,000	1.84	6.6	None
Priority	Ferlazzo, Dr. A.J.	Ferlazzo	220,000	5.05	6.9	None
Priority	McCoart Complex	McCoart	300,000	6.89	6.4	None
Priority	Western District Police	WDP	460,000	8.49	7.4	None
Medium	Human Services	HS	40,000	0.92	7.0	None
Medium	Central Community Library	Central	70,000	1.61	6.8	None
Medium	Environmental Services	ES	60,000	1.38	5.0	120 lbs
Medium	Gypsy Moth/Mosquito Control	GMMC	70,000	1.61	6.3	50 lbs
Medium	Juvenile Detention Center	JDC	90,000	2.07	7.1	None
Medium	Senior Center at Woodbridge	Sr. Ctr.	90,000	2.07	5.8	100 lbs
Low	Gar-Field Police	Gar-Field	50,000	1.15	6.3	30lbs
Low	Homeless Prevention Center, Hilda Barg	HPC	180,000	4.13		
Low	Juvenile Emergency Shelter, Molinari	JES	60,000	1.38	7.0	None
Low	Manassas Complex	Manassas	480,000	11.02	6.5-6.9	None
Low	Public Safety Training Facility	PSTC	370,000	8.49	6.8	None
Low	Fleet	Fleet	20,000	0.46		
Low	Animal Shelter	AS	43,155	0.99		
Low	Police Impound Lot	PIL	20,170	0.46		
High	Dale City Neighborhood Library	DCNL	20,000	0.46	6.8	None
High	Gainesville Neighborhood Library	GNL	10,000	0.23	6.9	None
High	Gar-Field Pumps Complex	Pumps	100,000	2.30	6.2	30 lbs
High	Independent Hill Neighborhood Library	IHNL	10,000	0.23	6.3	30 lbs
High	Nokesville Neighborhood Library	NNL	10,000	0.23	6.5	None
High	Potomac Community Library	Potomac	50,000	1.15	7.4	None
High	Winter Shelter	WS	90,000	2.07	7.0	None

- 3) Contract maintenance is divided into four (4) groupings (See Table on Previous Page)
 - i) Priority
Sites always receive the highest level of service
 - ii) High
Sites receive the highest level of service on a rotating annual basis
 - iii) Medium
Sites receive a mid-level of service on a rotating annual basis
 - iv) Low
Sites receive the lowest level of contract service on a rotating annual basis
 - v) Minimal
Sites receive minimal maintenance. This occurs when the County is implementing extreme budget reductions Countywide.
 - vi) Annual rotation corresponds with the PWC fiscal budget year and changes every July 1st
Medium → High → Low ...

- 4) The ADC Work Crew is used to manage the turf at the Manassas Complex; below is what is completed by the work crew.
 - a. Mowing
 - b. Frequency: about 22 times per fiscal year
 - c. Edging
 - d. Frequency: about 22 times per fiscal year

- 5) Standard service actions (High/Medium/Low) The table on the following page shows the services that are completed and their frequency at the High/Medium/Low/Minimal sites.

	Groupings					Notes
	Priority	High	Medium	Low	Minimal	
	P	H	M	L	Mini	
Broad Leaf Weed Control	2	2	1	0	0	M completed in October
Edging	8	8	8	8	8	Manassas completed by ADC Work Force Crew
Hard Surface Weed Control	3	3	3	2	2	
Landscape Fertilization	1	1	1	0	0	
Landscape Insect and Disease Control	8	8	4	4	4	P&H completed monthly (Apr. - Nov.)
						M & L completed every other month
Landscape Weed Control	8	8	4	4	5	P&H completed monthly (Apr. - Nov.)
						M & L completed every other month
Mowing	24	24	24	24	24	Manassas completed by ADC Work Force Crew
Pruning and Shearing	3	3	2	1	1	P&H Dormant (Dec) tree pruning, spring shrub clearing, fall shrub shearing
						M dormant tree pruning, spring shrub shearing
						L dormant tree pruning
Soil Testing	1	1	1	1	0	Every two years
Turf Aeration and Seeding	1	1	0	0	0	
SWMP		2	2	2		
Goose Control	12					Only at McCoart 12 times a year or less
Turf Fertilization	3	3	2	1	0	P&H two in the fall, one in the spring
						M two in the fall
						L one in the fall
	Annual Frequency					

Additional Service Actions

Mulch and shovel edging	- Completed every other year
Lime application to turf	- Base on soil test results

TRANSPLANTS

B & G does not traditionally transplant trees. However there are times that B&G does accept donations. Below are some examples

- i) Example
 - (1) Memorial trees for staff/citizens
 - (a) Situation specific
 - (b) Donator may pick the tree or request suggestions
 - (c) Donator may pick the location or request suggestions
 - (d) Tree is planted – in-house or contractor
 - ii) Suggestions: When and if Grounds Maintenance conducts transplant operations, they will follow the recommended procedures from the following sources.
 - (1) Cooperative Extension Service
 - “Tree and Shrub Planting” article, Bonnie Appleton, Publication ([Appendix Q](#))
 - (2) State Arboretum of Virginia
 - “Memorial/Honorary Tree Policy”
 - Details their policy for selection, replacement, labeling, and donation requirements
 - <http://blandy.virginia.edu/arboretum/honorary-trees>

DISEASE AND INSECT CONTROL IN TREES

- i) Scheduled as part of the Parks & Recreations MOU
 - (1) Landscape Insect and Disease Control
 - a. Contract staff perform visual inspections of the trees during the growing season (April through November)
 - b. Inspection frequency is based on the rotation schedule for the site
 - 1. High (8 times per year); monthly
 - 2. Medium (4 times per year); bi-monthly
 - 3. Low (4 times per year); bi-monthly
 - c. Visual inspections dictate required control measures, if needed
- ii) Staff/citizen concerns about specific trees
 - (1) Work request is received by Buildings and Grounds to review a specific tree or area
 - (2) Concern location is inspected by in-house staff
- iii) Department of Forestry
 - (1) E-mail response for policy information relating to insect and disease conditions and notification with advice to landowners are mandated
 - (2) Code of Virginia

[Titles 10.1-1177 through 10.1-1181/http://law.lis.virginia.gov/vacode/title10.1/chapter11](http://law.lis.virginia.gov/vacode/title10.1/chapter11)

REMOVAL OF DISEASED AND HAZARDOUS TREES

The Department of Public Works Environmental Services Division has an Arborist on staff. When a tree is deemed diseased or hazardous, the Grounds Maintenance Supervisor may seek advice from the Arborist on how best to proceed.

SITE ASSESSMENT CHECKLIST

On an annual basis the Grounds Maintenance crew members will complete the “Site Assessment Checklist” at each B & G maintained facility. The purpose of these assessments is to conduct a systematic review of each site on a periodic basis to detect required maintenance activities. The assessment is a checklist used to review all exterior facility features such as turf, landscaping, parking lots, fencing, etc. Work orders are generated from the completed assessments to repair any found issues. **Appendix R** is the “Grounds Maintenance – Site Assessment Checklist.”

TURF MANAGEMENT

Grounds maintenance has a multi-faceted turf management program. The turf management program includes mowing, inspection, fertilization; disease & insect control and weed control. The schedule and services, which are part of the P & R MOU, are listed in the table on page 19. Visual inspections dictate required control measures for weeds and disease if needed.

TURF INVENTORY

P & R MOU information “see Table on page 19”

- Condition is evaluated based on soil test results done bi-annually
- VA Tech recommendations are followed to stabilize/improve turf health
- Soil tests results February 2014

HORTICULTURAL SERVICES (INTERIOR)

- Interior Plant Maintenance is scheduled to be done to care for the atrium plants at the Dr. A. J. Ferlazzo and James J. McCoart buildings.
- “Facility Information” form **Appendix S**

14. EXTERIOR FACILITY SIGNS

- Buildings & Grounds (B & G) maintains existing signs installed by B & G
- All other signs are handled by Public Works Sign Shop
 1. Pictographs: Federal Highway Administration Manual on Uniform Traffic Control Devices (FHA MUTCD)
 2. Regulatory signs: adhere to County codes for highway, vehicular, parking and site regulations
 3. Placement: no signs will be placed on VDOT right of ways without prior written approval
 - (a) Concrete footings are not generally used
 4. Request: all sign requests will be evaluated by PW B&G
 - (a) Construction Management does not need to provide a request form
 5. Enforcement: Prince William County Code

Sec. 13-321. Restricted parking zones on County owned property.

http://www.municode.com/library/va/prince-william-county/codes/code_of_ordinances to PWC, VA Code of Ordinances

- a. In response to a 1998 request to Chief Deane for clarification concerning parking enforcement of PWC color signs, we were given a copy of “Motor Vehicles Va. Criminal & Vehicle Handbook”, Sec. 46.2-1312. Size, design, and color of signs, signals, and markings erected by local authorities. <http://law.justia.com/codes/virginia/2006/toc4602000/46.2-1312.html>
- b. Manual on Uniform Traffic Control Devices & Standard Highway Signs: latest version available on-line <http://mutcd.fhwa.dot.gov/>
- c. “Department of Public Works B & G Division Exterior Signage Request” form **Appendix T** should be used by the agency requesting a new sign.
- d. **Appendix U** “ESSignShop”

15. SNOW REMOVAL

B & G is responsible for snow removal at all County facilities maintained by B & G. It is B&G’s goal to have all facilities passable within 48 hours of the end of a winter weather event. Snow removal is completed with B&G staff and contractual resources.

- a. The following B&G snow response information must be reviewed and updated annually and distributed to B&G supervisory staff:
 1. “Snow and Emergency Notification List (After Hours)”
 - **Appendix V** “Notification List”
 - “Personnel” spreadsheet
 - **Appendix W** “Personnel”
 - “In-house West Schedule”
 - **Appendix X** “In-house West Schedule”
 - “PWC Sites” listing; compilation of B&G and Property Management (PM) building locations
 - **Appendix Y** “PWC Sites Sample”
- b. The following information is also distributed to the B&G snow removal contractor:
 - “B & G Division Snow and Emergency Response Plan” cover sheet **Appendix Z**
 - “Contractor Schedule” – listing of locations and priorities
 - **Appendix AA** “Contractor Schedule”
 - “24-hour locations”
 - **Appendix BB** “24-hour Locations”
 - “Road Chemical Distribution Log” form – to be returned to B&G at end of shift **Appendix CC**
 - Map – aerial views of each site **Appendix DD**
- c. The following informational memos/letters are also distributed to agencies outside B&G:
 - “Point of Contact for Weather Warnings – Winter Storms” memo; Emergency Services Coordinator, F&R Chief, and Police Chief **Appendix EE**

- “Snow Removal Operations” memo; all County Departments and Agencies **Appendix FF**
- “Ice Melt Direction” submitted to Risk Management for publication – PWConnects Headlines **Appendix GG**
- “FAQ’s Snow Removal” submitted to PW Director’s Office for posting on the B&G website **Appendix HH**
- “Prince William County Emergency Operations Plan” updates should be submitted to F&R. Section “ESF 3B: Snow Removal Plan” is the part relating to B&G. (Latest version available on line http://ourteams.pwcgov.org/fire/SitePages/Emergency_Operations.aspx)
- Buildings & Grounds Snow Removal Equipment memo **Appendix II**

APPENDIX

GROUNDS MAINTENANCE PERFORMANCE MEASURE REPORT

Infor EAM Dataspy: "JH4207 PM Work Orders"

- ◆ Filter: Assigned to = JH4207 / AND / Date Reported >= "Month start date"
- ◆ Sort: Date Reported "Ascending"
- ◆ Layout: Date Reported / Work Order / Description / Status / Sched. Start Date / Date Completed
- ◆ Run the report
- ◆ Grid Menu icon; Save Grid to Excel
 - Jill files / Crew Calendar / D7i / D7i "year"; File name: "Month Year" PM info.xlsx

Excel

- ◆ Open the file
- ◆ Create a copy (separate tab): "Month Year" PM info Actual
- ◆ Remove items **reported** past date of the months parameters
- ◆ Note cancelled / duplicate work orders
- ◆ Add columns
 - "Count" – to count the number of WO's
 - "Days" – to show the number of days to complete the WO
 - ◆ Days formula: =SUM (Days Completed – Sched. Start Date)
 - ◆ Format cell: Number (no decimal points)
- ◆ Highlight rows
 - Green = Contractor
 - Blue = SWO
 - Bright Yellow = 15 calendar days or more
 - Orange = 11 – 14 calendar days
 - Purple = 8-10 calendar days
- ◆ **Re-save file** as an excel spreadsheet (no "" before or after the name)

Report

- ◆ Total # of work orders (overall) / Total # of contract work orders / Total # of standing work orders / Total # of crew/regular work orders
 - # and % completed within 14 calendar days
 - NOTE the # and % completed within 10 and 7 calendar days
- ◆ Total # of signs ordered (include supplier name)

Report information sample (August 2015):

August performance measure information for my crew and me is as follows:

- Work orders assigned to me = 73 with 2 that were cancelled/duplicate, so 71 with 47 completed within 14 calendar days (66.20%).
- Of the 71 work orders, 12 were contract with 3 completed within 14 calendar days (25.00%); 6 were SWO's with 1 completed within 14 calendar days (6.25%).
- Therefore, 43 were regular work orders, and 43 were completed within 14 calendar days (100.00%).

Sign information:

- WO#166034 (107-Bennett) sign maintenance; remove old sign.
- WO#166765 (401-McCoart) Contract sign maintenance; one (1) new sign from ESSS.
- WO#166844 (115-Health) Contract sign maintenance; new signs to be ordered from ESSS.

Appendix B

Performance Measures sample 2015

Count	Date Reported	Work Order	Description	Status	Sched. Start Date	Date Completed	Calendar Days
1	8/2/2015 12:13	165299	SWO-MONITOR AND CLEANUP GROUNDS - MANASSAS HUB	Completed	8/1/2015	8/28/2015 0:00	27
2	8/2/2015 12:13	165314	SWO - EMPTY TRASH CANS	Completed	8/1/2015	8/26/2015 0:00	25
5	8/2/2015 12:14	165323	SWO - STANDING WORK ORDER - GROUNDS	Completed	8/1/2015	8/31/2015 17:22	31
13	8/2/2015 12:14	165348	SWO-MONITOR AND CLEANUP GROUNDS - EASTERN HUB	Completed	8/1/2015	8/28/2015 0:00	27
14	8/3/2015 14:54	165509	620-CSB: TRANSFER ITEMS TO 430-LANDFILL	Completed	8/4/2015	8/4/2015 0:00	0
15	8/3/2015 15:44	165510	121-JCSU: TRANSFER ITEMS WITHIN BUILDING	Completed	8/4/2015	8/12/2015 0:00	8
16	8/4/2015 15:02	165612	225-SW: DELIVER ITEMS ON 9/11 BY 12PM	Completed	9/11/2015	9/14/2015 0:00	3
17	8/5/2015 11:17	165628	402-OWENS: TURF REPAIR	Completed	8/5/2015	8/6/2015 16:45	2
18	8/5/2015 16:28	165633	818-SS: TRANSFER ITEMS FROM 385-WH	Completed	8/6/2015	8/6/2015 0:00	0
19	8/6/2015 8:54	165816	SWO - TRAINING ACTIVITIES	Completed	8/6/2015	8/31/2015 17:27	26
20	8/6/2015 10:52	165678	CONTRACT - WEED CONTROL - HARD SURFACE	Completed	7/1/2015	7/30/2015 0:00	29
21	8/6/2015 10:52	165704	CONTRACT - WEED CONTROL - LANDSCAPE AREAS	Completed	7/1/2015	7/30/2015 0:00	29
26	8/6/2015 12:56	165809	CONTRACT: 398-DSB: PAVEMENT MARKINGS	Completed	8/10/2015	8/17/2015 16:35	8
27	8/7/2015 11:56	165829	860-CSB: TRANSFER ITEMS TO 430-LANDFILL	Completed	8/18/2015	8/18/2015 0:00	0
28	8/7/2015 14:02	165832	376-MJS: TRANSFER ITEMS TO 430-LANDFILL	Completed	8/10/2015	8/10/2015 0:00	0
33	8/11/2015 15:55	166034	107-BENNETT: SIGN MAINTENANCE	Completed	8/12/2015	8/21/2015 0:00	9
34	8/12/2015 11:29	166256	145-POLICE: REPAINT MARKINGS ON PAVEMENT	Completed	8/21/2015	8/25/2015 0:00	4
35	8/12/2015 11:52	166259	818-SS: TRANSFER ITEMS WITHIN BUILDING	Completed	8/12/2015	8/18/2015 0:00	6
36	8/14/2015 8:53	166277	215-SS: TRANSFER ITEMS TO 818-SS	Completed	8/14/2015	8/18/2015 0:00	4
37	8/14/2015 11:50	166284	370-PSTC: DELIVER LIFT FROM 540-CHINN	Completed	8/14/2015	8/19/2015 0:00	5
38	8/14/2015 11:59	166285	108-ATTRNY: TRANSFER ITEMS FROM 101-OCH AND TO 430-LANDFILL	Completed	8/14/2015	8/19/2015 0:00	5
39	8/17/2015 14:10	166299	SWO - 116-B&G: DELIVER ITEMS ON 9/11	Completed	9/11/2015	9/14/2015 0:00	3
40	8/17/2015 16:28	166308	420-AS: WASH ACO TRAILER	Completed	8/18/2015	8/19/2015 0:00	1
41	8/18/2015 9:58	166314	370-F&R: TRANSFER ITEMS TO 430-LANDFILL	Completed	8/18/2015	8/19/2015 0:00	1
42	8/18/2015 10:38	166316	401-B&G: TRANSFER ITEMS TO 430-LANDFILL	Duplicate	8/18/2015	8/19/2015 11:33	N/A
43	8/18/2015 10:41	166317	108-B&G: TRANSFER ITEMS TO 430-LANDFILL	Duplicate	8/18/2015	8/19/2015 11:39	N/A
44	8/18/2015 14:10	166325	EMPLOYEE OF THE MONTH SIGN INSTALLATION	Completed	8/20/2015	8/26/2015 0:00	6
45	8/18/2015 14:50	166619	376-MJS: STRAIGHTEN SIGN	Completed	8/19/2015	8/20/2015 0:00	1
50	8/19/2015 11:20	166634	430-SW: DELIVER ITEMS ON 9/17 @ 2PM	Active	9/17/2015	18-Sep	1
51	8/19/2015 17:00	166645	401-B&G: TRANSFER ITEMS TO 430-LANDFILL	Completed	8/20/2015	8/24/2015 0:00	4
52	8/19/2015 17:05	166646	340-NNL: WHEEL STOP MAINTENANCE	Completed	8/20/2015	8/20/2015 0:00	0
53	8/19/2015 17:09	166647	340-NNL: DRAINAGE MAINTENANCE	Completed	8/20/2015	8/26/2015 0:00	6
54	8/20/2015 8:15	166648	CONTRACT: LIMING	Active	9/1/2015	18-Sep	17
55	8/20/2015 8:23	166655	CONTRACT: MULCH AND SHOVEL EDGE	Active	9/1/2015	18-Sep	17
56	8/20/2015 10:02	166668	SWO - 115-HEALTH: DELIVER ITEMS ON 9/15	Completed	9/2/2015	9/16/2015 16:18	15
57	8/20/2015 11:40	166674	376-MJS: DELIVER MULCH	Completed	8/20/2015	8/24/2015 0:00	4
63	8/26/2015 10:54	166765	CONTRACT: 401-MCCOART: SIGN MAINTENANCE	Completed	8/26/2015	9/1/2015 0:00	6
64	8/27/2015 7:25	166785	370-F&R: TREE REMOVAL	Completed	8/27/2015	8/31/2015 17:12	5
65	8/27/2015 14:22	166790	900-P&R: TRANSFER ITEMS TO 402-OIT	Completed	8/28/2015	9/8/2015 0:00	11
66	8/27/2015 14:45	166792	CONTRACT: 727-HPC: SIGN MAINTENANCE	Completed	8/28/2015	9/3/2015 0:00	6
67	8/27/2015 14:49	166793	214-BRL: REPAIR CONCRETE AT LOADING DOCK	Completed	8/28/2015	9/1/2015 0:00	4
68	8/27/2015 15:36	166797	190-WH: TRANSFER ITEMS TO 430-LANDFILL	Completed	8/28/2015	9/4/2015 17:33	8
69	8/28/2015 15:16	166844	CONTRACT: 115-HEALTH: SIGN MAINTENANCE	Active	8/28/2015	18-Sep	21
70	8/31/2015 9:03	166848	775-RIPPON: DELIVER ITEMS ON 9/11	Completed	9/11/2015	9/14/2015 0:00	3
73	8/31/2015 15:21	166930	815-JCS: LANDSCAPE MAINTENANCE	Completed	9/1/2015	9/10/2015 0:00	9
			15 calendar days or more				
			11-14 calendar days				
			8-10 calendar days				
73 Month's Total							
2 Cancelled/Duplicate							
71 WO's	# (%)	47 (66.20%)		# (%)	46 (64.79%)		
12 Contract	Completed within 14 Calendar Days	3 (25.00%)		Completed within 10 Calendar Days	3 (25.00%)		
16 SWO's	Calendar Days	1 (6.25%)		Calendar Days	1 (6.25%)		
43 Regular/Crew	Calendar Days	43 (100.00%)		Calendar Days	42 (97.67%)		
Signs							
166034	107-Bennett	sign maintenance; remove old sign					
166325	EOM install						
166619	376-MJS	straighten sign post					
166765	401-McCoart	sign maintenance; Contract		ESSS = 1 sign			
166792	727-HPC	sign maintenance; Contract		ESSS = 6 signs			
166844	115-Health	sign maintenance; Contract		ESSS = sign to be ordered			

WINTER SHELTER COST INFO REPORT

Infor EAM Dataspy: "622-WS Work Orders"

Infor EAM

- ◆ Filter
 - Equipment = 11052 (AND)
 - Date Completed >= "Month start date time 00:00" (AND)
 - Date Completed <= "Month end date time 00:00"
 - ◆ Ex. Start >= 06/01/15 00:00 AND End <= 07/01/15 00:00 gives results for June 2015
- ◆ Sort Date Reported "Ascending"
- ◆ Layout
 - Work Order
 - Description
 - Status
 - Sched. Start Date
 - Start Date
 - Date Completed
- ◆ Run the report
- ◆ Save Grid to Excel (green "X")
 - Save: Jill files / Grounds / Eastern Hub / 622 Winter Shelter / WS Monthly Cost Info / WS "year"
 - File name: WS Costs info "Month Year".xls

Excel

- ◆ Open the file
- ◆ Create a copy (separate tab): WS Costs info "Month Year" Actual.xls
- ◆ Add "Costs" column and "TOTAL"
 - Get cost info for each work order from Infor EAM
 - Transfer info to excel spreadsheet
- ◆ **Re-save file** as an excel spreadsheet (no "" before or after the name; not linked to Infor EAM program)

Report

- ◆ Total \$ of work orders completed for the month at the Winter Shelter (overall)

Report information sample (August):

Total for the month was \$1,545.36; detailed info is in the attachment.
Send multi-month report to capture more accurate information.

*Include three (3) months of info – current plus two (2) previous months

Appendix D
WS Cost info sample 2015

Costs	Work Order	Description	Status	Sched. Start Date	Start Date	Date Completed	Costs
\$ 67.74	162029	PRESSURE WASH - EASTERN HUB	Completed	6/1/2015	7/21/2015 0:00	9/1/2015 0:00	
		JUNE SUBTOTAL					\$ 67.74
\$ 7.45	164348	STANDING WORK ORDER - ANNUAL FIRE EXTINGUISHERS	Completed	7/1/2015	7/1/2015 0:00	8/18/2015 16:10	
		JULY SUBTOTAL					\$ 7.45
\$ 37.00	167785	CONTRACT - EDGING	Completed	8/1/2015	8/3/2015 0:00	8/19/2015 0:00	
\$ -	166125	UPDATE CIP	Cancelled-Duplicate	8/1/2015		8/26/2015 9:41	
\$ 11.19	166754	UPDATE CIP	Completed	8/1/2015	8/25/2015 0:00	8/27/2015 0:00	
\$ 48.70	165350	SWO-MONITOR AND CLEANUP GROUNDS - EASTERN HUB	Completed	8/1/2015	8/11/2015 0:00	8/28/2015 0:00	
\$ 224.00	167807	CONTRACT - MOWING	Completed	8/1/2015	8/17/2015 0:00	8/28/2015 0:00	
\$ 70.00	167714	CONTRACT - LANDSCAPE INSECT/DISEASE INSPECTION/CONTROL	Completed	8/1/2015	8/10/2015 0:00	8/28/2015 0:00	
\$ -	167737	CONTRACT - WEED CONTROL - HARD SURFACE	Completed	8/1/2015	8/3/2015 0:00	8/28/2015 0:00	
\$ 76.00	167763	CONTRACT - WEED CONTROL - LANDSCAPE AREAS	Completed	8/1/2015	8/10/2015 0:00	8/28/2015 0:00	
\$ -	166900	CUSTODIAL SUPPLIES TAKEN TO BUILDINGS	Completed	8/1/2015		8/31/2015 10:52	
\$ 20.60	166043	CHECK EMERGENCY LIGHTING/EXIT SIGNS	Completed	8/4/2015	8/5/2015 0:00	8/21/2015 0:00	
\$ 1.06	166059	CHECK FIRE EXTINGUISHERS	Completed	8/9/2015	8/4/2015 0:00	8/27/2015 0:00	
\$ 38.79	166076	MISCELLANEOUS MAINTENANCE - EASTERN HUB	Completed	8/23/2015	8/4/2015 0:00	8/31/2015 0:00	
\$ 108.01	166092	BUILDING WALK THRU - PM CHECK	Completed	8/23/2015	8/3/2015 0:00	8/31/2015 0:00	
\$ 834.82	166106	STANDING WORK ORDER FOR ADMIN IN EASTERN HUB	Completed	8/23/2015	8/3/2015 0:00	8/31/2015 0:00	
\$ -	166143	SECURITY SYSTEM CHANGES IN EASTERN HUB	Completed	8/31/2015	8/14/2015 0:00	8/14/2015 0:00	
		AUGUST SUBTOTAL					\$1,470.17
\$1,545.36		GRAND TOTAL					

Appendix E
 Authorization for Overtime – SAMPLE 2015

DEPARTMENT OF PUBLIC WORKS

AUTHORIZATION FOR OVERTIME:

Approval forms must be submitted as soon as need is determined but no later than Friday noon except for emergencies.

Personnel Policy 16.7B Appointing authorities or their designees must approve overtime compensation in advance in order for any compensation to be granted. Emergency situations do not require prior approval. In addition, appointing authorities shall determine whether overtime compensation shall be granted as cash payment or compensatory leave.

DIVISION: Buildings & Grounds

PAY PERIOD: 11/6/15

NAME:	DATE:	ESTIMATED HOURS:	REASON FOR OVERTIME:
Jill Holley	10/24/15	4.00	APWA; JM evaluation
Steve Horn	10/24/15	4.00	390-WDP pavement markings
Chris Hancock	10/29/15	3.00	831-Montclair event support pickup
Steve Horn	10/29/15	3.00	831-Montclair event support pickup
Jim Morehead	10/29/15	3.00	831-Montclair event support pickup
Jill Holley	10/31/15	4.00	APWA; JM evaluation

DIVISION CHIEF OR DESIGNEE: _____ **DATE:** _____

DIRECTOR OF PUBLIC WORKS: _____ **DATE:** _____

Appendix F
January Training – SAMPLE 2015

JANUARY 2015 TRAINING SCHEDULE

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	29	30	31	1	2	3
SS = Santos Sanchez; JM = Jim Morehead; SH = Steve Horn; CH = Chris Hancock; JH = Jill Holley	RM#2401: Required Occupational Safety and Health Posters	MAVIS BEACON / COMPUTER-BASED TRAINING CLASS / CDL permit prep / REGISTERED TECH prep	RMSB 12/14:	HOLIDAY	PM#6: Applicants and Resumes (SS, JM, CH, JH)	
4	5	6	7	8	9	10
MAVIS BEACON / COMPUTER-BASED TRAINING CLASS / CDL permit prep / REGISTERED TECH prep (SS)	RM SB 1/12: Ice Melt (SS, JM, SH, CH, JH)		DPW SOP#1.001.3: Strategic Business Plan PWC PW (version 5/10/10) (SS, JM, SH, CH, JH)	PM#5: Pay Plan and Employee Compensation (SS, JM, SH, CH, JH)	RM#2351: Fall Protection Program (SS, JM, SH, CH, JH)	
11	12	13	14	15	16	17
RM SB 1/13: Fuel Safety & Spill Response (SS, JM, SH, CH, JH)	DPW SOP#1.003.1: Vehicle Use Policy (version 3/23/09) (SS, JM, SH, CH, JH)		PM#4: Personnel Committee (SS, JM, SH, CH, JH)	RM#2301: Confined Space Program (SS, JM, CH, JH)	MAVIS BEACON / COMPUTER-BASED TRAINING CLASS / CDL permit prep / REGISTERED TECH prep (SS)	
18	19	20	21	22	23	24
HOLIDAY	PM#3: Position Classification Plan (SS, JM, JH)		RM#2202: Respiratory Protection (SS, JM, JH)	MAVIS BEACON / COMPUTER-BASED TRAINING CLASS / CDL permit prep / REGISTERED TECH prep (SS, JM)	RM SB 1/14: Keep Your Elbows In (SS, JM, JH)	
25	26	27	28	29	30	31
PM#2: Definitions (SS, JM, JH)	RM#2101A Plan for Infectious Pathogens (PAGE 1 ONLY) - additional info on line (SS, JM, JH)		MAVIS BEACON / COMPUTER-BASED TRAINING CLASS / CDL permit prep / REGISTERED TECH prep (SS, JM)	RM SB 1/15: not printed (Winter Driving)	DPW SOP#1.003.2: Disbursements (version 4/3/14) (SS, JM, JH)	

Appendix G
Employee Training Sample 2015

COURSE DATE	COURSE TITLE	Instructor	Location	Eval. Date	Reviewed	
08/31/15	B&G P-card training Questions & Answer	Paula Conn	DSB 202A&B		E	
08/31/15	Personnel Policy 15 - Leave Training	Brianna Cobbins	DSB 202A&B		S	
05/19/15	Pesticide Applicator Certificate - Category 6	VDACS	certificate #124508-G		E	expires 6/30/17
05/18/15	Values Training	Public Works	Development Services		S	
04/29/15	EMS Refresher and Hazardous Communication FY2015 Awareness	Bob Weiss	B&G Conference Room		S	
12/16/14	Infection Control - The Basics FY2015	Risk Management	Ferlazzo - Leesylvania Conf		S	
11/18/14	BG#2150 JD 270 Skid Steer Operations Training Sign-in Sheet	Jim Lambert	Gar-Field Tower		E	
11/18/14	Improving Your Recruitment Ad	Human Resources	Ridgewood Center HR Conf		E	
10/15/14	The Truth About Heart Disease	Keith Chu	B&G Conference Room		E	
08/27/14	Employee Emergency Preparedness and Response Facility Review	Jill Holley	B&G		E	
08/27/14	EMS Annual Refresher	Jill Holley	B&G		E	
08/27/14	EMS Annual Refresher	Robert Weiss	B&G Conference Room		S	
08/19/14	10-Minute Training: Fluorescent Bulbs	CBT	computer		E	
08/06/14	DOT Drug and Alcohol Awareness	CBT	computer-based		E	
07/29/14	Generating Creative and Innovative Ideas: Verifying and Building on Ideas	CBT	computer		E	productivity pack
07/29/14	10-Minute Training: Watershed Protection	CBT	computer		E	
07/28/14	Generating Creative and Innovative Ideas: Maximizing Team Creativity	CBT	computer		E	productivity pack
07/22/14	Generating Creative and Innovative Ideas: Enhancing Your Creativity	CBT	computer		E	productivity pack
06/25/14	Universal Waste Rule Training	CBT	computer		E	
06/20/14	Meth Lab Waste Recognition	RM on-line video	B&G		E	
06/11/14	Bed Bug Training	Dr. D. M. Miller	DSB 202A&B		S	
06/06/14	2013 County Executive Awards nominee - Winter Prep	Bob Weiss	Hylton PA Center		S	nominee
04/23/14	Disbursements (Public Works)	Sid Lopez	DSB 202A&B		S	
04/23/14	Cash Receipts / Collections	Sid Lopez	DSB 202A&B		S	
03/28/14	Office Safety (Update Available)	CBT	computer		E	
03/13/14	Certified Applicator Recertification Program	VA CES	Stafford		E	expires 6/30/17
01/27/14	Sprains and Strains	CBT	computer		E	
11/25/13	Slips, Trips, and Falls (Update Available)	CBT	computer		E	

Appendix H
Vehicles – SAMPLE 2015

MILEAGE	NUMBER	HUB	DESCRIPTION	COMMENTS	Oil Change
	731	CUSTODIAL	ASTRO VAN	REPLACED BG#217 (1/24/06)	103,963
	849	WESTERN	DODGE VAN	reassigned from Mailroom Jan12	
	1285	MANASSAS	CHEVY VAN		
	1476	EASTERN	CHEVY P/U	w/ blade	
	1530	MAILROOM	CHEVY VAN	reassigned from BD; replaced BG#350	
	1614	WESTERN	CHEVY P/U	w/ blade	
	1842	CENTRAL	CHEVY BOOM TRUCK		
	1845	MAILROOM	CHEVY ASTRO VAN		
	1937	PRINT SHOP	GMC VAN		
	2049	GROUNDNS	CHEVY STAKE BODY 12' bed	replaced BG#365	69,630
	2186	MANASSAS	CHEVY VAN		
	2405	CENTRAL	CHEVY SILVERADO P/U	w/ blade; replaced BG#089 blade	
	2406	MANASSAS	CHEVY SILVERADO P/U	w/ blade	
	2417	CENTRAL	CHEVY VAN	in service August 2015	
	2531	MOTORPOOL		replaced MP#1388 063010	
	2535	GROUNDNS	CHEVY SILVERADO P/U	replaced BG#383	89,777
	2589	EASTERN	VAN	replacement for #893	
	2722	ADMIN	CHEVY BLAZER	in service 1/30/06	26,785
	2774	MANASSAS	CHEVY SILVERADO P/U	w/ blade; in service 8/4/06	
	2775	MANASSAS	CHEVY SILVERADO P/U	w/ blade; in service 8/7/06	
	2782	MANASSAS	VAN	in service 9/27/06	
	2783	MANASSAS	VAN	in service 10/4/06	
	2897	ADMIN	CHEVY BLAZER	in service 1/11/07	23,440
	2944	INDEPENDENT	CHEVY VAN	replacement for #212; in service 7/31/07	
	3128	EASTERN	CHEVY VAN	in service 3/6/09	
	3296	GROUNDNS	CHEVY VAN	replacement for BG#086	46,441
	3314	GROUNDNS	CHEVY SILVERADO P/U	replacement for BG#568; w/ blade	27,965
	3332	GROUNDNS	CHEVY SILVERADO P/U	replacement for BG#570; w/ blade & dump bed	26,690
	3449	MAILROOM	FORD TRANSIT		
	3466	MANASSAS	ISUZU BUCKET TRUCK		
	3584	INDEPENDENT	CHEVY 2500 4x4 P/U	w/ blade; in service 2013	
	3736	MAILROOM	FORD TRANSIT	in service 2014	
	3914	GROUNDNS	CHEVY STAKE BODY W/ LIFT	in service 10/8/15; replaces BG#936	5,000
	3917	GROUNDNS	CHEVY SILVERADO P/U	in service 10/2/15; replaces BG#210	5,000

Appendix I

Equipment IS – In Service 2015

EQUIPMENT	NUMBER	POC	HUB	DESCRIPTION	YEAR	COMMENTS
BG	234	HOLLEY	GROUND	HUDSON TRAILER, LARGE	1986	NEED 2049 TO HAUL
BG	601	PHILLIPS	JUDICIAL	GENERATOR, KATOLITE	1983	108-JC
BG	606	NEGVESKY	CENTRAL	GENERATOR, CAT	1988	402-OWENS
BG	607	HOLLEY	GROUND	KUBOTA, L305	1984	30 HP diesel
BG	626	HOLLEY	GROUND	SNOWBLOWER JOHN DEERE 826	1989	Chico
BG	630	MORRISON	EASTERN	SWEEPER	1999	2/22/07 Gar-Field Shed
BG	632	LESHER	WESTERN	WELDER	1989	
BG	637	HOLLEY	GROUND	HOMELITE CHAINSAW	1988	
BG	640	NEGVESKY	CENTRAL	GENERATOR, LEXCO 250	1985	401-MCCOART ALLIS-CHALMERS
BG	641	MORRISON	EASTERN	WHEELHORSE	1988	
BG	678	LESHER	WESTERN	GENERATOR, CUMMINS NTA-855-G2	1989	370-PSTC
BG	731	ROLLEY	CUSTODIAL	CHEVY ASTRO VAN	1988	in service 1/20/06
BG	849	LESHER	WESTERN	DODGE VAN	Oct-90	transferred from Mailroom Jan12
BG	861	HOLLEY	GROUND	TIGERLINE TRAILER, SMALL	1990	
BG	936	HOLLEY	GROUND	CHEVY CHEYENNE STAKEBODY W/ LIFTGATE	May-91	replaced BG#208 06/28/06
BG	1285	SAYLOR	MANASSAS	CHEVY VAN	Dec-95	
BG	1462	MORRISON	EASTERN	SNOWBLOWER JOHN DEERE 826	1996	
BG	1463	NEGVESKY	CENTRAL	SNOWBLOWER JOHN DEERE 826	1996	
BG	1465	MORRISON	EASTERN	STIHL BR400 BLOWER	1996	2/22/07 Gar-Field Shed
BG	1473	MORRISON	EASTERN	GENERATOR, KOHLER	1996	820-POLICE
BG	1476	MORRISON	EASTERN	CHEVY P/U	1997	w/ blade
BG	1530	BLAIR	MAILROOM	GMC JIMMY	1997	reassigned from BD; replaced BG#350
BG	1614	LESHER	WESTERN	CHEVY P/U	1998	w/ blade
BG	1801	BLAIR	MAILROOM	CHEVY CAVALIER		added to mailroom 041612
BG	1842	NEGVESKY	CENTRAL	CHEVY BOOM TRUCK	Oct-00	transferred from Manassas Hub Sept12
BG	1845	BLAIR	MAILROOM	CHEVY ASTRO VAN	2000	
BG	1928	HOLLEY	GROUND	CHAINSAW STIHL 036	2000	purchased May 2000; \$400
BG	1937	GOSWELLEN	PRINT SHOP	GMC VAN	2000	
BG	1948	MORRISON	EASTERN	SNOWBLOWER	2000	
BG	1949	HOLLEY	GROUND	SNOWBLOWER CUB CADET 1333SWE	2000	Poncho
BG	2039	ROLLEY	WESTERN	PARKER POWER VACCUM 3Z804 VAC 35	6/01	IN SERVICE JUNE 2005; PSTC
BG	2049	HOLLEY	GROUND	CHEVY STAKE BODY 12' bed	Mar-01	replaced BG#365
BG	2067	HOLLEY	GROUND	PARKER POWER VACCUM	Jun-01	in service June05; transferred to Grds Nov12
BG	2150	MORRISON	EASTERN	SKID STEER		in service November 2014; salt structure
BG	2186	LESHER	INDEPENDENT	CHEVY/GMC VAN	Dec-02	
BG	2405	NEGVESKY	CENTRAL	CHEVY SILVERADO P/U	2004	w/ blade; replaced BG#089 blade
BG	2406	PHILLIPS	JUDICIAL	CHEVY SILVERADO P/U	Feb-04	w/ blade; CIP FY04
BG	2408	PHILLIPS	JUDICIAL	JOHN DEERE FRONTIER SNOWBLOWER	2003	108-STORAGE
BG	2417	NEGVESKY	CENTRAL	CHEVY VAN	2015	in service August 2015
BG	2506	LESHER	INDEPENDENT	GENERATOR, GENERAC 573RSL4032	2001	440-JDC
MP	2531	ADMIN	ADMIN			replaced MP#1388 063010
BG	2535	HOLLEY	GROUND	CHEVY SILVERADO P/U	Sep-05	w/ blade; replaced BG#383; w/ liftgate
BG	2589	MORRISON	EASTERN	CHEVY VAN	May-05	replacement for #893
BG	2612	HOLLEY	GROUND	WEEDEATER STIHL	Apr-05	STOLEN ITEM REPLACEMENT; \$200
BG	2613	HOLLEY	GROUND	WEEDEATER STIHL	Apr-05	STOLEN ITEM REPLACEMENT; \$200
BG	2614	HOLLEY	GROUND	HEDGE TRIMMER STIHL	Apr-05	STOLEN ITEM REPLACEMENT; \$370
BG	2664	LESHER	INDEPENDENT	GENERATOR, KOHLER 400RE02D	2003	
BG	2687	HOLLEY	GROUND	MOWER TROY-BLT	Oct-05	STOLEN ITEM REPLACEMENT
BG	2722	WEISS	ADMIN	CHEVY BLAZER	2006	in service 1/30/06
BG	2768	ROSE	MANASSAS	JOHN DEERE GATOR	May-06	WD POLICE
BG	2774	ROSE	MANASSAS	CHEVY SILVERADO P/U	May-06	w/ blade; in service 8/4/06
BG	2775	ROSE	MANASSAS	CHEVY SILVERADO P/U	May-06	w/ blade; in service 8/7/06
BG	2782	ROSE	MANASSAS	CHEVY VAN	Jun-06	in service 9/27/06; WDPOLICE
BG	2783	ROSE	MANASSAS	CHEVY VAN	Jun-06	in service 10/4/06
BG	2802	NEGVESKY	CENTRAL	KUBOTA, TRACTOR	2006	w/ blade; in service 9/15/06
BG	2897	FLOREY	ADMIN	CHEVY BLAZER	2007	in service 1/11/07
BG	2944	LESHER	WESTERN	CHEVY VAN		replacement for #212; in service 7/31/07
BG	2948	PHILLIPS	JUDICIAL	JOHN DEERE GATOR	2007	108-JC; 6' blade; dump bed
BG	2949	NEGVESKY	CENTRAL	JOHN DEERE GATOR		
BG	2983	HOLLEY	GROUND	HEDGE TRIMMER	2007	in service 9/27/07
BG	3018	HOLLEY	GROUND	CHAINSAW STIHL MS230	2008	14" blade; in service 3/24/08; \$260
BG	3020	ROSE	MANASSAS	FORKLIFT	2008	in service 5/28/08 @ 190-WH
BG	3128	MORRISON	EASTERN	CHEVY VAN		in service 3/6/09
BG	3225	MORRISON	EASTERN	JOHN DEERE GATOR		
BG	3237	NEGVESKY	CENTRAL	JOHN DEERE GATOR		
BG	3239	LESHER	WESTERN	SNOW THROWER JOHN DEERE	2009	in service 020410
BG	3258	HOLLEY	GROUND	PRESSURE WASHER, MTM CORP 3004	Apr-10	warranty replacement of original; \$4,757
BG	3259	HOLLEY	GROUND	STRIPER MACHINE	Jun-10	from Grainger
BG	3296	HOLLEY	GROUND	CHEVY CARGO VAN	Nov-10	Replaces BG#086
BG	3314	HOLLEY	GROUND	CHEVY SILVERADO P/U	Jan-11	Replaces BG#568; w/ blade
BG	3332	HOLLEY	GROUND	CHEVY SILVERADO P/U	Jan-11	Replaces BG#570; w/ blade & dump bed
BG	3362	ROSE	MANASSAS	SNOW THROWER CUB CADET 945 SWE PREMIUM	Aug-11	WD POLICE
BG	3363	HOLLEY	GROUND	SNOW THROWER CUB CADET 945 SWE PREMIUM	Aug-11	
ES	3374	HOLLEY	GROUND	SANDER W/ PLOW BLADE		in service 110411
ES	3375	HOLLEY	GROUND	SANDER W/ PLOW BLADE		in service 112911
BG	3430	HOLLEY	GROUND	SNOW THROWER JOHN DEERE	2012	in service 020112
BG	3449	BLAIR	MAILROOM	FORD TRANSIT	Mar-12	in service 030712
BG	3466	FEWELL	MANASSAS	ISUZU BUCKET TRUCK	Jul-12	in service 070612
BG	3474	ROSE	MANASSAS	HONDA GENERATOR, Model #EG 4000 CL		serial #EBGC-1002829
BG	3584	LESHER	INDEPENDENT	CHEVY 2500 4x4 P/U	2013	w/ blade
BG	3736	BLAIR	MAILROOM	FORD TRANSIT CONNECT XLT	2014	in service 7/22/14
BG	3749	HOLLEY	GROUND	STIHL POWERED POLE PRUNER	2014	in service 062514
BG	3914	HOLLEY	GROUND	CHEVY STAKE BODY 12' bed	Jun-15	in service 10/8/15; replaces BG#936
BG	3917	HOLLEY	GROUND	CHEVY SILVERADO P/U	Jun-15	w/ blade; in service 10/2/15; replaces BG#210
NA	??2983?	HOLLEY	GROUND	HEDGE TRIMMER STIHL	2007	HS 45; 24" blade; in service 9/26/07; \$310
NA		HOLLEY	GROUND	PUMP; WATER TANK		
NA		HOLLEY	GROUND	AUGER; 210 HOLE DIGGER	Dec-06	
NA		HOLLEY	GROUND	DEWALT CIRCULAR SAW	2007	DW369; 7-1/4"; SER#502157
NA		HOLLEY	GROUND	STIHL BR600 BLOWER	2011	SER#284829409

Appendix J

Fleet Maintenance Schedule Sample 2015

Equip. #	Description	In	Reason	Ready	# of Work Days
BG-3314	GRDS TRUCK	01/02/15	PM	01/05/15	1
BG-3332	GRDS TRUCK	01/08/15	PM	01/08/15	0
BG-2049	STAKEBODY	02/18/15	BATTERY	02/20/15	2
BG-1949	SNOW BLOWER	02/24/15	PULL HANDLE BROKEN	02/26/15	2
BG-2535	GRDS TRUCK	02/26/15	HEADLIGHTS & PLOW LIGHTS DON'T COME ON	03/03/15	3
BG-2722	BLAZER - WEISS	03/11/15	PM	03/12/15	1
BG-936	STAKEBODY	03/12/15	JUMP; LIFTGATE; HEAT; REVERSE BEEPER	03/20/15	6
BG-3363	SNOWBLOWER - CC	03/17/15	SNOW SHOOT WHEEL DOES NOT TURN	03/25/15	6
BG-3430	SNOW BLOWER	03/17/15	HANDLE GRIPS LOOSE; RIGHT SIDE WIRES	03/20/15	3
BG-3259	STRIPING MACHINE	03/24/15	PM	04/03/15	8
BG-3258	PRESSURE WASHER	03/24/15	PM	04/03/15	8
BG-2687	LAWN MOWER	03/25/15	PM; HARD TO START; BLADE CHANGE	03/31/15	4
BG-3296	GRDS VAN	04/07/15	OIL CHANGE; TURN SIGNAL; BRAKE LIGHT	04/09/15	2
BG-3314	GRDS TRUCK	04/15/15	NAIL - RT. REAR TIRE	04/20/15	3
BG-936	STAKEBODY	05/12/15	PM	06/26/15	32
BG-3332	GRDS TRUCK	05/27/15	CRACK IN WINDSHIELD	05/29/15	2
BG-3296	GRDS VAN	05/29/15	OIL CHANGE STICKER	05/29/15	0
BG-210	GRDS TRUCK	06/08/15	PM; STATE INPECTION; NO AC	07/07/15	20
BG-1928	CHAINSAW	06/15/15	NEW CHAIN	06/17/15	2
BG-234	TRAILER - LARGE	06/29/15	PM	07/08/15	6
BG-2687	LAWN MOWER	07/01/15	LOW rpm; WON'T RUN	07/17/15	11
BG-2614	HEDGE TRIMMER	07/01/15	WILL NOT START	07/21/15	13
BG-234	TRAILER - LARGE	07/09/15	NO LIGHTS; JACK BACKWARDS; NEED BG#2049	07/14/15	3
BG-2535	GRDS TRUCK	07/08/15	BRAKE LIGHTS; CHECK ENGINE LIGHT	08/03/15	18
BG-2049	STAKEBODY	07/09/15	TRAILER WON'T TURN ON WITH TRUCK	07/14/15	3
BG-234	TRAILER - LARGE	07/09/15	PICKUP / DROP OFF; LIGHTS	07/14/15	3
MP-2531	MOTOR POOL	07/22/15	PM; STATE INSPECTION	08/04/15	9
BG-3332	GRDS TRUCK	07/30/15	TARP COVER CRACKED / BROKEN	08/10/15	7
BG-936	STAKEBODY	08/03/15	ALTERNATOR (TOWED IN)	08/18/15	11
BG-2535	GRDS TRUCK	08/06/15	CHECK ENGINE LIGHT	08/11/15	3
BG-3314	GRDS TRUCK	08/26/15	CHANGE OIL LIGHT IS ON	08/28/15	2
BG-2535	GRDS TRUCK	09/01/15	PM	09/14/15	8
BG-2417	MAINTENANCE VAN		INVENTORY ADDITION	08/28/15	IN SERVICE
BG-3258	PRESSURE WASHER	09/01/15	HOSE LEAKING; TIRE FLAT	09/25/15	17
BG-936	STAKEBODY	09/08/15	BRAKES - VEHICLE ROLLS WHEN IN PARK & OFF		-42255
BG-3749	POLE PRUNER	09/10/15	NEW CHAINS	09/15/15	3
BG-2687	LAWN MOWER	09/17/15	BENT METAL; UNEVEN WHEELS		-42264
BG-2897	BLAZER - FLORY	09/25/15	OIL CHANGE	10/01/15	4
	PRESSURE WASHER	09/28/15	REPAIR; PUT INTO INVENTORY?		-42275
BG-3917	GRDS TRUCK		INVENTORY ADDITION	10/01/15	IN SERVICE
BG-210	GRDS TRUCK	10/02/15	OUT OF SERVICE		OUT OF SERVICE

Appendix K
Miss Utility – SAMPLE 2015

MISS UTILITY 800-552-7001; prompt 1; prompt 2 {www.va811.com (single site locate)}

DATE 10/23/15 at 11:22AM

OPERATOR www.va811.com

ID# 703-792-6390

POC Steve Horn 571-316-6167

WORK TYPE Install sign post

WORK FOR PWC – F&R

ADDRESS 8410 Kao Circle, Manassas, 20110

INTERSECTING Euclid Avenue

DESCRIPTION From Euclid Avenue, travel southeast on Kao Circle about 525'. Locate the landscape bed that is between the #8410 and #8414 entrance doors to the building, and the sidewalk.

MAP 5757-H9

TICKET# A529600976
Ticket valid for 15 business days from date of call (11/17/15)
Positive response #800-552-3120

CLEAR DATE 10/28/15 at 7AM
Update ticket if work not completed by the 13th business day (11/12/15)

COLOR MARKINGS AT&T; Columbia Gas of VA; Comcast; City of Manassas; Level 3 Communications; City of Manassas Park; NoVEC; PWCounty Pub; Qwest Communications; Sprint Long Distance; Verizon; Windstream KDL Inc; Zayo Bandwidth

Red = Electric Yellow = Gas/Oil Orange = Communications
Blue = Water Green = Sewer

PWC UTILITIES

OIT - PRIMARY Greg Hair (x4999) and Rob Rollins (x6154), and Sam Somers (x6271); cc: A. Jay Lowe (x4075)

Secondary Insight, LLC: Dennis Showalter 703-378-9008 (office); 703-378-9033 (fax)

BOS **NOTE:** if OIT requires contractor to locate County lines

Appendix L
Contract Information – SAMPLE 2015

GM Contract Info.doc

As of 10/5/15

CONTRACT INFORMATION:

Contractor Name	Contractor Number	Contract Name	Contact/Phone/Fax	Expiration Date
Julius Branscome, Inc.	14052BA3 (ES)	Asphalt Paving Goods & Services (Primary)	David Branscome 703-335-1000 (p)	02/04/2016
Freestate Farms (Eastern Clearing)	PO#DP162953 (B&G)	Compost, Mulch, & Topsoil {Landfill contractor}	{Karen Coleman 540-439-4163 (p)}	06/30/2016
Site Works	12138BA4	Construction Services / Misc – primary	Bill Walter 703-335-2571 (p)	04/30/2016
Toro Concrete, Inc.	12140BA3 (Environmental Services)	Curbs, Gutters, Ditches, and Sidewalks (Primary)	Robbie Murphy 540-937-3776 (p) 540-937-3868 (f)	04/06/2016
Long Fence Co. Inc.	4400003922 (Fairfax)	Fencing, Fence Parts Purchase & Installation	Larry Friedman 703-471-0960 (p) 703-478-3545 (f)	05/31/2016
PWC Parks & Rec	MOU (B&G)	Grounds Maintenance & Landscaping Services	Kevin Flickinger 703-792-4220 (p) 703-792-4278 (f)	06/30/2016
PWC Solid Waste Landfill		Household Hazard Waste (electronic)	Scott MacDonald x6804	
Ambius	12038QA4 (B&G)	Interior Plant Maintenance	Valerie Goldbeck 610-372-9700	09/04/2016
Rivas Design & Landscaping	12108BA4 (Neighborhood Services)	Landscaping Services	Bridget Rivas 703-392-9761 (p)	02/20/2016
Sweep Rite Sweeping Service	14116BA4 (B&G)	Parking Lot & Street Sweeping Services	Mel Poles 703-396-7796 (p) 703-209-9948 (cell)	05/23/2016
Mullen's Marking, Inc.	13030BA4 (B&G)	Pavement Marking Services	Travis Mullen 540-829-7277 (p)	09/24/2016
Merrifield Garden Center	PO#160117 (B&G)	Plant Materials	Rob Blount 703-955-1491 (p)	06/30/2016
Vulcan Construction Materials LP	11136BA4 (Construction Services)	Quarry Materials	David Riemenschneider 703-813-5069 (p) Dispatch 703-813-3760 (p)	07/04/2016
PWC ES Sign Shop	Internal Services 402203-5527	Signs	Bud Crager 703-792-5765 (p)	N/A
Brooks Lawn Service, Inc.	14132BA4 (B&G)	Snow & Ice Removal Services	Donald Brooks 703-906-5064 (p)	05/04/2016
Waggy's Towing	PO#160119 (B&G)	Towing	Angela Cropper 703-670-0762 (p)	06/30/2016
Insight, LLC	11098QA4 PO#DP162826	Underground Utility Locating Service	Dennis Showalter 703-378-9008 (p) 703-378-9033 (f)	01/20/2016
EL-X Enterprises	14021BA4 – primary (Neighborhood Services)	Weed Debris & Tree Control Services	Genese Rogers 757-839-2561 (p)	09/30/2016

Appendix M
Cyclic Updates – Pavement Page 1

Cyclic Updates

PAVEMENT

As of 7/15/14

TO x7010	SITE	DESCRIPTION	REPLACE	INSTALL	COST	COMMENTS	PRIORITY
6/22/09	102 F&R	F&R / Vote	2024	2009	\$71,888	102, 110	
3/22/10	107 Bennett	Between Peabody & building	2024	2009/2011	\$31,500	107 (soft spots repaired)	
6/22/09	107 Bennett	Between 107, 108 ADC, & 109	2024	2009	\$53,225	107 back; 109 side road	
6/28/10	108 JC	Judges	2025	2010	\$19,862	10,800 SF / 1,200 SY	
5/19/11	108 JC	Jury	2026	2011	\$47,018	41,184 SF / 4,576 SY	
6/22/09	109 ADC	Public	2017	2002	\$113,658	Front	?2022?
6/22/09	109 ADC	Police (OGV)	2017	2002	\$169,728	Front	?2022?
6/22/09	109 ADC	Connector	2020	2005	\$61,318	Between 2 lots	
6/22/09	109 Mosby	Peabody to Sr. Ctr.	2020	2007	\$74,000	Roadway	
11/24/10	115 Health	Between Lee and Church	2025	2010	\$32,904	Between 115 and 108	
9/26/11	116 B&G	Lot with building	2025	2010	\$21,523	Between 116 and 108-Jury	
7/19/10	117 Senior	Lot with building	2025	2010	\$35,600	33,395 SF / 3,710 SY	
11/19/12	210 GNL	Lot with building	2027	2012	\$9,867	7,947 SF / 883 SY	
7/13/12	214 BRRL	Lot with building	2027	2012	\$ 76,319	75,213 SF / 8,357 SY	
5/19/11	311 CL	Lot with building	2026	2011	\$62,853	63,459 SF / 7,051 SY	
7/15/14	340 NNL	Lot with building	2028	2013	\$7,285	5,814 SF / 646 SY	
6/22/09	370 PSTC	Main	2023	2008	\$177,395	112,805 SF / 12,534 SY	
8/31/10	370 PSTC	Burn	2025	2010	\$50,540	45,765 SF / 5,085 SY	
6/22/09	370 PSTC	Range	2022	2007	\$84,424	47,720 SF / 5,303 SY	
7/15/14	376 JES	Lot with building	2028	2013	\$37,166	13,831 SF / 1,537 SY	
6/22/09	390 WDP	Lot with building	2021	2006	\$498,573	289,491 SF / 32,166 SY	
6/22/09	398 DSB	Employee Lot	2022	2007	\$282,410	163,975 SF / 18,220 SY	
8/7/12	398 DSB	Plaza Ellipse	2027	2012	\$5,686	4,500 SF / 500 SY	
7/15/14	398 DSB	Stadium Road	2027	2012	\$10,990	1,250 SY	Shared
6/22/09	401 McCoart	Employee Lot	2021	2006	\$223,898	Fast Track	
6/22/09	401 McCoart	Visitor – ADA issues	2013	1998	\$122,357	71,050 SF / 7,894 SY	#1 (135,000 in

Appendix M
Cyclic Updates – Pavement Page 2

							FY13)
TO x7010	SITE	DESCRIPTION	REPLACE	INSTALL	COST	COMMENTS	PRIORITY
7/15/14	401 McCoart	County Complex Court	2022	2007	\$137,429	79,236 SF / 8,804 SY	
8/20/10	402 Owens	Lot & road & loading	2025	2010	\$59,234	Between 401 & 402; 402 loading	
3/22/10	420 AS	Lot with building	2024	2009	\$27,866	14,268 SF / 1,586 SY	
7/15/14	440 JDC	Lot with building	2028	2013	\$34,404	30,015 SF / 3,335 SY	
7/15/14	440 JDC	Road from Rt. 234 to OPS gate	2028	2013	\$23,764	19,881 SF / 2,209 SY	
6/22/09	444 GMMC	Lot with building	2023	2008	\$23,183	8,371 SF / 930 SY	
6/28/12	450 IHNL	Lot with building	2027	2012	\$11,147	852 SY	
10/1/09	457 Fleet	Lot with building	2024	2009	\$214,500	117,000 SF / 13,000 SY	
9/26/11	540 Chinn	Lot with building; Median divider	2026	2011	\$113,947	119,235 SF / 13,277 SY	
6/22/09	601 DCNL	Lot with building	2022	2007	\$11,728	Front and employee	
7/15/14	620 HS	Lot with building	2028	2013	\$9,136	Gravel lot NOT included 8,280 SF / 920 SY	
7/13/12	701 Senior	Lot with building	2027	2012	\$26,768	22,995 SF / 2,555 SY	
9/26/11	721 Potomac	Lot with building	2026	2011	\$44,323	53,550 SF / 5,950 SY	
11/19/12	727 HPC	Lot with building	2027	2012	\$31,350	24,597 SF / 2,733 SY	
9/26/11	810 Pumps	Lot with building	2026	2011	\$51,928	51,700 SF / 5,744 SY	
6/6/12	815 JCSU	Lots with building	2027	2012	\$16,527	14,697 SF / 1,633 SY	
12/2/11	818 Ferlazzo	Lots with building; front & back	2026	2011	\$209,488	225,836 SF / 25,093SY	
7/15/14	820 Police	Lot with building; Sindlinger Way	2028	2013	\$73,428	33,921 SF / 3,769 SY (lot) + 17,775 SF / 1,975 SY (road)	
6/22/09	820 Police	Old Police lot with tower	2021	2006	\$89,250	39,159 SF / 4,351 SY	

Appendix N Asphalt

YEAR		FY10	FY11	FY12	FY13	FY14	FY15	FY16
LOCATION	SIZE = SF (SY)	ASPHALT	ASPHALT	ASPHALT	ASPHALT	ASPHALT	ASPHALT	ASPHALT
		BRANSCOME	BRANSCOME	BRANSCOME	BRANSCOME	BRANSCOME	BRANSCOME	BRANSCOME
MCCOART	8,804 SY = CCC			Ellipse 6/25/12				
TOTAL				\$ 5,685.72				
BULL RUN	90,108 (10,012)				Branscome - 7/6/12			
TOTAL					\$ 72,177.02			
CHINN	119,235 (13,277)		Branscome					
TOTAL			\$ 106,508.36					
FERLAZZO	225,836 (25,093)		Branscome					
TOTAL			\$ 196,340.01					
ANIMAL SHELTER	14,268 (1,586)	Branscome						
TOTAL		\$ 26,871.58						
BENNETT	33,461 (3,718)	Branscome						
TOTAL	20,424 (2,270)	\$ 28,953.58						
B&G	18,786 (2,088)		Branscome					
TOTAL			\$ 18,858.85					
CENTRAL	57,098 (6,345)		Branscome					
TOTAL			\$ 58,656.56					
DALE CITY	5,025 (559)							
TOTAL								
DEVELOPMENT SERVICES	163,975 (18,220)				Stadium Rd. - half			
TOTAL	1/2 Stadium Rd = 1,250 SY				12/19/12 (1,250 SY)			
					\$ 10,989.59			
FIRE & RESCUE (102)	89,494 (9,944)							
TOTAL								
FLEET	117,000 (13,000)							
TOTAL								
GAINES. NEIGHBOR.	7,947 (883)				Branscome - 10/26/12			
TOTAL					\$ 9,266.82			
GAR-FIELD POLICE	51,696 (5,744)				Branscome - 5/23/13 (lot & road)			
TOTAL					\$ 66,900.53			
GAR-FIELD PUMPS	51,700 (5,744)		Branscome					
TOTAL			\$ 46,887.91					
GIRLS GROUP								
TOTAL								
HEALTH/JD	Lot = 30,960 (3,440);		Branscome					
TOTAL	Road = 20,085 (2,232)		\$ 29,573.91					
HOMELESS PREV.	24,597 (2,733)				Branscome - 11/9/12			
TOTAL					\$ 30,269.08			
BOYS GROUP / HS	8,280 (920)				Branscome - 6/25/13			
TOTAL					\$ 8,466.12			
INDEP. HILL	7,668 (852)			Branscome				
TOTAL				\$ 10,656.28				
JUDICIAL CENTER	Judge's = 11,216 (1,247);	Judge's	Jury					
TOTAL	Jury = 26,862 (2,985)	\$ 8,033.98	\$ 44,989.98					
JUV. COURT (815)	14,697 (1,633)			Branscome				
TOTAL				\$ 15,153.31				
JUV. DETENTION	49,896 (5,544)				Branscome - 5/15/13 (lot & road)			
TOTAL					\$ 53,969.85			
JUV. EMERGENCY	24,977 (2,776)					Branscome - 7/9/13		
TOTAL						\$ 35,729.16		
MOSBY (109)	Public = 56,168 (6,241);							
	OGV = 44,488 (4,944);							
TOTAL	Back = 28,334 (3,149)							
MOSBY (109)	Road = 31,205 (3,468)							
TOTAL								
NOKES. NEIGHBOR.	17,469 (1,941) = Mosby					Branscome - 5/29/13		
TOTAL	5,814 (646)					\$ 6,857.98		
OWENS			Branscome					
TOTAL			\$ 52,553.26					
POTOMAC	53,550 (5,950)		Branscome					
TOTAL			\$ 40,791.90					
PSTC			Branscome					
TOTAL			\$ 50,539.32					
SR. CTR. MAN.	31,904 (3,545)		Branscome					
TOTAL			\$ 33,608.47					
WEST DIST. POLICE	289,491 (32,166)							
TOTAL								
WINTER SHELTER	PRTC	PRTC	PRTC	PRTC	PRTC	PRTC		
TOTAL								
WOOD. SENIOR	22,995 (2,555)				Branscome 7/5/12			
TOTAL					\$ 24,087.18			
GRAND TOTAL		\$ 63,859.14	\$ 679,308.53	\$ 31,495.31	\$ 282,984.17	\$ 35,729.16	\$ -	\$ -

Appendix O Markings

YEAR	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
ACTION	MARKINGS	MARKINGS	MARKINGS	MARKINGS	MARKINGS	MARKINGS	MARKINGS	MARKINGS
	MULLENS	MULLENS	MULLENS	MULLENS	MULLENS	MULLENS	MULLENS	MULLENS
MCCOART	Employee	Employee / Ellipse	Visitor - 6/3/12	Roadway - thermo 04/13		Employee / Ellipse 7/3/15	Visitor	
TOTAL		\$ 2,058.20	\$ 1,475.00	\$ 20,485.70		\$ 1,633.40		
BULL RUN				Thermo - 7/6/12				
TOTAL				\$ 4,141.35				
CHINN		Mullen's - thermo 9/15/11				Thermo 7/1/15		
TOTAL		\$ 7,438.25				\$ 8,154.40		
FERLAZZO	YES	Mullen's - thermo 11/26/11		Thermo - new HC space 06/13		Thermo		
TOTAL		\$ 13,147.75		\$ 698.00				
ANIMAL SHELTER	Thermo					Thermo	Thermo - 9/23/15	
TOTAL	\$ 994.00						\$ 1,082.70	
BENNETT				Thermo - 4/20/13				
TOTAL				\$ 6,586.50				
B&G		Thermo				Thermo - 7/15/15		
TOTAL		\$ 2,663.80				\$ 4,893.70		
CENTRAL	Mullens - 10/09	Mullen's - Thermo - 05/11				Thermo - 7/12/15		
TOTAL	\$ 1,552.10	\$ 4,196.45				\$ 4,918.00		
DALE CITY		YES - 4/10/11				Yes - 7/12/15		
TOTAL		\$ 372.00				\$ 700.00		
DEVELOPMENT SERVICES		YES - 07/11		Thermo HC redo - 04/13		Yes - 7/3/15, 8/16/15		
TOTAL		\$ 1,738.70		\$ 1,137.90		\$ 2,428.00		
FIRE & RESCUE (102)				Thermo - 4/20/13				
TOTAL				\$ 8,856.20				
FLEET	NEW - thermo					Paint over thermo - 10/14/14		
TOTAL						\$ 2,210.50		
GAINES, NEIGHBOR.				Thermo - 11/10/12				
TOTAL				\$ 600.00				
GAR-FIELD POLICE	811-YES	YES - 6/22/11		Thermo - 5/29/13 (lot & road)		811 - 7/3/15	820 - YES	
TOTAL		\$ 1,383.60		\$ 6,475.40		\$ 1,004.85		
GAR-FIELD PUMPS		Mullen's - thermo 9/16/11				Thermo		
TOTAL		\$ 5,209.50						
GMMC			Thermo - 4/15 & 4/27				Thermo	
TOTAL			\$ 691.65					
HEALTH/JD		Thermo				Thermo		
TOTAL		\$ 3,329.35						
HOMELESS PREV.				Thermo - 11/10/12				
TOTAL				\$ 1,080.20				
HUMAN SERVICES	YES			Thermo - 6/28/13				Yes
TOTAL				\$ 670.00				
INDEP. HILL			Thermo - 05/15/12				Thermo	
TOTAL			\$ 490.50					
JUDICIAL CENTER	Judge's - thermo	Jury - thermo - 05/11				Judge's Thermo - 7/15/15		
TOTAL	\$ 11,827.80	\$ 2,028.25				\$ 8,872.00		
JUV. COURT (815)		YES - 8/24/11	Thermo - 05/26/12			Thermo		
TOTAL		\$ 315.28	\$ 1,373.30					
JUV. DETENTION		YES - 8/16/11		Thermo - 5/16/13; lot & road				Yes: lot & road - thermo
TOTAL		\$ 378.20		\$ 4,197.60				
JUV. EMERGENCY		YES - 8/4/11			Thermo - 7/15/13			
TOTAL		\$ 368.85			\$ 1,436.50			
MOSBY (109)		YES - 9/2/11				Yes		
TOTAL		\$ 4,175.00						
NOKES, NEIGHBOR.			YES - 4/15/12	Thermo - 5/31/13			YES	
TOTAL			\$ 300.00	\$ 426.40				
OWENS		Mullen's - thermo 10/11/10				Thermo		
TOTAL		\$ 6,679.75						
POTOMAC		Mullen's - thermo 9/16/11				Thermo		
TOTAL		\$ 3,531.00						
PSTC	Burn = N/A	Range - thermo	Main - thermo; Range 4/27				Main - thermo; Range	
TOTAL			\$ 8,016.65					
SR. CTR. MAN.		Mullen's - thermo 7/9/10				Thermo	Yes	
TOTAL		\$ 1,991.60						
WEST DIST. POLICE	YES	YES - 8/5/11				Yes	Paint - 10/10/15	
TOTAL		\$ 2,606.02					\$ 1,869.60	
WINTER SHELTER	PRTC	PRTC	PRTC	PRTC	PRTC	PRTC	PRTC	PRTC
TOTAL								
WOOD. SENIOR	Mullen's - 09/09		YES - 4/15/12	Thermo - 7/5/12			YES	
TOTAL	\$ 891.45		\$ 646.90	\$ 2,679.95				
GRAND TOTAL	\$ 15,265.35	\$ 63,611.55	\$ 14,271.40	\$ 58,035.20	\$ 1,436.50	\$ 34,814.85	\$ 2,952.30	\$ -

Appendix P

Sweep

YEAR		FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
LOCATION	SIZE = SF (SY)	SWEEP	SWEEP	SWEEP	SWEEP	SWEEP	SWEEP	SWEEP	SWEEP
		Sweep Rate	Sweep Rate	Sweep Rate	Sweep Rate	Sweep Rate	Sweep Rate		
MCCOART	Visitor 71,050 (7,894); Fast Track 130,000 (14,444)		Visitor / Fast Track			Visitor - 9/20/13	Fast Track - 5/1/15	Visitor	
TOTAL			\$ 2,213.20			\$ 842.03	\$ 1,540.69		
BULL RUN	82,956 (9,218)	YES		YES			YES		
TOTAL		\$ 924.36		\$ 924.36					
CHINN	119,235 (13,277)		YES			YES - 9/22/13		YES	
TOTAL			\$ 1,331.39			\$ 1,416.21			
FERLAZZO	225,836 (25,093)	BOTH		BOTH			BOTH		
TOTAL				\$ 2,265.34					
ANIMAL SHELTER	14,268 (1,586)	NEW		YES			YES		
TOTAL				\$ 159.04					
BENNETT	53,500 (5,934)		YES			YES - 9/20/13		YES	
TOTAL	21,105 (2,345)		\$ 595.05			\$ 632.96			
B&G	35,956 (3,996)		New			YES - 9/20/13		YES	
TOTAL						\$ 426.24			
CENTRAL	63,459 (7,051)		New			YES - 9/20/13		YES	
TOTAL						\$ 752.11			
DALE CITY	5,025 (559)		YES			YES - 9/20/13		YES	
TOTAL			\$ 130.00			\$ 140.00			
DEVELOPMENT SERVICES	163,975 (18,220)		YES - 7/8/11		YES		YES - 10/25/14	YES	
TOTAL			\$ 1,820.63				\$ 1,761.27		
FIRE & RESCUE (102)	89,494 (9,944)	YES		YES			YES		
TOTAL		\$ 997.16		\$ 997.16					
FLEET	117,000 (13,000)	NEW		YES			YES		
TOTAL				\$ 1,303.61					
GAINES, NEIGHBOR.	8,430 (937)	YES		YES			YES		
TOTAL		\$ 130.00		\$ 130.00					
GAR-FIELD POLICE	67,884 (7,538)	YES		YES			YES		
old TOWER lot	39,159 (4,351)		YES - 7/9/11		YES		YES - 5/6/15		
TOTAL		\$ 755.89	\$ 436.31	\$ 755.89			\$ 464.11		
GAR-FIELD PUMPS	51,700 (5,744)		YES		YES		YES - 5/7/15		
TOTAL			\$ 576.00				\$ 612.69		
GMMC	8,371 (930)	YES		YES			YES		
TOTAL		\$ 130.00		\$ 130.00					
HEALTH/JD	30,900 (3,434)		YES			YES - 9/20/13		YES	
TOTAL			\$ 344.35			\$ 366.29			
HOMELESS PREV.	24,875 (2,764)		YES - 7/8/11		YES		YES - 5/14/15		
TOTAL			\$ 277.17				\$ 294.83		
HUMAN SERVICES	8,280 (920)		YES		YES		YES		
TOTAL			\$ 130.00						
INDEP. HILL	6,472 (720)		YES			YES - 9/20/13		YES	
TOTAL			\$ 130.00			\$ 140.00			
JUDICIAL CENTER	51,980 (5,776); Judge's = 1,200 SY; Jury = 4,756 SY	JURY	JUDGES	JURY		JUDGES - 9/20/13		JUDGES	
TOTAL		\$ 458.87	\$ 130.00	\$ 458.87		\$ 140.00			
JUV. COURT (815)	15,950 (1,773)		YES			YES - 9/21/13		YES	
TOTAL			\$ 177.79			\$ 189.12			
JUV. DETENTION	28,632 (3,182)		YES		YES		YES		
TOTAL			\$ 334.23						
JUV. EMERGENCY	13,831 (1,537)		YES		YES		YES		
TOTAL			\$ 154.13						
MOSBY (109)	200,147 (22,343); Public = 7,333 SY; OGV = 10,950 SY; Back = 4,060 SY	OGV	PUBLIC	OGV & BACK		PUBLIC - 9/18/13		OGV & BACK	
TOTAL		\$1,505.17	\$ 735.34	\$ 1,505.17		\$ 782.19			
NOKES, NEIGHBOR.	5,343 (594)		YES		YES		YES		
TOTAL			\$ 130.00						
OWENS	48,080 (5,342)	YES		YES			YES		
TOTAL		\$ 772.54		\$ 772.54					
POTOMAC	53,550 (5,950)		YES			YES - 9/21/13			
TOTAL			\$ 596.65			\$ 634.67			
PSTC	Range: 47,720 (5,303); Main: 112,806 (12,534)	YES		YES			YES		
TOTAL		\$2,720.43		\$ 2,720.43					
SR. CTR. MAN.	33,395 (3,710)		YES			YES - 9/18/13		YES	
TOTAL			\$ 372.03			\$ 395.73			
WEST DIST. POLICE	289,491 (32,166)		YES		YES		YES - 8/15/14		
TOTAL			\$ 2,903.88				\$ 3,109.38		
WINTER SHELTER	PRTC	PRTC	PRTC	PRTC	PRTC	PRTC	PRTC		
TOTAL									
WOOD, SENIOR	29,069 (3,230)		YES			YES - 9/20/13		YES	
TOTAL			\$ 323.90			\$ 344.53			
GRAND TOTAL		\$8,394.42	\$ 13,842.05	\$ 12,122.41	\$ -	\$ 7,202.08	\$ 7,782.97		

Tree and Shrub Planting Guidelines

Bonnie Lee Appleton, Extension Specialist

Susan French, Extension Technician, AREC, Hampton Roads; Virginia Tech

Reviewed by David Close, Consumer Horticulture and Master Gardener Specialist, Horticulture, Virginia Tech

Plant and Site Selection

Select trees and shrubs well-adapted to conditions of individual planting sites. Poorly-sited plants are doomed from the start, no matter how carefully they're planted.

Test soil drainage before planting. Dig a test hole as deep as your planting hole and fill with water. If water drains at a rate of less than one inch per hour, consider installing drainage to carry water away from the planting hole base, or moving or raising the planting site (berm construction).

Also consider using more water-tolerant species. For trees, try red maple, sycamore, bald cypress, willow oak, or river birch. For shrubs, try inkberry, redbud, dogwood and buttonbush. Avoid dogwoods, azaleas, boxwoods, Japanese hollies, and other plants that don't like "wet feet" where drainage is poor.

Examine soil for compaction before planting. If soils are compacted, consider replacement with a good loam soil, or incorporation of several inches of an organic material such as composted yard waste to a depth of at least 8 inches over the entire planting area. Do not incorporate small quantities of sand - compaction will increase and drainage decrease.

Site Preparation

Dig shallow planting holes two to three times as wide as the root ball. Wide, shallow holes encourage horizontal root growth that trees and shrubs naturally produce.

In well-drained soil, dig holes as deep as the root ball. In poorly-drained heavy clay soil, dig holes one to two inches shallower than the root ball. Cover the exposed root ball top with mulch.

Don't dig holes deeper than root balls or put loose soil beneath roots because loose soil will compact over time, leaving trees and shrubs planted too deep. Widen holes near

the soil surface where most root growth occurs. Score walls of machine-dug (auger, backhoe) holes to prevent glazing.

Backfill holes with existing unamended soil. Do not incorporate organic matter such as peatmoss into backfill for individual planting holes. Differences in soil pore sizes will be created causing problems with water movement and root growth between the root ball, planting hole, and surrounding soil.

Backfill half the soil, then water thoroughly to settle out air pockets. Finish backfilling, then water again. Cover any exposed root ball tops with mulch.

Incorporate slow-release granular fertilizers into backfill soil to provide nitrogen, or if a soil test indicates a need for phosphorus or potassium. Avoid using fast-release agromonic fertilizers that can dehydrate tree roots. Use no more than 1# actual nitrogen per 1,000 ft. of planting hole surface. (Example - if using 18-6-12 with a 5' diameter hole, incorporate 0.3 oz. per planting hole.)

Tree and Shrub Preparation

Closely inspect the wrapping around root balls of B&B (balled and burlapped) trees and shrubs. Growers use many synthetic materials, as well as burlap treated to retard degradation, to wrap root balls. Many of these materials will not degrade. To insure root growth into surrounding soil, remove pinning nails or rope lacing, then cut away or drop the wrapping material to the bottom of the planting hole, backfilling over it.

Wire baskets used to protect root balls degrade very slowly underground. Remove the top 8-12 inches of wire to keep equipment from getting caught in wire loops, and surface roots from girdling.

Remove all rope, whether jute or nylon, from trunks. Again, degradation is slow or nonexistent, and ropes can girdle trunks and roots.

Appendix Q

Tree and Shrub Planting – Page 2

Remove plastic containers from container-grown trees and shrubs. For plants in fiber pots, break away the top or remove the pot entirely. Many fiber pots are coated to extend their shelf life, but this slows degradation below ground and retards root extension.

If roots are circling around the root ball exterior, cut through the roots in a few places. Cutting helps prevent circling roots from eventually girdling the trunk. Select trees grown in containers with vertical ribs or a copper-treatment on the interior container wall. These container modifications and treatments minimize circling root formation.

Tree Care After Planting

Remove tags and labels from trees and shrubs to prevent girdling branches and trunks.

Good follow-up watering helps promote root growth. Drip irrigation systems and water reservoir devices can facilitate watering.

Mulch, but don't over mulch newly planted trees and shrubs. Two to three inches of mulch is best - less if a fine material, more if coarse. Use either organic mulches (shredded or chunk pine bark, pine straw, composts) or inorganic mulches (volcanic and river rocks).

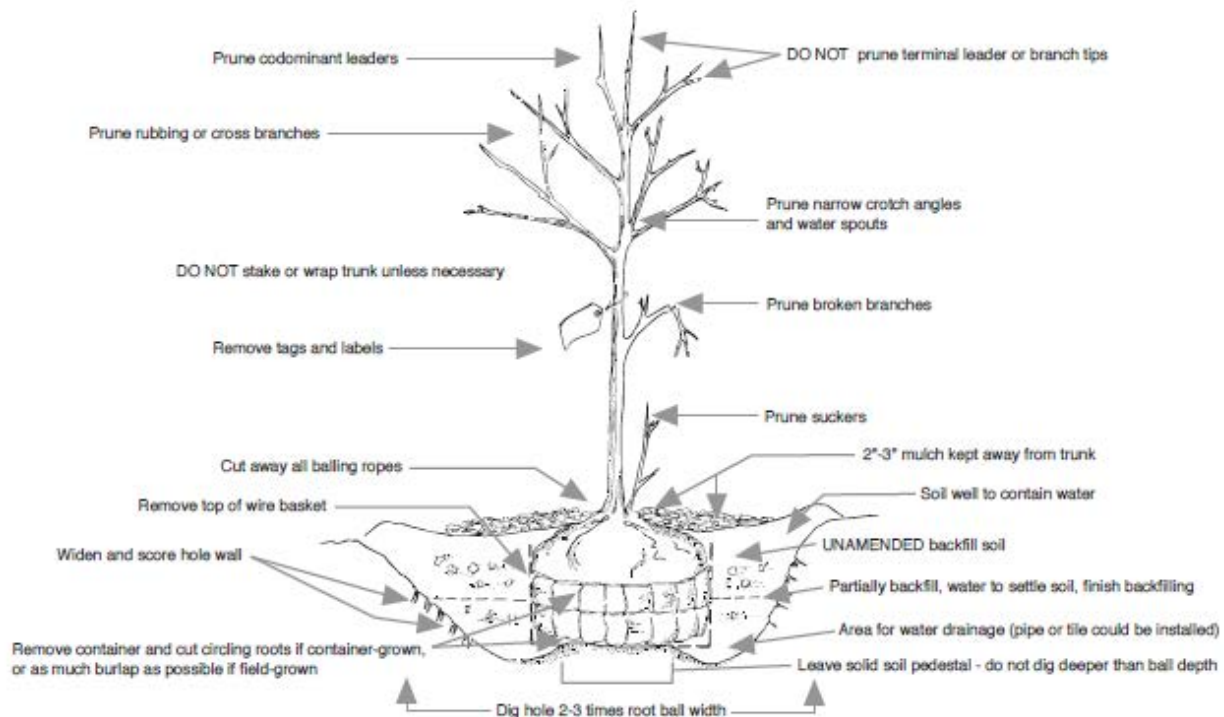
Keep mulch from touching tree trunks and shrub stems. This prevents disease and rodent problems if using organic mulches, and bark abrasion if using inorganic mulches.

Don't use black plastic beneath mulch around trees and shrubs because it blocks air and water exchange. For added weed control, use landscape fabrics that resist weed root penetration. Apply only one to two inches of mulch atop fabrics to prevent weeds from growing in the mulch.

Only stake trees with large crowns, or those situated on windy sites or where people may push them over. Stake for a maximum of one year. Allow trees a slight amount of flex rather than holding them rigidly in place. Use guying or attaching material that won't damage the bark. To prevent trunk girdling, remove all guying material after one year.

Most trees should not have their trunks wrapped. Wrapping often increases insect, disease, and water damage to trunks. Thin-barked trees planted in spring or summer into hot or paved areas may benefit from wrapping if a white wrap is used. To avoid trunk girdling, do not attach wraps with wire, nylon rope, plastic ties, or electrical tape. If wraps must be used, remove within one year.

For protection against animal or equipment damage, install guards to protect the trunk. Be sure the guards are loose-fitting and permit air circulation.



Appendix R

Site Assessment Checklist – Page 1 – SAMPLE 2015

WORK ORDER No: 169278

DATE: 10/14/15

BUILDING NO./IDENTIFICATION: 701 - St. Ctr. Burns Drive only
(#11058)

BUILDINGS AND GROUNDS DIVISION
 GROUNDS MAINTENANCE - SITE ASSESSMENT CHECKLIST

118

PURPOSE: Conduct a systematic review of each site on a periodic basis to detect required maintenance activities. Place a maintenance indicator OK or NW (Needs Work) in the respective box. Provide comments and attach photos for major areas of damage. Place the maintenance area id number in the relevant location on the attached sitemap.

ID No./Maintenance Area	OK/NW	Comments/Corrective Action Needed	Repair Date
1./Roads: Check for potholes, loose gravel, sand, salt, striping, signage.	OK		
2./Curbs: Check for chips, cracks, paint, hazards, etc.	OK		
3./Walkways: Check for chips, cracks, hazards, access, etc.	NW	blow leaves off walkway	10/26
4./Stairs: Check for slip/trip hazards, condition, railings, etc.	OK		
5./Parking: Check for debris, potholes, cracks, striping, markings.	OK		
6./Signs, Posts: Check condition, height, plumb, fading, missing, etc.	NW	NW STRAIGHTEN. HC	10/26
Flags: Check condition, lighting, poles, etc.	OK		
8./Fencing: Check soundness, slat/link breaks, vines, etc.	NW	NW TIA ON FENCE	10/15
9./Utilities: Check condition of sheds, dumpsters, boxes, etc.	OK		
10./Trees&Shrubs: Check disease, insects, removal, trimming, pruning.	OK		
11./Flower Beds: Check for weeding mulching, cleanup, etc.	OK		
12./Lawns: Check for disease, insects, seeding, cleanup, etc.	OKK		
13./Litter and Leaves: Check for necessary cleanup.	NW	BURNS Drive PEOPLE'S COMP TONS OF TRASH	170558
14./Storm Water Management: Check sewers for proper drainage.	NW		
15./Other (Jersey barriers)	NW	Graffiti	170558
16./Other (is a Hole):	NW	Filled by THE FENCE	10/27

Person(s) Conducting Assessment: SS-√M Assessment Date: 10-14 Hours: 1.5

NOTE: Use reverse side for additional comments. Attach supporting photos and site map.

T118 860
 100213
 5563

Page 2 (Site Assessment Continued)

WORK ORDER NO: 168653
 BUILDING NO./IDENTIFICATION: 701 - Sr Ctr
(#11058)

DATE: _____

ADDITIONAL COMMENTS:

9'4" gap - Burns Dr. between fence & jersey barrier
Freestate Fences LLC: PO# DP162953 ~ fill dirt/topsoil

FOLLOWUP WORK:

DATE	RESOURCE	HOURS	COMMENTS
10/15	Jm SS	7.0	took pins, cleared graffiti & removed tree at Senior Center.
Jm SS	1.0	10/21	plu supplier for 701 Home Depot. *to repair park bench
Jm SS	4.5	10/23	Repaired bench. We will need to return and remove cones in two weeks.
Jm SS	3.0	10/26	Blew leaves and straightened HC signs.
Jm SS	4.0	10/27	Filled hole @ 701 Sr Ctr.
Jm SS	1.5	10/28	went to home depot (paint)
Jm SS	2.0	10/30	Painted jersey walls at Burns Dr. need to apply second coat next week.

Attach supporting photos and site map.

Appendix S

Facility Information – Page 1 – CONTRACT 2015

Contract No. 12038QA4

I. Replacements will be made within five (5) working days and are to match the original plants. If the plant type is not available, the County's representative must approve a suitable substitution.

The County reserves the right to add or delete facilities or change the inventory in the existing facilities as deemed necessary. The contractor will be compensated for the changes utilizing the time and materials rates quoted herein.

Current Inventory: Currently Prince William County Department of Public Works/Building and Grounds Division supports two facilities requiring horticultural services.

1. Dr. A. J. Ferlazzo Building,
15941 Donald Curtis Dr., Woodbridge, VA 22191
Hours of Operation: 8:00 A.M. – 5:00 P.M. (Mon. – Fri.)
FACILITY INVENTORY for Dr. A. J. Ferlazzo Building

Located in the atrium of this facility are:

A. Ficus benjamina (Braided Trunk), 4 Each, 36" fiberglass container in planter, 1 plant per container

B. Epipremnum aureum, 20 Each, 5 per 36" container, 8" grow pots

C. Schefflera arboricola, 52 Each, 13 per Planter (surround 36" container), 10" grow pot

Located in the back hallway of this facility is:

A. Philodendron selloum, 1 Plant, 10" freestanding

Located in the staircase planter of this facility are:

A. Dracaena marginata, 1 Plant, 17" freestanding

B. Schefflera arboricola 8 Plants, 10" grow pot

2. James J. McCoart Building
1 County Complex Court
Prince William, VA 22192
Hours of operations: 8:00 A.M. – 5:00 P.M. (Mon. – Fri.)

FACILITY INVENTORY for James J. McCoart Building

Located in the first floor atrium of this facility are:

A. Ficus 'Midnight', 2 Each, 22" Decorated, 17" grow pot

B. Epipremnum aureum, 14 Each, 22" Decorative, 7 per Ficus

Contract No. 12038QA4

- C. Aglaonema 'Maria', 2 Each, 14" grow pot
- D. Aglaonema 'Maria', 2 Each, 12" Decorative, 8" grow pot
- E. Dracaena 'Costericana', 2 Each, 14" grow pot

Located on the second floor atrium of this facility is:

- A. Dracaena fragrans 'Massangeana', 2 Each, 14" grow pot

Bloom Changes: Bloom changes shall be made at the McCoart building as per the following schedule. Arrangement of blooms is based on achieving 52 weeks of colors.

1. Bromeliad
 - 10 Flowers per change
 - 5 changes per year
 - 6" pots
 - Estimated life expectancy is 6 to 7 weeks
2. Azalea (Spring)
 - 10 Flowers per change
 - 2 changes per year
 - 6" pot
 - Estimated life expectancy is 2 weeks
3. Kalanchoe (Summer)
 - 10 Flowers per change
 - 2 changes per year
 - 6" pot
 - Estimated life expectancy is 2 to 3 weeks
4. Mum (Fall)
 - 10 Flowers per change
 - 2 changes per year
 - 6" pot
 - Estimated life expectancy is 2 weeks
5. Poinsettia
 - 10 Flowers per change
 - 1 change per year
 - 6" pot
 - Estimated life expectancy is 2 weeks

Appendix T
B&G Exterior Sign Request – SAMPLE 2015



**DEPARTMENT OF PUBLIC WORKS
BUILDINGS & GROUNDS DIVISION
EXTERIOR SIGNAGE REQUEST**

From: Buildings & Grounds		Requester (full name): <i>Jim Morehead</i>
Phone#: x7010		Dept.: <i>B & G</i>
Fax#: x6376		Interoffice Zip:
E-mail: bgworkrequest@pwcgov.org		Phone #: <i>4207</i>
Return Mail Code: MA247		Today's Date: <i>10/28/15</i>
		OCA Code:
Sign Size	Width x Height (inches)	Select One Custom details (W" x H")
<input checked="" type="radio"/> Single or Double Sided	<i>14" x 10"</i>	Select One
Color <i>Red with white letters</i>	Background/Copy	Select One Symbol details Custom details
Quantity	Sign(s) <i>3</i>	
	Post(s) <i>-</i>	
Wording	<i>No Trespassing</i>	
Location Address	Number, Street, City, Zip Code	<i>14730 Potomac Mills rd. Woodbridge, VA. Winter Shelter</i>
Install Directions	Specify where on the property the sign(s) will be installed.	<i>Front and side of building. [Hand-drawn diagram of a building with arrows pointing to the front and side walls]</i>
Additional Comments	<i>Replace faded signs</i>	

Appendix U
ES Sign Shop – SAMPLE 2015



**PRINCE WILLIAM COUNTY
SIGN GRAPHICS SHOP
WORK ORDER FORM**

DATE REC'D 11/2/2015
DATE COMPLETED _____
COMPLETED BY _____
CHECKED BY _____

CUSTOMER Jill Holley

INVOICE # _____

CONTACT / PHONE / E-MAIL x4207 jholley@pwcgov.org

COUNTY DEPT. / DIVISION PW / B&G

OCA FOR IDT (5 series OL3) 402203-5527

SIGN SIZE / AMOUNT	SIGN SIZE / AMOUNT	SIGN SIZE / AMOUNT	OTHER SIGNAGE AVAILABLE
12" X 12" _____	12" X 18" _____	FIRE LANE _____	DECALS * details below
18" X 24" _____	12" X 24" _____	DRY POND _____	MAGNETIC* details below
24" X 30" _____	18" X 24" _____	WET POND _____	A-FRAME* details below
30" X 30" _____	30" STOP _____	24" STOP _____	NAMEPLATE* details below

6" (SIX) STREET NAME _____ *details below LETTER COLOR White
9" (NINE) STREET NAME _____ *details below BACKGROUND COLOR Red

SIGN DETAILS (Custom size, original wording, special requests or instructions) Call 703-792-5765 w/questions
Existing signs were placed on building siding (14"W x 10"H); faded, need to be replaced.

Can we complete your order with some hardware?

Round Post - 10 ft	How Many? _____	Cap? _____	Nameplate Bracket? _____
U-Channel Post - 10 ft	How Many? _____	Cross? _____	Other? _____
Break-a-way Post - 10 ft	How Many? _____	Nuts/bolts? _____	_____

PLEASE ATTACH A DRAWING OR USE THE SPACE BELOW

Quantity = 3



*Est @ \$100 for
3 signs
plastic*

CUSTOMER SIGNATURE: _____ DATE: _____

PLEASE FAX FORM TO 703-792-5763

Appendix V
Notification List – SAMPLE 2015

SNOW AND EMERGENCY NOTIFICATION LIST (AFTER HOURS)

AREA/Contact	Primary	Secondary
	(H) = home (C) =cell phone	
BUILDINGS & GROUNDS		
Bob Weiss	571-238-7045 (C)	XXX-XXX-XXXX (H)
Don Flory	571-238-7038 (C)	XXX-XXX-XXXX (H)
Jill Holley	XXX-XXX-XXXX (H)	571-238-7039 (C)
CENTRAL HUB		
Andy Negvesky	XXX-XXX-XXXX (H)	571-238-7034 (C)
EASTERN HUB		
Gary Morrison	571-238-7041 (C)	XXX-XXX-XXXX (H)
INDEPENDENT HILL HUB		
Mark Leshar	571-238-7032 (C)	XXX-XXX-XXXX (H)
JUDICIAL CENTER		
Roosevelt Phillips	XXX-XXX-XXXX (H)	571-722-9204 (C)
MANASSAS HUB		
Mike Rose	XXX-XXX-XXXX*	571-238-7044 (C)
	*personal cell	
WESTERN HUB		
Mark Leshar	571-238-7032 (C)	XXX-XXX-XXXX (H)
Nick Williams	XXX-XXX-XXXX*	571-238-7042 (C)
	*personal cell	
OWENS COMMUNICATIONS		
Fire & Rescue	703-792-6800	
Police Dispatch	703-792-6810	
PUBLIC SAFETY TRAINING CENTER		
Staff Duty phone	703-792-4487	
Security Guard desk	703-792-4463	

Appendix W
Personnel – SAMPLE 2015

LOCATION & POC	WORK	WORK CELL	LEAVE INFO
CENTRAL HUB	703-792-7199	571-329-2255	
Andy Negvesky		571-238-7034	
David Nadwodny		571-749-7219	
Greg Nelson		571-641-0355	
Bill Price		703-475-7686	
Charles Young		571-722-9508	
Info Desk	703-792-7437		
Snow blower (BG#1463)	Truck w/ blade (BG#2405)		
Kubota w/ blower & spreader (BG#2802)	Gator w/ blade (BG#2949)	Gator w/ blade & spreader (BG#3237)	
EASTERN HUB	703-792-6355	571-329-2258	
Gary Morrison		571-238-7041	
Michael Branham		571-221-6904	
D. Scott Jameson		571-221-1319	
A. Randy Patton		571-221-0300	
Joe Schaeffer		571-238-7036	
Wheelhorse tractor w/ blade (BG#641)	Truck w/ blade (BG#1476)		Gator (BG#3225)
Snow blower (BG#1462)	Snow blower (BG#1948)		Skid Steer (BG#2150)
INDEPENDENT HILL HUB	703-792-5381	571-329-2259	
Mark Leshar		571-238-7032	
Mike Stutsman		571-749-7989	
	Truck w/ blade (BG#3584)		
WESTERN HUB	703-792-6686	571-329-2968	
Mark Leshar		571-238-7032	
Nick Williams		571-238-7042	
Bobby Fewell		571-238-7028	
Security	703-792-4463		
	Truck w/ blade (BG#1614)		
Snow thrower (BG#3239)	Gator w/ blade (BG#3769)		

Appendix X
In-house West Schedule – SAMPLE 2015

#	LOCATION	ADDRESS	PRIORITY	OPENS	COMMENTS	ADC Map	New Walks
370-A	PSTC Joint Training Facility	13101 Public Safety Drive	1	7AM	Lot & Walks	5987-G4	
380	EVOC	13170 Public Safety Drive	2	7AM*	Lot ONLY	5987-F4	*Bill Separately (No walks as of 10/31/14)
340	Nokesville Neighborhood Library	12993 Fitzwater Drive	3	10AM	Lot & Walks	5871-G9	
208	Haymarket Gainesville Community Library	14870 Lightner Road	4	10AM	Lot & Walks	5638-J7	Yes
392	Fuel Facility	8900 Freedom Center Blvd.	1	24HR	Lot	5756-H9	
390	Western District Police (Shift: 7A, 4P, 9P)	8900 Freedom Center Blvd.	2	24HR	Lot & Walks	5756-H8	
376	Molinari Shelter (Shift: 7A, 3P, 11P)	8642 Wellington Road	3	24HR	Lot	5756-H8	
118	Adult Detention Center (Shift:7A, 7P)	9320 Lee Avenue	4	24HR	Lot	5757-D10	
124	ADC Expansion	9310 Lee Avenue	5	24HR	Walks	5757-D10	
108	Judicial Center (CODE)	9311 Lee Avenue	6	8AM	Lot & Walks	5757-D10	
109	ADC Annex	9319 Mosby Street	7	8AM	Lot & Walks	5757-D10	
101	Old Courthouse	9248 Lee Avenue	8	8AM	Walks	5757-D10	
102	Fire and Rescue / Voter Reg	9250 Lee Avenue	9	8AM	Lot & Walks	5757-D10	
110	Police Evidence	9303 Peabody Street	10	8AM	Walks	5757-D10	
115	Public Health Department	9301 Lee Avenue	11	8AM	Lot & Walks	5757-D10	
116	Buildings & Grounds	9412 Peabody Street	12	8AM**	Lot & Walks	5757-D10	
117	Senior Center at Manassas	9320 Mosby Street	13	8AM	Lot & Walks	5757-D10	
107	Bennett Administration	9300 Lee Avenue	14		Lot & Walks	5757-D10	
214	Bull Run Library	8051 Ashton Avenue	15	10AM	Lot & Walks	5756-G5	
311	Central Library	8601 Mathis Avenue	16	10AM	Lot & Walks	5757-H7	
				** 24HR when snows			
B&G	Jill Holley	9412 Peabody Street	office	703-792-4207	703-792-7010		
		Manassas, VA 20110	home	XXX-XXX-XXXX			
			nextel	571-238-7039			
			fax	703-792-6376			

Appendix Y
PWC Sites – SAMPLE 2015

#	LOCATION	ADDRESS	CONTACT	PHONE	COMMENTS	Hub	Own/Rent	Comments
101	Old Courthouse	9248 Lee Avenue	Mike Rose	703-792-6795	Walks	Manassas	Owned	
102	Fire & Rescue; Voter Registration	9250 Lee Avenue	Mike Rose	703-792-6795	Lot & Walks	Manassas	Owned	
107	Bennett Administration	9300 Lee Avenue	Brendon Hanafin	703-792-6709	Lot & Walks	Historic	Owned	
108	Judicial Center (Gate code XXXX)	9311 Lee Avenue	Roosevelt Phillips	703-792-6397	Lot & Walks	Judicial	Owned	
109	ADC Annex	9319 Mosby Street	Lt. William Smith	703-792-5830	Lot & Walks	Manassas	Owned	
110	Police Evidence	9303 Peabody Street	Mike Rose	703-792-6795	Walks	Manassas	Owned	
115	Health Department - Manassas	9301 Lee Avenue	Roosevelt Phillips	703-792-6397	Lot & Walks	Judicial	Owned	
116	Buildings & Grounds	9412 Peabody Street	Mike Rose	703-792-6795	Lot & Walks	Manassas	Owned	
117	Senior Center at Manassas	9320 Mosby Street	Roosevelt Phillips	703-792-6397	Lot & Walks	Judicial	Owned	
118	Adult Detention Center - Main	9320 Lee Avenue	Mike Rose	703-792-6795	Lot	Manassas	Owned	
118	Adult Detention Center - Main	9320 Lee Avenue	Lt. William Smith	703-792-5830	Walks	Manassas	Owned	
121	Courthouse Professional Center	9540 Center Street	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
122	Courthouse Station	9309 Center Street	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
124	ADC Expansion	9320 Lee Avenue	Mike Rose	703-792-6795	Lot	Manassas	Owned	
124	ADC Expansion	9310 Lee Avenue/ 9320 Lee Av.	Lt. William Smith	703-792-5830	Walks	Manassas	Owned	
127	Soil & Water Conservation	8850 Rixlew Lane	Patty Cox	703-792-5175	Lot & Walks		Leased	
128	Commonwealth Attorney Victim/Witness	9300 West Courthouse Rd., #102	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
138	ADC Warehouse	9023 Euclid Avenue	Patty Cox	703-792-5175	Lot & Walks		Leased	
139	Fire & Rescue Warehouse	8410 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
140	Adult Detention Center - Work Release	9127-B Euclid Avenue	Patty Cox	703-792-5175	Lot & Walks	Manassas	Leased	
141	Employee Health	8480 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
142-A	Police Warehouse	9039 Euclid Avenue	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
142-B	Police WH Ext. Records Center	9033 Euclid Avenue	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
143-A	Fire & Rescue Warehouse	9027 Euclid Avenue	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
144	Fire & Rescue CPAT	8492-8494 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
145	Police Identification	8478 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
146	PWC Environmental & Public Health	8468-8470 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
148	Fire & Rescue SCBA Shop	8488 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
150	Police Administration	8400-8406 Kao Circle	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
158	CSB Mental Health	10340 Butternut Circle	Debbie Negvesky	703-792-7730	Lot & Walks		Leased	Lessee
161	CSB Prince William Club	8521-8525 Phoenix Drive	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
163	CSB Home	3047 Cahill Lane	Patty Cox	703-792-5175	Lot & Walks	Eastern	Leased	
190	B&G Warehouse	11492 Robertson Drive	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
195	Transportation Modular Building	9455 Hornbaker Road	Patty Cox	703-792-5175	Lot & Walks	Western	Owned	
198	Thomasson Barn	9349 Hornbaker Road	*Mark Leshner*	703-792-6686	Unoccupied	Western	Owned	barn
203	Economic Development	13575 Heathcote Boulevard	Chris Daniels	703-792-4940	Lot & Walks	Western	Leased	
208	Haymarket Gainesville Community Library	14870 Lightner Road	Mark Leshner	703-792-6686	Lot & Walks	Western	Owned	added FY15 listing
209	CSB Home	7805 Brookview Court	Patty Cox	703-792-5175	Lot & Walks	Manassas	Leased	
210	Gainesville Neighborhood Library	4603 James Madison Hwy.	Kevin Flickinger	703-792-4220	Lot & Walks	Western	Owned	2012 agreement w/ P&R
210	Gainesville Neighborhood Library	4603 James Madison Hwy.	*Mark Leshner*	703-792-6686	Lot & Walks	Western	Owned	
	Closed to the public 9/30/15 - reverts to P&R 1/1/16							
211	F&R Station #4	14450 John Marshall Highway	Lance McClintock	703-792-6364	Lot & Walks	Western	Owned	
213	Ozone Monitoring	4603 James Madison Hwy.	Patty Cox	703-792-5175	Lot & Walks	Western	Leased	
214	Bull Run Library	8051 Ashton Avenue	Mike Rose	703-792-6795	Lot	Manassas	Owned	
214	Bull Run Library	8051 Ashton Avenue	L.T. Services, Inc	703-916-9008	Walks	Manassas	Owned	
			(day porter)					
215	Sudley North	7987 Ashton Avenue	Chris Daniels	703-792-4940	Lot & Walks	Manassas	Leased	
219	CSB ID	7755 Ashton Avenue	Patty Cox	703-792-5175		Manassas	Leased	
220	F & R Trailer	13101 Public Safety Drive	Mark Leshner	703-792-6686		Western	Owned	
225	Compost Operations Trailer	13012 Balls Ford Road; #13000	Scott MacDonald	703-792-6804	Lot & Walks	Manassas	Owned	
227	Ben Lomond 20th Century Farm House	10311 Sudley Manor Drive	Brendon Hanafin	703-792-6709	Lot & Walks	Historic	Owned	
	Yellow items = "other" responsibility							
12/14/2012	"Facilities Leased Abstract" from Chris Daniels							
10/1/2015	"Facility Inventory" from Patty Cox							

BUILDINGS AND GROUNDS DIVISION
SNOW AND EMERGENCY RESPONSE PLAN

WINTER 2015-2016

EFFECTIVE November 1, 2015

REVISED 10/26/15

PURPOSE: To provide information to assist in safely and rapidly responding to weather related emergency situations and provide a basis for reaction to other natural or man-made disasters.

GENERAL: Under circumstances of pending unusual weather or other emergency conditions Buildings & Grounds will receive periodic updates from the Emergency Operations Center. These as well as operational messages will be forwarded to each Supervisor, the Administrative staff, and contractors.

The designated coordinator for a snow removal effort will notify each Building Operations Supervisor by phone or email of the information from the Emergency Operations Center and direct actions in response to the situation.

Building Operations Supervisors and staff may report to their Hub prior to the alert if in their judgment the conditions in their areas warrant a more immediate response. Building Operations Supervisors are responsible for alerting members of their staff to meet the snow removal effort.

Contractor staff will be committed by the Buildings & Grounds coordinator.

A report to the Buildings & Grounds response center indicating when Hub staff is on site is required, as is communications indicating progress, changing conditions, and/or problems. A summary report is to be forwarded to Buildings & Grounds the first working day following completion of clean-up efforts, indicating the staff worked, their reporting time and their ending time, as well as resource consumption (containers of ice melt, etc.) and condition of vehicles / equipment.

Buildings & Grounds will monitor the phones from the administration area.

Appendix AA
Contractor Schedule – SAMPLE 2015

#	LOCATION	ADDRESS	PRIORITY	OPENS	COMMENTS	ADC Map
402	Owens (Shift: TIMES)	3 County Complex Court	1	24HR	Lot & Walks	5991-D2
401	McCoart	1 County Complex Court	2	8AM	Lot & Walks	5991-D2
398	Development Services (DSB)	5 County Complex Court	3	8AM	Lot & Walks	5991-D2
P&R	Chinn Aquatics & Fitness Center	13025 Chinn Park Drive	4	5AM	Lot	5991-G3
540	Chinn Library	13065 Chinn Park Drive	5	10AM	Lot & Walks	5991-G3
P&R	Sharron Baucom Dale City Rec	14300 Minnieville Road	1	6AM	Lot	5991-E8
820	New Gar-field Police Station (Shift: TIMES)	15948 Donald Curtis Drive	1	24HR	Lot & Walks	6110-D3
810	Gar-field Gas Station (Motorcycle Shop)	15904 Jeff. Davis Hwy.	2	24HR	Lot & Walks	6110-D3
811	Tower (CODE); card	15960 Sindlinger Way	3	24HR	Lot	6110-D3
818	Ferlazzo	15941 Donald Curtis Drive	4	7AM	Lot & Walks	6110-C3
815	Juvenile Court Services	15950 Sindlinger Way	5	8AM	Lot & Walks	6110-C3
727	Homeless Prevention Center	14945 Jeff. Davis Hwy.	6	24HR	Lot	5992-F10
620	Human Services	14716 Potomac Mills Rd.	7	8AM	Lot & Walks	5992-C9
622	Hypothermia Unit - Winter Shelter	14730 Potomac Mills Rd.	8	6PM**	Lot	5992-C9
721	Potomac Library	2201 Opitz Blvd.	9	10AM	Lot & Walks	5992-F9
701	Woodbridge Senior Citizens Center	13850 Church Hill Drive	10	8AM	Lot & Walks	5992-H7
726	Dawson Beach Transitional Housing	14012 Dawson Beach Road	11	24HR	Road (**Walks)	5993-A7
				** 24HR when snows		
440	Juvenile Detention Center (Shift: TIMES)	14873 Dumfries Road	1	24HR	Lot & Walks	5990-D10
420	Animal Shelter	14807 Bristow Road	2	24HR	Lot & Walks	5990-B9
444	Gypsy Moth Mosquito Control	14879 Dumfries Road	3	8AM	Lot & Walks	5990-D10
601	Dale City Neighborhood Library	4249 Dale Blvd.	4	10AM	Lot & Walks	5991-F7
831	Montclair Community Library	5049 Waterway Drive	5	10AM	Lot & Walks	6109-C3
457	Fleet (CODE)	14809 Dumfries Road	6	8AM**	Treat lot only	5990-B9
				** 24HR when snows		
370-A	PSTC Joint Training Facility	13101 Public Safety Drive	1	7AM	Lot & Walks	5987-G4
380	EVOC	13170 Public Safety Drive	2	7AM	Lot ONLY	5987-F4
340	Nokesville Neighborhood Library	12993 Fitzwater Drive	3	10AM	Lot & Walks	5871-G9
208	Haymarket Gainesville Community Library	14870 Lightner Road	4	10AM	Lot & Walks	5638-J7
392	Fuel Facility	8900 Freedom Center Blvd.	1	24HR	Lot	5756-H9
390	Western District Police (Shift: TIMES)	8900 Freedom Center Blvd.	2	24HR	Lot & Walks	5756-H8
376	Molinari Shelter (Shift: TIMES)	8642 Wellington Road	3	24HR	Lot	5756-H8
118	Adult Detention Center (Shift:TIMES)	9320 Lee Avenue	4	24HR	Lot	5757-D10
124	ADC Expansion	9320 Lee Avenue	5	24HR	Walks	5757-D10
108	Judicial Center (CODE)	9311 Lee Avenue	6	8AM	Lot & Walks	5757-D10
109	ADC Annex	9319 Mosby Street	7	8AM	Lot & Walks	5757-D10
101	Old Courthouse	9248 Lee Avenue	8	8AM	Walks	5757-D10
102	Fire and Rescue / Voter Reg	9250 Lee Avenue	9	8AM	Lot & Walks	5757-D10
110	Police Evidence	9303 Peabody Street	10	8AM	Walks	5757-D10
115	Public Health Department	9301 Lee Avenue	11	8AM	Lot & Walks	5757-D10
116	Buildings & Grounds	9412 Peabody Street	12	8AM**	Lot & Walks	5757-D10
117	Senior Center at Manassas	9320 Mosby Street	13	8AM	Lot & Walks	5757-D10
107	Bennett Administration	9300 Lee Avenue	14		Lot & Walks	5757-D10
214	Bull Run Library	8051 Ashton Avenue	15	10AM	Lot & Walks	5756-G5
311	Central Library	8601 Mathis Avenue	16	10AM	Lot & Walks	5757-H7
				** 24HR when snows		
B&G	Jill Holley	9412 Peabody Street Manassas, VA 20110	office home	703-792-4207 703-792-7010		
			cell	571-238-7039		
			fax	703-792-6376		
	Donnie Brooks	9002 Sowder Place	cell	703-906-5064		
	1-F250 and 1-Dodge Ram 1 Ton Truck with blade	Nokesville, VA 20181-3102	home/office	XXX-XXX-XXXX		
	1-F350 1 Ton Truck with blade and spreader		fax	703-791-2460		
	4-F450 2 Ton Trucks with blade and spreader	Drivers:				
	2 snow blowers	Donnie, Patty, Jim & Louie Brooks; Steve Savage, Tony Shumate				
	3 Tractors w/ blades - too big for sidewalks	George, Mike, Duke, & Robert Tenell; Wayne May				
	5 Bobcats; 1 Backhoe	Joe Ratcliff, Doug Heath, Stevie Smith, Jim Brooks				

Appendix BB
24-hour Locations – SAMPLE 2015

#	LOCATION	ADDRESS	PRIORITY	OPENS	COMMENTS	ADC Map
402	Owens (Shift: TIMES)	3 County Complex Court	1	24HR	Lot & Walks	5991-D2
820	Gar-field Police Station (Shift: TIMES)	15948 Donald Curtis Drive	1	24HR	Lot & Walks	6110-D3
810	Gar-field Gas Station	15904 Jeff. Davis Hwy.	2	24HR	Lot & Walks	6110-D3
811	Tower (CODE); card	15960 Sindlinger Way	3	24HR	Lot	6110-D3
727	Homeless Prevention Center	14945 Jeff. Davis Hwy.	4	24HR	Lot	5992-F10
622	Hypothermia Unit - Winter Shelter	14730 Potomac Mills Rd.	5	6PM**	Lot	5992-C9
726	Dawson Beach Transitional Housing	14012 Dawson Beach Road	6	24HR	Road (*Walks)	5993-A7
				** 24HR when snows	*Walks billed separately	
440	Juvenile Detention Center (Shift: TIMES)	14873 Dumfries Road	1	24HR	Lot & Walks	5990-D10
420	Animal Shelter	14807 Bristow Road	2	24HR	Lot & Walks	5990-B9
457	Fleet (CODE)	14809 Dumfries Road	3	8AM**	Treat lot only	5990-B9
392	Fuel Facility	8900 Freedom Center Blvd	1	24HR	Lot	5756-H9
390	Western District Police (Shift: TIMES)	8900 Freedom Center Blvd	2	24HR	Lot & Walks	5756-H8
376	Molinari Shelter (Shift: TIMES)	8642 Wellington Road	3	24HR	Lot	5756-H8
118	Adult Detention Center (Shift:TIMES)	9320 Lee Avenue	4	24HR	Lot	5757-D10
124	ADC Expansion	9320 Lee Avenue	5	24HR	Walks	5757-D10
116	Buildings & Grounds	9412 Peabody Street	6	8AM**	Lot & Walks	5757-D10
				** 24HR when snows		
B&G	Jill Holley	9412 Peabody Street Manassas, VA 20110	office	703-792-4207	703-792-7010	
			home	XXX-XXX-XXXX		
			nextel	571-238-7039		
			fax	703-792-6376		

Appendix CC
Road Chemical Distribution Log - SAMPLE 2015

**ROAD CHEMICAL DISTRIBUTION LOG
PRINCE WILLIAM COUNTY PUBLIC WORKS
BUILDINGS & GROUNDS DIVISION**

**RETURN FORM AT END OF SHIFT TO:
9412 PEABODY STREET
MANASSAS, VA 20110
703-792-6376 - FAX**

WO#
Chemicals

163096

WO#
Labor

#155426

#163096

#163096

#154635

DATE	TIME	SALT (load)	SAND (load)	MIX (load)	DRIVER / TRUCK #
Ex. 8/12/05	5:00 PM	1			JD HOLLEY
3/1/15	12:30-4:30pm	(1)			Mike Ferrill
3/1/15	12:30p-6p	(1)			Mike Stetsman
3/1/15	9p - 12A	(1)			↓
		(3)			
	FY15 usage	1/2 tons salt			
3/2/15	5-8pm	(1)			Mike Stetsman
	FY15 usage	1/2 tons salt			
3/2/15	6-8pm	(1)			Mike Ferrill
	FY15 usage	1/2 tons salt			

NOTE: estimated quantity = 2.00 tons/load; mix = 1.50 ton salt plus 0.50 ton sand

AS OF 11/26/14 FROM BROOKS STORAGE SITE (9802 SOWDER PLACE, NOKESVILLE)
AS OF 11/26/14 FROM CITY OF MANASSAS SITE (RUSS GRAHAM POC FOR 13 LOADS; 18.98 SALT AND 19.96 SAND)
AS OF 11/26/14 FROM GAR-FIELD TOWER STORAGE SITE (15960 SINDLINGER WAY, WOODBRIDGE)

Appendix DD
Map - SAMPLE 2015

WINTER SEASON SNOWMAPS CENTRAL HUB COUNTY COMPLEX COURT
McCoart Fast Track / Employee Parking Lot
Between Great Bridge Road and County Complex Court; includes connector road (Richter Way).



Appendix EE
POC Memo – SAMPLE FY15

December 15, 2014

TO: Patrick Collins
Emergency Services Manager

Kevin J. McGee
Fire & Rescue Chief

Heidi Braun
Public Safety Director

FROM: Robert M. Weiss
Buildings & Grounds Division Chief

RE: Point of Contact for Weather Warnings – Winter Storms

The Buildings & Grounds (B&G) Division of Public Works and the Parks, Grounds, Facility & Support Services (PGFSS) Division of Parks & Recreation are responsible for snow removal for all County Government owned facilities. Notification and alerts to changing weather conditions received from the County Communications Center are key to planning and accomplishing this mission.

The points of contact needing weather updates and notifications of hazardous road conditions are as follows (* designates preferred after-hours primary number):

Primary (P&R):	Gary Rzepecki	703-792-4270 (o)	*571-499-1843 (c)	XXX-XXX-XXXX
Primary (B&G):	Bob Weiss	703-792-6379 (o)	*571-238-7045 (c)	XXX-XXX-XXXX (h)
Alternate (P&R):	Kevin Flickinger	703-792-4220 (o)	*703-928-5365 (c)	
Alternate (B&G):	Don Flory	703-792-6386 (o)	*571-238-7038 (c)	XXX-XXX-XXXX (h)
Alternate (B&G):	Jill Holley	703-792-4207 (o)	*XXX-XXX-XXXX (h)	571-238-7039 (c)

The FAX number for B&G is 703-792-6376 and for PGFSS is 703-792-4717; these numbers are monitored during normal County business hours only. Thank you for your support of our efforts.

C: Debbie Andrew, P&R Director
Tom Bruun, PW Director

Appendix FF
Snow Removal Ops Memo – SAMPLE FY15

December 15, 2014

TO: All County Department and Agency Heads

FROM: Robert M. Weiss
Buildings & Grounds Division Chief

RE: Snow Removal Operations

The Buildings and Grounds Division is preparing for 2014/2015 snow removal operations. We want you to be aware of our work and ask your assistance to facilitate our efforts. We will commit all available resources to keeping parking lots, sidewalks, and building entrances safe and accessible. Once snow and/or ice begins to accumulate, expect routine Buildings and Grounds operations to be suspended while employees and contractors work to maintain building accessibility and operational safety.

To help us maximize our services to you:

- Please park County vehicles close together in one area. Parking personal vehicles in a group is helpful. This provides open space for plow trucks to operate safely and ultimately clear more spaces sooner.
- Please park in designated spaces only. Parking in loading zones, emergency access areas, and areas not designated for parking impedes clearing operations and creates unnecessary hazards.
- Please be aware of plowing and sanding operations occurring near your vehicle. Visibility is a concern, so please make sure the operator sees you before you pass in front of or behind a plow or sand truck.
- Please be patient and careful. Our resources are limited and workload is allocated by priority. Since we cannot clear all areas at once, we ask you to use caution at all times until we get the opportunity to get to your building.
- Please understand that no B&G employee or contract employee will intentionally “plow someone in”. We may have to go around your vehicle in the process of clearing parking lots and roadways, but we will keep it as clear as possible. We do not dig vehicles out! Keeping a shovel and an abrasive to aid traction (kitty litter) in your vehicle during winter is a good idea for everyone.
- Please note:
 - Property Management Division is responsible for coordination of snow removal at leased facilities. If you are located in a leased facility and would like an update on snow removal operations, contact the Leasing Agent, at 703-792-7290.
 - The Parks, Grounds, Facility & Support Services Division is responsible for snow removal at Parks & Recreation sites; if you would like an update, contact Kevin Flickinger, Recreation Grounds Services Manager, at 703-792-4220.

Your patience and support during snow and ice removal operations are appreciated. If you have questions concerning our efforts, please contact Jill Holley at ext. 4207 or me at ext. 6379.

C: Debbie Andrew, Parks & Recreation Director, P&R
Thomas Bruun, Director of Public Works
Matt Corneliussen, Property Mgmt. Division Chief
Kevin Flickinger, Recreation Grounds Services Manager, P&R
Gary Rzepecki, Parks, Grounds, Facility & Support Services Division Chief
Matthew Villareale, Assistant Public Works Director

Appendix GG
Ice Melt Direction – SAMPLE FY15

Over the last ten (10) years, the Buildings & Grounds Division of Public Works has distributed an average of 27,405 lbs. of ice melt chemicals around County buildings, at a cost of \$6,680 per year. These chemicals are applied to assist employees and citizens in accessing County locations safely.

In an effort to protect County personnel in Property Management's leased facilities and Community Services Board's residential homes where snow removal operations are the responsibility of a building landlord and residents, sites with ice melt containers receive an average of \$585 worth of ice melt chemicals each year. Individual containers distributed to these locations contain the manufacturer's directions for proper application and the Material Safety Data Sheet (M)SDS.

We have partnered with the Department of Parks & Recreation (P&R) to consolidate some snow removal operations, as well as provide their satellite crews with ice melt chemicals for their locations.

PLEASE, take a moment to familiarize yourself and your staff members on the proper application of these chemicals, prior to the start of the 2014-2015 winter weather season. Whether your agency has routinely been receiving ice melt chemicals from B&G, are part of the Risk Management initiative at selected Property Management and CSB facilities, or you are located at one of the P&R sites, knowledge of proper usage will benefit everyone.

Each leased building with an ice melt container should notify the Property Management Leasing Agent at (x7290), when supplies need to be replenished. P&R locations are handled through contact with the Recreation Grounds Services Manager, Kevin Flickinger (x4220). B&G funded locations will continue to receive an e-mail after each winter event for updates to needed ice melt supplies.

Your co-workers and customers will appreciate your efforts. Even with the chemical, we ask everyone to be cautious and watch their footing during inclement weather.

Appendix HH
FAQ's Snow Removal FY15

How does B&G prepare for the snow and ice season?

- ◆ During the fall, Buildings & Grounds staff get ready by stockpiling chemicals at strategic locations.
- ◆ Equipment is tested, fire hydrants and storm drains are marked, and contactor information is confirmed.

What areas is B&G responsible for clearing?

- ◆ B&G is responsible for clearing roads, parking lots, and walkways around thirty-nine (39) County-owned properties.
- ◆ County agencies operating out of leased facilities should contact the Property Management Leasing Agent to find out who is responsible for clearing their areas.
- ◆ County Park sites (Recreation/Community Centers and Golf Courses) are the responsibility of the Department of Parks & Recreation.

How does B&G decide which sites to clear first?

- ◆ Priority goes to locations that are staffed/open 24/7.
- ◆ Main roadways which carry the most traffic get top priority.
- ◆ Parking lots also get early snow removal attention.
- ◆ Main walkways, those leading to the front visitor entrance of the building, are top priority during operating hours and while snow/ice is occurring.
- ◆ Once the snow stops, secondary access points into a facility are cleared and treated. Additional “touch-up” work is done to clear more parking spaces and widen roadway access.

How soon will all areas be passable after a storm?

- ◆ Our **goal** is to make all areas **passable** within 48 hours **after** a storm ends.
- ◆ B&G snow removal crews and contractors work around the clock when a storm occurs until conditions are safe for traveling. At night, icy patches on roads, in parking lots, and on walkways, are treated with abrasives.

What is put down on the roads?

- ◆ Salt is most effective after the snow has accumulated about an inch and the temperature is 27 degrees Fahrenheit or higher. Under these conditions, the salt and snow will mix, melting the snow into a slush that can be plowed off the pavement. This melting occurs within two hours or sooner if traffic is using the roadway and parking lot.
- ◆ Abrasives (sand) are put down to aid traction, and calcium chloride can be added to melt the ice and snow. If the temperature is below 27 F, the salt will not melt the snow and ice, so other methods are used.
- ◆ In order to protect plow equipment from excessive wear, B&G uses an indicator level of 2” minimum before plowing roadways and parking lots.

What is put down on the walks?

- ◆ Mr. Magic Premium Ice Melt manufactured by The Kissner Group
 - Material Safety Data Sheets are available from Intranet Speed Dial (M)SDS

Appendix II
Snow Removal Equipment – SAMPLE 2015



Thomas Bruun
Director

COUNTY OF PRINCE WILLIAM

Fleet Management
14809 Dumfries Road, Manassas, VA 201102
(703) 792-5930 FAX: (703) 792-5934
<http://www.pwcgov.org>


DEPARTMENT OF
PUBLIC WORKS



A Nationally Accredited
Public Works Agency

December 2, 2015

TO: Robert M. Weiss
Buildings & Grounds Division Chief

FROM:  Thomas E. Westergaard
Fleet Management Division Chief

RE: Buildings & Grounds Snow Removal Equipment

Fleet Management will provide Buildings & Grounds pre and post winter equipment preparation services. Below are the services that will be provided by Fleet.

Pre-Winter Services (Prior to November 1st)

- Go over each piece of equipment and ensure that it is functional
- Replace cylinder oil in the truck mounted plows
- Ensure spreaders are functional and properly installed on ES3374 & ES3375
- Ensure spreaders are calibrated so that their spreading radius meets the demands of the operators.

Post-Winter Services

- Go over each piece of equipment and ensure that it is functional
- Thoroughly clean each piece of equipment
- Spray each piece of equipment with a desalinization chemical to neutralize the salt.
- Remove and store the spreaders from ES3374 & ES3375




Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Construction Services Snow/Ice Removal Plan
Number:	3.037.1
Subject:	Construction Services Snow/Ice Removal Procedures
Cross Reference:	APWA Management Practice(s) <u>Chapter 26</u>
Date Issued:	February 28, 2012
Date Revised:	December 12, 2018
Date Last Reviewed:	December 12, 2018
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018



	SOP Title: Construction Services Snow/Ice Removal Plan	SOP No.: 3.037.1
	Effective Date: 12/12/2018	Supersedes Policy Dated: 06/15/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to document the snow/ice control removal plan for the Environmental Services Division Construction Services Branch. This SOP details all the facets of the snow/ice control removal plan for Construction Services.

B. Applicability

This SOP is applicable to the Environmental Services Division Construction Services Branch.

C. Specifics of the SOP

a. Adoption of PWC EOP ESF 3B

This plan adopts the responsibilities given to the Environmental Services Division as listed in the Prince William County Emergency Operations Plan (EOP) Emergency Support Function (ESF) 3B Snow Removal Plan. (Attachment A)

b. Weather Monitoring

The Construction Services Branch is responsible for monitoring the weather for the Branch. The Construction Services Branch Chief (Branch Chief) does this via the internet, local radio and TV stations. Also, the Branch Chief is on the email list of the County Emergency Services Coordinator. The emergency services coordinator tracks the weather and provides updates to employees with emergency management responsibilities throughout the County.

c. Employee Scheduling

The Branch Chief is responsible for mobilizing the branch for snow removal operations. Attachment B lists who is called in for snow removal operations. Snow/ice removal work is generally completed between 4:00a.m. and 7:00p.m.


d. Snow and Ice Control Materials

Construction Services uses a grit mixture of one (1) ton stone screenings and 50 pound of salt. The grit mixture is mixed at the Operations Building, if any is stored, it is stored in the concrete bay shown on Attachment C. The salt is purchased from local suppliers. Stone screenings are purchased from Cedar Mountain Stone or Vulcan Materials.

e. Equipment

Attachment D lists all of the equipment used by Construction Services for the purposes of snow/ice control. During the month of November, the crew supervisors are responsible for completing an equipment drill. At this same time, a training meeting is held with all employees to review snow removal procedures and projects for the upcoming season. As a part of this drill all the equipment is set up for snow/ice control and inspected for issues. Also, during this drill all equipment is calibrated to the proper settings. All issues identified during this must be rectified by December 15th each year.



	SOP Title: Construction Services Snow/Ice Removal Plan	SOP No.: 3.037.1
	Effective Date: 12/12/2018	Supersedes Policy Dated: 06/15/2015

f. **Snow Removal Projects**

Attachment E is a list of snow removal responsibilities for Construction Services. These locations are all non-primary streets or parking lots. Therefore, snow/ice responses are generally limited to the hours of 4:00 a.m. to 7 p.m. Exceptions are at the discretion of the Branch Chief.

g. **Material Loading**

Material Loading is completed at the Operations Building. Attachment F details the loading procedures. Loading procedures are reviewed during morning crew meeting prior to the start of the snow/ice season.

h. **Removal Procedures**

The Branch has a curb to curb policy for cleaning streets. After precipitation has stopped, crews must clear or treat the streets from curb to curb. Grit is applied to surfaces after the event has ended. The removal expectations are reviewed during morning crew meetings prior to the start of the snow/ice season.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

Administration of this SOP shall be the responsibility of the Environmental Services Division Chief.

Attachments

Attachment A: Prince William County EOP ESF 3B Snow Removal Plan

Attachment B: Lists who is called in for snow removal operations

Attachment C: Picture of the building at Ops in which “grit” is stored in.

Attachment D: Lists all of the equipment used by Construction Services for the purposes of snow/ice control.

Attachment E: List of snow removal responsibilities for Construction Services

Attachment F: Details the loading procedures

ATTACHMENT A

Prince William County EOP
ESF 3B Snow Removal Plan

**ESF 3B SNOW REMOVAL PLAN
TABLE OF CONTENTS**

INTRODUCTION	2
AUTHORITIES AND REFERENCES	2
PURPOSE	2
SITUATION AND ASSUMPTIONS	2
ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES	3
CONCEPT OF OPERATIONS	4
ADMINISTRATION AND LOGISTICS	5

Revised: 12/08

INTRODUCTION

To remove accumulated snow from County facilities and other designated areas to ensure access by employees and citizens, to maintain normal government operations and services to the maximum extent possible. To quickly call in additional resources to supplement the routine snow plan and prepare to handle additional work assignments as directed by the Office of Emergency Services.

AUTHORITIES AND REFERENCES

- A. Authorities
- B. References

PURPOSE

The purpose of this appendix is to remove snow from County facilities to ensure access and maintain government.

SITUATION AND ASSUMPTIONS

A. Situation

The average seasonal snowfall for the region as measured at Washington Reagan National and Dulles Airports by the National Weather Service (NWS) is between 16.6 and 22.8 inches. Snowfall occurs several times a season and the accumulation of snow results in limited access to County facilities and interferes with transportation. Prince William County rarely experiences a major snowstorm in which the severity of the storm exceeds the capability of the County's assets to clear the snow from the County facilities in a safe and timely manner.

B. Assumptions

1. The average snowfall will be within the expected range.
2. Weather forecasts will be accurate enough to provide sufficient warning to mobilize personnel, equipment, and contractors.
3. Personnel and equipment resources required that are not currently County assets will be available from regional sources.
4. This annex would be put into effect when the routine snow removal plan becomes ineffective.
5. All available County-owned equipment assigned to the Division is being utilized.
6. Movement is affected by the nature and scope of the snow.
7. Fleet Maintenance will be available to provide vehicle maintenance support and wrecker service as necessary.

ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Organization

1. The Director of Public Works is responsible for planning, organizing, and coordinating snow removal operations.
2. Other County departments will be prepared to provide assistance to the Department of Public Works.

B. Assignment of Responsibilities

In the event of an emergency, the Chief of the Buildings and Grounds Division will assume full responsibility for efficient coordination of the following groups that will be necessary in carrying out the mission:

1. Buildings and Grounds Administration

Office staff will be brought in or take action from home to call contractors who have necessary equipment and material at strategic locations to assist in snow removal.

2. Courier support will be available for special assignments as directed.
3. Building Operating Engineers and staff are expected to be at their hubs or other designated locations conducting regular snow removal efforts. Upon direction they will shift priorities to support emergency operations.
4. Grounds Maintenance and Housekeeping Staff
5. It is assumed that members of this group have already put in over 8 hours in snow removal. Actions will start to rotate these employees so utilization of all available assigned equipment can be maximized and staff rotated.

6. Environmental Services Division Snow Plow Responsibility

a. Assist VDOT

- (1) Areas designated by VDOT snow plow plan in eastern Prince William County: Dumfries, Woodbridge, Dale City, etc.
- (2) Areas designated by VDOT snow plowing plan in western Prince William County excluding: Bull Run Mountain Estates.

b. County Designated Areas (By Priority)

- (1) Landfill and Fleet yard (sand)
- (2) Balls Ford Facility Mulch Yard
- (3) Railroad Avenue
- (4) Innovation Technology Park (Innovation Drive, Assett Loop, Discovery Boulevard, University Boulevard (Innovation section only))
- (5) Mockingbird Heights Road (South of Fuller Heights Rd.)
- (6) Defaulted Subdivisions (Palace Court, etc.)
- (7) Post Office Road (behind B.J.'s Wholesale)

ATTACHMENT A

- (8) Rippon Lodge Driveway
7. Buildings and Grounds Division priorities during the emergency would be as follows:
 - (1) Gas pumps - Gar-Field and Western District
 - (2) County Complex
 - (3) Police access - Gar-Field and Western District
 - (4) Juvenile Detention Center
 - (5) Facilities operating 24-hours per day such as: Juvenile Emergency Shelter, Animal Shelter (PW Environmental Services), Group Home for Boys and Group Home for Girls (PW Environmental Services). Hilda Barg Homeless Prevention Center, and Hypothermia Unit/Winter Shelter.

CONCEPT OF OPERATIONS

- A. The Department of Public Works will coordinate snow removal activities for the County using County staff and equipment supplemented by contractors when necessary.
 1. Buildings and Grounds Division will centralize the coordination of snow removal activities for County buildings and will operate from the office at 9412 Peabody Street.
 2. Environmental Services Division will coordinate snow removal from designated areas and buildings.
 3. Property Management Division will facilitate snow removal from leased County properties through coordination with building owners/management.
 4. Department of Development Services will provide inspectors from its Building Development Division to evaluate roof loading and snow accumulation and provide advice regarding occupancy issues upon request.
- B. Communications with employees will be by cell phones/Nextel radio and commercial phones, or 800 MHZ portable radio in the event of commercial/cell phone communication services are not available.
- C. The Department of Public Works will provide staff personnel to the Emergency Operations Center (EOC) or other designated command centers upon request from the Office of Emergency Services.
- D. The Department of Public Works will be responsible for soliciting other qualified County employees for assistance in operating and providing relief of snow removal equipment operators.
- E. The Department of Public Works will re-assess priorities and respond to requests for assistance from the Office of Emergency Services/Management.

ATTACHMENT A

- F. The Buildings and Grounds Division will centralize coordination of its staff from the building at 9412 Peabody Street, Manassas. Buildings and Grounds Operations Center - Phone 703-792-6390.
- G. Additional qualified County employees would be solicited from other County agencies for assistance as required, mainly in relief operating snow removal equipment.
 - 1. National Guard Armory (mobilization only)
 - 2. Assist at Adult Detention Center
- H. Priorities will be changed as necessary by the Office of Emergency Services and the Director of Public Works for handling facilities not listed.

ADMINISTRATION AND LOGISTICS

- A. Administration
 - 1. All records and reports will be maintained by each Public Works Division and submitted to the assigned Department Coordinator for compilation and submission to the Planning Section Documentation Unit as directed.
 - 2. Tracking records and reports of administrative data
 - a. Hours worked
 - b. Location and type of the work performed
 - c. Pay rate of personnel performing work
 - d. Expenditures
 - a. Expenditures
 - (1) Purchase orders
 - (2) Invoices
 - (3) Vouchers
 - 3. Detailed records regarding costs associated with snow removal operations will be maintained to provide input for requests for disaster assistance funds.
 - 4. The Environmental Services Division has limited resources for snow removal in expanded areas of responsibility. The crew chief will decide if extended working hours may be necessary in addition to allocating the most efficient use of team members and equipment within the crew. Activity records and time sheets will be submitted daily.
 - a. This organization structure will remain in effect until snow removal activities have been completed. Normal working hours will be re-established for all employees unless team members work more than a normal shift. In this instance, schedules will be adjusted to eliminate continued work in successive shifts.

ATTACHMENT A

- b. The crew supervisor will assume responsibility of the crew team during follow-up shifts of extended involvement during scheduled absence of the crew chief.
- c. The Environmental Services Division chief has the authority to reorganize/reschedule crews as the situation warrants.
- d. With the director's concurrence, the Environmental Services Division Chief can authorize personnel to take a 4x4 vehicle home to shuttle the crew.
- e. The Environmental Services Division chief is to be informed if the crew chief is unavailable at home in the event of snow forecast.
- f. The Environmental Services Division chief is to be kept informed of field activities.
- g. Crew members responsible for snow removal in designated areas will be in touch through their respective radio units. Base station #8 (OTFSS) will; however, coordinate activities with the division chief by telephone, if needed. Crew members can also be provided with "quarters" by the division secretary to make use of pay phones radio contact is lost.
- h. The activation of the snow removal plan may be partial for a specific area. The crew chief will coordinate resources accordingly.
- i. Crew chiefs are responsible for winterizing the equipment before November 15. Installation of snow plows is also to be completed by November 15.

B. Logistics

1. Procurement of equipment and supplies

- a. The normal procurement process will be followed for each agency or organization. However, if resources are not available, the request will be processed through the Logistics Section and will follow the VDEM SALTT request process. The following information should be included in all resource requests:
 - (1) Size
 - (2) Amount
 - (3) Location
 - (4) Type of resource
 - (5) Time frame in which it is needed
- b. Specialized equipment or supplies will also be requested through the Logistics Section.

2. Personnel

- a. Requests for additional personnel will be processed through the National Capital Region (NCR) mutual aid agreements (MAAs) that are currently in place.

ATTACHMENT A

- b. Additional personnel requests will be requested via the Statewide Mutual Aid (SMA) program. SMA information is found on the Virginia Department of Emergency Management's (VDEM's) Website at vaemergency.com (See ESF 5, Attachment A, VDEM SMA Event Agreement).
- C. Excessive snow storms could be declared disasters and might fall under Category A under the Robert T. Stafford Act for Debris Removal.
- D. Buildings and Grounds will maintain an initial stock of ice melting chemicals for immediate use at major County buildings. Additional supplies will be stored at the Buildings and Grounds Warehouse.
 - 1. Material kept on hand
Buildings and Grounds (B&G) pre-positions an initial stock of ice melting chemicals at major facilities for immediate use. Backup supplies will be stored at the Bennett Administration Building.
- E. Material availability - Additional and replacement materials are available and will be obtained from local sources in accordance with existing procedures.
 - 1. Southern States - salt, shovels, winter gear, urea fertilizers
 - 2. Virginia Department of Transportation - salt, sand
 - 3. Local hardware stores - gloves, shovels, ice melt
 - 4. Vulcan Quarry - sand, fine ground rock
- F. B&G Snow Equipment (by Hub):
 - 1. Manassas and Judicial Center Hubs
 - 4x4 pickup trucks (6) with blades Snow Scrapers
 - 2 Sand trucks Snow Scoops
 - Snow blowers (3) De-Icer
 - Wheel horse tractor with blade Ice melt spreaders
 - 2. Central Hub:
 - 4x4 pickup truck with blade Snow Scrapers
 - Wheel horse tractor with blade Snow Scoops
 - Kubota tractor with blade Snow Blower
 - De-Icer Ice Melt Spreader

ATTACHMENT A

3. Eastern Hub:

4x4 Pick Up truck with blade	Snow Scrapers
Wheel Horse tractor with blade	Snow Scoops
Snow Blowers (2)	De-Icer
Ice Melt Spreader	

4. B&G - Western Hub:

4X4 Pick Up with blade	Snow Scrapers
Wheel Horse tractor with blade	Snow Scoop
Ice Melt Spreader	De-Icer
Snow Blower	

5. B&G - Independent Hill Hub

Kubota tractor with blade	Snow Scrapers
Snow Blower	Snow Scoops
Ice Melt Spreader	

Environmental Services Division - Snow Equipment	
Pickup with plow & sander & plow	ES 1711 & ES 1944 & ES 124
Pickup with plow & sander & plow	ES 1710 & ES 1943 & ES 125
Boom Truck with plow & sander	ES 1565 & ES 1565 & ES 2828
Small Dump truck with plow & sander	ES 1560 & ES 128 & ES 1804
Motor Grader	ES 1027
B21 Kubota	ES 1699
Kubota Tractor	ES 2145
Backhoe	ES 1924
Skid Steer	ES 1026
Case Rubber Tire Loader	ES 2536

ATTACHMENT A

Snow Blower	ES 1471		
Track Bobcat	ES 2663		
Track Bobcat	ES 2797		
Vehicles 4x4	ES 1295	ES 1711	ES 1849
	ES 1412	ES 1712	ES 1955
	ES 1527	ES 1713	ES 2033
	ES 1573	ES 1714	ES 2034
	ES 1574	ES 1715	ES 2035
	ES 1617	ES 1847	ES 2036
	ES 1710	ES 1848	ES 2184
	ES 2514	ES 2496	ES 2189

3.037.1 Construction Services Snow/Ice Removal Procedures

ATTACHMENT B

Employees working with County during Snow removal (not going to VDOT)

Revised 12/17/2018

Snow Team #1

Name	Cell Phone	Home Phone
Matt Bowman	571-245-6470	703-609-5052
Stanley Friend	703-855-8088	540-760-9930
Danny Garber	703-307-0452	703-497-0777

Snow Team #2

Name	Cell Phone	Home Phone
Raymond Zuspan (supervisor)	703-898-7267	540-439-5247
Bill Brooks	703-888-6974	703-754-1343
Stacey Breeding	540-718-6589	540-937-5039

When snow is forecast Lucas Hisghman will notify the supervisors of each team with the time their team is scheduled to work. The supervisors will notify the men on their teams.

The Landfill opens at 6am Saturdays, 9am Sundays and 6am weekdays.

Mulch yard opens at 7am Saturdays, 9am Sundays and 7am weekdays.

Any mechanical problems with trucks call Tim Childers at 571-238-4362. Fleet takes care of all trucks in emergencies.

Police non-emergency number to report accident in county vehicle is 703-792-6500.

If you are driving a CDL vehicle and are involved in an accident and are issued a ticket or someone is killed, you must contact your supervisor and be taken to Prince William Hospital for a drug and alcohol test immediately.

Other Numbers:

Marc Aveni	571-722-4353	703-257-1422
Lucas Hisghman	703 898-7269	540-220-9276
Ops Fax	703 792-5763	
Ops Bay Phone	703 792-5385	
Sign Shop	703 792-5765	
Police non-emergency	703 792-6500	

Attachment C



3.037.1 Construction Services Snow/Ice Removal Procedures

ATTACHMENT D

CONSTRUCTION SERVICE BRANCH

Revised 12/17/2018

Snow Removal Equipment

Primary Equipment

ES 3558-F750 medium dump truck (Raymond's)
ES 1805-sander for ES3558 (no remote starting)
ES 123-plow for ES 3558
ES 3557 Super duty 3500 (Matt's)
ES 2828-sander for ES 3557
ES 126-plow for ES 3557
ES 3440-super duty 3500 (Raymond's)
ES 1944-sander for ES3430
ES 125-plow for ES3430
ES 3418-super duty 3500 p/u
ES 1943-sander for ES3418
ES 124-plow for 3418

Supplemental Equipment

ES 1699-B21 Kubota
ES 2145-Kubota Tractor
ES 1450-JCB Backhoe
ES 1924-JCB 214S Backhoe
ES 2536-Case Rubber Tire Loader
ES2663-T300 Bobcat skid steer
ES2797-S300 Bobcat skid steer
ES2990-T190 Bobcat skid steer
ES3483-T750 Bobcat skid steer

All equipment for snow removal operations is to be inspected during the month of November and be fully operational by December 15.

As part of the inspection and preparation process all sanders will be calibrated to ensure they put down the proper amount of anti-icing materials. The gate opening from the storage box to the spinner is adjustable from 1 to 4 inches. As part of the calibration process the box is loaded with material and we conduct test passes in the parking lot adjusting the gate until material is spread 12 feet wide in an even pattern. Past experience has shown that 3 inches is the best setting to use.

3.037.1 Construction Services Snow/Ice Removal Procedures

ATTACHMENT E

CONSTRUCTION SERVICE BRANCH

Revised 12/17/18

Snow Removal Projects

Project Name	Priority Rating
Landfill and sand Fleet yard (807)	1
Balls Ford Mulch Yard (1002)	2
Railroad Avenue (609)	3
Mockingbird Heights stub (609)	4
Post Office Road (609)	5

Assignments

Team #1 – Matt Bowman

<u>Crew</u>	<u>Equipment</u>	<u>Projects</u>
Matt Bowman	ES 3440 Sander Plow	Mulch Yard
Danny Garber	ES3418 Sander Plow	Railroad Avenue Mockingbird Heights Post Office Road
Stanley Friend	ES3557 Plows Sanders	Landfill

Team #2 – Raymond Zuspan

<u>Crew</u>	<u>Equipment</u>	<u>Projects</u>
Raymond Zuspan	ES3440 Sander Plow	Mulch Yard
Stacey Breeding	ES3418 Sander Plow	Railroad Avenue Mockingbird Heights Post Office Road
Bill Brooks	ES3557 Plows & Sanders	Landfill

3.037.1 Construction Services Snow/Ice Removal Procedures

ATTACHMENT F

Loading Procedures for Stone Screenings/Salt Mix

Revised 12/17/18

The machines and procedures listed below will be used to load the stone screening/salt mix stored in the covered shed onto the truck mounted sanders. One 50 lb. bag of salt to be mixed with each ton of stone screenings when delivered. Look at the weigh ticket after screenings are dumped. If 12 tons were delivered, then break up 12 bags of salt on top of pile of screenings and mix together in storage bin with rubber tire loader ES 2536.

Super Duty 3500 trucks with orange painted sanders:

Truck is to be parked with brake on.

All chains and straps securing sander are to be inspected

ES 2052 Kubota tractor or the Bobcat skid steers will be used to load the sanders mounted on super duty 3500 trucks

Each bucket of screenings/salt mix loaded by the Kubota tractor weighs approximately 1500 pounds.

Each bucket loaded by the skid steers weighs approximately 1800 pounds

Maximum Load 3600 lbs. screening/salt on super duty 3500 trucks

2 buckets from the skid steers or the Kubota tractor.

ES 3558 with stainless steel sander

Truck is to be parked with brake on.

All chains and straps securing sander are to be inspected

Bobcat skid steers or JCB backhoes will be used to load the sander mounted on ES 3558

Each bucket of screenings/salt mix loaded by the skid steers weighs approx. 1800 pounds

Each bucket of screenings/salt mix loaded by JCB weighs approx. 4000 pounds

Maximum Load 8000 lbs. Screening/salt on ES3558

4 buckets from skid steer

2 buckets from JCB backhoes

All equipment used to load or mix screening/salt mix needs to be power washed as soon as event is over.

Appendix D – Pesticide Herbicide and Fertilizer Application



Mosquito Treatment Report

This data is filtered by the following parameters:

From

7/1/2019

To

06/30/2020

Site Type

SWM

Treatment summary

3275 total inspections.

628 total treatments.

11.33038223140496 acres treated.



Mosquito Treatment Report

This data is filtered by the following parameters:

From

7/1/2019

To

06/30/2020

Site Type

Non-SWM

Treatment summary

3784 total inspections.

861 total treatments.

16.74307644628099 acres treated.



Mosquito Treatment Report

This data is filtered by the following parameters:

From

7/1/2019

To

06/30/2020

Treatment summary

7059 total inspections.

1489 total treatments.

28.07345867768595 acres treated.




Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Insecticide Storage, Disbursement, Transport and Inventory
Number:	3.017.7
Subject:	Procedures for Insecticide Storage, Disbursement, Transport and Inventory
Cross Reference:	APWA Management Practice (s) <u>28.4</u>
Date Issued:	May 3, 2010
Date Revised:	December 12, 2018
Date Last Reviewed:	June 30, 2015
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018

	SOP Title: Insecticide Storage, Disbursement, Transport and Inventory	SOP No.: 3.017.7
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish a guide for the storing, handling, and disbursement of insecticides.

B. Applicability

This SOP applies to all employees of the Mosquito and Forest Pest Management Branch (MFPM).

C. Guidelines

Storage: Insecticides such as solid and liquid larvicides, and insecticide tank flush used in the program are stored in the Mosquito Shed located at the MFPM building. Insecticides used on a regular basis during the mosquito season may be held in County vehicles. The liquid adulticide is stored in the Mosquito Shed located at the MFPM building in on spill containment pallets. Each drum storage pallet is properly labeled.

Disbursement: Larvicides and adulticides are distributed on an “as needed basis”. Technicians pick up the larvicides or adulticide. The amount of material that is taken is recorded on an inventory sheet located at the storage sites. The inventory at the storage sites is managed by the Assistant Branch Chief.

Transport: Insecticides must be secured while being transported in County trucks.

Disposal of Empty Insecticide Containers: Empty larvicide bags can be disposed of in the trash. Empty adulticide insecticide containers are picked up by the vendor they were purchased from. Always refer to the Product Label before disposal.


Disposal of Unwanted Insecticide Material: Expired and unwanted insecticides are identified by any staff member and turned over to the County’s Hazardous Waste Contractor by the Assistant Branch Chief.

Safety: Read and follow all instructions on Product Labels. SDS (see below) must also be reviewed.

Safety Data Sheets (SDS): SDS information on all insecticides in use may be found in the storage sheds, staff vehicles and in the department shared drive and the SDS online portal. The Assistant Branch Chief must ensure that all staff has access to the latest versions (in an electronic format) on an at least annual basis.

Chemical Spill: If any spill were to occur the MFPM staff member will immediately inform the on-call person and call 911 for spill cleanup.



	SOP Title: Insecticide Storage, Disbursement, Transport and Inventory	SOP No.: 3.017.7
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

Pesticide Accidents: Pesticide accidents or incidents that constitute a threat to any person, to public health or safety, and/or to the environment must be reported to the VDACS Office of Pesticide Services. Initial notification must be made by telephone within 48 hours of the occurrence; a written report describing the accident or incident must be filed within 10 days of the initial notification. The above is the responsibility of the Assistant Branch Chief and in his/her absence, the Branch Chief. Additionally, it is their responsibility to notify PWC Risk Management within 24 hours of a spill that is above the thresholds established by this agency.

Spill Response: All vehicles and storage facilities will contain spill kits suitable to address pesticide spills. All staff that use or may potentially come into contact with pesticides will undergo training on spill response.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration


The administration of this SOP shall be the responsibility of the Mosquito and Forest Pest Management Branch Chief.





Standard Operating Procedure
Department of Public Works
Environmental Services Division

Title:	Adulticiding
Number:	3.017.2
Subject:	Adulticiding
Cross Reference:	APWA Management Practice (s) <u>28.2</u>
Date Issued:	May 3, 2010
Date Revised:	December 12, 2018
Date Last Reviewed:	June 30, 2015
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018

	SOP Title: Adulticiding	SOP No.: 3.017.2
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

A. Purpose

The purpose of this standard operating procedure (SOP) is to establish a guide to mosquito spraying operations. It is established to ensure that targeted spraying is conducted; it also ensures that adequate safety measures and EPA guidelines on the application of chemicals are followed.

B. Applicability

This SOP applies to all employees of the Mosquito and Forest Pest Management Branch.

C. Specifics

Adulticiding Process

Adulticiding may be triggered by high mosquito trap counts for specific species (mainly *Culex pipiens* and *Cx. restuans*) and positive arbovirus pools in residential areas. The decision to spray is further determined by species composition, presence or absence of non-participants, weather, location, proximity to human habitation and housing density among other factors. Adulticiding is conducted in the spray block where the infected mosquitoes were collected. Additional areas may be treated based on proximity to the trap site associated with the positive pools.


The program does not generally spray based on the density of the Asian Tiger Mosquito (*Aedes albopictus*) or other container breeders. In exceptional cases where highly pestiferous species are present in huge numbers (as evidenced by trap data) such as *Psorophora* spp., spray may also be justified. Furthermore, the branch generally does not spray if it is raining continuously, extreme heat, high winds or Code Red conditions. It is recommended that the sprayer is turned off at a distance of 300 feet from non-participants (NPs).

Citizens are allowed to opt out via email or phone call if they do not want their property to be sprayed. This non-participant database is maintained by the Assistant Branch Chief and GIS analyst and updated annually. Spray block maps include this information when it becomes available.

A public notification is published on the day of spraying once the decision is made to spray. The county's website and other notification systems are used as the media for public notification. The public notification lists the blocks to be sprayed and information on how to access spray block maps on the County Mapper XM.

The branch has two designated spray trucks both of which are equipped with a spray machine. The Assistant Branch Chief is responsible for general vehicle maintenance and spray machine calibration to ensure that the vehicles are in a state of readiness to be deployed during the mosquito season. Each vehicle is also equipped with a Spill Kit which must be checked before each spray operation by the sprayer.



	SOP Title: Adulticiding	SOP No.: 3.017.2
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

Once a spray operation is assigned, the sprayer/driver may request additional staff support. The driver operates the fogger machine while the second person is required to assist with navigation and alert the driver of any impending danger that might not be immediately visible to the driver. A paper map of the spray route is prepared by the GIS Analyst and made available to the vehicle operator.

The branch uses GIS tools on mobile devices linked to the fogging equipment to track and map areas sprayed. GIS data layers (spray route, spray block & NPs) are prepared at the office by the GIS Analyst and then deployed to a handheld Field PC. This device is then attached to the vehicle's control box which is equipped with a GPS. At the end of the spray session the device is disconnected and returned to the office. The data collected is uploaded to GIS and is used to create a spray information map showing the spray line and GPS points indicating when the sprayer was turned on and off. A detailed spray report is produced after the spray operation on the quantity of chemical used, the acreage sprayed and spray activity times and made available to the Field Supervisor and Branch Chief.

D. Chemical Spills

If any spill were to occur the MFPM staff member will immediately inform the on-call person and call 911 for spill cleanup.

Pesticide accidents or incidents that constitute a threat to any person, to public health or safety, and/or to the environment must be reported to the VDACS Office of Pesticide Services. Initial notification must be made by telephone within 48 hours of the occurrence; a written report describing the accident or incident must be filed within 10 days of the initial notification. The above is the responsibility of the Assistant Branch Chief and in his/her absence, the Branch Chief. Additionally, it is their responsibility to notify PWC Risk Management within 24 hours of a spill that is above the thresholds established by this agency.

Spill Response

All vehicles and storage facilities will contain spill kits suitable to address pesticide spills. All staff that use or may potentially come into contact with pesticides will undergo training on spill response.

E. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

F. Administration

The administration of this SOP shall be the responsibility of the Mosquito and Forest Pest Management Branch Chief.



Appendix E – Illicit Discharges and Improper Disposal

**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 4-2020	Date: 9/27/2019	Time: 11:50AM
Business Areas: SWM Facility	Report Completed By: Prem Poudel	
Outfall ID#59810 Address: 19256 Fuller Ht. Rd	City, State: Triangle, VA	Zip Code: 22172
Complain or Case Received From: Routine Inspection		

Photo of discharge:

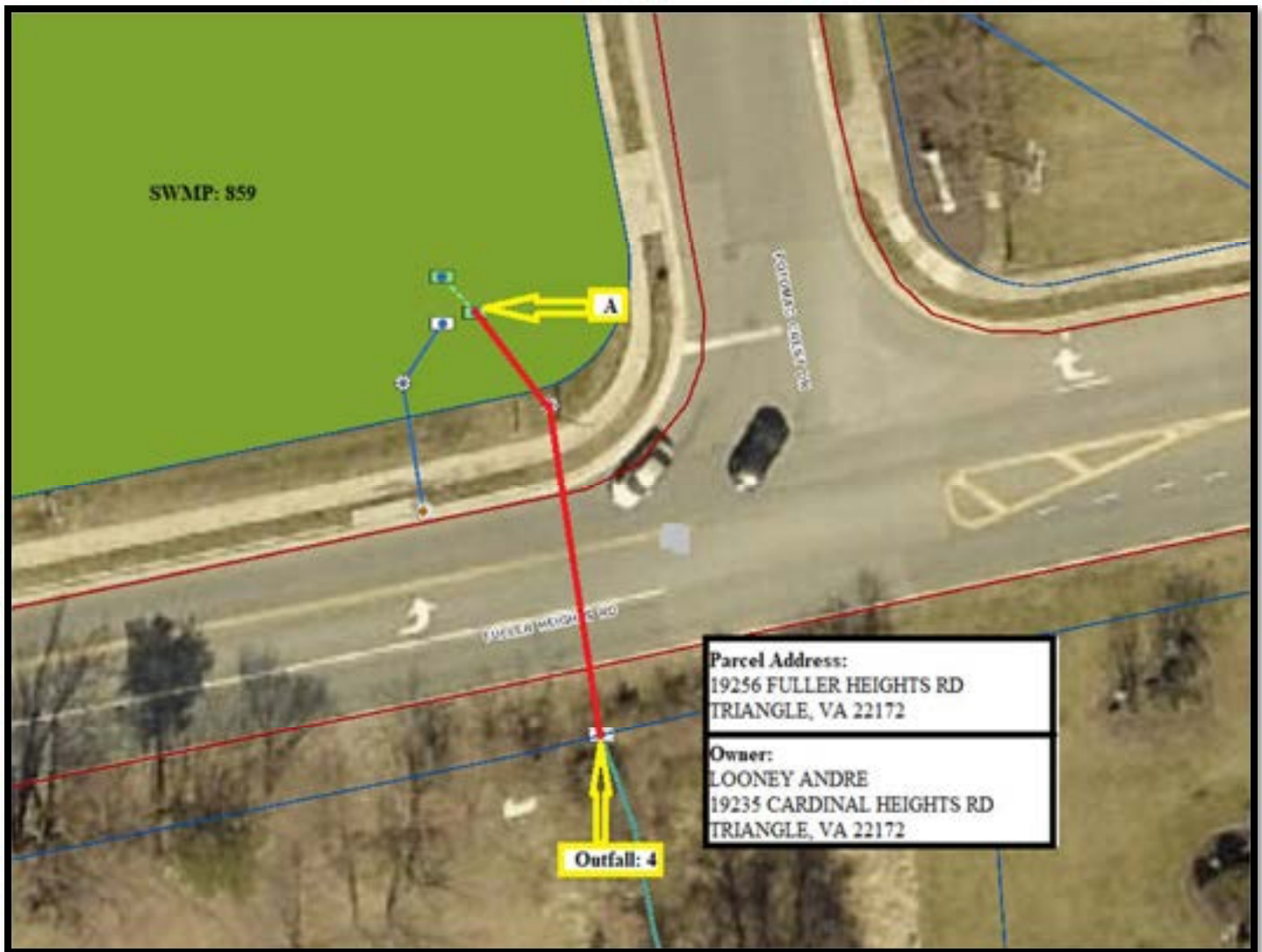


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.40 Limit: Std.	Conductivity: 519 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
Clear discharge was observed flowing from outfall. pH and conductivity were found within the standard limit. Discharge was tracked and found pond discharge of SWMP 859. The source of discharge was surface water, is non-point.	

Conclusion:

The source of discharge was surface water, is non-illicit discharge. Further investigation is not needed.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 14-2020	Date: 9/25/2019	Time: 11:30AM
Business Areas: Apartments	Report Completed By: Prem Poudel	
Outfall ID#59810 Address: 19300 Belleau Wood Dr	City, State: Triangle, VA	Zip Code: 22172
Complain or Case Received From: Routine Inspection		

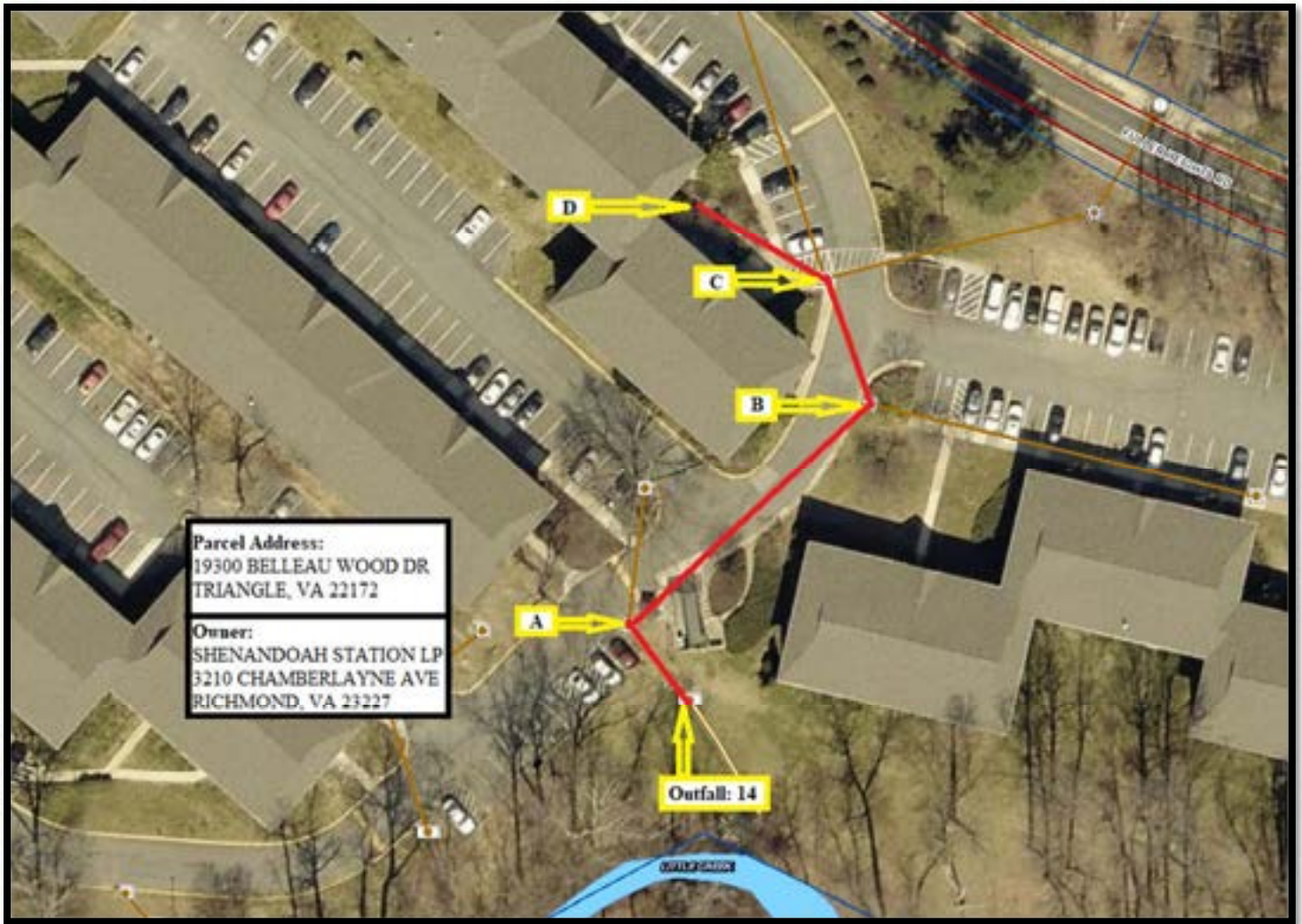
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.0 Limit: Std.	Conductivity: 217 μ S/cm Limit: Std.	Temp.: 67°F Limit: Std.	
Discharge related Indicators	Odor: NA	Color: NA	Turbidity: NA
	Floatables: NA	Stains: NA	Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
Clear discharge was observed flowing from outfall. pH and conductivity were found within the standard limit. Discharge was tracked and found to generated from ground water seepage. At Manhole A, flow was observed from AB branch and continued until C. Manhole C was found to be connected with foundation drain CD. The source of discharge was confirmed ground water from foundation into storm sewer system.	

Conclusion:

The source of discharge was grounds water, is non illicit discharge. Further investigation is not needed.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 3 -2020	Date: 7/25/2019	Time: 10:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 297 Address: 18304 Woodland Dr	City, State: Woodbridge, VA	Zip Code: 22172
Complain or Case Received From: Routine Inspection		

Photo of discharge:

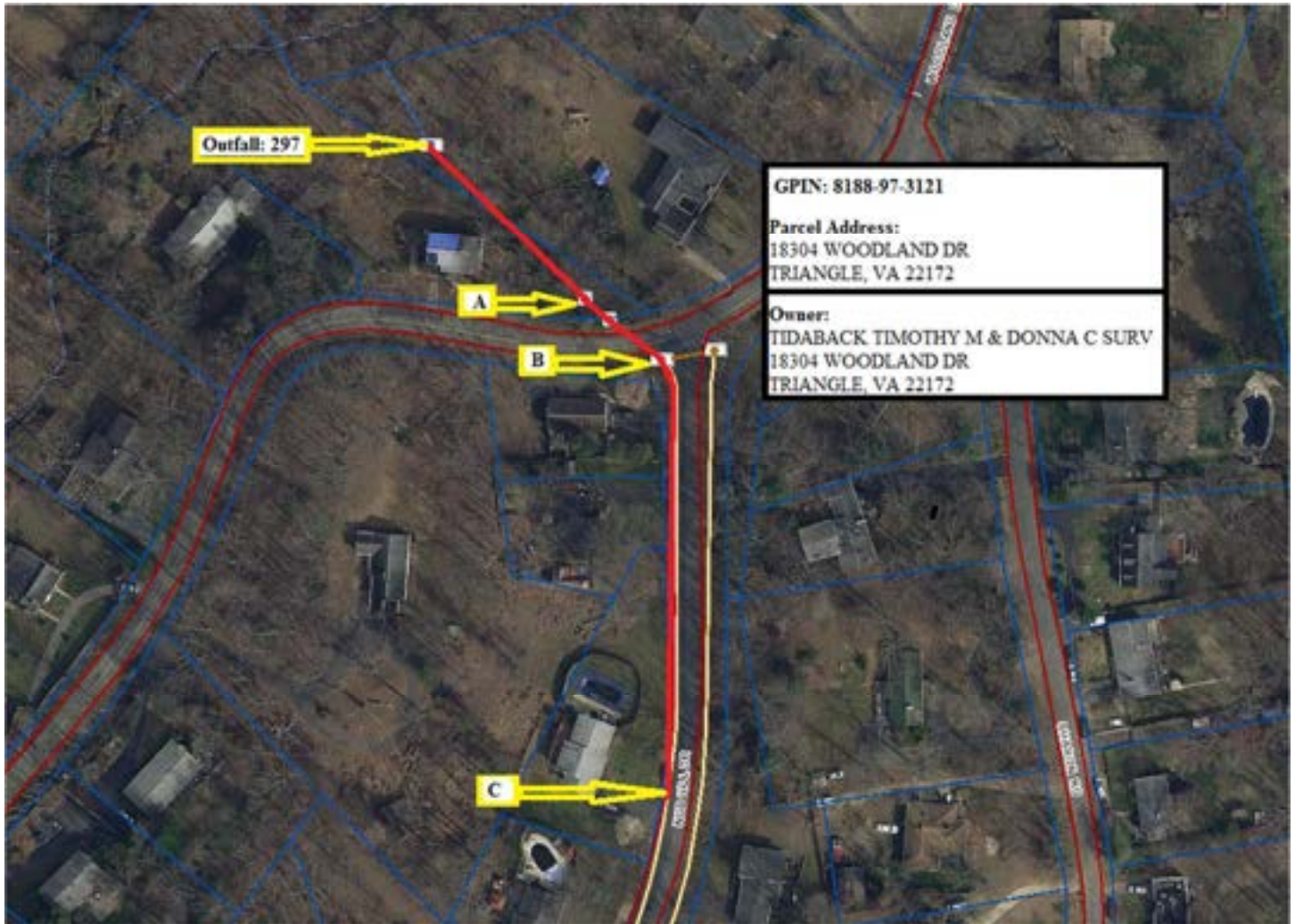


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.40 Limit: Std.	Conductivity: 922µS/cm Limit: Std.	Temp.: 82°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
<p>Pipe algae observed at outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch. Inlet B was receiving flow from BC channel. Ground water was flowing into BC channel from adjoining landscape. Channel was dry beyond point C.</p>	

Conclusion:

Source of discharge was discovered ground water from saturated landscape. Source of Algae was confirmed ground water.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
 5 COUNTY COMPLEX COURT, SUITE 170
 PRINCE WILLIAM, VA 22192-5308
 OFFICE: 703-792-7070 FAX: 703-792-6297

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 12-2020	Date: 8/16/2019	Time: 11:00AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 646 Address: 3376 Flint Hill PL	City, State: Woodbridge, VA	Zip Code: 22192
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.20 Limit: Std.	Conductivity: 211 μ S/cm Limit: Std.	Temp.: 72°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch only and continued tracking at BC. Inlet C was receiving surface flow from the grass swale. Discharge was observed at swale from foundation drain.

Conclusion:

After investigation, source of discharge was discovered ground water from foundation drain entering into storm sewer system via upstream inlet.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 16-2020	Date: 8/23/2019	Time: 10:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 764 Address: 4525 Edsall Drive	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:

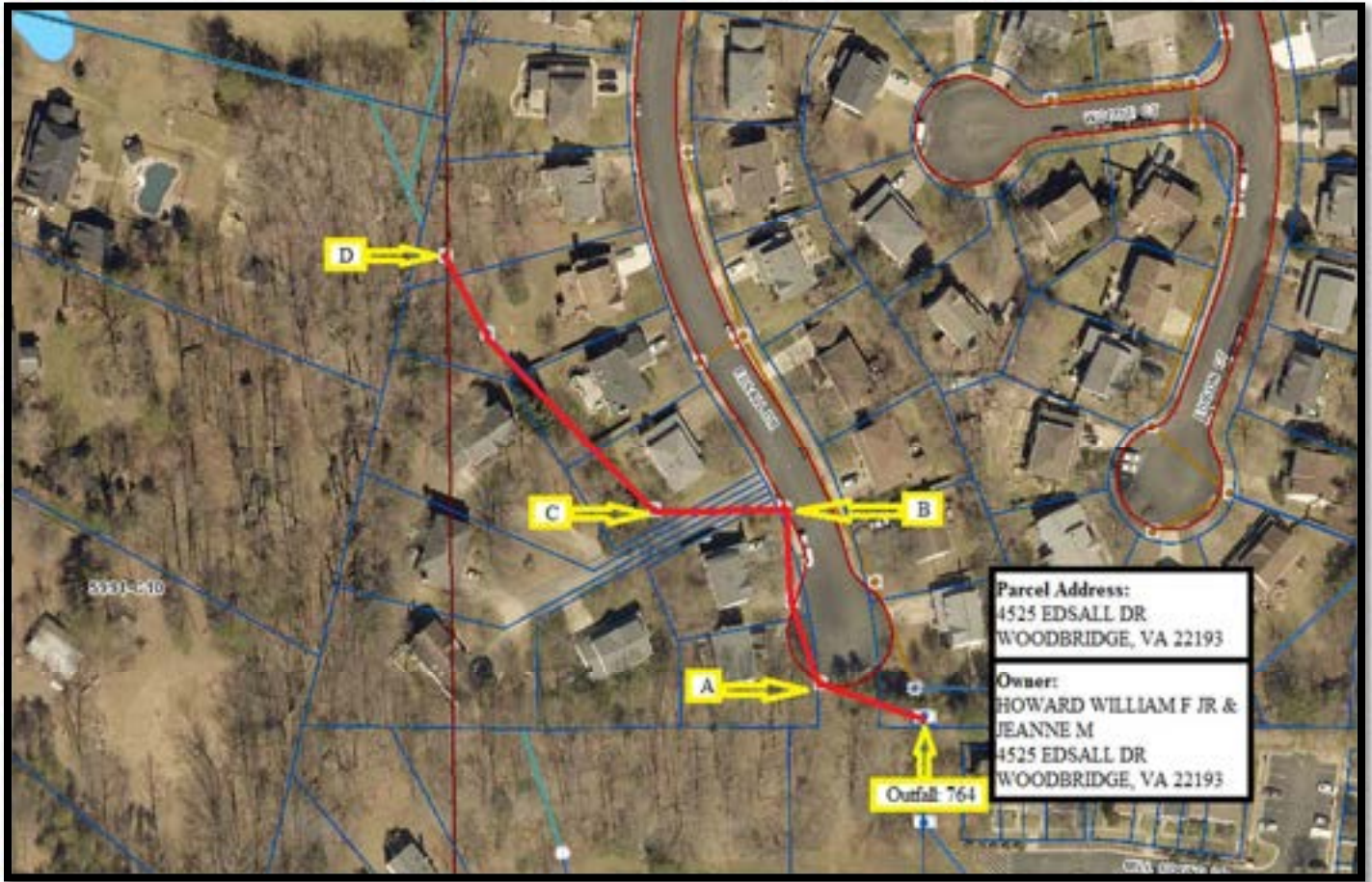


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.20 Limit: Std.	Conductivity: 194 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies: Stagnant flow was observed at outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch and continued tracking at AB, BC and CD. D is a drop inlet receiving discharge from upstream channel. The Channel was dry. There was no cross connection with sanitary sewers.</p>	
<p>Conclusion: After investigation, source of discharge was discovered ground water seepage into storm sewer system.</p>	

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 22-2020	Date: 9/11/2019	Time: 11:55AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#2349 Address: 14355 Salsbury Ct	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.20 Limit: Std.	Conductivity: 314µS/cm Limit: Std.	Temp.: 73°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: Algae	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
pH and conductivity did not exceed the limits during onsite test. Source of discharge was tracked along red line shown in map above. At manhole A, flow observed from AB branch. Access did not get to inspect Manhole B and D, but Manhole C and E were found dry. Tracking was continued along points F, G and H. Upstream inlet E was receiving discharge from VDOT storm water management pond.	
<u>Conclusion:</u>	
The source of discharge was confirmed VDOT pond discharge. Discharge observed at outfall was very common and further investigation is not needed.	

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 23-2020	Date: 9/20/2019	Time: 10:15AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#2608 Address: 4948 Linsey Ct	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.20 Limit: Std.	Conductivity: 491µS/cm Limit: Std.	Temp.: 74°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: Algae
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
pH and conductivity did not exceed the limits during onsite test. Source of discharge was tracked along red line shown in map above. At manhole A, flow observed from both AB and AC branches. Discharge of AB branch was trickle and visually better. Access did not get to inspect Manhole B. Tracking was continued along branch AC. Manhole C was very dry.	
Conclusion:	
The source of discharge was confirmed ground water seepage. The source of algae was suspected from ground minerals. Discharge was seemed very common and no further investigation is needed.	

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 13-2020	Date: 8/16/2019	Time: 11:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 3872 Address: 12239 All Spice Ct	City, State: Woodbridge, VA	Zip Code: 22192
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 8.20 Limit: Std.	Conductivity: 312 µS/cm Limit: Std.	Temp.: 71°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Discharge was found to be stagnant. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch only and continued tracking at BC. Inlet C was observed in moist condition only. Discharge was gradually reducing in upstream section. Cross connection did not find in inspection.

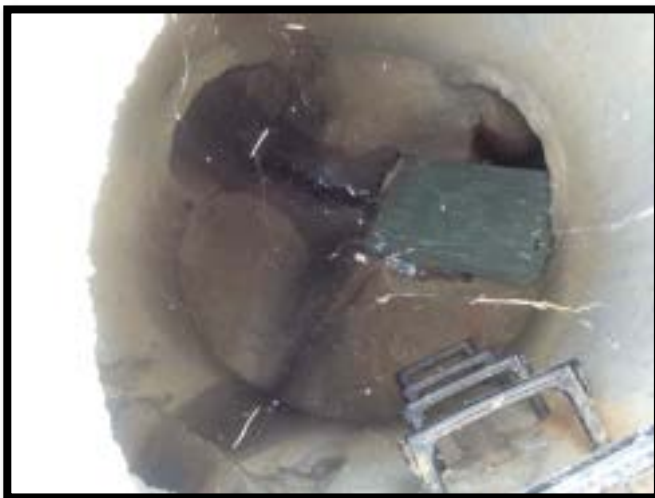
Conclusion:

After investigation, source of discharge was confirmed ground water seepage into storm sewer system.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 9-2020	Date: 8/8/2019	Time: 11:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 7710 Address: 1707 Maurice Drive	City, State: Woodbridge, VA	Zip Code: 22191
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.40 Limit: Std.	Conductivity: 218 μ S/cm Limit: Std.	Temp.: 69°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: Algae
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
<p>Pipe algae observed at outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from both AB and AC branches. Tracking was continued to AB branch. At manhole B, inflow observed from both curbs and gutters. One of them was water main leakage and another was foundation drain having intermittent flow at certain interval. Tracking was continued to AC branch. At manhole C, flow observed from both CD and CF branches. Drop inlet F was in moist condition only. After that discharge tracked along CDE. E is the outlet of SWMP# 478. Trickle flow was releasing from BMP.</p>	

Conclusion:

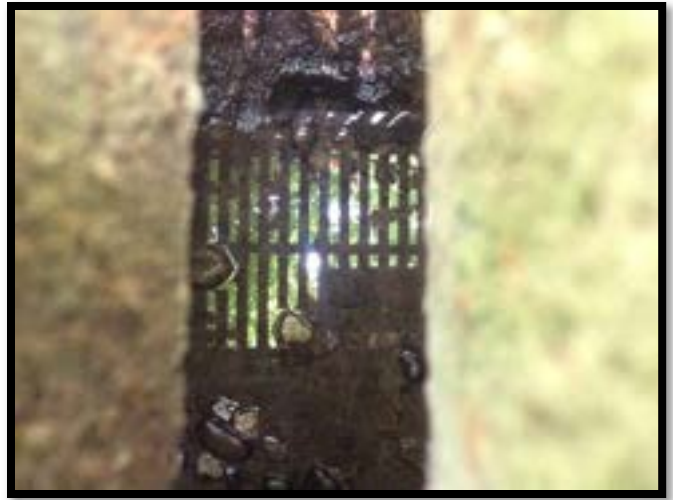
After investigation, source of discharge was confirmed from three different sources. Sources were water main leakage, foundation drain and outflow of SWMP. The case will inform to PWCSA for maintenance of watermain leakage.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 34-2020	Date: 2/19/2020	Time: 11:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#9002 Address: 5778 Rockcliff Ln	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

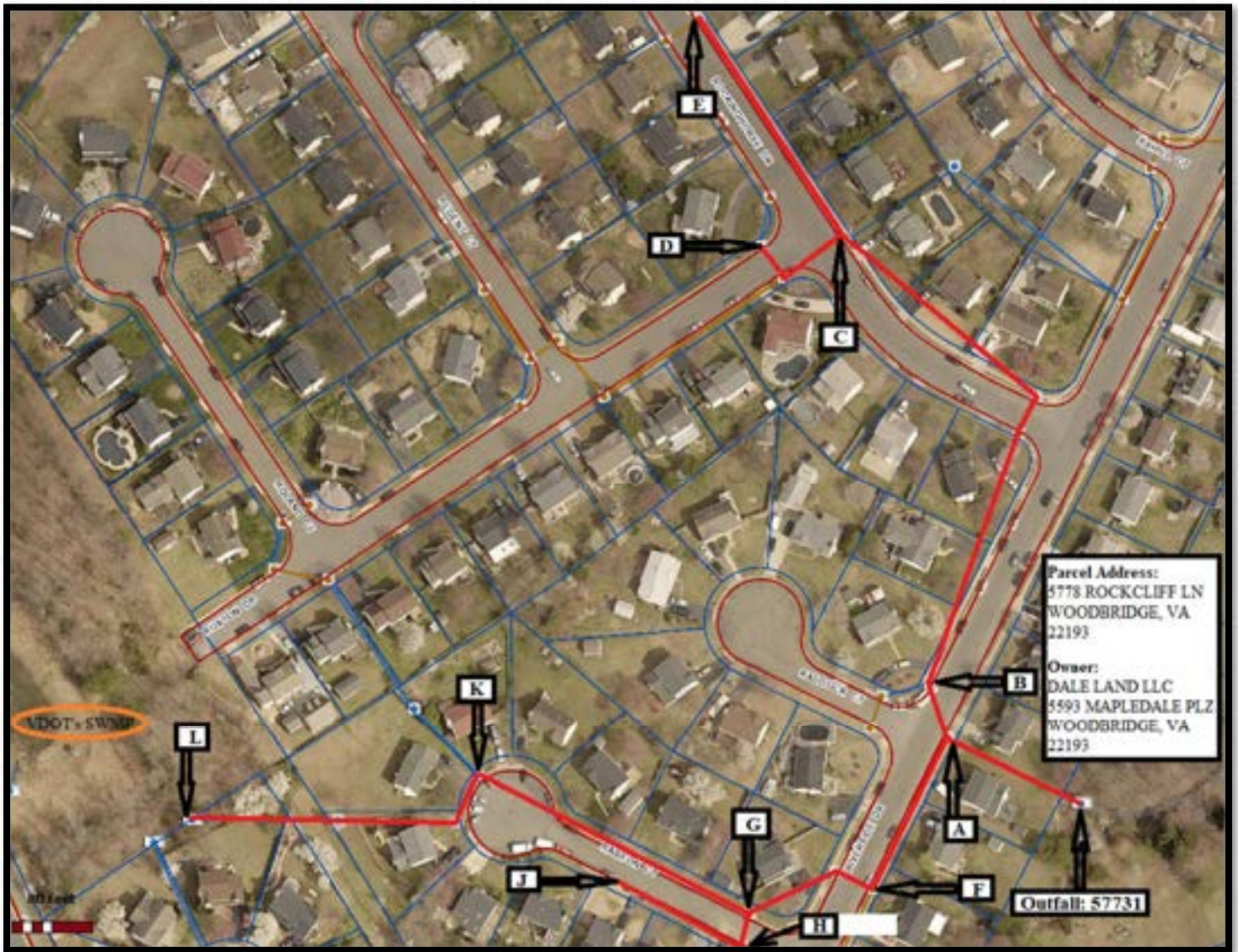
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 8.4 Limit: Std.	Conductivity: 417 μ S/cm Limit: Std.	Temp: 54°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name: NA	Name: NA
Company: Dale Land LLC	Company:
Address: 5593 Mapledale Plaza, Woodbridge VA	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
<p>Discharge was observed with orange algae through outfall having stagnant flow. The conductivity and pH did not exceed the standard limits on test performed on site. Discharge was tracked. Manhole A had flow from ABC and AFG directions. Tracking was started in ABC branch. At Manhole C, Discharge observed from CD and CE branch but both manholes D and E were found very dry respectively.</p>	

Tracking was started in next branch AFG. Manhole G was receiving flow from GHJ and GKL branch respectively. Foundation drains were connecting with curb & gutter discharging water along HJ line. Upstream storm water inlet located at point L was receiving water from the channel having upstream pond discharge. The pond belongs to VDOT.

Hence the discharge from outfall was found to be generated by combine effect of pond discharge and foundation drain.

Conclusion:

The source of discharge was discovered foundation drain with channel inflow, is considered a non-illicit discharge.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:













**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #:7 -2020	Date: 7/30/2019	Time: 02:30 PM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 9840 Address: 5369 Mansfield Court	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

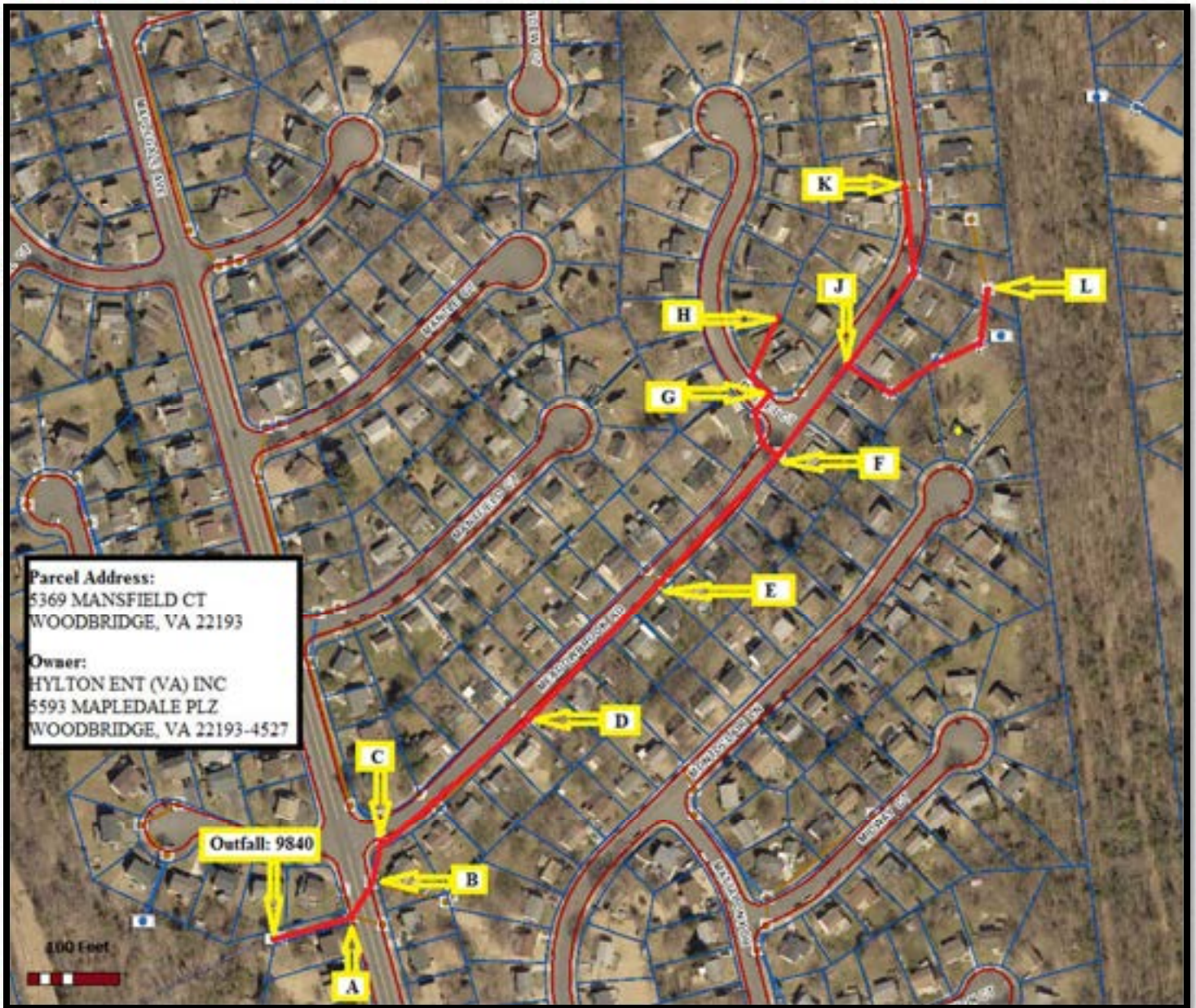
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.9 Limit: Std.	Conductivity: 614 μ S/cm Limit: Std.	Temp.: 72°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	

Discharge was observed through outfall. Algae were observed at downstream channel. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch. Discharge tracked along B, C, D, E, and F. At manhole F, discharge observed from both FG and FJ branches. Tracking was continued on GH branch and found ground water seepage with high Algae. After that, tracking was continued to FJ branch. At Manhole J, discharge was observed from both JL and JK branches. Manhole L and K were found dry. Cross connection of sanitary sewer with storm sewer system could not find during inspection. Volume of flow was gradually diminishing in upstream sewer.

Conclusion:

Source of discharge was confirmed ground water seepage. Development of Algae is a natural phenomenon developed due to bacteria with ground water.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
 5 COUNTY COMPLEX COURT, SUITE 170
 PRINCE WILLIAM, VA 22192-5308
 OFFICE: 703-792-7070 FAX: 703-792-6297

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 32-2020	Date: 11/21/2019	Time: 10:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#9965 Address: 4201 Glendale Rd	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.44 Limit: Std.	Conductivity: 375 μ S/cm Limit: Std.	Temp: 59.6°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date: 11/27/2019	Date:
Time: 11:38 AM	Time:
Name: Ms. Sherri	Name:
Company/Agency: American Water	Company/Agency:
Notes: sherri.abell@amwater.com / (703) 706-3864	Notes:
Comments/ Deficiencies:	
Clear discharge was observed through outfall. Discharge was tracked. Manhole A was receiving discharge from branch AB. At Manhole B, flow was observed from branches BC and BD. Large volume of discharge was discovered from BC branch but manhole C was very dry. Sample was taken at B from the flow of BC branch.	

pH and conductivity were found within the standard limit. Drinking water line connection point is discovered in between B and C points. Tracking was continued in another branch along the points B, D, E, F and G. Manhole G was in pavement and unable to open the lid. Upstream manhole M was observed dry. Tracking was again continued in H-L branch. Trickle flow was observed at Manhole J and K. At manhole K discharge observed from cross road but manhole L was discovered very dry. The source of discharge suspected ground seepage in BL branch. Desktop analysis of water sample was done on 11/22/2019. Fluoride, Chlorine and Copper were found to exceed standard limits of storm water's parameters.

Conclusion:

The source of discharge was suspected watermain leakage nearby 4142 Glendale Rd and ground water seepage in BL branch respectively. The case will notify to American Water to investigate from their side.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:









**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 35-2020	Date: 2/20/2020	Time: 10:00 AM
Business Areas: Residential + School	Report Completed By: Prem Poudel	
Outfall ID#10143 Address: 15224 Calexico Ln	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:

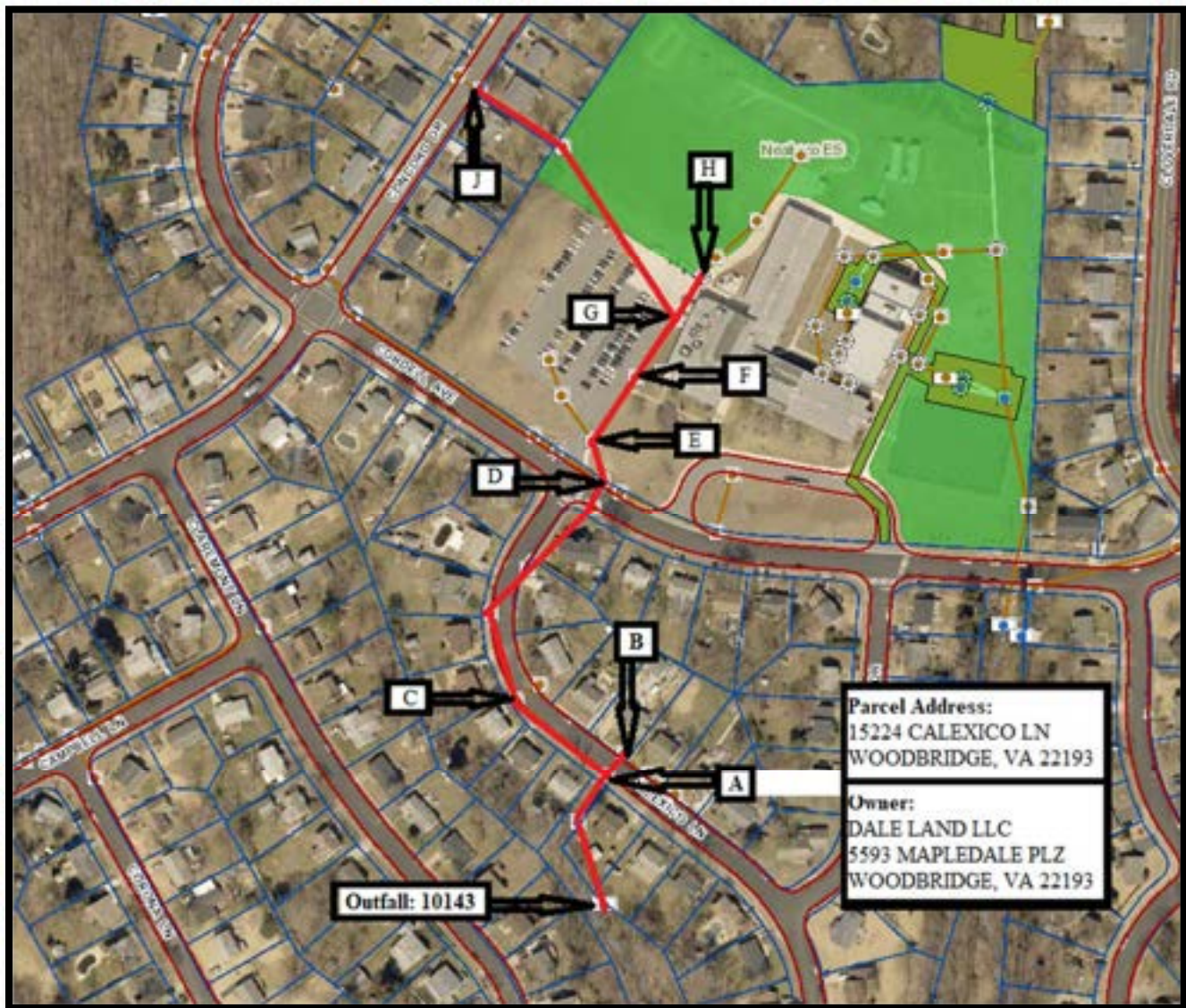


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.3 Limit: Std.	Conductivity: 611 μ S/cm Limit: Std.	Temp: 54°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: Algae	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name: NA	Name: NA
Company: Dale Land LLC	Company:
Address: 5593 Mapledale Plaza, Woodbridge VA	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
Discharge was observed with orange algae through outfall. The conductivity and pH did not exceed the standard limits on test performed on site. The downstream channel was severely eroded. Erosion control measures need to be employed soon to control further damage.	

Discharge was tracked. Manhole A had flow from AB and ACDEFG branches. At manhole B, the curb and gutter were receiving inflow from foundation drain of three houses. Tracking was continued in next branch ACDEFG. Manhole G was receiving flow from GH and GJ branches respectively. Manhole H and J were discovered extreme manhole being very dry. The discharge was found in diminishing order in upstream lines and cross connection did not notice in inspection, source was confirmed ground water seepage into storm sewer system.

Hence the discharge from outfall was found to be generated by combine effect of ground seepage and foundation drain.

Conclusion:

The source of discharge was discovered foundation drain with ground water seepage, is considered a non-illicit discharge.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:















**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 31-2020	Date: 10/3/2019	Time: 10:40 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#16340 Address: 8410 Impalla Dr.	City, State: Manassas, VA	Zip Code: 20110
Complain or Case Received From: Routine Inspection		

Photo of discharge:

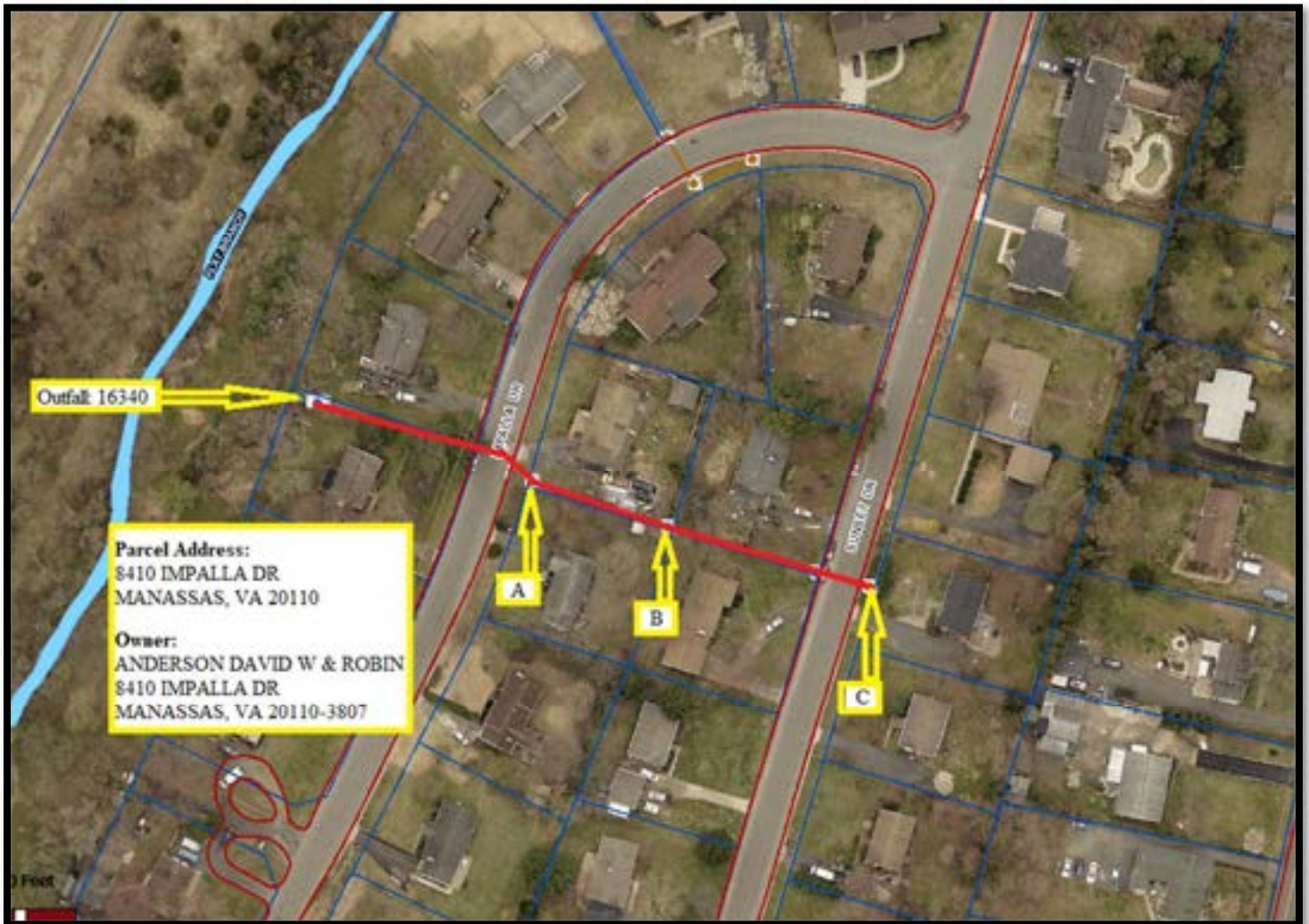


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.7 Limit: Std.	Conductivity: 318 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
Clear discharge was observed through outfall. pH and conductivity were found within the standard limit. Discharge was tracked. Manhole A was receiving discharge from branches AB and continued up to Manhole C. Manhole C was receiving significant amount of water from foundation drain of the properties located along Sunset drive.	
<u>Conclusion:</u>	

The source of discharge was discovered ground water from foundation drain, is non-illicit discharge. Further investigation is not needed.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 21-2020	Date: 9/11/2019	Time: 11:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 17343 Address: 15688Piedmont Place	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:

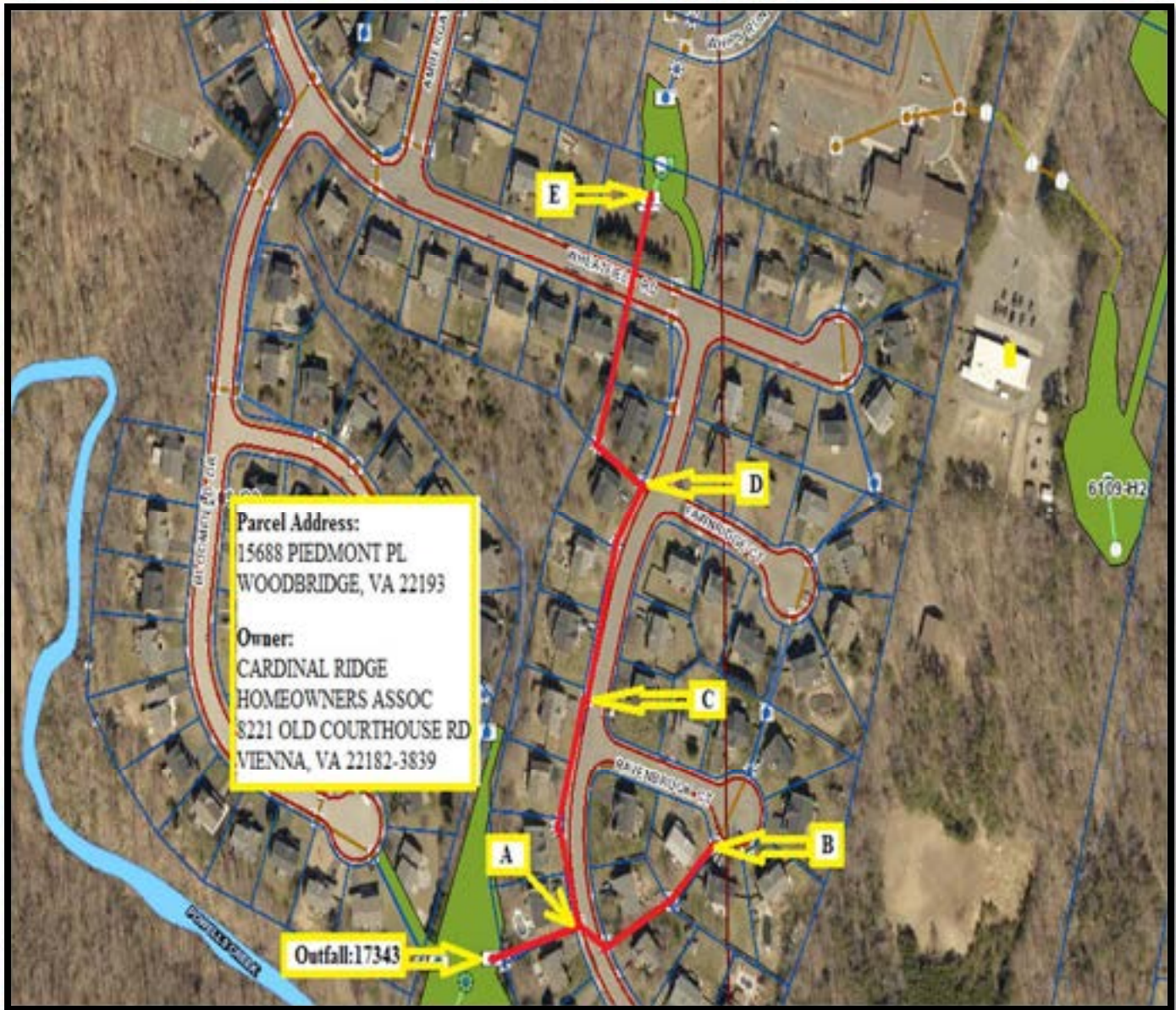


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.0 Limit: Std.	Conductivity: 313 μ S/cm Limit: Std.	Temp.: 71°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

pH and conductivity did not exceed the limits during onsite test. Source of discharge was tracked along red line shown in map above. At manhole A, flow observed from both AB and BC branches. Manhole B was found to be dry. Tracking was continued along points C, D and E. The open channel flow with pond discharge was entering through upstream inlet E.

Conclusion:

The source of discharge was confirmed surface water.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:









**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 37-2020	Date: 2/20/2020	Time: 11:45 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#17365 Address: 4038 Cardinal Crest Dr	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.4 Limit: Std.	Conductivity: 312 μ S/cm Limit: Std.	Temp: 52°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: Algae	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name: NA	Name: NA
Company: Cardinal Crest HOA	Company:
Address: PO BOX 1375 Newington, VA 22122	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
<p>Discharge was observed with orange algae through outfall. The conductivity and pH did not exceed the standard limits on test performed on site. There was no special character or sign of illicit discharge at outfall and downstream channel.</p> <p>Discharge was tracked. The upstream successive Manhole A was found totally dry. Cross-connection of sanitary sewer did not notice in an inspection.</p>	

Hence the source of discharge from outfall was considered due to ground water seepage into storm sewer system. Development of algae is a natural phenomenon in a ground water.

Conclusion:

The source of discharge was confirmed ground water, is a non-illicit discharge.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 36-2020	Date: 2/20/2020	Time: 10:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#17531 Address: 3828 Wertz Drive	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:

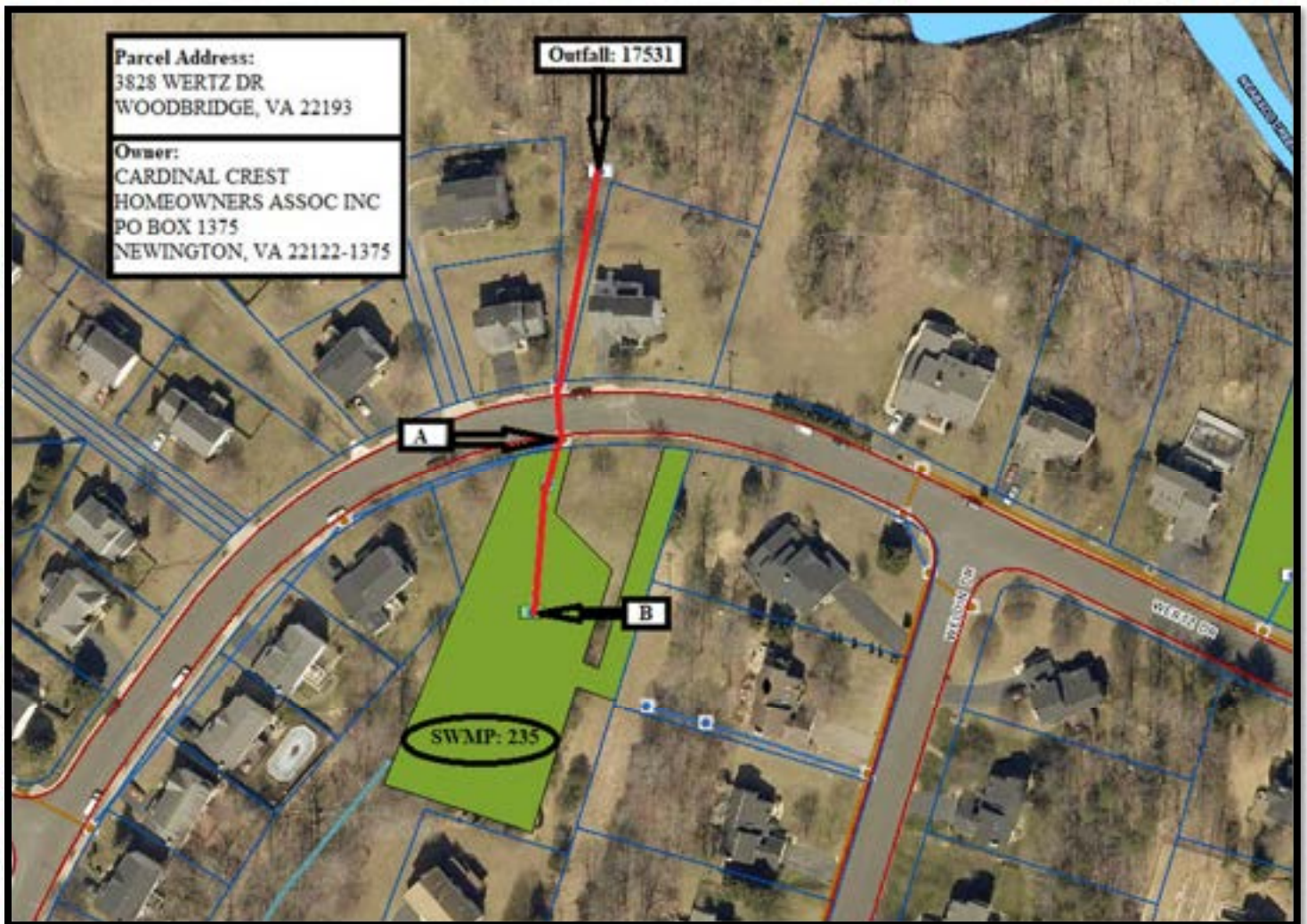


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.5 Limit: Std.	Conductivity: 514 μ S/cm Limit: Std.	Temp: 51°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: Algae	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name: NA	Name: NA
Company: Cardinal Crest HOA	Company:
Address: PO BOX 1375 Newington, VA 22122	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
<p>Discharge was observed with orange algae through outfall. The conductivity and pH did not exceed the standard limits on test performed on site. There was no special character or sign of illicit discharge at outfall and downstream channel.</p> <p>Discharge was tracked. Manhole A had flow from AB branch. B is the riser of SWMP #235, receiving inflow from ponding water.</p>	

Hence the source of discharge from outfall was discovered pond outflow, is a non-point source.

Conclusion:

The source of discharge was discovered upstream pond discharge, from a non-point source is a non-illicit discharge.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:







**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 10-2020	Date: 8/13/2019	Time: 10:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 19348 Address: 15076 Haviland Ct	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

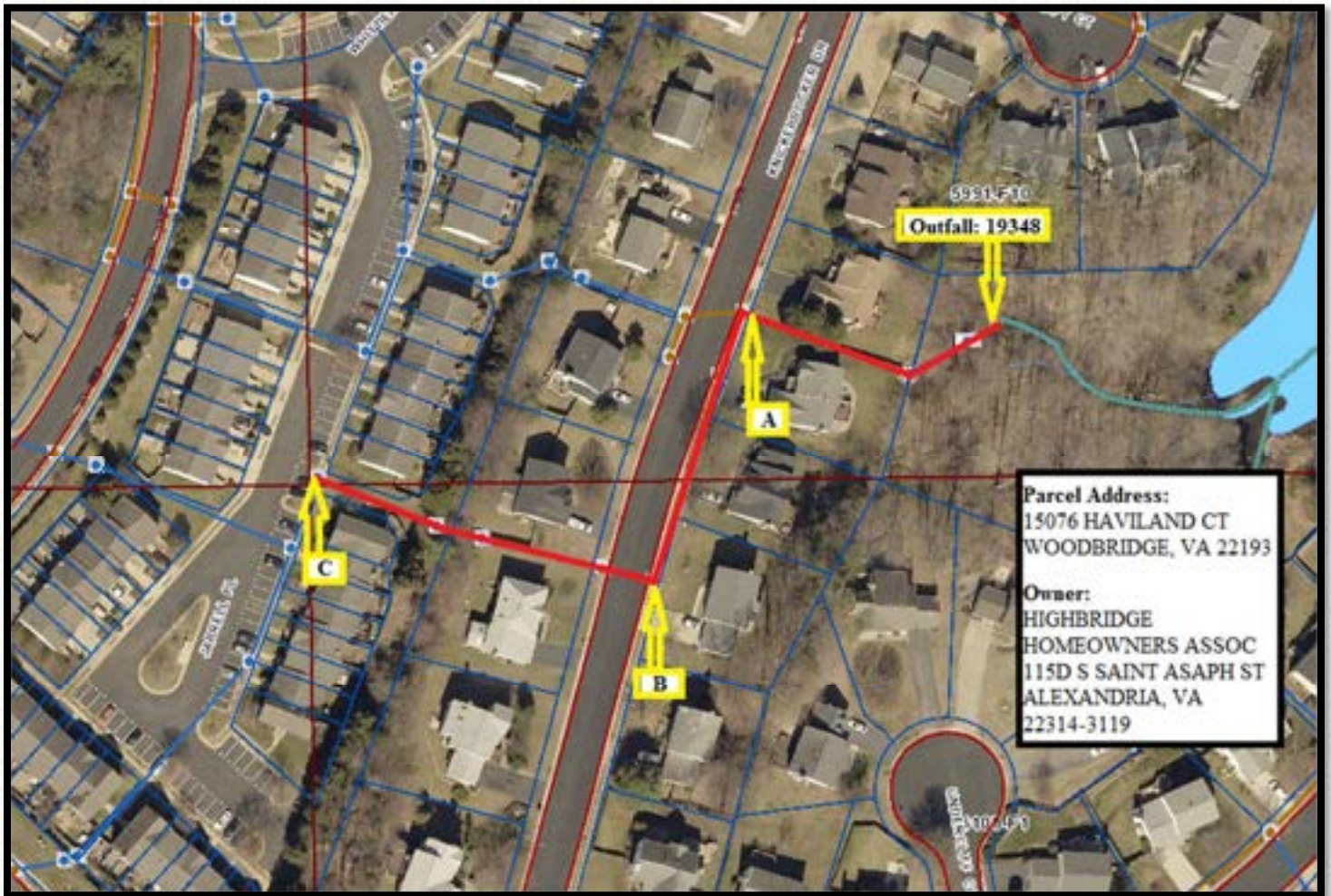
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.70 Limit: Std.	Conductivity: 218 μ S/cm Limit: Std.	Temp.: 76°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies: Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch only. Tracking was continued along points A, B and C. Discharge was gradually reducing and found manhole C very dry. Cross connection of sanitary sewer could not find during inspection.</p>	

Conclusion:

After investigation, source of discharge was confirmed ground water seepage into storm sewer system.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 11-2020	Date: 8/13/2019	Time: 11:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 19375 Address: 15076 Haviland Ct	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

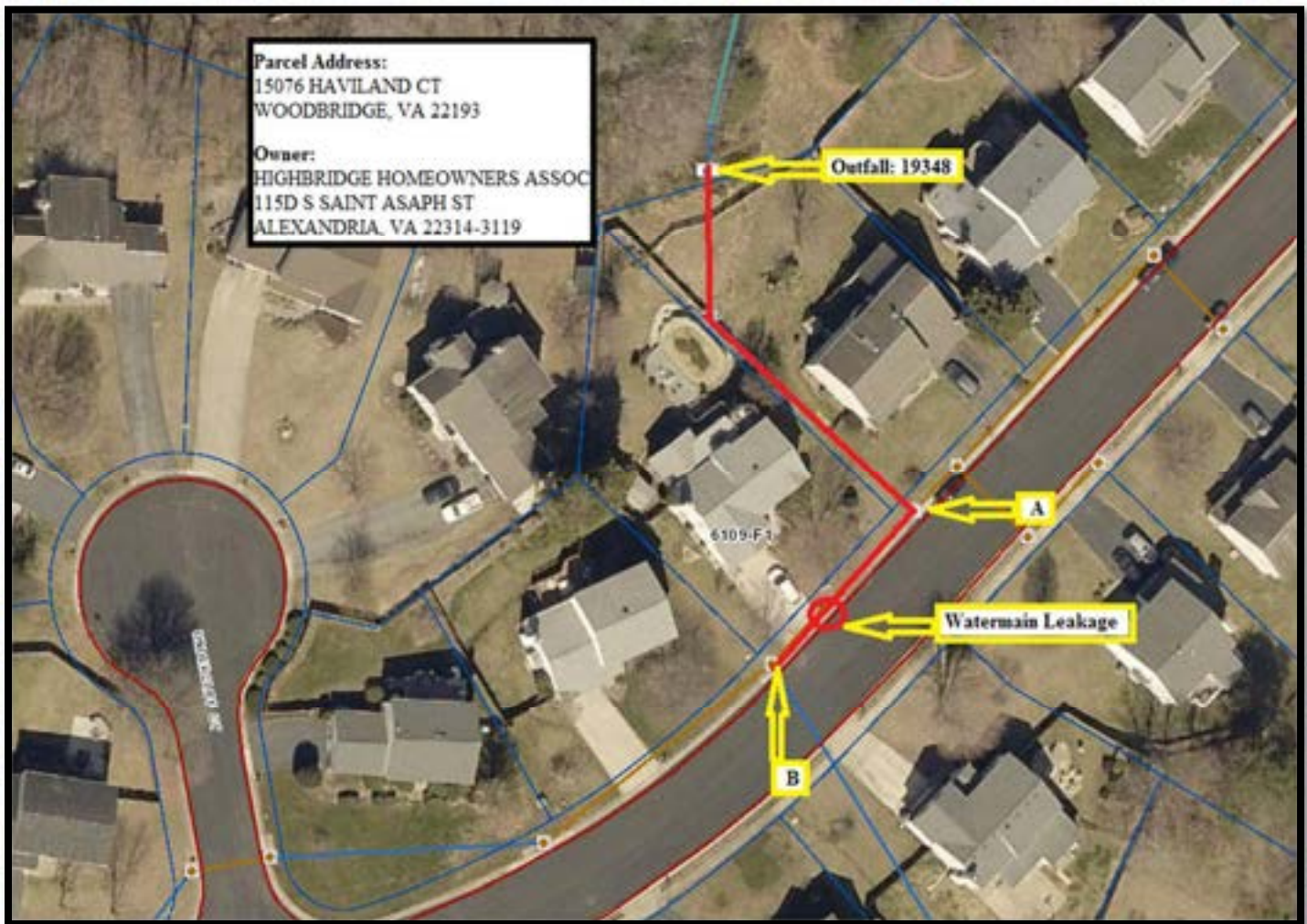
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 8.20 Limit: Std.	Conductivity: 304µS/cm Limit: Std.	Temp.: 79°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
<p>Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch only. Tracking was continued along points A and B points. Road Curb and Gutter Inlet A was receiving discharge from water main leakage happened between point A and B. Manhole B was in moist condition only.</p>	

Conclusion:

After investigation, source of discharge was confirmed water main leakage with ground water seepage.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 19-2020	Date: 9/5/2019	Time: 11:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 24686 Address: 16732 River Ridge Blvd	City, State: Woodbridge, VA	Zip Code: 22191
Complain or Case Received From: Routine Inspection		

Photo of discharge:

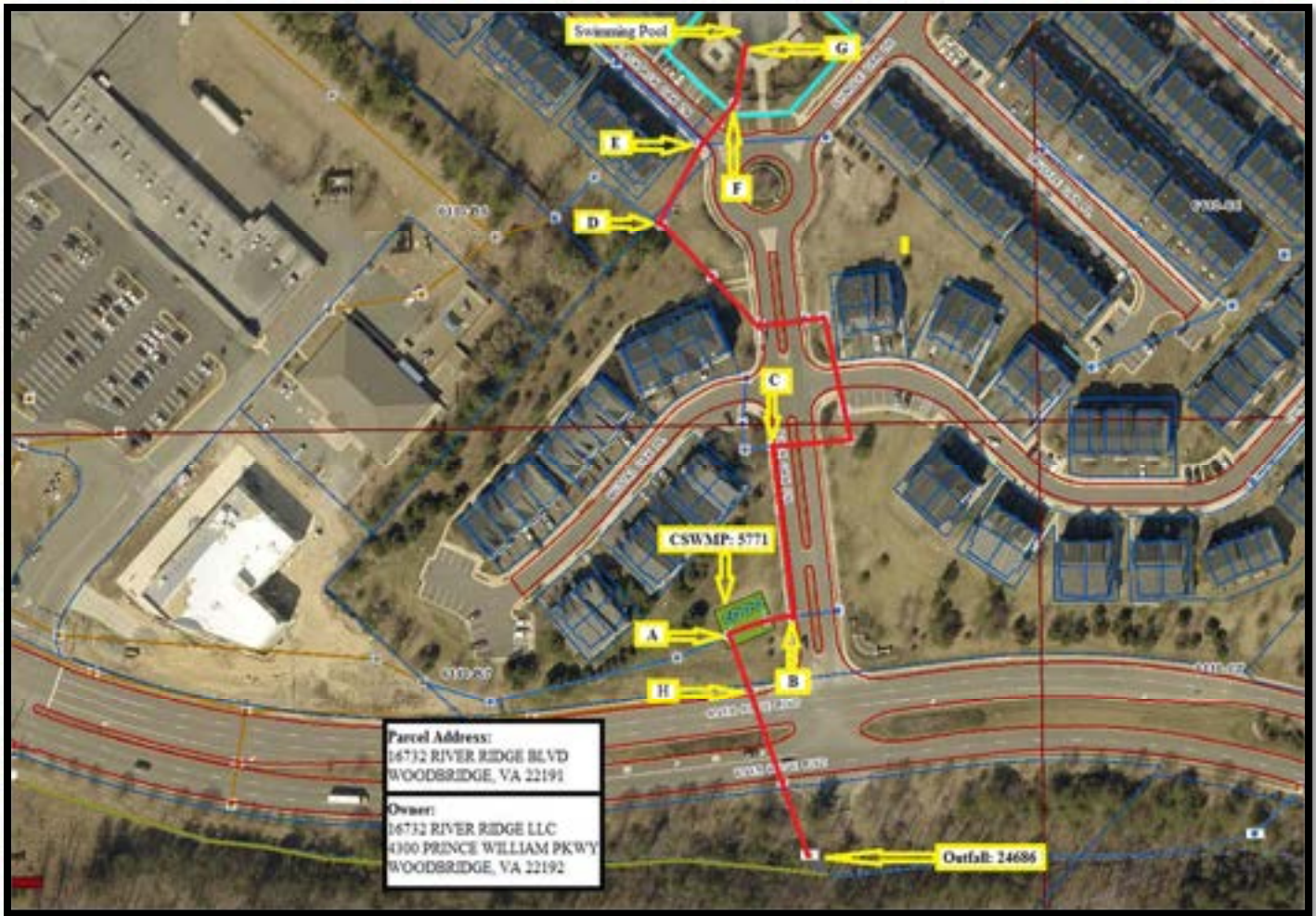


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.40 Limit: Std.	Conductivity: 618 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Stains: Algae
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies:</p> <p>Orange algae was observed at pipe and downstream channel. pH and conductivity did not exceed the limits during onsite test. Source of discharge was tracked along red line shown in map above. At manhole H, Flow observed from both HA branch only. A is the outlet of SWMP 5771. The discharge had high velocity so that it was seemed some additional source have to be added in storm sewer system. Tracking was continued along point B, C, D, E and F. At manhole F, flow observed from FG direction via PVC pipe. That PVC pipe is found to have discharge from overflow of swimming pool. The pool was seemed to refill with water.</p>	

Conclusion:

The source of discharge was confirmed combine effect of overflow from pool refill and saturated infiltration of BMP. Algae was developed due to ground water seepage due to overflow from SWMP after being saturated infiltration process. It is a natural phenomenon.

Notifications:

Citation Code Section: NA

Citation Narration: NA

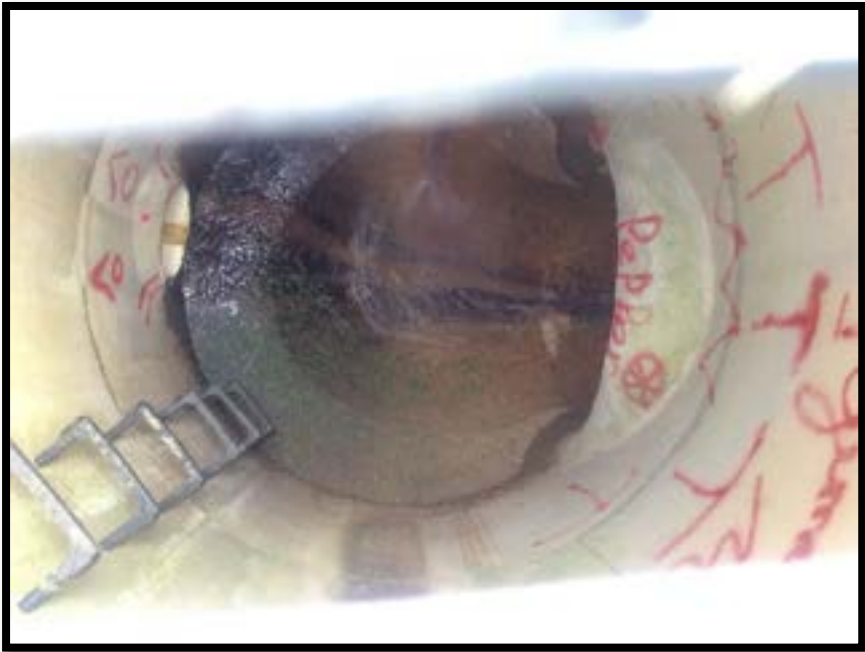
NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:







**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 1-2020	Date: 7/2/2019	Time: 10:30 AM
Business: Residential Plus Community Center	Report Completed By: Prem Poudel	
Outfall ID# 22011	City, State: Woodbridge, VA	Zip Code: 22192
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.9 Limit: Std.		Conductivity: 581 μ S/cm Limit: Choose an item.	Temp.: 67°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA	Turbidity: NA
	Floatables: NA	Stains: NA	Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
<p>Pipe algae observed at outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch. At B, flow observed from both BC and BD branch. Both Manhole C and D were dry. Cross connection of sanitary sewer did not find during inspection.</p>	

Conclusion:

Source of discharge was confirmed ground water seepage into storm sewer system. Algae developed due to ground water and it is a natural phenomenon.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 39-2020	Date: 2/24/2020	Time: 10:45 PM
Business Areas: Road Easement	Report Completed By: Prem Poudel	
Outfall ID#23232 Address: 7948 Prince William Pkwy	City, State: Manassas, VA	Zip Code: 20111
Complain or Case Received From: Routine Inspection		

Photo of discharge:

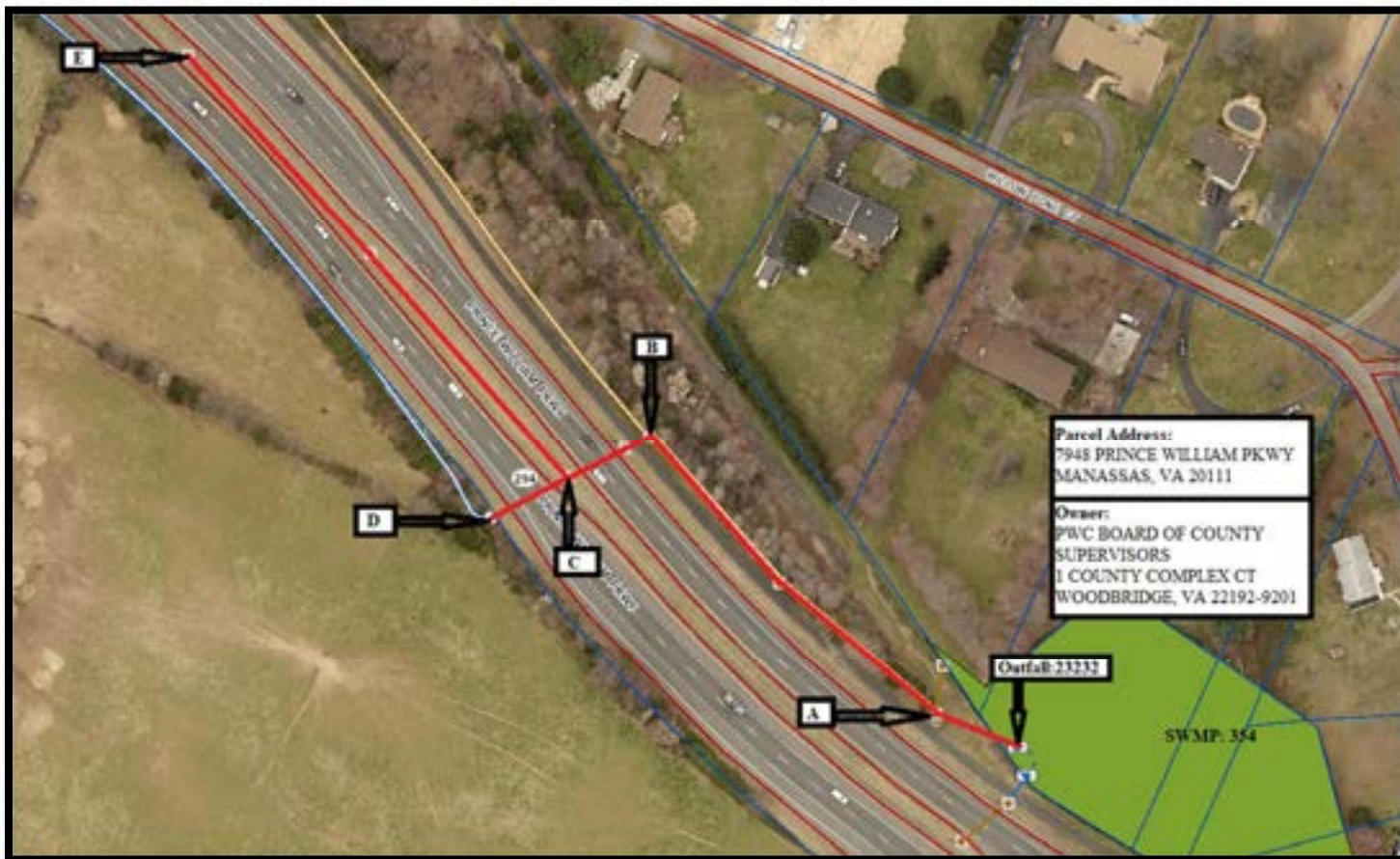


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.9 Limit: Std.	Conductivity: 318 μ S/cm Limit: Std.	Temp: 56°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company: PWC Board Of County Supervisors	Company:
Address: 1County Complex Ct , Woodbridge VA 22192	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies:</p> <p>Discharge was observed through outfall. The conductivity and pH did not exceed the standard limits on test performed on site. There was no special characters or sign of illicit discharge at outfall and downstream channel.</p> <p>Discharge was tracked. The upstream successive Manhole A had a flow from AB branch. At Manhole B, flow observed from BC branch only. At C, flow observed from CD and Ce Branch. Structure E is a drop inlet and D is an upstream inlet. Both D and E were dry. Cross-connection of sanitary sewer did not notice in an inspection. The source of discharge was confirmed ground water seepage.</p>	

Conclusion:

The source of discharge was confirmed ground water seepage into storm sewer system, is a non-illicit discharge.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 40-2020	Date: 2/24/2020	Time: 11:45 AM
Business Areas: Road Easement	Report Completed By: Prem Poudel	
Outfall ID#23527 Address: 8010 Guy Drive	City, State: Manassas, VA	Zip Code: 20111
Complain or Case Received From: Routine Inspection		

Photo of discharge:

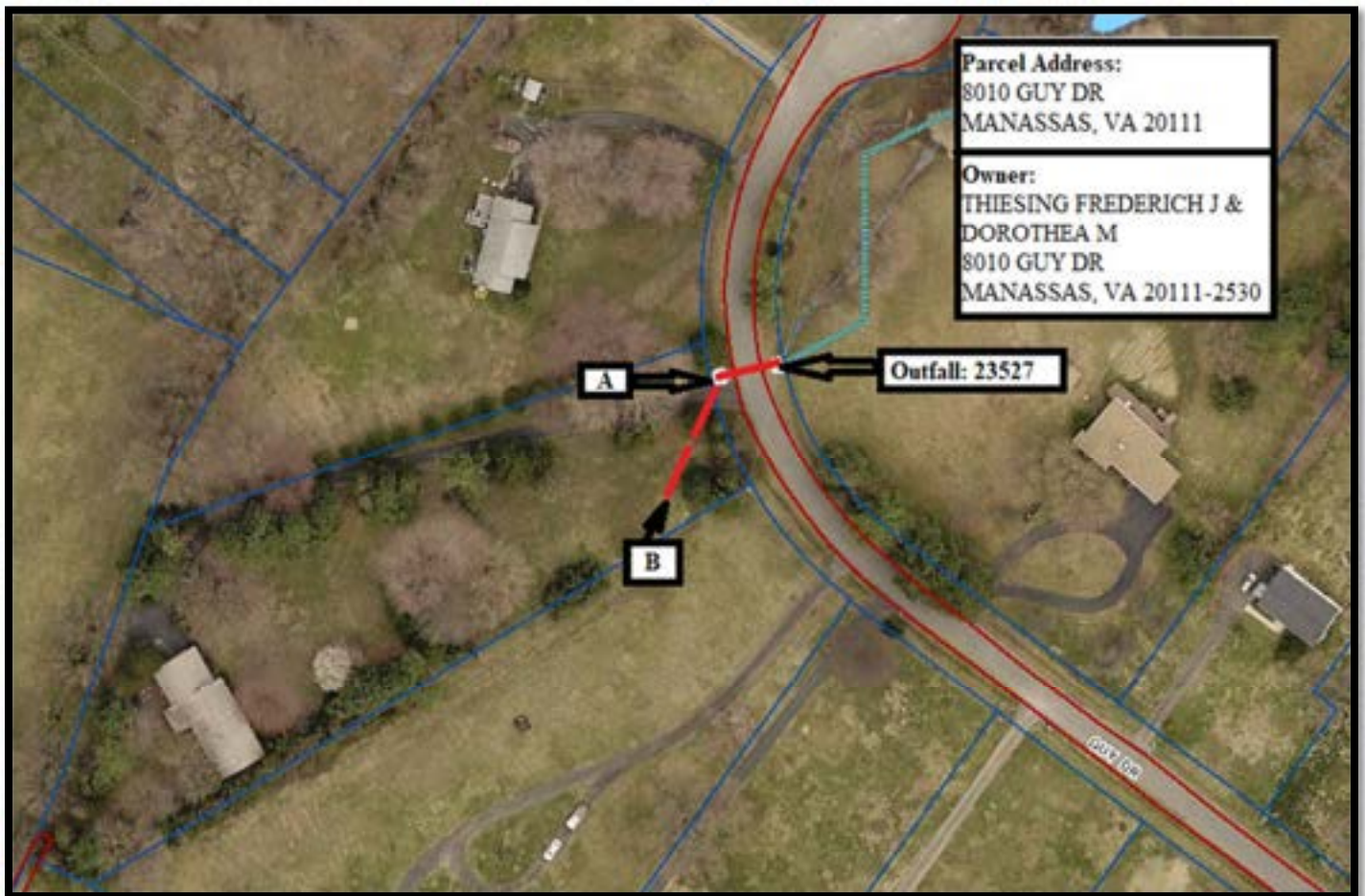


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.4 Limit: Std.	Conductivity: 315 μ S/cm Limit: Std.	Temp: 58°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name: Frederich Thiesing	Name: NA
Company:	Company:
Address: 8010 Guy Drive, Manassas VA 20111	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
<p>Discharge was observed through outfall. The conductivity and pH did not exceed the standard limits on test performed on site. There was no special characters or sign of illicit discharge at outfall and downstream channel.</p> <p>Discharge was tracked. The upstream road culvert inlet A had stagnant water seeping from ground. There was no visible inflow from the ground. The source of discharge was confirmed ground water seepage.</p>	

Conclusion:

The source of discharge was confirmed ground water seepage into storm sewer system, is a non-illicit discharge.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 4 -2020	Date: 7/25/2019	Time: 11:00 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 24391 Address: 2714 Landings Point Loop	City, State: Woodbridge, VA	Zip Code: 22191
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.90 Limit: Std.	Conductivity: 811 μ S/cm Limit: Std.	Temp.: 77°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies: Discharge was observed through outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A, B and C had flow from AB, BC and CD branches respectively. D is a riser of SWMP 562 releasing discharge into downstream storm sewer system. Source of discharge was discovered pond outflow.</p>	

Conclusion:

Source of discharge was discovered pond outflow. Further tracking will continue for inflow of SWMP #562.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





1

**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 19-2020	Date: 9/5/2019	Time: 11:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 24686 Address: 16732 River Ridge Blvd	City, State: Woodbridge, VA	Zip Code: 22191
Complain or Case Received From: Routine Inspection		

Photo of discharge:

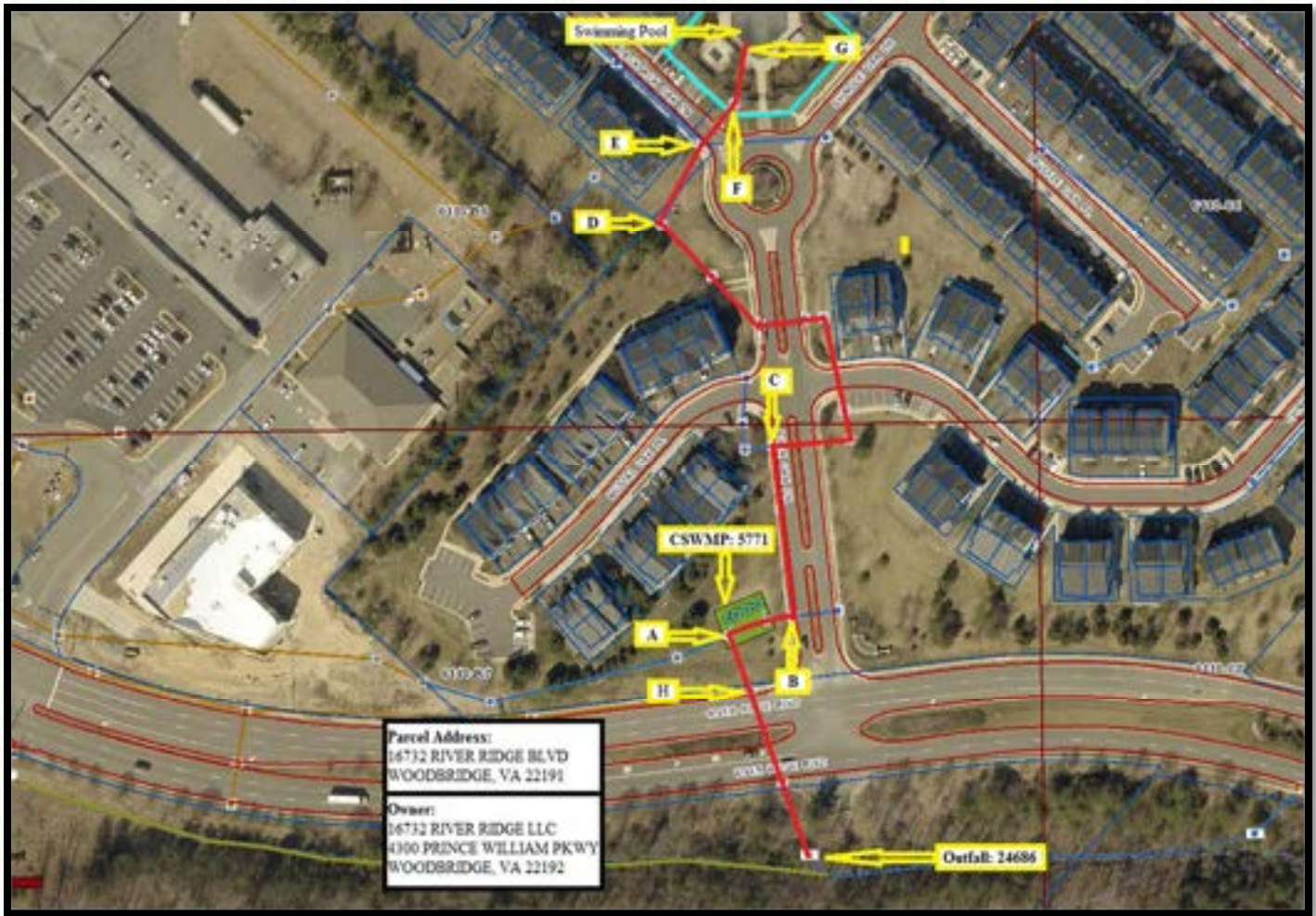


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.40 Limit: Std.	Conductivity: 618 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Stains: Algae
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies:</p> <p>Orange algae was observed at pipe and downstream channel. pH and conductivity did not exceed the limits during onsite test. Source of discharge was tracked along red line shown in map above. At manhole H, Flow observed from both HA branch only. A is the outlet of SWMP 5771. The discharge had high velocity so that it was seemed some additional source have to be added in storm sewer system. Tracking was continued along point B, C, D, E and F. At manhole F, flow observed from FG direction via PVC pipe. That PVC pipe is found to have discharge from overflow of swimming pool. The pool was seemed to refill with water.</p>	

Conclusion:

The source of discharge was confirmed combine effect of overflow from pool refill and saturated infiltration of BMP. Algae was developed due to ground water seepage due to overflow from SWMP after being saturated infiltration process. It is a natural phenomenon.

Notifications:

Citation Code Section: NA

Citation Narration: NA

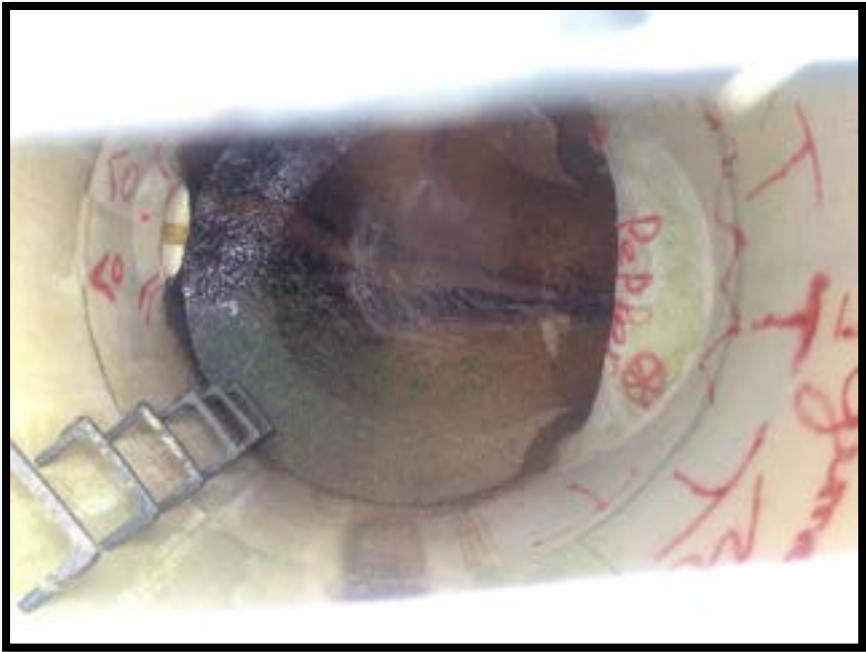
NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:







**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 39-2020	Date: 2/24/2020	Time: 10:45 PM
Business Areas: Road Easement	Report Completed By: Prem Poudel	
Outfall ID#23232 Address: 7948 Prince William Pkwy	City, State: Manassas, VA	Zip Code: 20111
Complain or Case Received From: Routine Inspection		

Photo of discharge:

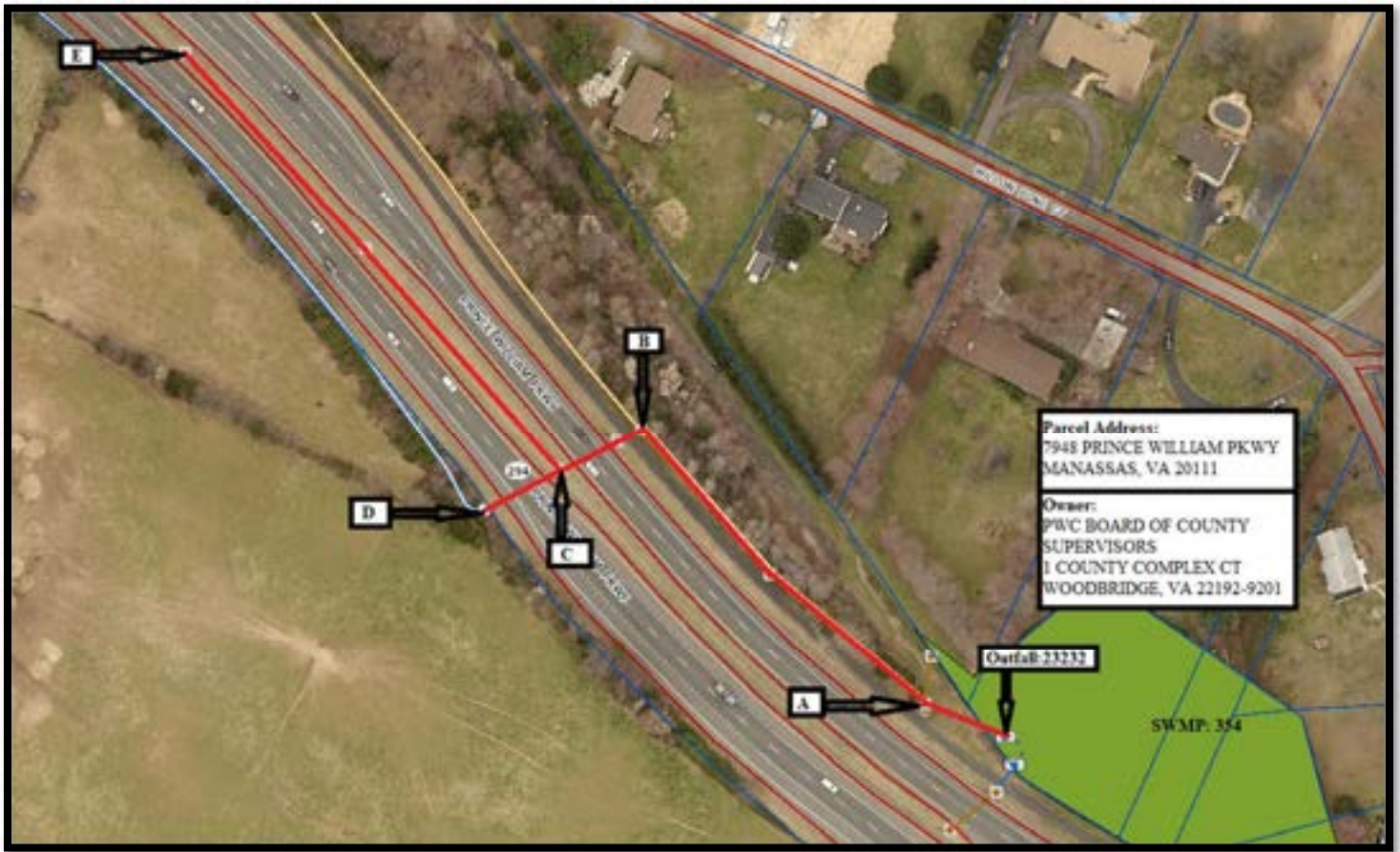


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.9 Limit: Std.	Conductivity: 318 μ S/cm Limit: Std.	Temp: 56°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company: PWC Board Of County Supervisors	Company:
Address: 1County Complex Ct , Woodbridge VA 22192	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies:</p> <p>Discharge was observed through outfall. The conductivity and pH did not exceed the standard limits on test performed on site. There was no special characters or sign of illicit discharge at outfall and downstream channel.</p> <p>Discharge was tracked. The upstream successive Manhole A had a flow from AB branch. At Manhole B, flow observed from BC branch only. At C, flow observed from CD and Ce Branch. Structure E is a drop inlet and D is an upstream inlet. Both D and E were dry. Cross-connection of sanitary sewer did not notice in an inspection. The source of discharge was confirmed ground water seepage.</p>	

Conclusion:

The source of discharge was confirmed ground water seepage into storm sewer system, is a non-illicit discharge.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 24-2020	Date: 9/20/2019	Time: 11:15AM
Business Areas: Industrial	Report Completed By: Prem Poudel	
Outfall ID#31197 Address: 9220 Developers Drive	City, State: Manassas, VA	Zip Code: 20109
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.4 Limit: Std.	Conductivity: 1081 μ S/cm Limit: Std.	Temp.: 77°F Limit: Std.
Discharge related Indicators	Odor: Sewage	Color: Black
	Floatables: NA	Stains: Industrial Waste
		Turbidity: Opaque
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

The color of discharge was black with sewage smell. Conductivity of discharged water was discovered exceeding the standard limit during onsite test. The outfall is an outlet of CSWMP 5005. Pond water was observed white-green whereas downstream creek was seemed black. The sampling was taken at Riser. White stain was observed at Riser, Pipes and Outfall. Downstream creek was observed black nearby outfall and seemed whitish black at downstream creek. The sewer system is connected with Broad run Construction Waste Recycling Facility, is a VPDES permitted business. The facility was poorly maintained. Contact was made with one of the property owner Mr. Andrew, it came to know that the pavement surface usually washes twice a week and allow discharge into storm sewer system. The odor may be developed due to eutrophication happened due to industrial discharge. Discharge was being disappeared in downstream channel before reaching to the creek.

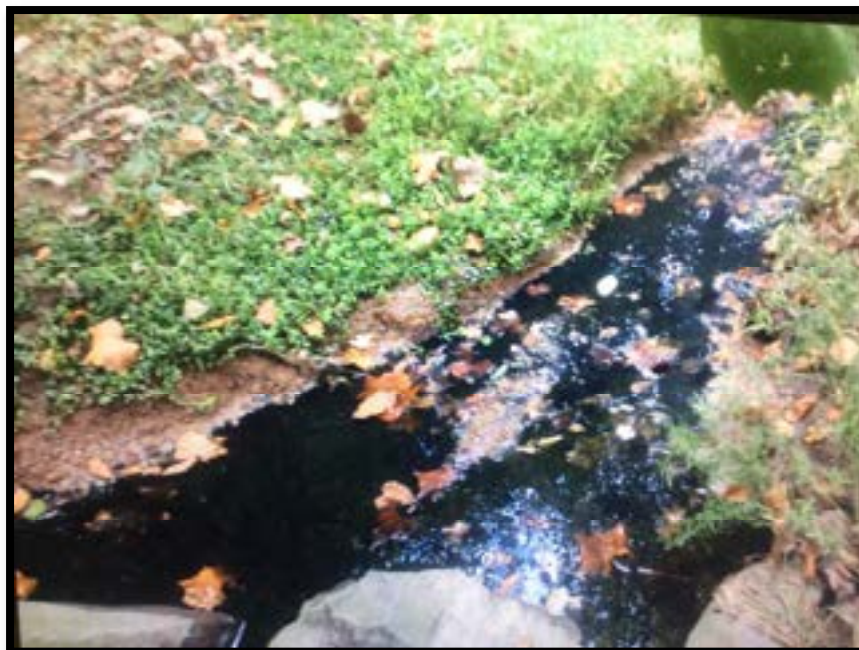
Conclusion:

The odor was feeling like a sewage. It could generate due to eutrophication. Follow up inspection will continue. If the same discharge get on follow up inspection, DEQ will notify for further investigation.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:









**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 17-2020	Date: 8/29/2019	Time: 10:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 34852 Address: 11998 Rutherglen Pl	City, State: Bristow, VA	Zip Code: 22031
Complain or Case Received From: Routine Inspection		

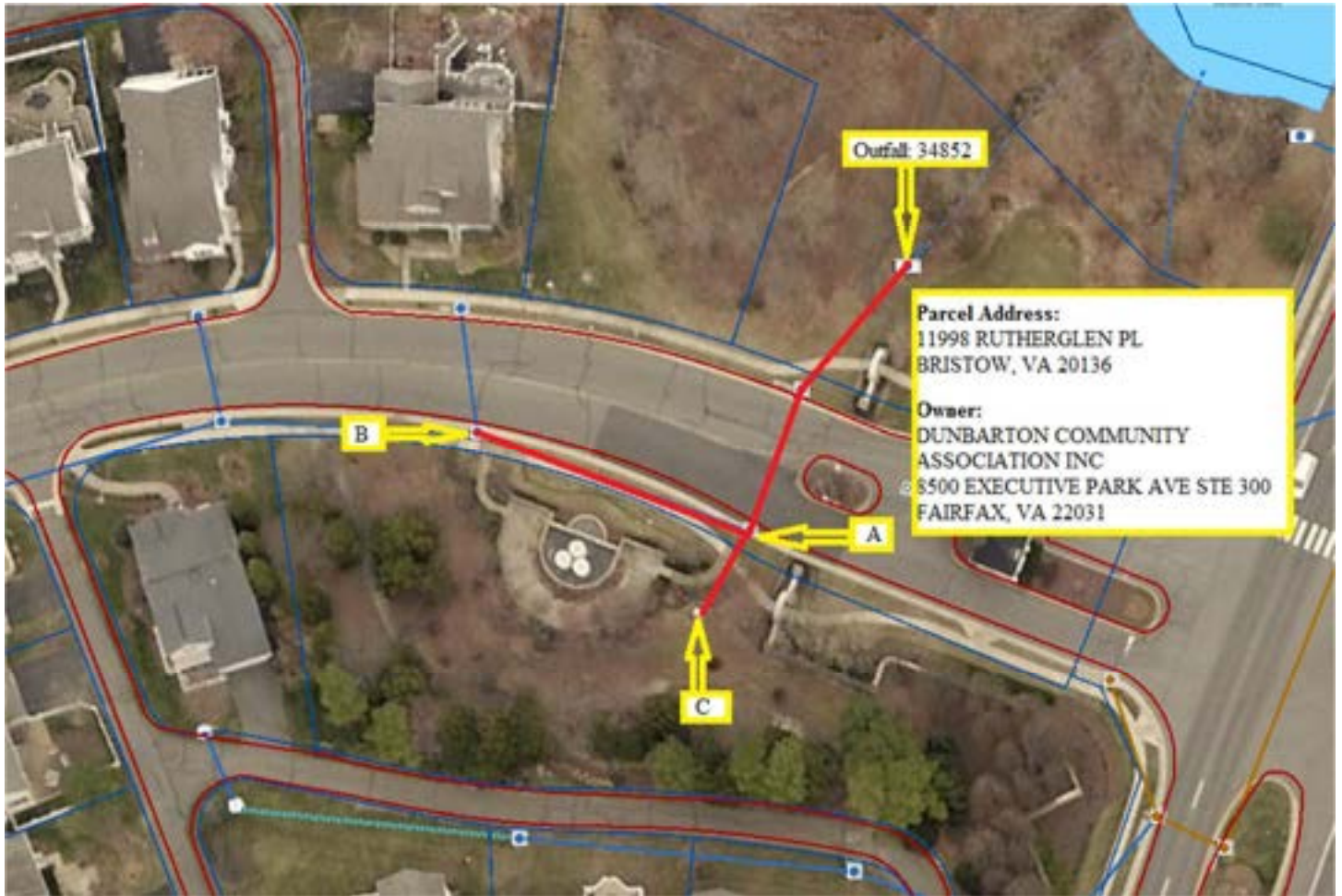
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 10.40 Limit: Std.	Conductivity: 319 μ S/cm Limit: Std.	Temp.: 67°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
<p>Discharge was seemed to be intermittent. pH found exceeding the limit during onsite test. Source of discharge was tracked along red line shown in map above. At manhole A, Flow observed from both AB and AC direction. Branch AC was drain pipe found to be connected with fountain. Tracking was continued in AB branch. Manhole B was just holding water at low point without flow. There was significant flow at AC branch. The source was identified overflow from water fountain. Crews of Harmony Pond Inc were working for cleanup fountain basin applied chlorine. The way was nonprofessional. Crews of Harmonic Pond Inc were educated and hand over education material to stop releasing chlorinated water into storm sewer system.</p>	

Conclusion:

The volume of discharge was small and diluted with creek water. Warning made to company crews and education materials were hand over to literate them about declorination.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:









PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
 5 COUNTY COMPLEX COURT, SUITE 170
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INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 5 -2020	Date: 7/25/2019	Time: 11:30AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 36972 Address: 2714 Landings Point Loop	City, State: Woodbridge, VA	Zip Code: 22191
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.50 Limit: Std.	Conductivity: 814 μ S/cm Limit: Std.	Temp.: 78°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Discharge was observed through outfall. Outfall was an inlet of SWMP 562. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A and B had flow from AB and BC branches respectively. At manhole A and B, ground water seepage was observed through joints into storm sewer system. Excessive algae were developed with seepage. Drop inlet C was very dry.

Conclusion:

Source of discharge was discovered ground water seepage. Algae were developed with ground water is a natural phenomenon. Further investigation is not necessary.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 2-2020	Date: 7/2/2019	Time: 11:30 AM
Business: Residential Plus Community Center	Report Completed By: Prem Poudel	
Outfall ID# 47310	City, State: Woodbridge, VA	Zip Code: 22192
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.40 Limit: Std.		Conductivity: 831 μ S/cm Limit: Choose an item.	Temp.: 67°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA	Turbidity: NA
	Floatables: NA	Stains: NA	Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
<p>Pipe algae observed at outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch. Discharge tracked along points A, B, C, D, E and F. F is a storm inlet of the system. Cross connection of sanitary sewer did not find during inspection. Discharge found to generate from upstream inflow as well. Source of algae was confirmed surface water. Source of contaminant promoting algae could not confirm.</p>	

Conclusion:

Source of discharge was confirmed surface water combined with ground water seepage into storm sewer system. Algae found to be developed. Runoff over polluted ground could promote algae at the outfall and downstream channel. Specific source of contaminant did not show up during inspection. Follow up inspection will continue in following years.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 8-2020	Date: 8/6/2019	Time: 10:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 53192 Address: 5274 Quebec Pl	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.06 Limit: Std.	Conductivity: 104 μ S/cm Limit: Std.	Temp.: 69°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Pipe algae observed at outfall. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Drop Inlet A had flow from upstream branch of drop inlet B. Drop Inlet B was found very dry. Major part of outfall discharge was found to generate in small stretch between Drop Inlet 1 to 2. Source of discharge could not figure out during inspection. Storm Sewer was cross over to the Sanitary Sewer at two different locations below the Drop inlet B.

Desktop analysis has performed on 8/7/2019 and found exceeding limit of copper only. Source of algae could not determine.

Conclusion:

Excessive algae formation at outfall, significant discharge generated in small stretch, exceeding standard limit of copper and cross over storm sewer with sanitary sewer system have create suspicious condition of cross connection of sanitary sewage. CCTV inspection is needed for inclusive investigation.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 6 -2020	Date: 7/25/2019	Time: 1 :30 PM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 54211 Address: 3774 Stonewall Manor Dr	City, State: Triangal, VA	Zip Code: 22172
Complain or Case Received From: Routine Inspection		

Photo of discharge:

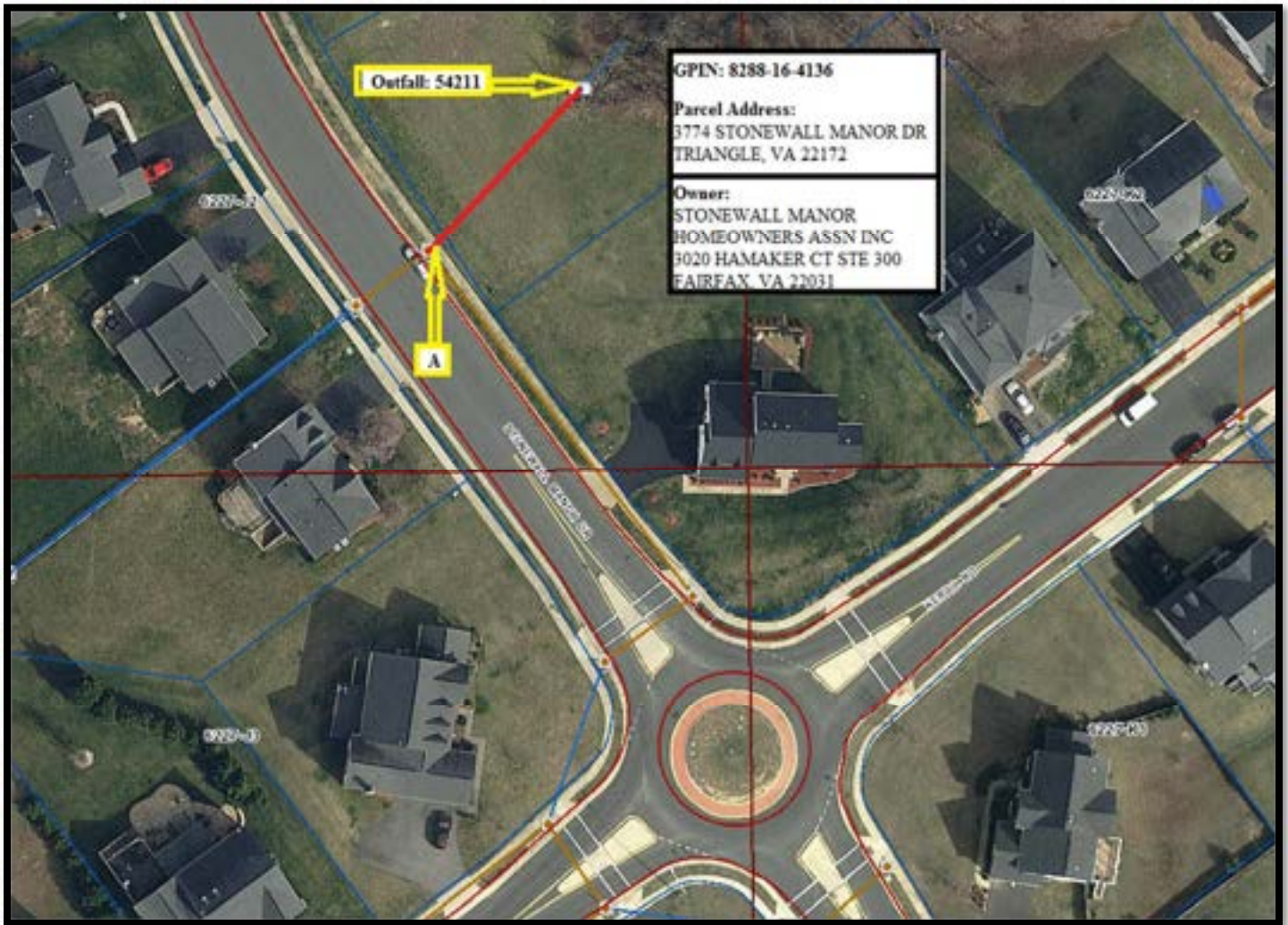


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.4 Limit: Std.	Conductivity: 319 μ S/cm Limit: Std.	Temp.: 78°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: Lime
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
Discharge was observed through outfall. Lime stain was observed at downstream channel. Onsite test results of pH and Conductivity lie within standard limits. Discharge tracked along red line shown in map above. Manhole A was very dry. There was no cross connection of sanitary sewer with storm sewer system having flow. Landscape was too steep backfill areas. The constituents of backfill material may have lime which ultimately entered into storm sewer system with ground water seepage.	

Conclusion:

Source of discharge confirmed ground water seepage. Lime could be leach out from constructed backfill. follow up inspection will make in following year.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 29-2020	Date: 9/27/2019	Time: 1:20 PM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#59391 Address: 19240 Potomac Crest Dr	City, State: Triangle, VA	Zip Code: 22172
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.9 Limit: Std.	Conductivity: 412 μ S/cm Limit: Std.	Temp.: 65°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<p>Comments/ Deficiencies: Clear discharge was observed flowing from outfall. pH and conductivity were found within the standard limit. Discharge was tracked. Manhole A was receiving discharge from branches AB, AE and AC. Manhole B was dry and cross connection did not observe with AB sewer, so discharge should be ground water seepage. Next tracking continued at ACD branch. Volume of flow was gradually reducing until manhole D. Manhole D was in moist condition. Next tracking continued in AE direction. Inlet E was receiving discharge from upstream storm water management pond, was the main source of outfall discharge.</p>	

Conclusion:

The source of discharge was discovered surface water with ground water seepage, is non-illicit discharge. Further investigation is not needed.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 29-2020	Date: 9/27/2019	Time: 1:20 PM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#59391 Address: 19240 Potomac Crest Dr	City, State: Triangle, VA	Zip Code: 22172
Complain or Case Received From: Routine Inspection		

Photo of discharge:

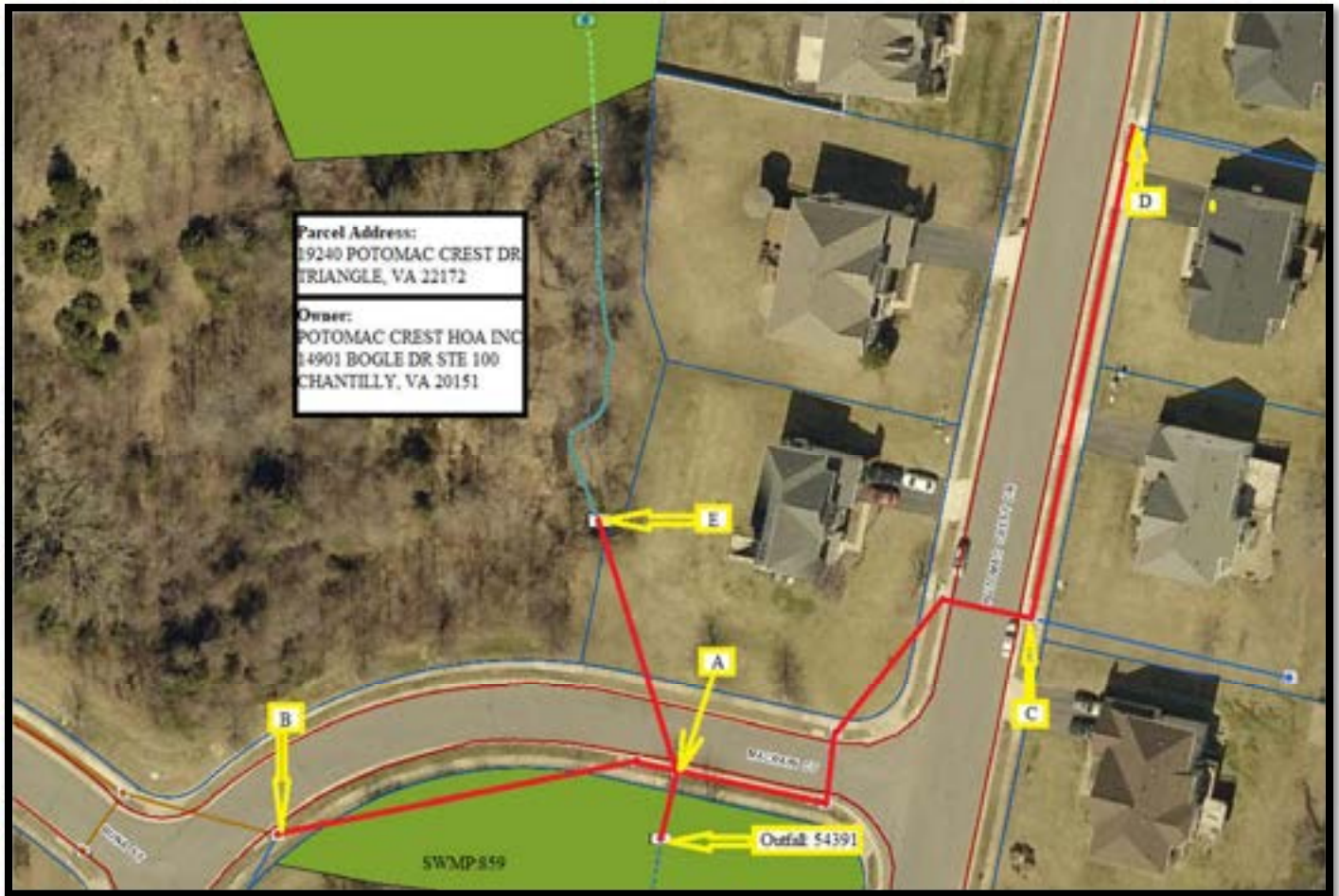


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.9 Limit: Std.	Conductivity: 412 μ S/cm Limit: Std.	Temp.: 65°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
Comments/ Deficiencies:	
<p>Clear discharge was observed flowing from outfall. pH and conductivity were found within the standard limit. Discharge was tracked. Manhole A was receiving discharge from branches AB, AE and AC. Manhole B was dry and cross connection did not observe with AB sewer, so discharge should be ground water seepage. Next tracking continued at ACD branch. Volume of flow was gradually reducing until manhole D. Manhole D was in moist condition. Next tracking continued in AE direction. Inlet E was receiving discharge from upstream storm water management pond, was the main source of outfall discharge.</p>	

Conclusion:

The source of discharge was discovered surface water with ground water seepage, is non-illicit discharge. Further investigation is not needed.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:





**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 15-2020	Date: 8/23/2019	Time: 11:45AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 57472 Address: 13486 Princedale Dr	City, State: Woodbridge, VA	Zip Code: 22192
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.50 Limit: Std.	Conductivity: 217 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: NA
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Onsite test results of pH and Conductivity lie within standard limits. There was a big drop of four feet at the outfall due to erosion in downstream channel. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch only and continued tracking at BC, CD and DE. E is an upstream inlet receiving discharge from stormwater facility F of PWC Public School.

Conclusion:

After investigation, source of discharge was discovered outflow of Prince William County Public School stormwater management pond.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 14-2020	Date: 8/23/2019	Time: 11:00 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 57613 Address: 5301 Dale Blvd	City, State: Woodbridge, VA	Zip Code: 22192
Complain or Case Received From: Follow up Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.70 Limit: Std.	Conductivity: 311 μ S/cm Limit: Std.	Temp.: 68°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: Algae
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Onsite test results of pH and Conductivity lie within standard limits. Algae was developed at outfall. Discharge tracked along red line shown in map above. Manhole A had flow from AB branch only and continued tracking at BC, CD and DE. E is a drop inlet having foundation outflow pipe connection from the top. Access did not get to track EF branch, but it was tracked in previous inspection and drop inlet F was in moist condition. Branch EF lies in valley with steep landscape.

Conclusion:

After investigation, source of discharge was confirmed foundation discharge from DF branch.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:



**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 33-2020	Date: 2/19/2020	Time: 10:30 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#57731 Address: 13540 Princedale Drive	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 7.8 Limit: Std.	Conductivity: 218 μ S/cm Limit: Std.	Temp: 53°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: NA	Other: NA
	Color: NA	
	Stains: NA	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name: NA	Name: NA
Company: PWC School Board,	Company:
Address: PO BOX 389, Manassas, VA 20108	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name:	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
<p>Discharge was observed with orange algae through outfall having stagnant flow. The conductivity and pH did not exceed the standard limits on test performed on site. Discharge was tracked. Manhole A had flow from AB branch. Tracking was started and found discharge from BC and Bd branches at Manhole B. Manhole C was found very dry. Tracking was continued in BDEF branch. Foundation drains were found to relate to road curbs and gutters along DE line contributing discharge into storm sewer system through inlets. F is an inlet structure receiving discharge from drainage catchments having concrete swale. Hence the discharge from outfall was found to be generated by combine effect of upstream inflow and foundation drain.</p>	

Conclusion:

The source of discharge was discovered foundation drain with channel inflow, is considered a non-illicit discharge.

Notifications:

Citation Code Section: NA

Citation Narration: NA

NOV Issued: N

NOV #: NA

EnerGov Case # : NA

Photos:







**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 24-2020	Date: 9/20/2019	Time: 11:15AM
Business Areas: Industrial	Report Completed By: Prem Poudel	
Outfall ID#31197 Address: 9220 Developers Drive	City, State: Manassas, VA	Zip Code: 20109
Complain or Case Received From: Routine Inspection		

Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.4 Limit: Std.	Conductivity: 1081 μ S/cm Limit: Std.	Temp.: 77°F Limit: Std.
Discharge related Indicators	Odor: Sewage	Color: Black
	Floatables: NA	Stains: Industrial Waste
		Turbidity: Opaque
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

The color of discharge was black with sewage smell. Conductivity of discharged water was discovered exceeding the standard limit during onsite test. The outfall is an outlet of CSWMP 5005. Pond water was observed white-green whereas downstream creek was seemed black. The sampling was taken at Riser. White stain was observed at Riser, Pipes and Outfall. Downstream creek was observed black nearby outfall and seemed whitish black at downstream creek. The sewer system is connected with Broad run Construction Waste Recycling Facility, is a VPDES permitted business. The facility was poorly maintained. Contact was made with one of the property owner Mr. Andrew, it came to know that the pavement surface usually washes twice a week and allow discharge into storm sewer system. The odor may be developed due to eutrophication happened due to industrial discharge. Discharge was being disappeared in downstream channel before reaching to the creek.

Conclusion:

The odor was feeling like a sewage. It could generate due to eutrophication. Follow up inspection will continue. If the same discharge get on follow up inspection, DEQ will notify for further investigation.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:









**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 26-2020	Date: 9/25/2019	Time: 11:30AM
Business Areas: Industrial	Report Completed By: Prem Poudel	
Outfall ID#59810 Address: 13527 Quate Ln	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

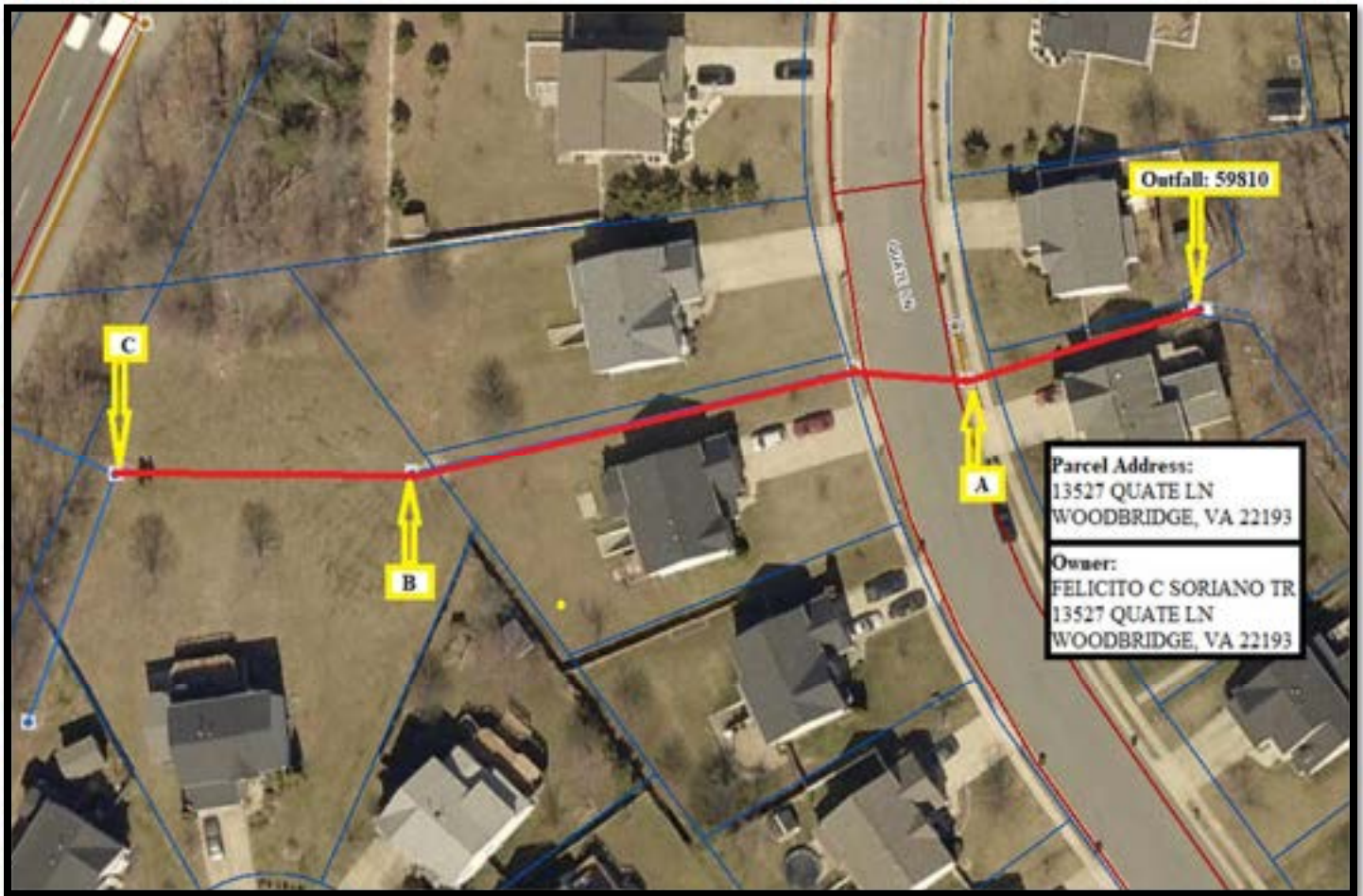
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 7.8 Limit: Std.	Conductivity: 315µS/cm Limit: Std.	Temp.: 65°F Limit: Std.
Discharge related Indicators	Odor: NA	Color: NA
	Floatables: NA	Stains: Algae
		Turbidity: NA
		Other: NA

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:
<u>Comments/ Deficiencies:</u>	
Algae was found to develop at outfall. pH and conductivity were found within the standard limit. Discharge was tracked and found to generated from ground water seepage. At Manhole C, significant number of algae was developed with trickle flow at cracks of structure. The source of discharge was confirmed ground water seepage into storm sewer system.	
<u>Conclusion:</u>	
The source of discharge was ground water seepage. Algae was found to develop at outfall due to ground water. Further investigation is not needed. Follow up inspection will continue in future.	

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:







**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 41-2020	Date: 4/17/2020	Time: 10:45 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID#59899 Address: 15064 Copper Turtle Pl	City, State: Woodbridge, VA	Zip Code: 22193
Complain or Case Received From: Routine Inspection		

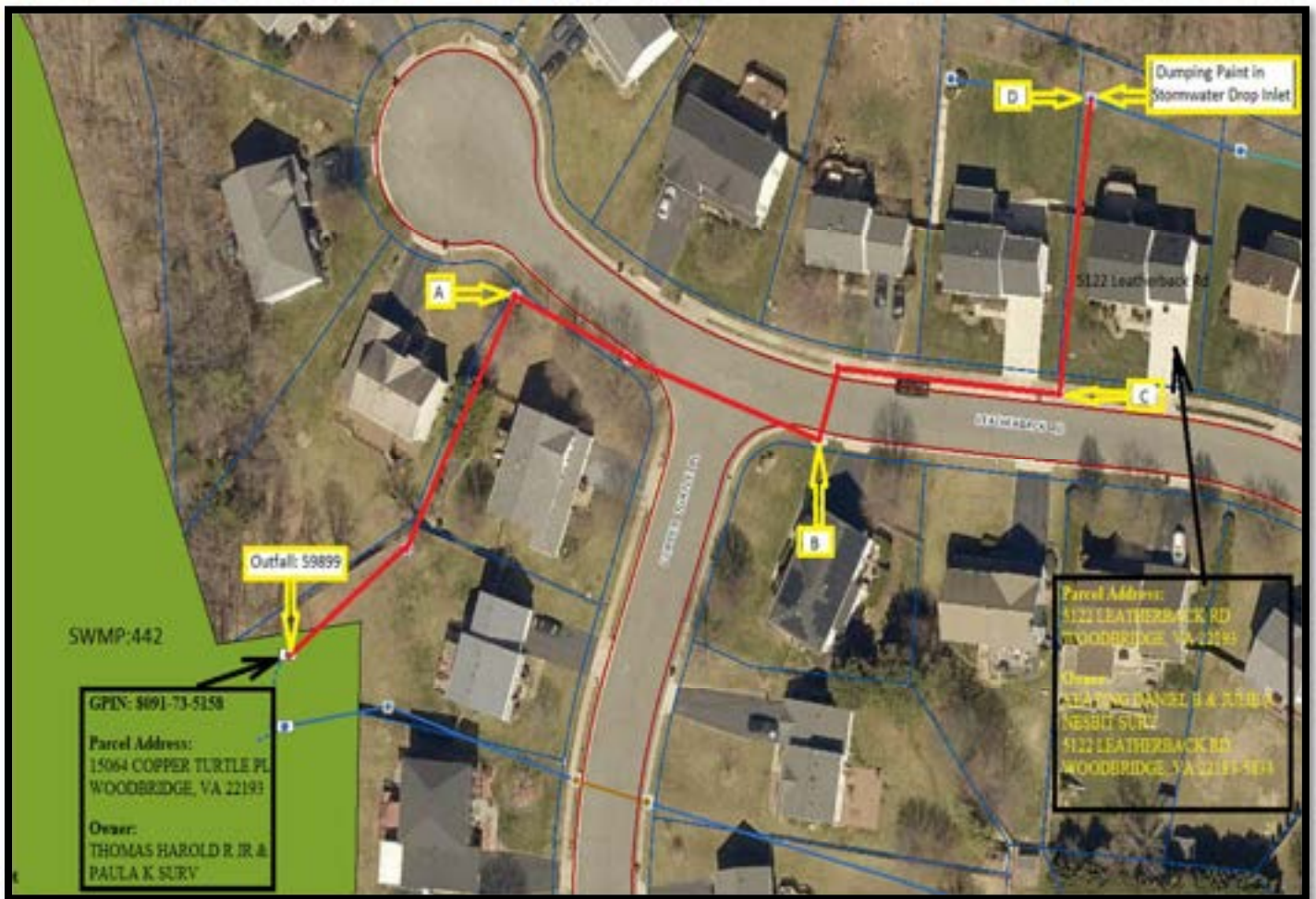
Photo of discharge:



Onsite Water Quality Test performed: Yes If yes, observed results:

pH: 8.9 Limit: Std.	Conductivity: 913 μ S/cm Limit: Std.	Temp: 56°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: Opaque
	Floatables: NA	Stains: NA
		Other: Paint Discharge

Map of Trackdown Path:



Property Owner (Dumping Paint Location)	Responsible Party (Contractor)
Name: Daniel Keating	Name: NA (Lieutenant Mr. John Hornaday has this info.)
Company: Residential House	Company: NA
Address: 5122 Leatherback Rd, VA 22193	Address: NA
Phone #: NA	Phone #: NA
Note: The violator is a staff of contractor employed for painting.	Note: After a conflict with the staff of the contractor and the County inspector, the case was immediately reported to the Hazmat Coordinator Mr. Matthew Atkins and PWC Police. The Battalion Chief Mr. Thomas Jarman arrived on site with the team and the case was handled by the Lieutenant Mr. John Hornaday.
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date: 04/17/2020	Date: 04/17/2020
Time: 10:56 AM	Time: 10:28 AM
Name: Staff on Duty	Name: Mr. Matthew Adkins (Hazmat Coordinator)
Company/Agency: PWC Police (703-792-6500)	Company/Agency: Department of Fire & Rescue
Notes:	Notes:

Comments/ Deficiencies:

During routine inspection, white discharge was observed flowing from stormwater outfall (ID: 59899). The discharge was tracked along the storm sewer line at points A, B, C, and D, shown on the map above. The stormwater drop inlet located at the back yard of 5122 Leatherback Rd was found to be the site of the illicit discharge, which was a white paint. The staff members of the contractor employed for painting house were responsible for the discharge. The County inspector explained that discharging paint is a violation of the law. The contractor staff were asked to take action to capture the white discharge immediately, but no action was taken. The County inspector was warned by one of the contractor's staff members to leave the site. Information on the contractor responsible for the discharge will be provided at a later date.

The case was immediately forwarded to Mr. Matthew Adkins, the Hazmat Coordinator, and the County Police. The case was also forwarded to the Chief of Environmental Services and the Assistant Branch Chief of the Watershed Management Branch.

The Battalion Chief Mr. Thomas Jarman of Department of Fire and Rescue arrived on site with a team and the case was handled by Lieutenant Mr. John Hornaday. The Hazmat team lead by the Captain Jonathan Newell was dispatched for immediate containment of the white discharge. Atlas Environmental completed the cleanup. The white discharge was contained before reaching Lake Terrapin.

Conclusion:

Dumping paint into the storm sewer system is a violation of County Code (23.2-4.1). The abatement and cleanup work were completed by Atlas Environmental. A court summons has been issued to the violator.

Notifications:

Citation Code Section: 23.2-4.1

Citation Narration:

ARTICLE II. STORMWATER POLLUTION

Sec. 23.2-4.1. Unlawful discharge to the stormwater system and **waters** of the County.

(a) It shall be a violation of this article for any person to discharge:

- (1) **Any wastes**, trash, garbage, or any matter causing or aiding pollution on any property in the County in any manner so as to allow such to be **washed into any stormwater system** by storm or floodwater.
- (2) Any grass clippings, mulch, or yard waste, animal carcasses and **other wastes** into the stormwater system, or do any injury to the stormwater system or in any manner **pollute the stormwater system**.

NOV Issued: Yes (Department of Fire & Rescue)

NOV #: NA

EnerGov Case #: NA

Photos:









**PRINCE WILLIAM COUNTY DEPARTMENT OF PUBLIC WORKS
WATERSHED BRANCH
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
5 COUNTY COMPLEX COURT, SUITE 170
PRINCE WILLIAM, VA 22192-5308
OFFICE: 703-792-7070 FAX: 703-792-6297**

INCIDENT/TRACKDOWN REPORT- Dry Weather Monitoring

INCIDENT INFORMATION		
Incident Report #: 18-2020	Date: 9/5/2019	Time: 11:00 AM
Business Areas: Residential	Report Completed By: Prem Poudel	
Outfall ID# 63128 Address: 17136 Gibson Mill Rd	City, State: Dumfries, VA	Zip Code: 22026
Complain or Case Received From: Routine Inspection		

Photo of discharge:

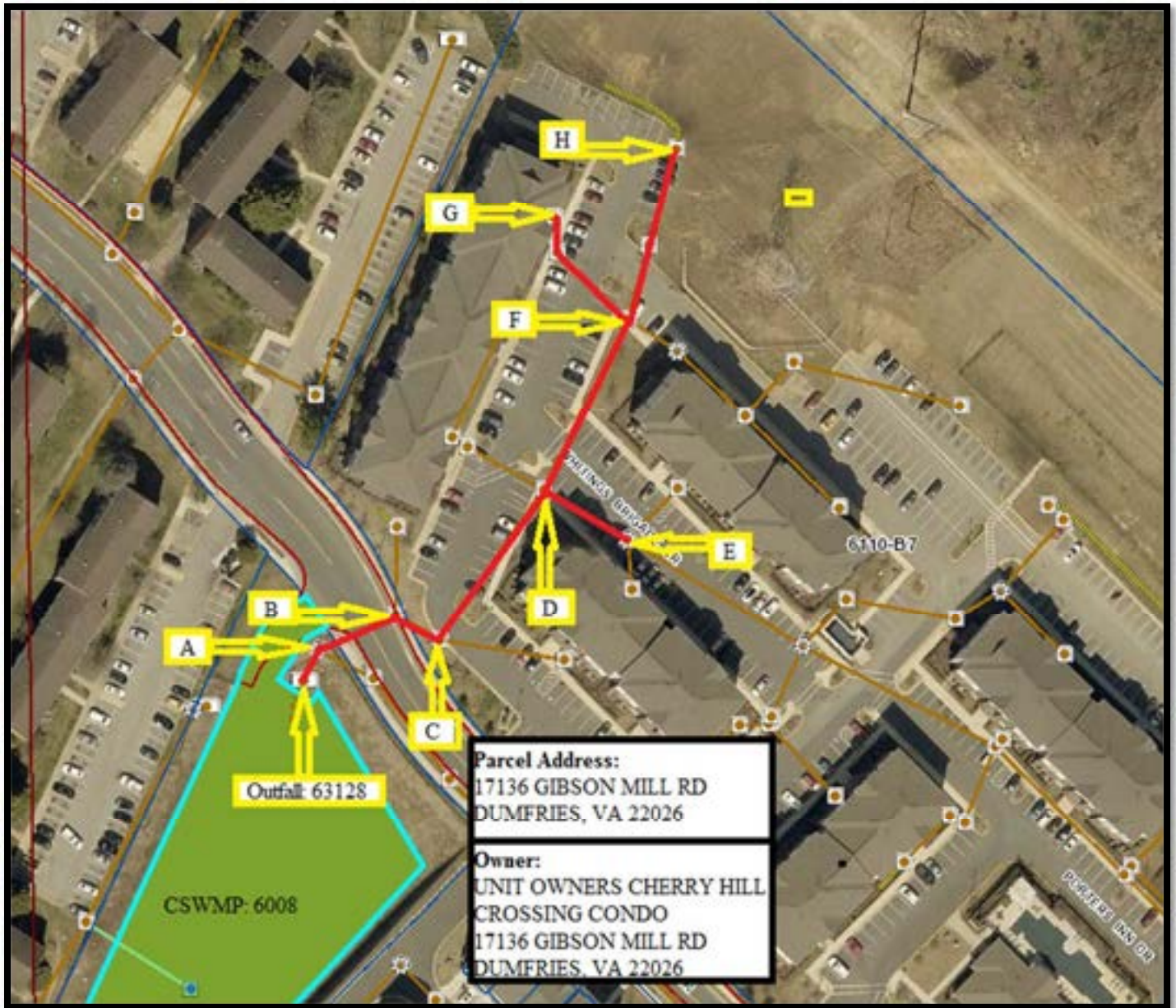


Onsite Water Quality Test performed: Yes

If yes, observed results:

pH: 8.40 Limit: Std.	Conductivity: 318 μ S/cm Limit: Std.	Temp.: 69°F Limit: Std.
Discharge related Indicators	Odor: NA	Turbidity: NA
	Floatables: Suds	Other: NA
	Color: NA	
	Stains: Algae	

Map of Trackdown Path:



Responsible Party (Owner/ Institutions)	Other Party (Management Company)
Name:	Name: NA
Company:	Company:
Address:	Address:
Phone #:	Phone #:
Note:	Note:
Notification/Contact (Other agencies contacted (DEQ, NS, FMO?) NA	
Date:	Date:
Time:	Time:
Name: TBD	Name:
Company/Agency:	Company/Agency:
Notes:	Notes:

Comments/ Deficiencies:

Suds with orange algae was observed at outfall. pH and conductivity did not exceed the limits during onsite test. Source of discharge was tracked along red line shown in map above. At manhole A, Flow observed from both AB branch only. Tracking was continued along point C and D. At manhole D, flow observed from both DE and EF branches. Manhole E was found dry. Manhole F was receiving flow from both FG and FH branches. Both drop inlets were observed receiving trickle flow from landscape. Volume of flow was observed gradually reducing in upstream section. Cross connection of sanitary sewer did not find during inspection.

Conclusion:

The source of discharge was discovered ground water seepage. Algae and suds found to be developed at the outfall. Specific source of illicit discharge did not find but application of fertilizer and chemicals on landscape with parking lot runoff may responsible for suds and algae. Discharge with high vertical drops in different sections is also responsible for forming sod due to turbulence flow. Follow up inspection will continue in following year.

Notifications:

Citation Code Section: NA		
Citation Narration: NA		
NOV Issued: N	NOV #: NA	EnerGov Case # : NA

Photos:





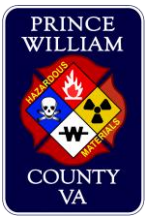




Appendix F – Spill Prevention and Response



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170021459	Date: 7/10/2107
Location:10850 Pyramid Place Manassas Va	Time: 12:22
Report Completed By: Tech II Greiner	Incident Commander:
HM 506 Personnel Responding: Tech II Greiner, Tech II Luke, Tech I Lautenbacher HS 516 Personnel Responding: Other HMT Personnel Responding: HMO 502, HMO 501	

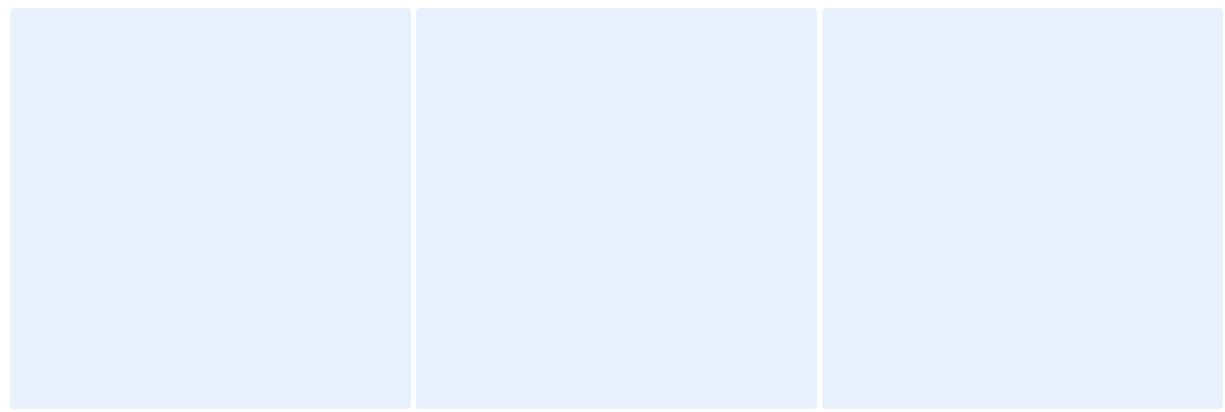
INCIDENT DESCRIPTION	
<p>At 11:30am station 6 received a call from the UFRO to inform them of a possible hazmat situation at the medical examiner's office. The UFRO gave the duty hazmat technician the contact information for the first sergeant in charge of the call so that the hazmat technicians could get the story of what was going on. The duty hazmat technician called the Sgt. and was told that last night the patient committed suicide by soaking a towel with diethyl ether and then placing a bag over his head and zip tying it shut. The towel and bag were removed by Prince William PD and placed in evidence. The patient was transported to the medical examiner's office. The doctors at the medical examiner's office were concerned with the smell that was coming from the patient and wanted to make sure there was no significant hazard or risk to them. HM506, HM501 and HM502 all met on scene and spoke with the doctors at the medical examiner's office to confirm that it was in fact diethyl ether that was used and the plan of how we would check the patient. Based on research done on scene, it was decided to make entry in structural PPE and SCBA and monitor the air around the patient especially near the head where the substance was. HM506 made entry and used the PID as well as two 4-gas monitors. The highest reading on the PID was 362ppm. All readings on the 4-gas monitors were normal. When HM506 came out, they met with HM501 and the doctors to discuss their findings and suggestions as to how to handle the patient moving forward. HM501 explained to the doctors that there is no significant risk with the patient at the levels our monitors were getting, however to wear proper ppe as well as respiratory protection while around the patient. The doctors understood the necessary precautions they needed to take and felt comfortable with our suggestions and findings. HM506 called Sgt. Robinson to confirm that there was no hazard at the home where the incident took place. It was confirmed that all materials used were secure and there was no need for hazmat to go to the scene. HM506 cleared the scene at 13:50.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 07/10/2017	Date: 07/10/2017
Time: 14:40	Time: 12:00
Name: Dan Maxfield	Name: Sgt. Robinson
Comp/Agency: VA EOC	Comp/Agency: PWC PD
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

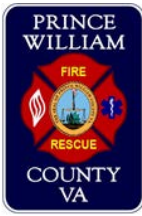
NOTIFICATIONS/CONTACTS	
Date: 07/10/2017	Date:
Time: 12:45	Time:
Name: Jocelyn Posthumus	Name:
Comp/Agency: Asst. Chief Medical Examiner	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

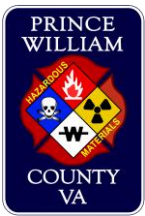


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD170021777	Date: 7/13/2017
Location:8028 Stillbrooke Rd	Time: 08:22
Report Completed By: Lt. N. Baskerville	Incident Commander: None
HM 506 Personnel Responding: Tech II Favole, Tech II Greiner, Tech I Kolbas HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>PSCC contacted E506 for an investigation at a home for an unknown spill. E506 took HM506 to the call. Spoke to homeowner. She stated she is going through a divorce. Her ex-husband had put a chemical substance on the floor of the first floor. He then turned on the heat in the home and left. The path was through the front door and back to the kitchen. Used the PID and 4 Gas meter for detection and monitoring. Got 0 readings on LEL, CO2, and H2S and O2 was 20.9% on the 4 gas meter. PID alarmed with one beep every few minutes, but showed no reading. Did not find the container used to disperse the chemical. PD was in contact with the ex-husband; found that he used a commercially available stink bomb product. Unable get an exact listing of ingredients. M908 was unable to match in its library. Once 20 feet out of the building, no one had any symptoms of sickness.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 7/13/2017	Date:
Time: 16:06	Time:
Name: Capt. Hennessy	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

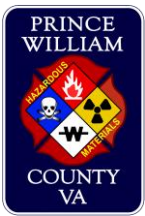


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170023097	Date: 7/25/2017
Location: 5180 Dale Blvd, Woodbridge VA 22193	Time: 17:00
Report Completed By: M. Adkins, HMO501	Incident Commander: N/A
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding: HMO501	

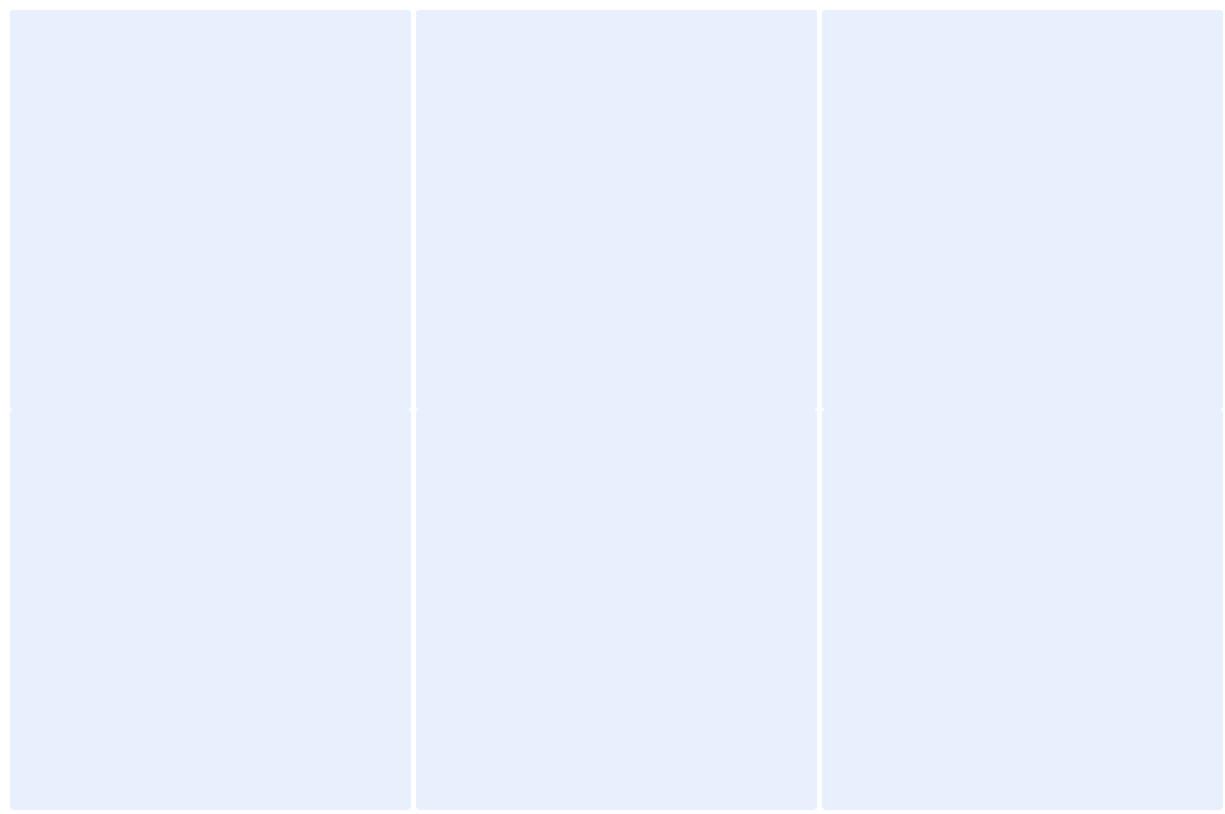
INCIDENT DESCRIPTION	
National Response Center received an anonymous complaint of an ongoing ammonia leak at the Prince William Ice Center. At approximately 1700 - FM Lt. Mike Cozdeba and I conducted a walk through of the facility and found no evidence of any leak or other issue. Staff at the site stated there was a recent involuntary separation of a number of employees that could be the reason for the complaint.	
RESPONSIBLE PARTY	OTHER PARTY
Name: RJ Zeigler	Name:
Company: Prince William Ice Center	Company:
Address: 5180 Dale Blvd	Address:
Phone#: 703-853-0286	Phone#:
Notes:	Notes:

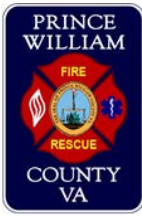
NOTIFICATIONS/CONTACTS	
Date: 07/25/2017	Date:
Time: 1739	Time:
Name: Alan Lacy	Name:
Comp/Agency: VA DEQ	Comp/Agency:
Notes: Provided information regarding this incident as requested.	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

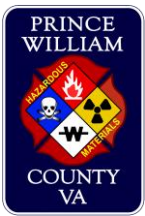
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170023759	Date: 7/31/2017
Location: 14076 Baneberry Cir	Time: 13:28
Report Completed By: Tech II Snitwongse	Incident Commander: Capt Arft
HM 506 Personnel Responding: Tech II Snitwongse, Captain McCleese, LT. Shannon, Tech II Griener, Tech II Hoffman, Tech I Podobed HS 516 Personnel Responding: Tech II Mirabile, Lt. Samuels Other HMT Personnel Responding: Lt. Miller	

INCIDENT DESCRIPTION
<p>E518 Responded to an outside natural gas leak at 14076 Baneberry Cir. Upon arrival E518 officer upgraded the call type to include a hazmat compliment due to apparent size of the breach of the gas line. Nearby homes were also being affected due to high percentages of gas concentration in and around the properties.</p> <p>Upon arrival of hazmat units, it was determined that a 4" natural gas line was hit during an excavation by a construction company. Washington Gas was notified and had a 30 min eta for arrival.</p> <p>Investigation by hazmat personnel was conducted wearing full structural firefighting PPE utilizing 4 gas monitors. The highest measurable readings were directly downwind of the excavation site approximately 50 feet away in the front and side yard of a vacant home. The 4 gas readings were at no point any higher than 10% of LEL. As a precaution, nearby homes were checked for LEL and all dwellings reported negative for gas readings.</p> <p>As an aid to monitor LEL gas readings near the gas leak, the AreaRae system was deployed and monitored remotely from the command post during the repair efforts by the gas company. Hazmat personnel continued to provide manpower and on scene monitoring as conditions changed.</p> <p>Washington Gas was able to fully secure the gas leak by 1650.</p>

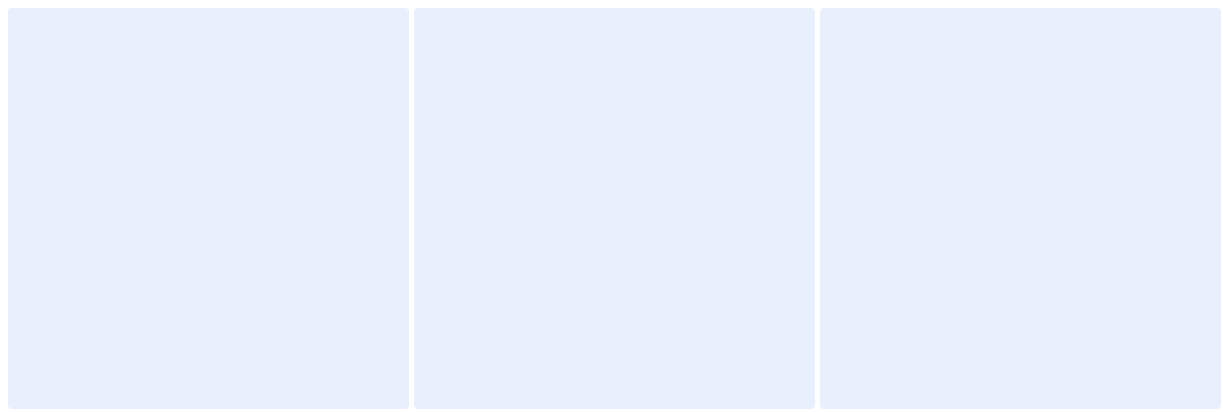
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 7/31/2017	Date:
Time: 0950	Time:
Name: Bartol	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes: Courtesy notification	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

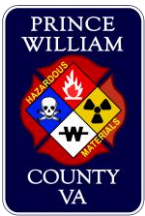
NOTIFICATIONS/CONTACTS	
Date:	Date:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 17003725	Date: 11/28/2017
Location: 5109 Russell Rd	Time: 11:12
Report Completed By: Tech II Snitwongse	Incident Commander: BC503 Beavers
HM 506 Personnel Responding: Tech II Snitwongse, Tech II Hoffman, Tech I Sawyer, Tech I Harvey HS 516 Personnel Responding: Tech II Shipman, Tech I Taylor, Tech I King Other HMT Personnel Responding: HMO Matt Adkins, Captain Stewart	

INCIDENT DESCRIPTION	
<p>HAZMAT responded to 5109 Russell Rd at the US Department of Veteran Affairs Mail Sorting Office for the National Cemetery. Upon arrival to the dispatched address HAZMAT personnel conducted a face to face with the officer of E503 who was the first arriving county unit to the scene. Captain Dixon advised that a employee who had been sorting mail a day earlier had noticed a letter that had been contaminated by a white powder. Some of the powder reportedly spilled on the workers desk and it was brushed to the floor. The employee placed the letter in a bag and relocated it to another part of the office. No one reported or showed signs of being ill or otherwise symptomatic.</p> <p>With the arrival of HMO502, it was decided to make entry to investigate the situation. Emergency decontamination was established at E503 prior to entry. The Recon Team members were Tech II Hoffman and Tech I Sawyer. The Recon Team donned structural firefighting PPE, with nitrile gloves and SCBA and made entry at 1145. PID and 4 Gas readings within the structure were normal. The Recon Team then obtained a sample and processed it using the 20/20 protein detection kit and pH paper. The pH remained neutral and the 20/20 kit returned an immediate result and had corresponding color change that indicated a positive presence of protein. After it was determined there was protein present, the Recon Team ran the ProStrips '5T' test kit to possibly identify the type of agent. The result of the ProStrip '5T' did not indicate the presence of any of the target agents. The Recon Team exited the structure at 1202 removing nitrile gloves and letting the Decon team know that they had not come into contact with the powder. PD guarded the structure and the Recon Team reported to the incident command staff with their findings. Pictures of the site were provided to command and the HAZMAT Officers who then advised PD and FBI of the message contained in the letter. Due to the contents of the message and the incident location FBI assumed responsibility for this incident. The incident was held briefly waiting for FBI arrival.</p> <p>Agent Aidan Garcia of the FBI arrived on scene and requested that the letter and its contents be double bagged, screened for hazards, and provided to the agent for further investigation. HAZMAT Officers also advised the entry team to finish up by cleaning the area where the envelope was tested with disinfectant as a precaution. The Recon Team made reentry at 1225 to conduct the steps as requested. The double bagged items were screened using the 4 gas monitor and PID. Contents were also screened for radiation. All readings were normal. Recon disinfected the area when finished. Upon exiting TII Hoffman provided the bagged items directly to Agent Garcia.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Kirk Elliott	Name:
Company: U.S Department of Veterans Affairs	Company:
Address: 1575 Eye Street, NW Room 654	Address:
Phone#: (202)501-3044	Phone#:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

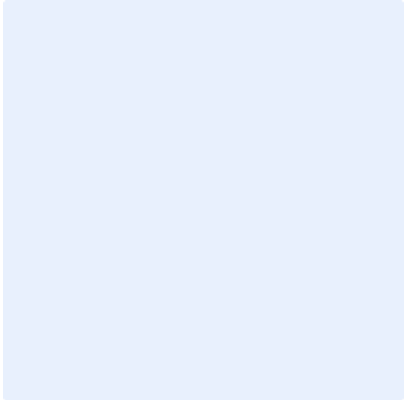
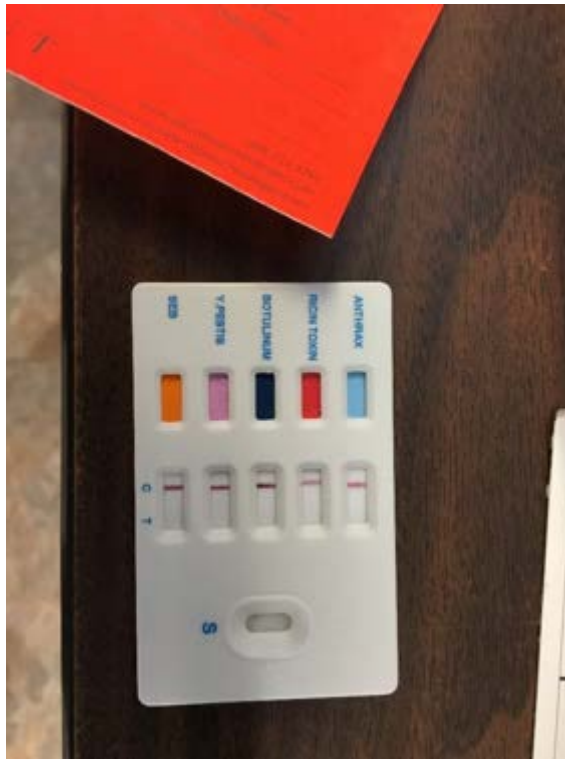
NOTIFICATIONS/CONTACTS	
Date: 11/28/2017	Date: 11/28/2017
Time: 18:43	Time: 11:15
Name: Brandon Wykert	Name: Aidan Garcia
Comp/Agency: VAEOC	Comp/Agency: FBI - WFO WMD Team
Notes: Courtesy notification	Notes:
Date: 11/28/2017	Date: 11/28/2017
Time: 11:12	Time: 11:30
Name: First Sgt. Markley	Name: Mary Laurel Castle
Comp/Agency: PWCPD	Comp/Agency: PW Health District
Notes: PD On Scene/Senior Official	Notes: Email HMO Adkins
Date: 11/28/2017	Date: 11/28/2017
Time: 11:12	Time: 11:20
Name: Brian Misner	Name: AC Matt Smolsky
Comp/Agency: PWC Emergency Management	Comp/Agency: PWC FMO/Public Affairs
Notes:	Notes: Direct to HMO Adkins for infomation
Date: 11/29/2017	Date:
Time: 10:00	Time:
Name: Jason Terry	Name:
Comp/Agency: Quantico Emergency Manager	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

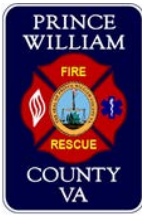
Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

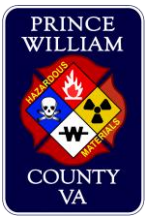


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170024542	Date: 8/7/2017
Location: 15025 Fleetwood Dr., Nokesville 20181	Time: 18:49
Report Completed By: Luke	Incident Commander:
HM 506 Personnel Responding: Jones, Yanike, Luke, Deghand, Phillips HS 516 Personnel Responding: Other HMT Personnel Responding: Atkins	

INCIDENT DESCRIPTION	
<p>Duty Hazmat, Lt. Jones, received a phone call from Detective Sekely from PWCPD saying a home owner received a package in the mail from an unknown party. Also after the home owner opened it, they didn't realize that the package was sent to the wrong home. PWCPD removed ziplocked package from home believing it was some kind of narcotic. The police officer took the package in his vehicle to the Public Safety Academy (PSA), 13101 Public Safety Dr., Nokesville Va. 20181. HM506 met up with narcotics officers at the PSA so we could confirm with one of our instruments the identity of the substance inside the package. Using the FirstDefender RMX RX1377 it had confirm the package had contained Methamphetamine Hydrochloride. PWCPD maintained ownership of the product.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Detective D.R. Sekely	Name:
Company: PWCPD	Company:
Address: 1 County Complex	Address:
Phone#: 703-686-6528	Phone#:
Notes:	Notes:

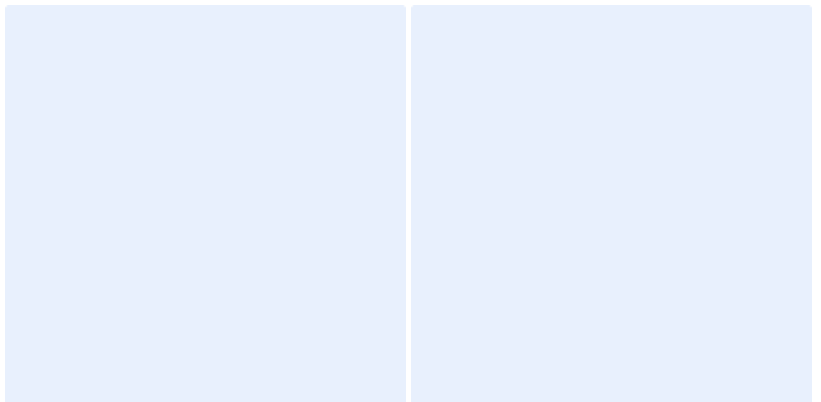
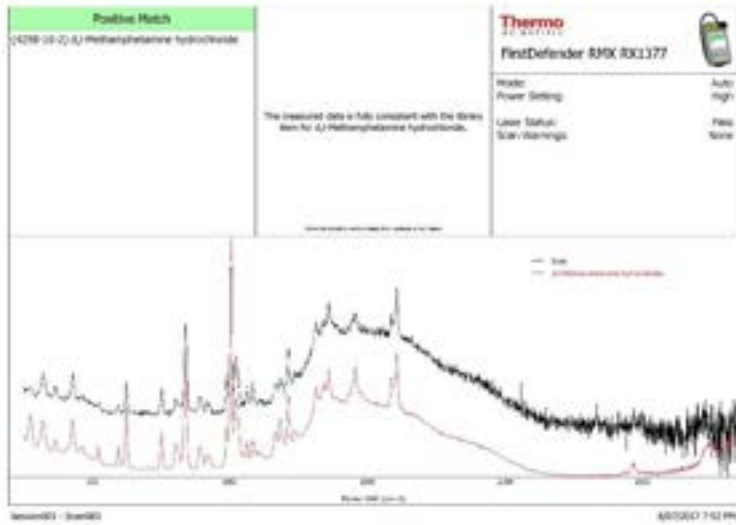
NOTIFICATIONS/CONTACTS	
Date: 8/7/17	Date:
Time: 22:13	Time:
Name: Key	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

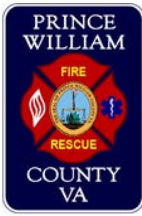
**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

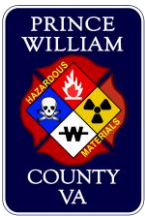
Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170024643	Date: 8/8/2017
Location: 15030 Sunny Ridge Ct. Woodbridge, VA 22191	Time: 19:51
Report Completed By: Lt. Mark Schwab	Incident Commander: n/a
HM 506 Personnel Responding: n/a HS 516 Personnel Responding: n/a Other HMT Personnel Responding: n/a	

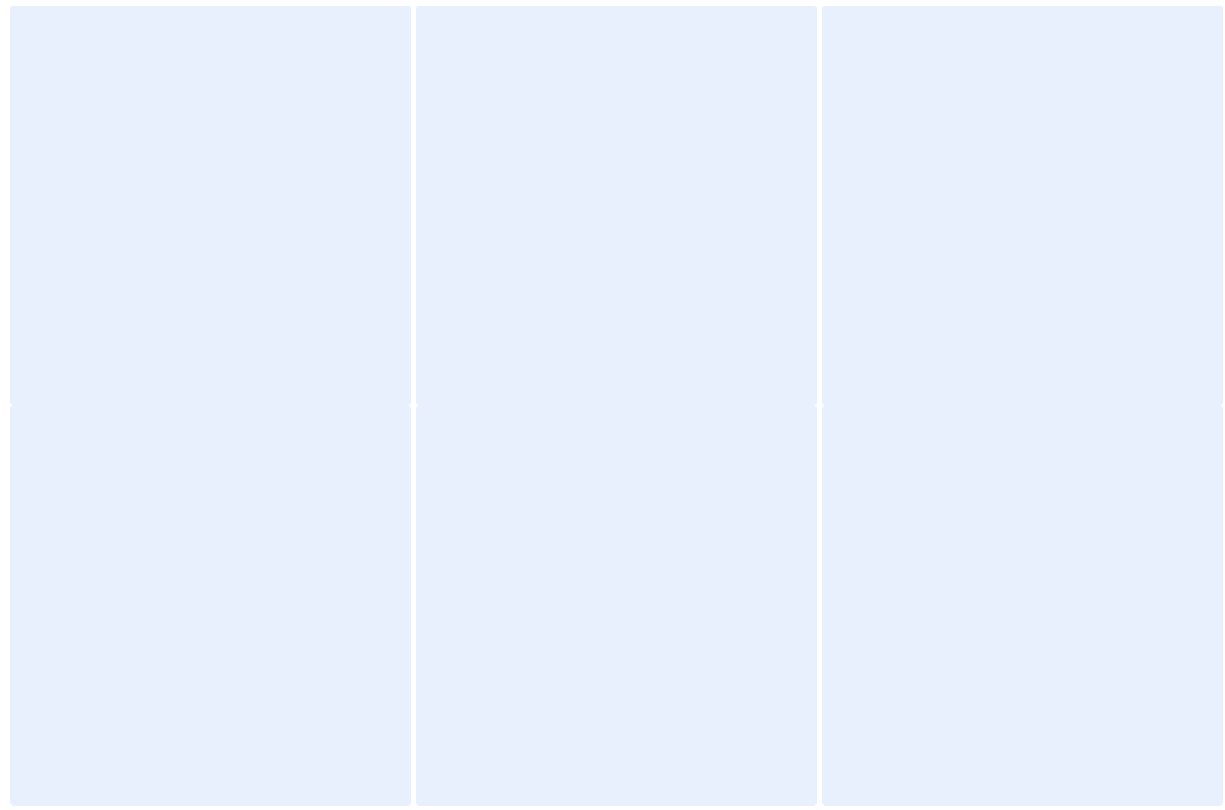
INCIDENT DESCRIPTION	
E512 called to give a courtesy notification that they were on scene of a vehicle leaking gas. The driver had just filled up her tank and there was a leak at the rubber boot that connected the fill spout with the tank. The leak was a slow drip and approximately ½ gallon had leaked out. He advised that absorbent had been put down and that they were unable to find the driver of the vehicle. After speaking with HMO501 no further notifications were needed.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Unknown	Name:
Company:	Company:
Address: 15030 Sunny Ridge Ct. Woodbridge, VA 22191	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 8/8/17	Date:
Time: 20:30	Time:
Name: Matt Adkins	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD170025593	Date: 8/17/2017
Location: 1040 Express Dr. Woodbridge, VA	Time: 23:08
Report Completed By: Lt. Schwab	Incident Commander: N/A
HM 506 Personnel Responding: Lt. Schwab, T-II Abel, T-I Cone HS 516 Personnel Responding: Other HMT Personnel Responding: Adkins (HMO501), Stewart (HMO502)	

INCIDENT DESCRIPTION	
<p>HM506 received a request for consultation with Police Department at the VRE station at Rt. 1 and Dawson Beach Road. PD had elevated radiation readings with a RadEye Personal Radiaton detector and requested secondary screening. Officers has elevated readings near 40 microrem/hr and had confirmed readings with another device. HM506 responded and began an assessment. After surveying the entire building it was determined that there was a source showing consistent readings above normal known background radiation, but there was not a "hot" spot. Isotope Identification was attempted with a low confidence identification for Iridium-192. Contact was made with HMOs for further details. HMO502 Captain Stewart conducted an assessment of the structure while HMO501 Adkins collected data from the Isotope Identification devices to provide to DOE Triage for technical review and assessment. Triage requested additional readings with a longer spectra and use of the Ortec Device. Captain Stewart contacted Virginia State Police CCI and Washington Metro Transit Authority Police CBRNE to assist as they have the Ortec devices. Spectra was uploaded to to DOE Triage and it was determined the elevated levels were from naturally occuring radioactive materials. There was no further need for additional investigation.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Eric Johnson, P.E.	Name:
Company: Virginia Rail Express	Company:
Address: 1500 King Street, Suite 202, Alexandria	Address:
Phone#: 571-238-9132	Phone#:
Notes: ejohnson@vre.org	Notes:

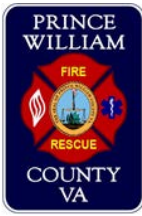
NOTIFICATIONS/CONTACTS	
Date: 8/18/17	Date: 8/18/2017
Time: 1:48	Time: 0700
Name: Dan	Name: Mark Scheuer
Comp/Agency: VAEOC	Comp/Agency: DOE Triage - NNSA
Notes: This notification was made by Lt. Schwab	Notes: Triage Emergency Response Officer
Date: 8/18/2017	Date: 8/18/2017
Time: 0745	Time: 0715
Name: Allison Ansher	Name: Alan Lacy
Comp/Agency: Health District Director	Comp/Agency: VADEQ
Notes: Requested update of information.	Notes: Requested Update

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

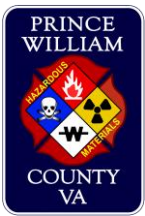
NOTIFICATIONS/CONTACTS	
Date: 8/18/2017	Date: 08/18/2017
Time: 0930	Time: 0702
Name: Tom Jordan	Name: Ryan Peterson
Comp/Agency: VDEM HAZMAT	Comp/Agency: DOE/DHS Joint Analysis Center
Notes: Updated regarding situation. Stated he would have Virginia Rad Health Contact us.	Notes: Requested information and insured contact with triage was made.
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170025634	Date: 8/18/2017
Location: 149 I95 N Hwy, Triangle Va 22134	Time: 10:32
Report Completed By: Technician II Weaver	Incident Commander: Lieutenant Shannon
HM 506 Personnel Responding: Lieutenant Shannon, Technician II Weaver, Technician I Lautenbacher, Technician I Wahn	
HS 516 Personnel Responding:	
Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>HM506 was requested for a phone consult by E503. E503 advised that they were on scene of a tractor trailer that had ruptured one of its saddle tanks and had an active leak. E503 advised that around 75 gallons had leaked out of the tank. HM506 advised E503 to perform defensive measures to contain the leak. HM506 responded to the call. HM506 arrived on scene and found a saddle tank leaking from the bottom seam. E503 had built a damn around the product that leaked out to contain it. HM506 placed a popup pool under the tank to collect the leaking diesel fuel. HM506 isolated the tanks by shutting the valve between the tanks. HM506 used Plug N Dike to stop the leak. HM506 handed the driver an LEPC form to pick a clean up contractor. The Driver chose Atlas for the clean up company. HM506 remained on scene until Atlas arrived. HM506 turned the scene over to Atlas.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: David Michael Williams	Name: Floyd Ellmore
Company: Tide Water Direct	Company: VDOT Incident Management Coordination
Address: 7195 Fir St, Eatton MD 21601	Address:
Phone#: 410-758-1500	Phone#: 703-539-9143
Notes:	Notes:

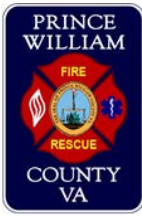
NOTIFICATIONS/CONTACTS	
Date: 8/18/2017	Date:
Time: 15:33	Time:
Name: Captain Hennessy	Name:
Comp/Agency: VA EOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

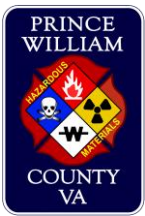
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Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170025803	Date: 8/20/2017
Location: I-95N 158.5mm	Time: 18:11
Report Completed By: Tech. II Sean Jones	Incident Commander: BC506 Bolland
HM 506 Personnel Responding: Lt. T. Forbes, Technician D. Bell, Technician S. Jones, Technician, L. Yanike, and Technician S. Kent HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>Incident # 170025803. HM506 was dispatched to a fuel spill from the right saddle tank of an 18 wheeler. E512 was first onscene and began defensive operations by putting absorbent near the saddle tank and absorbent pads in the drainage ditch. H506 arrived onscene and saw that the diesel fuel was flowing into the dirt of the ditch and not near the storm drain. HM506 placed two portable pools under the saddle tank to catch the fuel and overflow. HM506 also placed booms into the drainage ditch to keep the fuel from flowing any further. HM506 found that there was a hole at the bottom front of the right saddle tank and stopped the leak with a wooden plug and putty. After talking to the driver of the 18 wheeler it was found that there was approximately 100 gallons of diesel fuel in the saddle tanks. Bekins trucking Manager Doug Lagrath stated that he and his company could not be able to contact a clean up company until Monday August 21, 2017. After explaining to the truck driver and his manager that they had to get the diesel spill cleaned up they still refused to do it in a timely manner. Mike Wood from VDOT and Hazmat Officer 502 were contacted and informed of the situation. VDOT assumed responsibility of the spill and contacted Atlas Environmental to conduct the clean up.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Charles Mceachern	Name: Mike Wood
Company: Bekins Trucking	Company: VDOT
Address: 200 Tolar St., Fayetteville, NC 28304	Address:
Phone#: 910-483-2729	Phone#:
Notes: Manager: Doug Lagrath, 919-440-0451	Notes:

NOTIFICATIONS/CONTACTS	
Date: 8/20/2017	Date:
Time: 12:56 AM	Time:
Name: Dan Maxfield	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes: Courtesy Notification	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information: Equipment used: Two booms , pads, plug and dike putty, wooden mallet, four wooden plugs.
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

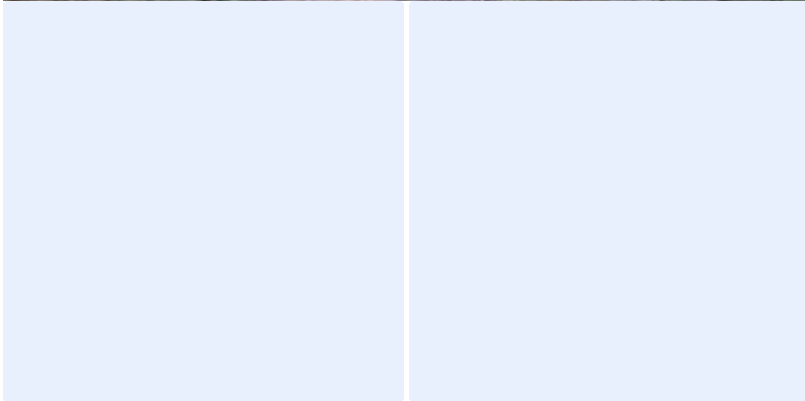


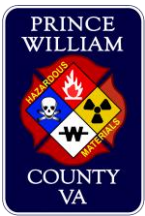
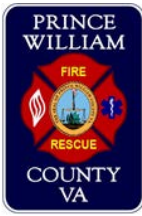
PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170026942	Date: 8/30/2017
Location: Interstate 95 @ 148/8	Time: 02:36
Report Completed By: Lt. Stephen Horvath	Incident Commander: Chief Miles Young
HM 506 Personnel Responding: Lt. Horvath, N. Budkiewicz, A. Davis and J. Sawicki HS 516 Personnel Responding: Lt. Samuels, G. Clark, D. Popsuy and A. Silvernale Other HMT Personnel Responding:	

INCIDENT DESCRIPTION
<p>When we arrived on-scene I did a face to face with the incident commander Chief Young. He asked if we would survey the scene for any containment needs and to get back to him. VDOT already had a representative on the scene so I asked him to talk with him to find out since the responsible party was already transported (tractor trailer driver) if VDOT was going to handle getting the clean up contractor. BC M. Young said he would find out and let me know.</p> <p>So HM506 surveyed the scene with a 4 gas and all readings were within the normal limits. We found an Enterprise 25' box truck that was being towed when a tractor trailer rear ended it. The truck being towed broke away from the tow vehicle when it was rear ended and struck the guard rail on the high speed lane side. The Enterprise truck saddle tank was punctured on the front of the tank half way up. There was only one fuel tank on the passenger side. When we arrived on scene E503 had already made a containment pool out of a tarp and a few pike poles to catch the fuel. HM506 personnel placed a 2.5 gallon pop up pool inside E503 containment pool to catch any remaining fuel. There was evidence that some of the leaking fuel had run into the grass and then into the culvert. Estimated amount of fuel loss on the Enterprise truck was approx. 40 gallons of diesel. The fuel tank also leaked down to the bottom of the puncture and HM506 personnel plugged it to make sure it wouldn't leak any more when the wreckers were moving it prior to towing it. The tractor trailer that rear ended the Enterprise truck also had damage to its saddle tank which ruptured and lost all of it's diesel fuel which per the driver before being transported was 110 gallons of diesel. HM506 checked the culvert North and South of the accident scene for any evidence of fuel in the rain water in the culvert. No sheen was found and all readings on the 4 gas were normal. For safety precautions HM506 personnel with assistance of E523 personnel made two earth dams north and south of the accident scene incase there was any more rain this way any product that did make it into the culvert would be contained.</p> <p>Spoke with VDOT, command and VSP it was decided by VDOT rep on-scene that Redman towing was on-scene and stated they would tow the vehicles and clean up the road way. Redman stated that they contacted Atlas and they would would clean up the culvert. VDOT agreed with this plan and Redman towing took over moving the vehicles and cleaning the roadway. VDOT rep stated that the VA haz-mat officer would be following up on the cleanup and would be in contact with HM501 on the status. Command was satisfied with the plan and the progress and released us. Photos of the scene were taken by HM506 personnel as you will see below in this report as well as VAEOC was contacted for informational purposes only.</p>

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

RESPONSIBLE PARTY	OTHER PARTY
Name: N/A	Name:
Company: Quality Express LLC.	Company:
Address: 261 E Crestwood Dr. Camp Hill, PA 17011	Address:
Phone#: 717-364-6803	Phone#:
Notes: Driver transported prior to our arrival - USDOT 2935869	Notes:

NOTIFICATIONS/CONTACTS	
Date: 8-30-2017	Date:
Time: 03:30	Time:
Name: VAN	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes: Informational purposes	Notes:
Date: 8-30-2017	Date:
Time: 03:45	Time:
Name: Floyd "Boots" Ellmore	Name:
Comp/Agency: VDOT	Comp/Agency:
Notes: Regional Incident Management Coordinator	Notes:
O: 540-658-5365 C: 703-539-9143	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Date:	Date:
Time:	Time:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

Fire Marshal requested/on scene: Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT







PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

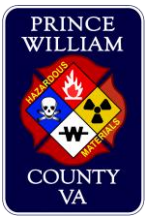


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170027615	Date: 9/5/2017
Location: 15009 Spriggs Valley Ct Woodbridge, VA 22193	Time: 13:45
Report Completed By: Technician II Eric Weaver	Incident Commander: Technician II Eric Weaver
HM 506 Personnel Responding: Tech II Weaver, Tech II Hoffman, Tech I Waln, Tech I Harvey HS 516 Personnel Responding: Other HMT Personnel Responding:	

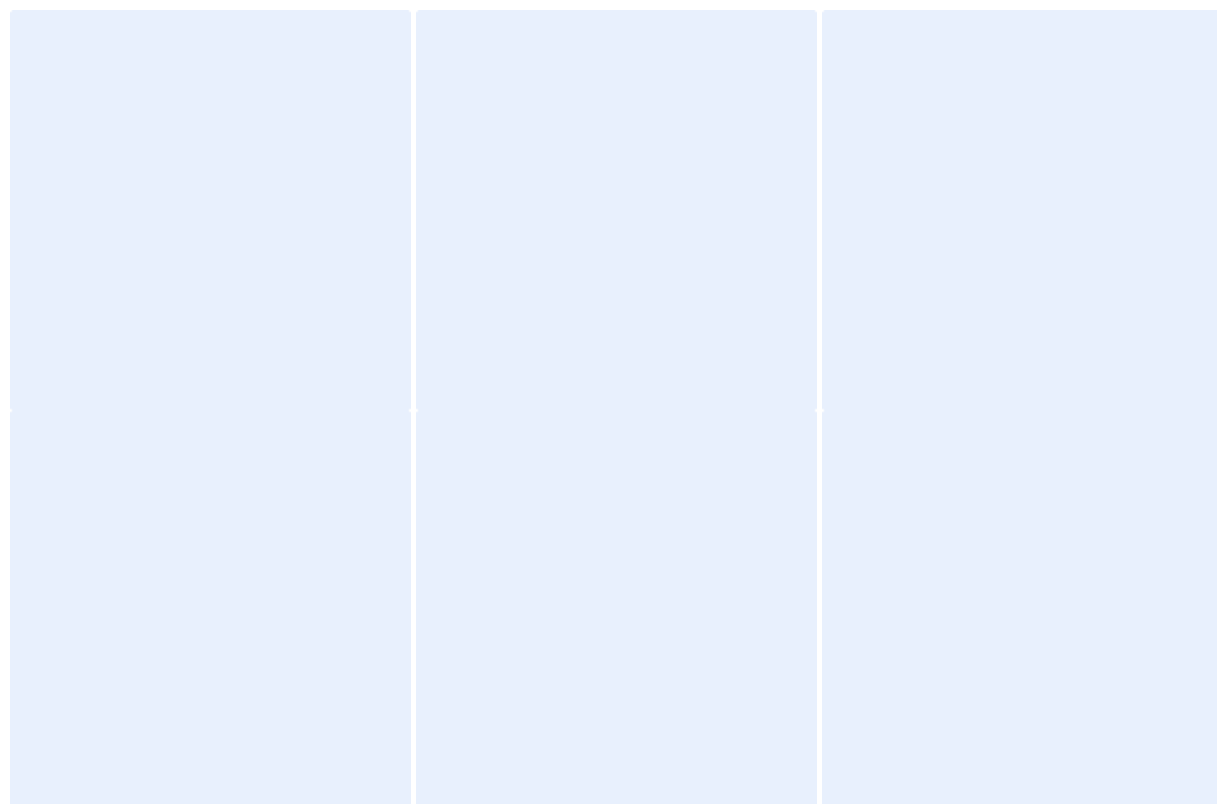
INCIDENT DESCRIPTION	
Homeowner had called 911 about breaking a flouresent bulb at his house. 911 had advised the homeowner to clean up the bulb and throw it away. Homeowner was not happy about that and called station 6. After talking with the homeowner, R506 and HM506 went enrout to the location. HM506 helped clean up bulb and placed the pieces in a bag. HM506 placed bag on front porch and handed homeowner an LEPC form.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Brian Loop	Name:
Company:	Company:
Address: 15009 Spriggs Valley Ct, Woodbridge VA 22193	Address:
Phone#: 240-388-1707	Phone#:
Notes:	Notes:

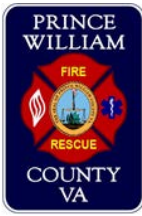
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Comp/Agency:	Comp/Agency:
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Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

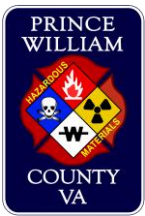
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170028363	Date: 9/12/2017
Location: Prince William Parkway and Moore Dr.	Time: 15:36
Report Completed By: Sean Jones	Incident Commander: Lt. Brian Reader
HM 506 Personnel Responding: Lt. Forbes, D. Bell, J. Campbell, and S. Jones HS 516 Personnel Responding: Lt. Brian Reader and C. Smith Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
E516 AOS to find a dump truck leaking fuel. The vehicle was parked on a dirt pad, but had left a trail of fuel, occasionally pooling, on a 2 mile trail of Prince William Parkway. Lt. Reader, OIC of E516, called for a Hazmat Consult with HM506 and R506. Lt. Reader advised that there was no more than 5 gallons of fuel spilled in total, based on fuel level readings from the dump truck. Lt. Reader also advised that there was no recoverable product, due to its dispersion across 2 miles of highway. Lt. Reader advised that there were no resources that HM506 could bring that they did not have already (namely, absorbant). HM506 advised giving the driver an LEPC form. HM506 cleared the call at 1545 with no further services to be delivered. The vehicle had a VA registration of PX226420.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Marshall Martin	Name: Kevin Eaheart (Owner)
Company: Eaheart Excavating, Inc.	Company:
Address: 7501 Prince William Parkway, Manassas, VA 20111	Address:
Phone#: 804-761-6676	Phone#:
Notes: Excavation company	Notes:

NOTIFICATIONS/CONTACTS	
Date: 9/12/17	Date:
Time: 16:35	Time:
Name: Tyler Ellis	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes: Courtesy Notification	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

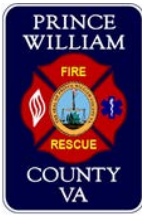


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

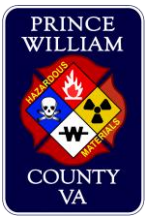


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170028457	Date: 9/13/2017
Location: 5513 Wellington Road Gainesville, VA 20155	Time: 16:47
Report Completed By: Tech I Sawicki	Incident Commander: N/A
HM 506 Personnel Responding: Lt. Anthony, T2 O'Donnell, T1 Sawicki HS 516 Personnel Responding: N/A Other HMT Personnel Responding: N/A	

INCIDENT DESCRIPTION	
At approx 1640 we conducted a phone consult with Lt. Knonebusch from the FMO in regards to conditions at the above address. She stated that there were fluids/oils that had leaked out onto the ground at the location. She also stated that there were no active leaks and no waterways were compromised and that she simply wanted a consult to address her concerns. HM506 responded as a courtesy and found no recoverable product and no actions were needed by us. Instructed FMO's to advise owner of the use of booms, pads and absorbants.	
RESPONSIBLE PARTY	OTHER PARTY
Name: John Earl Smelser	Name:
Company: Virginia Scrap Corporation	Company:
Address: 5513 Wellington Road Gainesville, VA 20155	Address:
Phone#: 571-261-2525	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 09/13/2017	Date:
Time: 19:05	Time:
Name: Archer Stark	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: Lt. Knonebusch



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

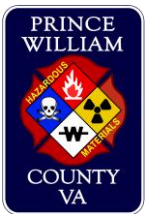


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170028646	Date: 9/15/2017
Location: 7402 Sudley Rd Manassas VA	Time: 1124
Report Completed By: T.Forbes	Incident Commander: T.Forbes
HM 506 Personnel Responding: T. Forbes, D. Bell, L.Yanike, Z.Markley HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>I was notified by HMO502 of a fuel spill at 7402 Sudley Rd Manassas VA, she stated that earlier this morning a customer over filled their vehicle and spilled gasoline on the ground. Hazmat 506 responded to the above address and met with the manager of the Raceway gas station. He stated that a customer was overfilled their vehicle and spilled up to 33.89 gallons (total amount dispensed). The manager of the gas station contacted Raceway emergency help number that contracted with Atlas Environmental to clean up the spilled gasoline. Atlas Environmental representative stated that the gasoline ran down the parking lot and entered the storm drain on the south side the parking lot, and traveled in the storm drain to the other side of 7421 Sudley Rd (Dunkin Donut). The Atlas environmental representative stated that he believed that 5 to ten gallons of gas was spilled. Hazmat 506 personnel monitored the area and the storm sewer and obtained normal reading Race way parking lot, the storm sewer in the Dunkin Donuts parking lot had an LEL of 2% when it was first monitored. We continued to monitor the storm sewer and the reading quickly returned to normal readings. The gasoline odor dissipated the area as Atlas Environmental attempted to recover any product in the storm sewer. HM506 personnel spoke with employees at that gas station and the Dunkin Donuts.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Jaliya Weera	Name:
Company: Raceway Gas	Company:
Address: 7402 Sudley Rd	Address:
Phone#: (703) 330-4988	Phone#:
Notes: Called Race way emergency number when the spill happened.	Notes:

NOTIFICATIONS/CONTACTS	
Date: 09/15/2017	Date: 09/15/2017
Time:	Time:
Name: Race way Emergency Help	Name: Daniel
Comp/Agency:	Comp/Agency: VA EOC
Notes: (800) 688 6199	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: Lt. Greenfield

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



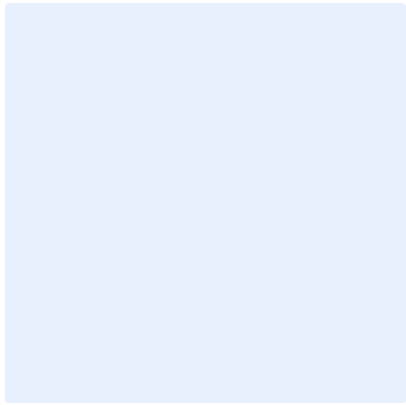
PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

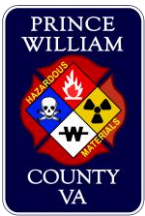
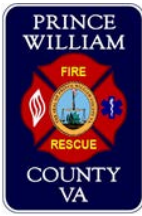


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170030019	Date: 9/26/2017
Location: 10833 Gambriel Dr, Manassas Va 20109 Apt. 33	Time: 15:30
Report Completed By: Technician II Weaver	Incident Commander: Captain Newell
HM 506 Personnel Responding: Technician II Weaver, Tech II Hoffman, Tech II Greiner, Tech I Lautenbacher HS 516 Personnel Responding: Lt Miller, Tech II Gonzalez, Tech I Heard, Tech I King Other HMT Personnel Responding: HMO502 Captain Stewart, HMO501 M. Adkins, FM Captain Karhan, FM Lt Hubbel	

INCIDENT DESCRIPTION	
<p>HMO502 received a call from PWC PD- Narcotics at 15:17 asking for hazmat support for their investigation of an illicit grow house. HMO502 contacted the Communications center and requested dispatch of HMO502, HM506 and E511. HM506 arrived onscene first and met with PD. PD advised that they had a large grow operation that consisted of mushrooms and marijuana on the top floor of an apartment building. PD was concerned about the possibility of something toxic in the apartment. Isolation Zone was established at the closed door of Apartment 33. HM506 officer met with HMO502 and came up with a plan to send an entry team into the apartment along with two officers. Both the entry team and the officers wore Level B suits with airpacks. E511 set up decon outside the structure in a grassy area. BC504 arrived onscene and took command. HMO502 and HM506 officer met with the entry team and had a safety brief before entry into the structure. Entry team made entry into Apartment #33 at 16:06. The entry turned the power off to the HVAC system at the thermostat. Entry team reported that all readings on the monitors were in normal limits. Entry team exited Apartment #33 at 16:17. Entry team went straight to decon. Once they completed decon both the entry team and the two officers rehabbed. Command requested HS516 to provide additional hazmat technicians. PD advised HM that they needed to reenter the structure, perform evidence collection to include photographs, and remove the product out of the building. Command requested FM/Hazmat technicians to assist PD with evidence collection. Once the FM's arrived, PD entered the structure with FM to take pictures and assist PD with packaging up the product. HM506 was placed in service with HS516 remaining onscene to back up the evidence collection team and to provide decon. Medic and Safety officer services were also retained for the duration of the call. Once sufficient product was removed a representative of the property owner changed the lock and HS516 and HMO502 sealed the door with chem tape. The property owner was provided the LEPC form and advised of their responsibility for clean up. At 20:19 HM506 was requested for a phone consult with M508. M508 advised HM506 that a family from Grambril Dr was playing outside during the incident and thought that they were exposed to what was in the apartment. HM506 advised M508 that there was no hazard outside the apartment. No hazmat response was needed.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Christine Bunting	Name: Nathan Pavery
Company: TGM Communities	Company: TGM Communities
Address: 10819 Gambriel Dr. Manassas, VA 20109	Address: 10819 Gambriel Dr. Manassas, VA 20109
Phone#: 443-365-0244	Phone#: 804-387-3165
Notes: Communities Director, on 9/27/17 @ 10:08. She reported that they have a call out to Apex for clean up.	Notes: Maintenance Director, reported at approx.20:00 he will contact a clean up company first thing in the morning

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date: 9/26/17	Date: 9/26/17
Time: 16:48	Time: 20:42
Name: Dan	Name: Mary Laurel Castle
Comp/Agency: Virginia EOC	Comp/Agency: Prince William Health District
Notes:	Notes: Courtesy notification via phone following M508 consultation with Duty Hazmat Tech regarding fears of exposure
Date: 9/26/17	Date: 9/26/17
Time: 15:40	Time: 21:05
Name: Souvlis&Garcia	Name: John Williams
Comp/Agency: FBI	Comp/Agency: Novant Health
Notes: courtesy notification via email	Notes: Courtesy notification via email following M508 consultation with Duty Hazmat Tech regarding fears of exposure
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: Captain Karhan

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

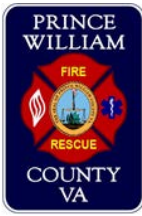


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

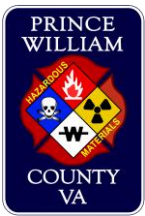


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD170030698	Date: 10/2/2017
Location: 8488 Kao Cir, Manassas Va 20110	Time: 06:18
Report Completed By: Technician II Weaver	Incident Commander: Lt Shannon
HM 506 Personnel Responding: Lt Shannon, Tech II Weaver, Tech I Lautenbacher, Tech I Waln HS 516 Personnel Responding: Other HMT Personnel Responding:	

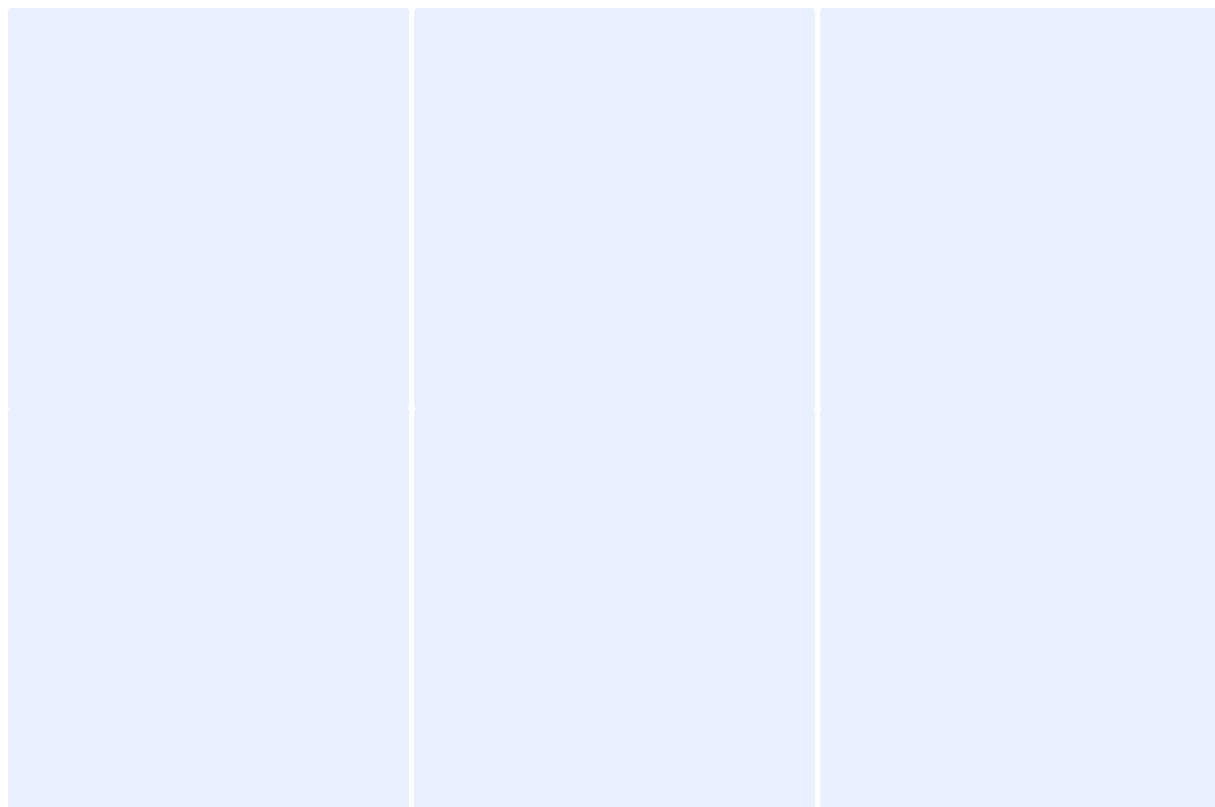
INCIDENT DESCRIPTION	
HM506 received a call from the SCBA shop that the air quality monitor in there shop was alarming and reading between 10-11 ppm. HM506 went to the SCBA shop and monitored the location. All readings where normal. HM506 reset the monitor at the SCBA shop and it started working correctly.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

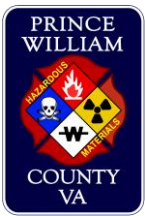
NOTIFICATIONS/CONTACTS	
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170030808	Date: 10/3/2017
Location:Centreville/Leeland	Time: 07:02
Report Completed By: Technician II Luke	Incident Commander: Capt. Furguson
HM 506 Personnel Responding: Tech II Luke HS 516 Personnel Responding: Other HMT Personnel Responding:	

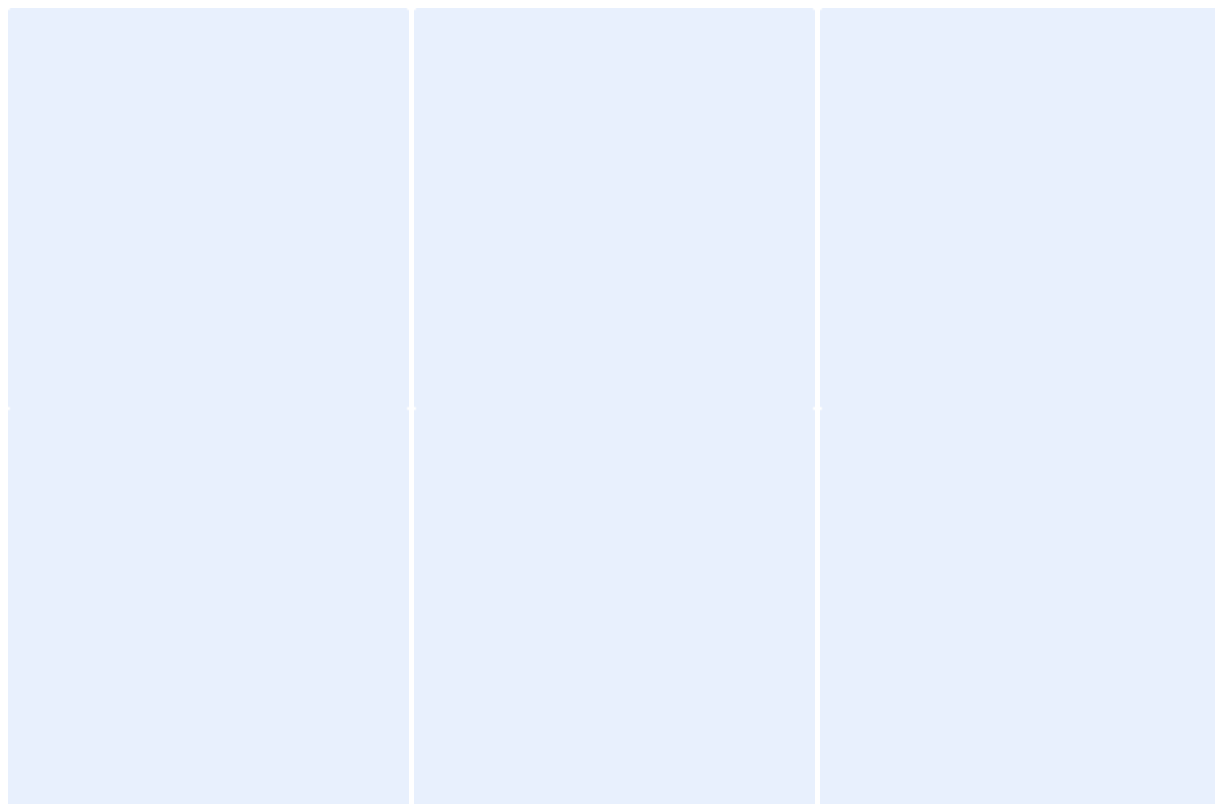
INCIDENT DESCRIPTION	
HM506 was called for a phone console from E508 asking about an auto accident they were on. E508 had a box truck that happened to be leaking antifreeze on the road. E508 put absorbant down on the street to stop the leak from spreading. E508 assured that none of the antifreeze made it into the storm drain. Technician II Luke told Capt Furguson that the tow truck company should be able to handle clean up of the fluid.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Owner of truck	Name:
Company: See E508's report	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

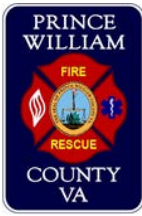
NOTIFICATIONS/CONTACTS	
Date: 10/3/17	Date: 10/3/17
Time: 0702	Time: 20:20
Name: Capt. Furguson	Name: Major Hennessey
Comp/Agency: E508	Comp/Agency: VaEOC
Notes: Engine on call.	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

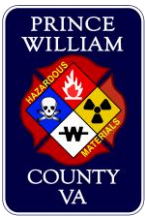
NOTIFICATIONS/CONTACTS	
Date:	Date:
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Comp/Agency:	Comp/Agency:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170030812	Date: 10/3/2017
Location: Jefferson Davis Hwy	Time: 08:15
Report Completed By: Technician II Luke	Incident Commander: Technician II Hartling
HM 506 Personnel Responding: Luke HS 516 Personnel Responding: Other HMT Personnel Responding:	

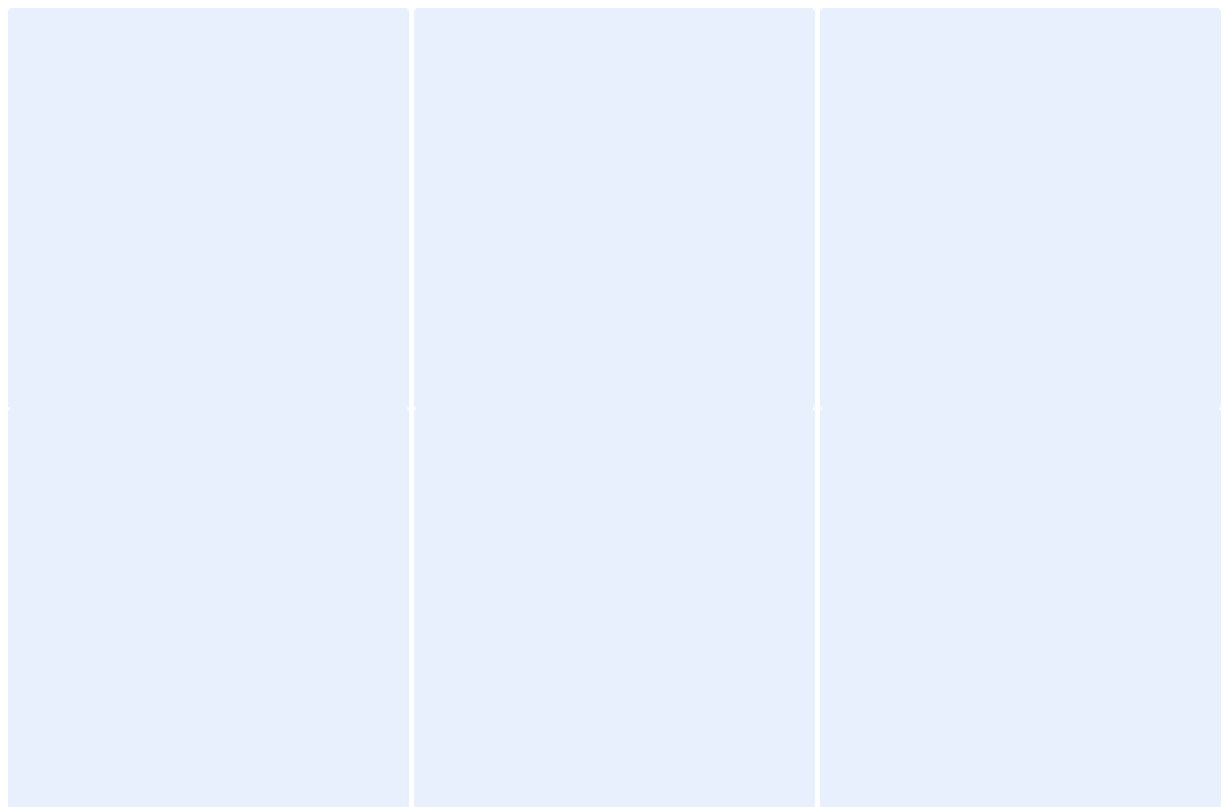
INCIDENT DESCRIPTION	
HM506 was called for a phone consult to assist E512 with a call that they were on. E512 was called to find a 2 gallon gas can on the side of the road, leaking a little bit. Gas can still appeared to have half the can full. The leaking gas appeared to be evaporating and stayed out of any storm drains. HM506 advised E512 to contact VDOT to claim the gas can. HM502 contacted HM506 and advised she would go to the scene to see if gas can was taken care of.	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDOT	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/3/17	Date: 10/3/17
Time: 08:15	Time: 08:30
Name: Tech II Hartling	Name: Capt. Stewart
Comp/Agency: E512	Comp/Agency: HM502
Notes: Officer of E512	Notes: Confirmed clean up
Date: 10/3/17	Date:
Time: 20:20	Time:
Name: Major Hennessey	Name:
Comp/Agency: VaEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

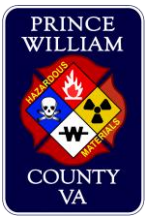
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170031024	Date: 10/4/2017
Location: 11121 Industrial Rd	Time: 2126
Report Completed By: Tech II H. Pereira	Incident Commander: BC 501 - Jerry Deem
HM 506 Personnel Responding: 2126 HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>HM506 was dispatched to assist with a dumpster fire investigation. E525 was initially dispatched to a dumpster fire, and once fire was extinguished, E525's officer noticed some storage drums inside of garbage dumpster. E525 requested a hazmat consult and HM506 to be dispatched to the scene. Upon arrival HM506 found dumpster where fire had been extinguished and where drums were still inside. Minor smoke was present, and containers was not hot according to thermal imaging camera.</p> <p>HM506 arrived on scene and was briefed by E525, BC 501, and FM523. E525's officer stated that he noticed the drums inside of dumpster and also many drums out in the yard. E525 wanted to make sure none hazardous substances were present. Using structural PPA and SCBA, E506 obtained samples from water run of and from some product that remained inside of one of the containers. Technician II Pereira and Technician I Malone used the following monitors to survey the area; Q-Rae2, PID, Identifinder2, and Ph paper. No abnormal substances or abnormal readings were found .</p> <p>By the end of monitoring , representatives from the company had arrived on scene and wre giving information to FM523. Accordinging to company representatives, the drums found in the dumpster were a combination of two different types of adhesive that were mixed together to make a solid, so it then could be sent to the landfill as solid waste.</p> <p>Without any abnormal readings, E506 turned scene over to E525.</p> <p>For any further information in regards to this incident, please see FM523 report.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company: Simpson Unlimited Inc.	Company:
Address: 11121 Industrial Rd, Manassas, VA 20109	Address:
Phone#: (703) 361-0841	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/04/2017	Date:
Time: 2330	Time:
Name: Officer Collins	Name:
Comp/Agency: VA EOC	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator: Lt. M. Cozdeba

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

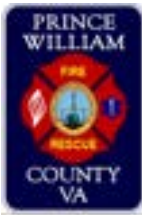


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

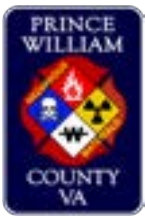


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170032031	Date: 10/21/2017
Location: 15455 Silvan Glen Dr.	Time: 15:38
Report Completed By: Cook	Incident Commander: BC507
HM 506 Personnel Responding: Cook, Jones, Bell HS 516 Personnel Responding: Other HMT Personnel Responding: Lt. Jones, Luke	

INCIDENT DESCRIPTION	
<p>Resident of address noticed a yellow substance on the top of the water that runs within her back yard. Her property runs to a back cove of Lake Montclair and the home owner was under the impression that someone may have been dumping into the water.</p> <p>HM506 went to the edge of the water and took multiple samples: PPB Rae, showing no abnormal readings. QRae 2 showed no abnormal signs, 20.9 Oxy, 0% LEL, 0 ppm CO, 0 ppm H2S. PH paper was used, showing water being at neutral level (7). First defender, "no product found". Tru Defender, "Water". BC507 contacted the golf club and relayed to HM506 that the product was water from the pond that was used for watering the golf course and any residual water was pumped back into the pond at that location. No hazard was found and HM506 went back in service.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/21/17	Date: 10/21/17
Time:	Time: 20:34
Name: Marc Aveni	Name: Harper
Comp/Agency: PWC Public Works - Watershed Management	Comp/Agency: VAEOC
Notes: Notification Email	Notes: courtesy phone call
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
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Comp/Agency:	Comp/Agency:
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Name:	Name:
Comp/Agency:	Comp/Agency:
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Time:	Time:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:

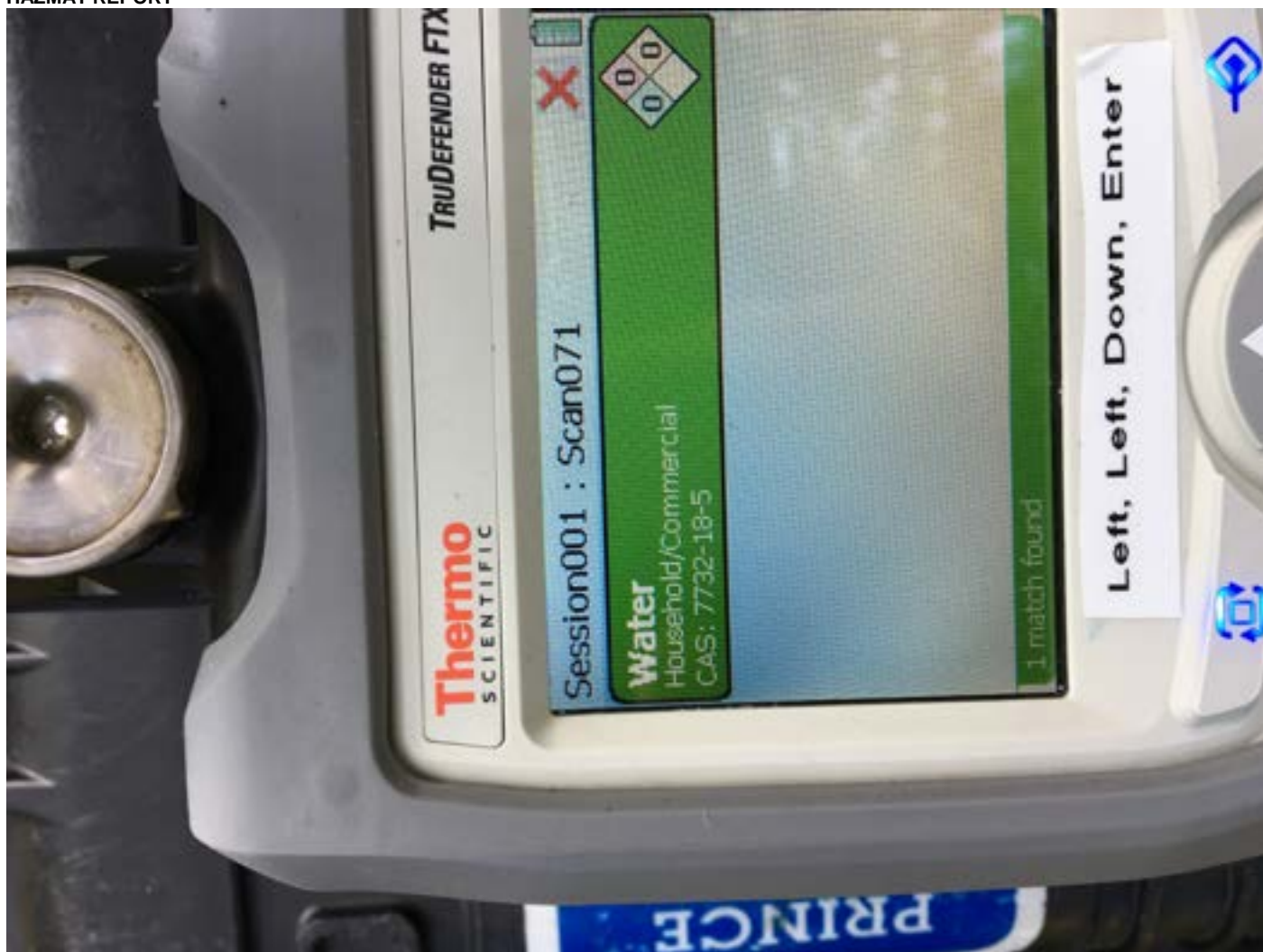
Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

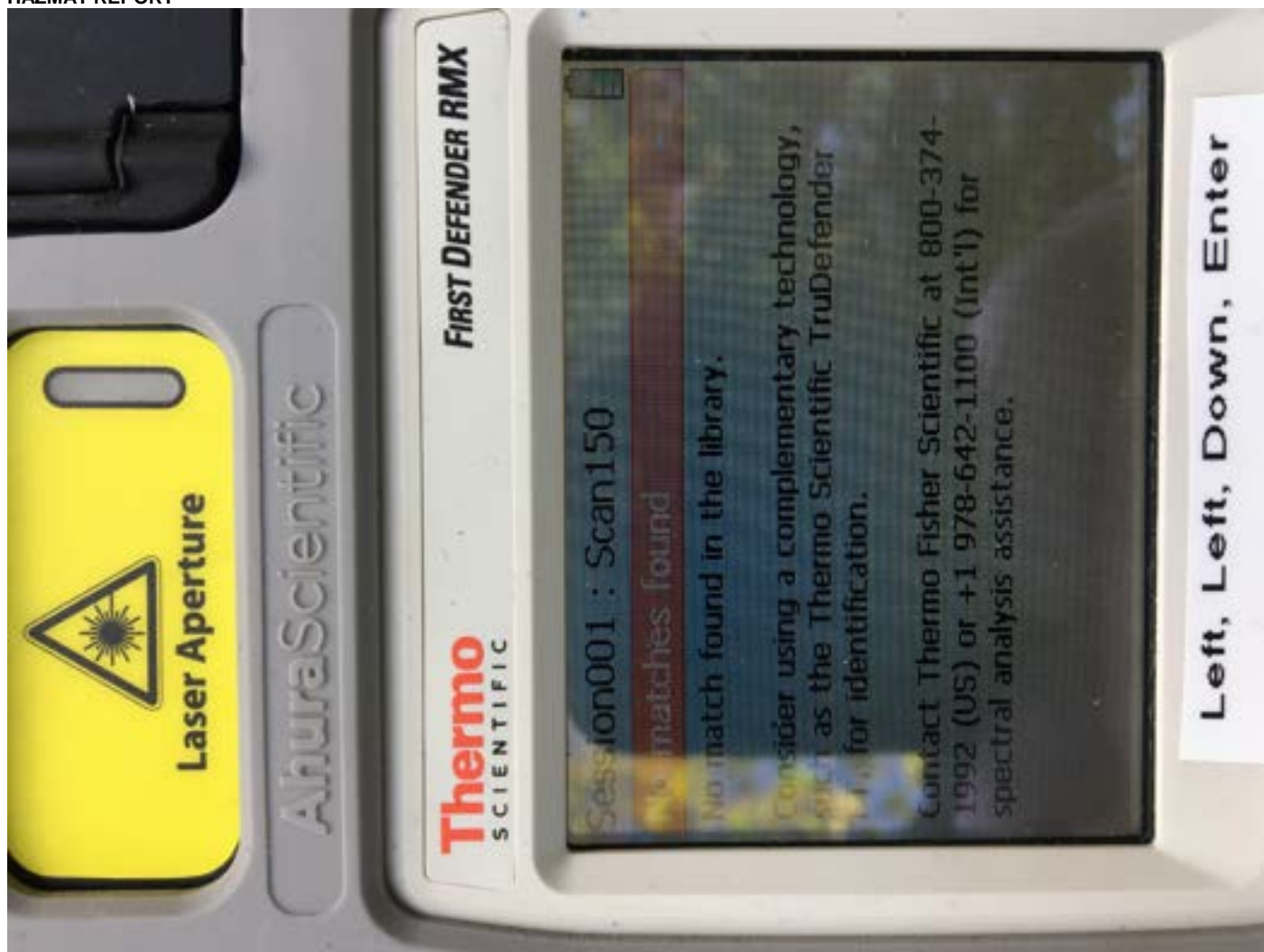


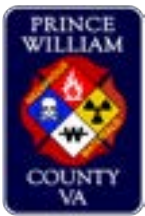
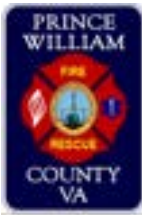












**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: FD170032293	Date: 10/16/2017
Location: I-95 South Hwy Mile Marker 154	Time: 06:12
Report Completed By: Cone, Matthew	Incident Commander: BC 505
HM 506 Personnel Responding: Lt. Schwab, Mark. Tech II Williams, Daniel. Tech I Malone, Cameron. Tech I Cone, Matthew HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>DHM received a phone consult from E512's officer. He reported that approximately forty quarts of oil had leaked out from the engine bay of a tractor trailer. The officer also stated that absorbent had been put down and no waterways were effected. Hazmat 506 AOS to find a Tractor trailer on the right shoulder of I-95 south bound near mile marker 154. It had damage to the front end due to rear ending a passenger car, causing the loss of oil. The oil was on the shoulder and stopped at the edge of the grass. E512 along with VDOT had placed booms and covered the spill with absorbent. No active leaks were found so Hazmat 506 looked for any environmental concerns. Upon investigation we found that no waterways were impacted and no vegetation concerns were present. The driver of the tractor trailer was given a LEPC form and he chose to use Atlas for the site clean up. HM 506 cleared the scene and went in service. After returning to the station the VAEOC was informed of the incident</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Tom Searfoss (Company Official)	Name: Richie Slaque (Driver)
Company: Frito Lat	Company: (717) 873-5453
Address: 3556 Gillispie Dr. York PA. 17408	Address:
Phone#: 717) 793-3049	Phone#:
Notes: arrived on scene Engine 12	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/16/2017	Date:
Time: 11:17am	Time:
Name: Dan Maxfield	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes: notified of incident, and told no aid required	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Comp/Agency:	Comp/Agency:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



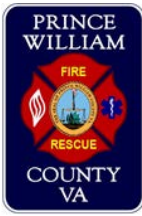


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD170032339	Date: 10/16/2017
Location: 5177 Blackmidland Rd	Time: 1327
Report Completed By: Lt. Anthony	Incident Commander:
HM 506 Personnel Responding: Lt Anthony, TII Pereira, TII Budkiewicz HS 516 Personnel Responding: Other HMT Personnel Responding:	

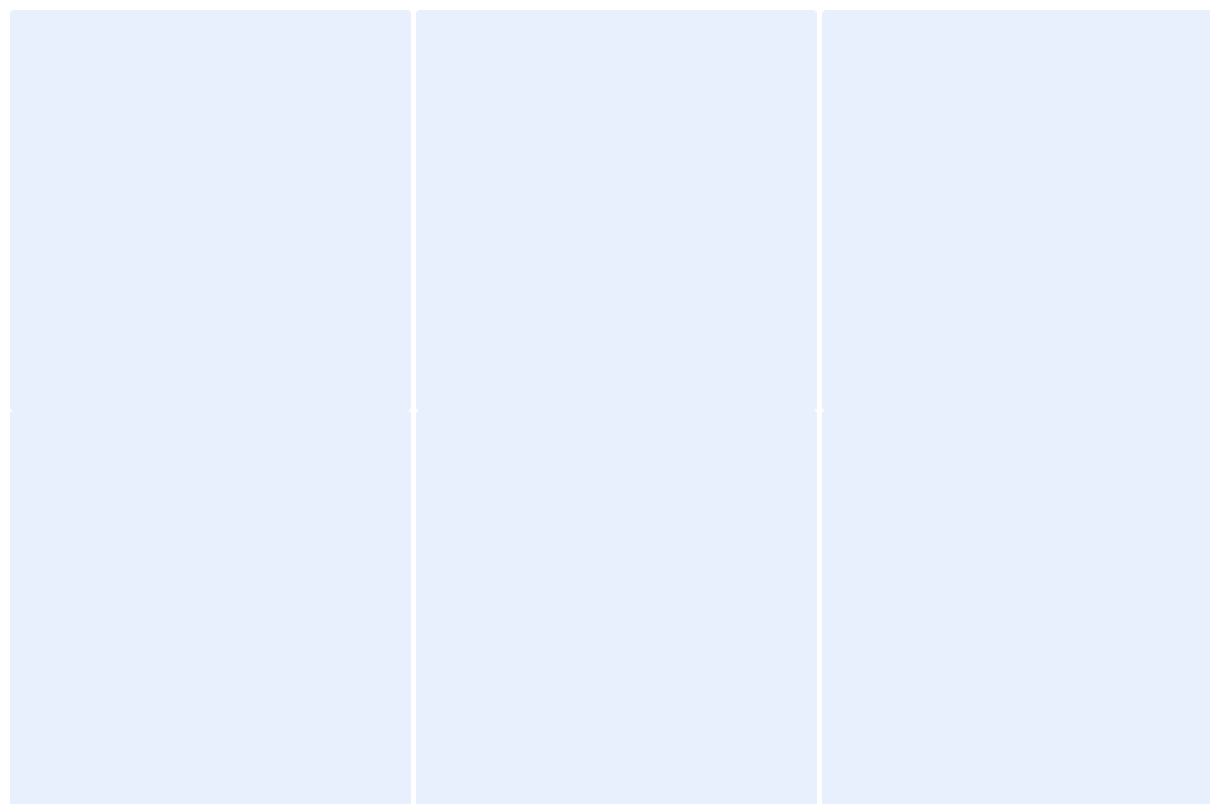
INCIDENT DESCRIPTION	
HM506 was dispatched as mutual aid to Fauquier for a overturned asphalt truck. HM506 was placed in service while in route by Incident Comander.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
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Comp/Agency:	Comp/Agency:
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

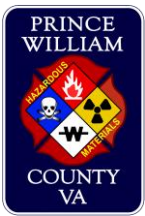
NOTIFICATIONS/CONTACTS	
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Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170032353	Date: 10/16/2017
Location: 5177 Midland Road, Fauquier County	Time: 15:30
Report Completed By: HMO501 Adkins	Incident Commander: Catlett Fire Chief Kalvyn Smith
HM 506 Personnel Responding: Tech II D. Williams, S. Choloe, Budkiewicz, Tech I M. Cone, C. Malone HS 516 Personnel Responding: Other HMT Personnel Responding: HMO501 Adkins, BC501 Denner	

INCIDENT DESCRIPTION	
<p>Hazardous Materials units were previously dispatched for mutual aid to an incident in Fauquier County involving an overturned asphalt truck. Prior to units arriving they were placed in service, however HMO501 Adkins continued at the request of the Incident Commander (Catlett Fire Chief K. Smith) upon arrival Chief Smith requested that HMO501 conduct an assesment of the situation. The intial request for HAZMAT was to provide lid locks for the dome of the truck, but after investigation PW HAZMAT was not needed when it was determined that the leak was coming from vent lines. HM0501 along with personnel from Warrenton Training Center HAZMAT did a walk around and noted a spill approximately 50 feet off the side of the road of spilled asphalt. Temperatures of the container were approximately 150 to 170 degrees F all atmospheric readings were normal, PID was not used due to the known precense of asphalt and in open air. After working with the responsible party concerning offloading it was decided a drill operation to place holes in the side of the container for removal of the product needed to be established while the responsible party continued to work to remove a valve at the rear of the tank for better access. Warrenton Training Center HAZMAT advised they did not have the tools for this, so PW HAZMAT was again called to the scene. HM506, R506, Safety 501 and BC501 responded. Upon arrival units removed the protective wrap and insulation around the tank where the drill operation was planned. Shortly before drilling was set to occur the responsible party was able to gain access to the tank via the valve and offloading again continued. After it was confirmed that this process would work to offload the container, PW HAZMAT units were placed in service.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company: WHITEHURST PAVING CO INC	Company:
Address: 3723 NINE MILE ROAD RICHMOND, VA 23223	Address:
Phone#: (804) 264-0707	Phone#:
Notes: DOT# 004818	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/19/2017	Date: 10/20/2017
Time: 18:30	Time: 13:00
Name: Jason Kezele	Name: Alan Lacy
Comp/Agency: VDEM	Comp/Agency: VA DEQ Spills Response
Notes: Multiple attempts to contact the VAEOC were made on 804 and 800 numbers and the phone rang busy. Mr. Kezele is a regional VDEM represenative and took our call information.	Notes: At the request of Chief Smith contacted DEQ to advise of the situatuion and inform them that the environmental contractor indicated the trucking company would cleanup the spill themselves.

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
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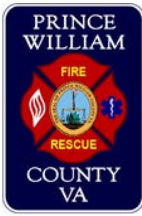
Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

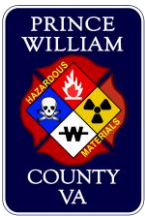


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170032425	Date: 10/17/2017
Location: Sudley Rd / Pageland Ln.	Time: 07:33
Report Completed By: Hoffman	Incident Commander: BC Morrison
HM 506 Personnel Responding: Hoffman, Weaver, Greiner, Lautenbacher HS 516 Personnel Responding: E516, HS516 (Placed in Service) Other HMT Personnel Responding: HM501-Adkins	

INCIDENT DESCRIPTION	
<p>E515 dispatched for an auto accident. Once on scene they upgraded to a HAZMAT due to the leaking of fertilizer/herbicide. R506 responded with HM506 to the scene. Once on scene R506s officer met with command and the driver of the truck. It was determined that one of the 3 tanks was leaking and had apporximatly 90 gallons in it with 20-25 gallons that had leaked out. E515s crew had set up a tarp to try to catch as much product as possible. They had also made 2 dams using dirt and natural products around the area. The acidity of the product was tested with ph paper and determined to be a neutral product, slightly acidic but non hazardous. R506 crew placed a 150 gallon under the truck to catch product, also attempted to use plug and dike to seal an area in the truck where it was leaking. Once the arrival of the TruGreen supervisor it was determined that the truck had 2 empty tanks and the one that was leaking was coming from a sheered valve. R506s personnel used a wax ring to seal the valve and stop the leak. R506 also deployed 2 absorbant booms. The responsible party was having trouble with their corporate office of determining their clean up company. Atlas enviromental was called due to the original company having an extended response time. They provided an additional truck to off load the remaining product into which was done by TruGreen's personnel. Atlas enviromental arrived on scene and the scene was turned over to them and county PD.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Paolo Verrone	Name:
Company: TruGreen	Company:
Address:	Address:
Phone#: 240-994-8082, 703-480-0011	Phone#:
Notes: pverrone@trugreenmail.com	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/17/17	Date: 10/17/17
Time: 0904	Time: 1304
Name: Alan Lacy	Name: Archer
Comp/Agency: DEQ NOVA Spills and Response Coordinator	Comp/Agency: EOC
Notes: 1-804-396-0150	Notes: Courtesy Notification
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
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Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



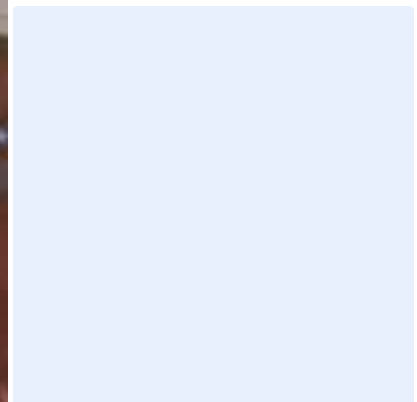
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HAZMAT REPORT

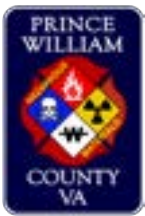
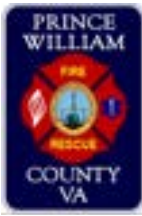


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170033138	Date: 10/23/2017
Location: 16516 Sherwood Pl, Woodbridge, VA 22172	Time: 13:43
Report Completed By: Lt. Ross Shannon	Incident Commander: BC. Beavers
HM 506 Personnel Responding: Shannon, Snitwongse, Hoffman HS 516 Personnel Responding: None Other HMT Personnel Responding: None	

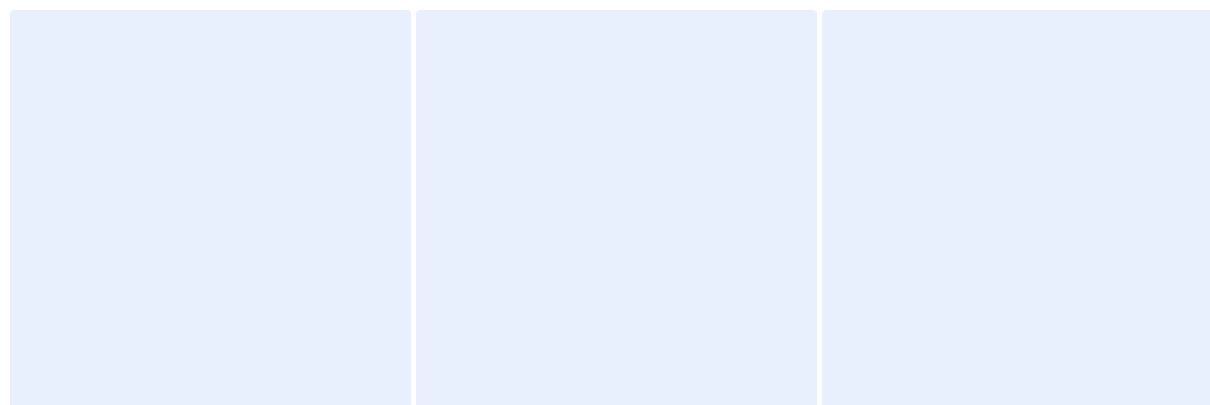
INCIDENT DESCRIPTION	
<p>HM506 received a phone consult from E523. They were dispatched on an Inside Gas Leak at a townhouse. Upon their initial investigation that had a smell but could not detect anything abnormal with their 4 gas monitor or their gastrax. They were requesting assistance with determining the source and if there was anything potentially harmful in the atmosphere. The description we received by ohne was that it smelled like anything from bleach to something rotting, but it did not smell like gas. They had already poured water down the floor drain in the area where it seemed the smell was coming from. We decided to go enroute to the call with R506 and HM506. We arrived on scene and did a face to face with the officer from E523. They showed us the location of where the smell was originating, in a utility closet off the kitchen. Upon our investigation, we found a small bottle of pesticide that was sitting on the furnace that had some residue on the outside of the bottle. We determined this to be the source of the smell. We did monitor the home with the PID and the MultiRae Pro with PID, ammonia, chlorine, hydrogen cyanide and oxygen sensors. We got normal reading with both devices and determined that none of these hazards were present. We removed the pesticide from the home and placed it on the back patio. We advised the occupant of our findings and turned the home back over to her.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/23/2017	Date:
Time: 20:18	Time:
Name: Tyler Ellis	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

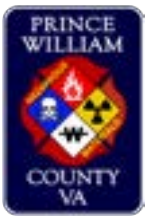
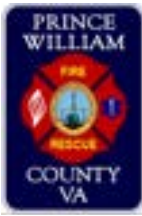
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: FD170033356	Date: 10/25/2017
Location: Wellington Road/Sudley Manor Drive	Time: 10:29
Report Completed By: Tech II Graham Clark	Incident Commander: Tech II Matt Livingston
HM 506 Personnel Responding: Tech II Graham Clark (Phone Consult) HS 516 Personnel Responding: N/A Other HMT Personnel Responding: N/A	

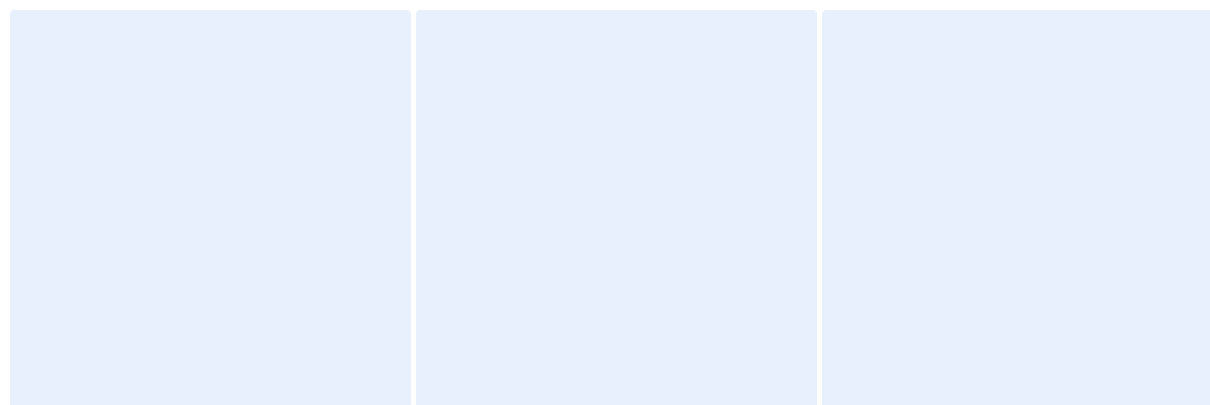
INCIDENT DESCRIPTION	
<p>E525 was dispatched at 10:29 AM for a dump truck leaking fuel at the intersection of Wellington Road and Sudley Manor Drive. E525 reported a dump truck struck a rock causing a leak in saddle tank, approximately 40 gallons leaked out. Fuel spilled onto soil surface, and was soaked into ground. No sewers or waterways were compromised by the spilled fuel. E525 officer (Matt Livingston) requested a phone consult. Based upon there not being an active leak, the fuel had already soaked into the ground, and no sewers or waterways were effected; no hazmat reponse was required. DHM G. Clark advised M. Livingston to give the responsible party an LEPC form for clean up response. Property belonged to Arcadia, however site work was being done by William A. Hazel, INC.; Safety Officer (Luis Sanchez) for Hazel, accepted LEPC form to coordinate clean up. No further action required. HM 502 was notified by DHM G. Clark. VAEOC notified.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Richard Bailey	Name: Luis Sanchez (Safety Officer)
Company: Broad Run Contracting	Company: William A. Hazel, INC.
Address: 4090 John Mosby Hwy, Aldie, VA, 20105	Address: 4305 Hazel Park Court, PO Box 600, Chantilly, VA, 20151
Phone#: 703-929-4716	Phone#: 703-378-8300 ext. 103
Notes: Richard Bailey personal # 571-316-4383	Notes: Accepted LEPC form

NOTIFICATIONS/CONTACTS	
Date: 10-25-17	Date:
Time: 11:29 AM	Time:
Name: Parikh	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

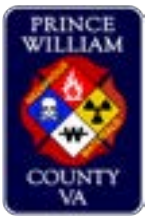
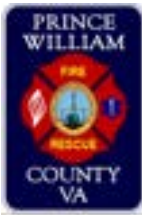
NOTIFICATIONS/CONTACTS	
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Name:	Name:
Comp/Agency:	Comp/Agency:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170034405	Date: 11/3/2017
Location:12350 Mohican Rd. Woodbridge VA 22192	Time: 15:01
Report Completed By: T.Forbes	Incident Commander: BC502-Wyks
HM 506 Personnel Responding: Forbes, Malone, Able Gibson HS 516 Personnel Responding: Samuels Mateo,Leon Other HMT Personnel Responding: HMO502-Stewart, EMO506-R. Moreau	

INCIDENT DESCRIPTION	
<p>Hazmat 506, HS516, and HMO502 were dispatched to Lake Ridge Middle School for a report of a leak of an unknown gas in a mechanical room. Upon arrival and meeting with units dispatched earlier for a fire alarm, E514 officer advised that they received a report of an odor of natural gas which prompted a worker at the school to utilize a manual pull station to activate the fire alarm. They also received information that a refrigerant alarm was activated but it was unknown if there was a leak or if it went into alarm with the fire alarm activation. When E514 entered the mechanical room a reading of 4% LEL was noted on their four gas monitor but all other readings were normal. They also noted an alarm of the refrigerant monitoring system with amounts in ppm of approx. 100 showing on a refrigerant monitoring system. As hazmat units arrived, the IC requested initial units that were investigating to withdraw. E514 went through emergency DECON as a precaution. Hazmat 506 and 516 established two entry teams to monitor the room, confirm the readings on the refrigerant monitoring system, and if natural gas was found, to secure the gas. Hazmat Entry Team One was made up of T. Forbes, C. Malone, G. Mateo and Hazmat Entry Team Two was made up of T. Samuels and B. Able. K. Stewart filled the Group Supervisor role. R. Moreau filled chemical reference and Technical Safety. Incident Command had E514 replace E526 on the hydrant to provide for a safety hose line and to provide DECON if necessary. E526 was released from the scene. Hazmat Entry Team One entered the school from side C at 16:04 with Entry Team Two staying outside as back-up/RIT. Entry Team One monitored the hallway with all normal readings on the four gas (0 PPM CO, O2 20.9%, 0ppm H2S, 0% LEL) and no change on all other monitors. Hazmat Entry Team One also had normal readings inside the mechanical room on all meters and confirmed that there was no active alarm of the refrigerant monitoring system. At 16:15 the DFR Hazmat Group determined that there was no hazardous materials leaking. The incident was turned back over to the school.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company: Prince William County School Board	Company:
Address: 14800 Joplin Rd Manassas VA 20112	Address:
Phone#: 703-791-7200	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 11/3/2017	Date: 11/3/2017
Time: 15:40	Time: 15:40
Name: Brian Misner	Name: Chief Smolsky
Comp/Agency: Emergency Management	Comp/Agency: PWCDFR
Notes: through Matt Adkins	Notes: through Matt Adkins

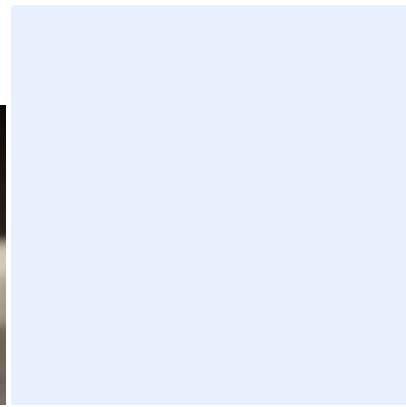
**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

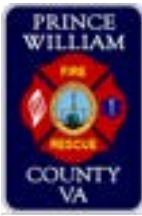
NOTIFICATIONS/CONTACTS	
Date: 11/3/2017	Date: 11/03/2013
Time: 17:57	Time: 17:25
Name: Bartol	Name: Mr. Cox
Comp/Agency: VAEOC	Comp/Agency: Prince William County Schools
Notes:	Notes: voice mail left
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

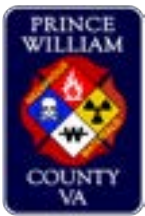


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 170035535	Date: 11/13/2017
Location: 10850 Pyramid Pl. Manassas, VA 20110	Time:
Report Completed By: Lt. Ross Shannon	Incident Commander: BC582
HM 506 Personnel Responding: Shannon, Weaver, Greiner, Sawyer HS 516 Personnel Responding: Battenfeld, Wing, King Other HMT Personnel Responding: Newell	

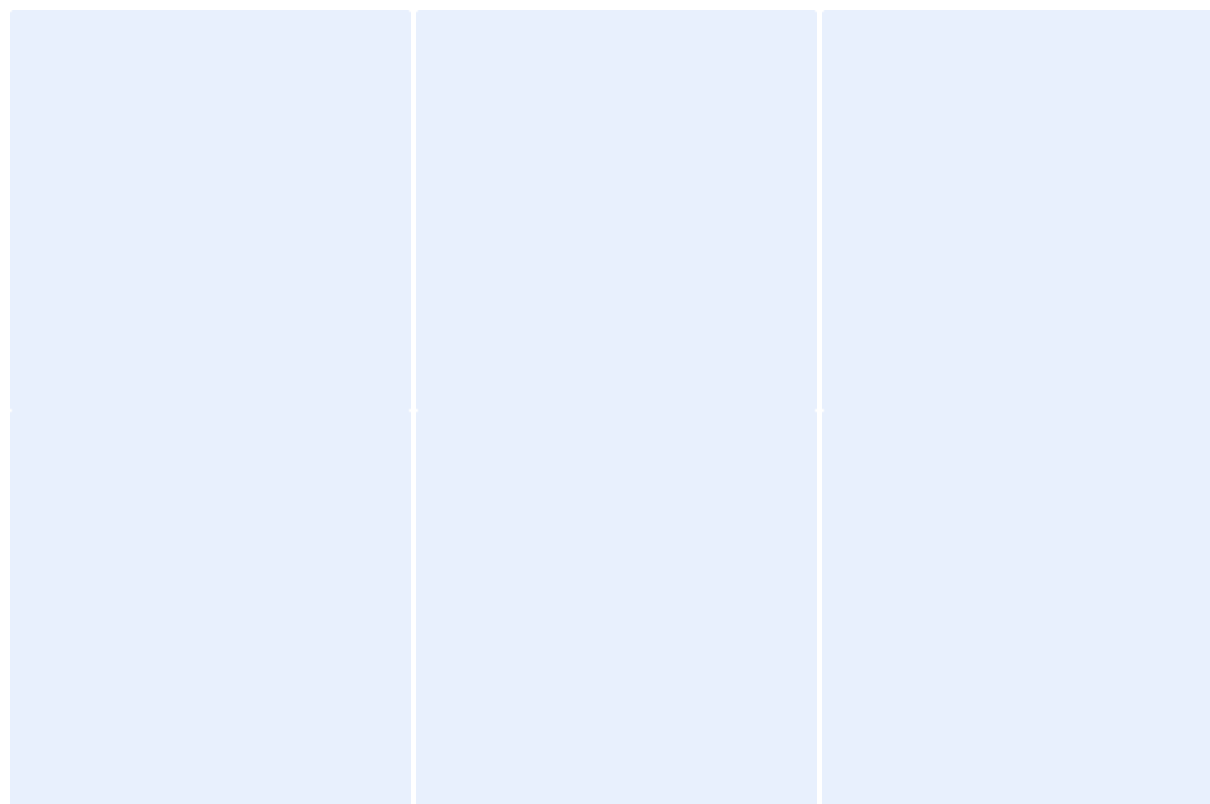
INCIDENT DESCRIPTION	
Structure Fire call for a malfunctioning HVAC unit on the roof top. We were add by mistake because of confusion over the location. This was at the Mecical Examininer's Office not the GMU Bio Lab.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

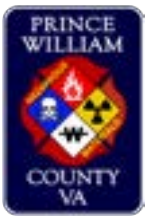
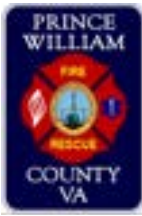
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170035624	Date: 11/14/2017
Location: 1816 Featherstone Rd	Time: 13:25
Report Completed By: Captain Stewart, HMO502	Incident Commander: BC Crispin
HM 506 Personnel Responding: n/a HS 516 Personnel Responding: n/a Other HMT Personnel Responding: FM518	

INCIDENT DESCRIPTION	
<p>HMO502 was in the area and self-dispatched to an inside gas leak at the listed address. Hazmat had responded a year or so ago to the same address for an investigation of an odor and the CAD comments appeared similar. Units on scene of the inside gas leak reported an odor but reported normal readings on their 4 gas (H2S, CO, LEL, O2). Several employees were complaining of a nauseous chemical smell caused burning eyes, irritated throat, headaches and nausea. Units on scene did not need to transport anyone as the occupants symptoms went away when fresh air was introduced. It was determined by units on scene that there was not a natural gas leak and the IC began to release units. E512 remained on scene to assist with an investigation of the odor. I fresh air calibrated and bumped a MultiRae Pro for further investigation. As I approached the scene there was a slight odor outside best described as solvent/paint based. I provided on the job training regarding the PID function of the MultiRae Pro to the E512 Officer specifically regarding ppb vs ppm and asked that he and his crews who were already in turnout gear with SCBA monitor the address. He was asked to back out or mask up if he had readings in the ppm. When he backed out he reported 4100 ppb (4.1 ppm) inside the occupancy with no change from normal for other gases (H2S, CO, LEL, O2). Natural ventilation was begun. FM518 arrived and the investigation continued of the other businesses that shared the common building. Except in one business (a legal auto paint shop) when the monitor was held up directly to a can of paint, there were no changes from normal. At the paint can the PID registered 24,000 ppb but quickly reduced as the monitor was withdrawn from the immediate headspace. It was determined that the odor and hazmat release indicated by the elevated PID readings was most likely from the auto paint shop located below and to the side of the original incident and that fumes from the paint shop ventilation system were being drawn in from the complainants roof top HVAC unit into their occupancy and causing a hazardous condition. The HVAC for the occupancy was secured by shutting off the heat at the thermostat. With addition of mechanical ventilation, the PID reading in the occupancy was reduced to 0 ppb. Occupants were allowed back inside. The incident was turned over to FM.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company: Manosy Auto Body	Company:
Address: 1832 Featherstone Rd Woodbridge, VA 22191	Address:
Phone#: 703-492-5000	Phone#:
Notes: Contact made by FM518. FM has been working with the owner due to paint booth issues.	Notes:

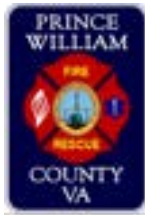
**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date: 11/14/17	Date: 11/14/17
Time: 15:38	Time: 1353
Name: Bartol	Name: Luke
Comp/Agency: VAEOC	Comp/Agency: PWC Duty Hazmat Tech
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: Lt. Hubbel

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: FD10036722	Date: 11/23/2017
Location: 309 Mill Street Occoquan, Va 22125	Time: 15:14
Report Completed By: LT David Jones	Incident Commander: Lt David Jones
HM 506 Personnel Responding: Lt Jones, Tech II Saxon, Tech I Deghand, Tech I Phillips HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>HM506 contacted by dispatch and HMO502 about an incident in FS 2's first due (town of Occoquan) where a boat had sank and was leaking fluids into the water. HM506 arrived on scene to find a small boat tied to a private dock had taken on water and sunk all except for the bow. Port side of the boat towards the water surface. Able to get the boat registration number to report to Fire Marshall's office who were able to find the owner of the boat. HM506 crew were able to access the dock to place two booms on the water around the back part of the boat parts sticking out of the water. A sail boat was also tied to the dock. The boat that sank was partially under the sail boat. Tied booms off to the rail of the boat and the dock behind the boat; in front of the sail boat. Periodically, Small bubbles of product would appear on the surface and start flowing down the water. The booms were placed downstream from where these bubbles were appearing to hopefully catch as much product as possible. Unable to get in touch with boat owner, but FMO (Lt Hubbel) was able to reach the boat owner. Boat owner stated they were aware the boat was under water and were looking for a way to pump it out in order to get the boat back on top of the water. They did not give an address or additional contact information to reach them about cleaning up the product. Informed them they will need to clean up the product. Unable to determine how much product has leaked. Unknown how much fluid was in the boat prior to going under. Also, with the flow of the river and the periodic bubbles, there was not a collection of product anywhere to be seen. Only actions taken was placement of the booms. Contacted DEQ, FMO and EOC. Property owner and boat owner appear to be the same individuals. Property owners notified of the booms being placed in water to collect product and their need to contact a clean up company. E506 and HM506 cleared scene with nothing farther.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Cobb Ervin	Name: William Ervin
Company:	Company:
Address: 309 Mill St Occoquan, Va 22125	Address: 309 mill St Occoquan, Va 22125
Phone#: 703.962.0546	Phone#:
Notes: Contacted by FMO (Lt Hubbel). Aware their boat had sunk and were going to take care of it. Notified of the boom placement and need for clean up company.	Notes: According to renters of address, Mr Ervin has passed away leaving the building and the property such as the boat and dock to his son, Cobb Ervin.

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date: 11/23/2017	Date: 11/23/2017
Time: 1705	Time: 2019
Name: alan Lacey	Name: Brandon Wykert
Comp/Agency: DEQ	Comp/Agency: VaEOC
Notes: courtesy notification by HMO502	Notes: courtesy Notification and update. Incident number for EOC is HNVA28125
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Comp/Agency:	Comp/Agency:
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Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

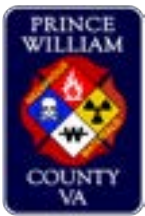
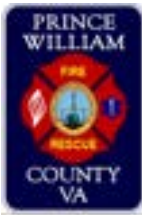


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170037146	Date: 11/27/2017
Location: 1816 Featherstone, Woodbridge VA 22192	Time: 1320
Report Completed By: Technician II D. Williams	Incident Commander: Capt. B. Hamby
HM 506 Personnel Responding: Lt. Schawb, Technician II D. Williams, Technician I Sawicki, Davis HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>E512 was dispatched for a CO leak at 1816 Featherstone Rd. E512 arrived on scene and began monitoring the dispatched address. Occupants were complaining of not feeling well and this was not the first time Fire and Rescue had been out to the address. Readings obtained from E512 were normal and no smell was noted. BC503 and M512 arrived on scene as well and staged. E512 then called for HAZMAT 506. HAZMAT 506 dispatched to the above address, arrived on scene, and began monitoring with their equipment (PID and 2 x 4 Gas Mutliraes). HM506 monitored 1816 Featherstone and the surrounding area. All readings were within normal ranges for the occupancies. There was a business below that operated as an automotive repair facility, painting cars. HM506 personel walked to the rear of the structure to investigate the body shop. There was a smell of paint chemicals coming from the exhaust vents, used for the paint booths, but wasn't noted anywhere else. HM506 turned the scene over to FMO Lt. Hinson. Lt Hinson was going to meet with the building owner and remained on the scene.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Andrew Neiman	Name:
Company:	Company:
Address: 1816 Featherstone, Woodbridge VA, 22912	Address:
Phone#: 5712656258	Phone#:
Notes:	Notes:

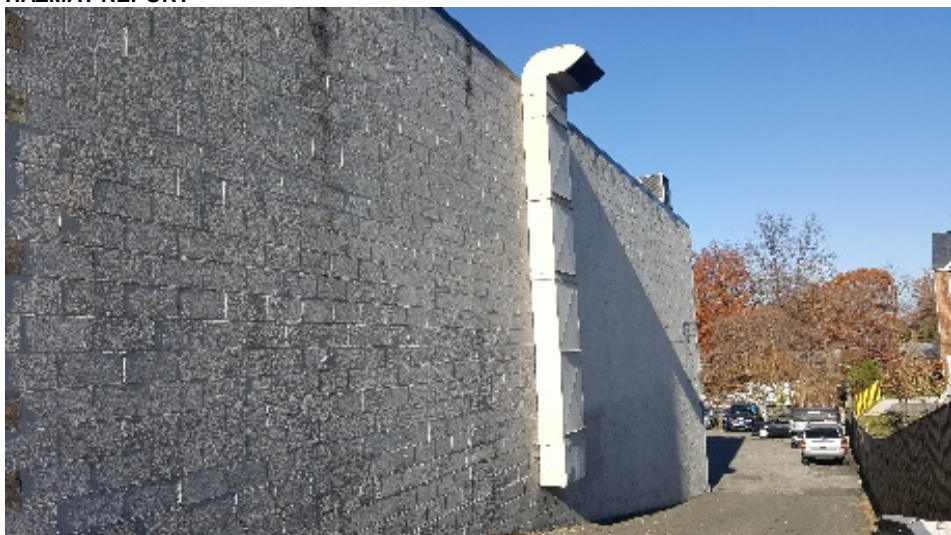
NOTIFICATIONS/CONTACTS	
Date: 11/27/2017	Date:
Time: 2104	Time:
Name: Wykert	Name:
Comp/Agency: EOC	Comp/Agency:
Notes: Report # HMVA 28146	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

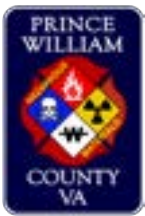
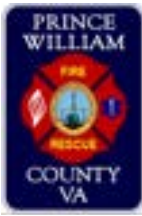
NOTIFICATIONS/CONTACTS	
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Name:	Name:
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Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator: Lt. Hinson

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT







**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: FD170038222	Date: 12/6/2017
Location: 10511 Battleview Parkway Manassas, VA 20109	Time: 15:06
Report Completed By: Lt. Schwab	Incident Commander: Lt. Culkowski
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding:	

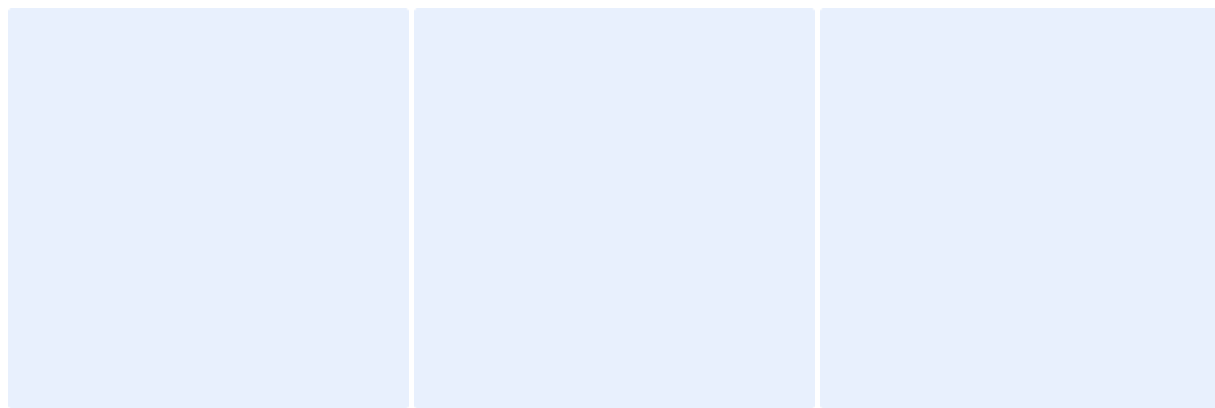
INCIDENT DESCRIPTION	
<p>HM506 received a phone call from T511 that was on scene of a fuel spill behind a loading dock. There was a fuel container that could hold approximately 15 gallons, that was leaking onto the ground. T511's officers reported that approximately 5 gallons had leaked on to the ground. The leak had been secure and was no longer leaking. The fuel had leaked into the business through the rear door and outside the door; a smell of gasoline was present. T511 placed absorbent on the ground inside the business and monitored the area with the 4-gas monitor. They stated that they got an LEL of 3% in one small corner of the building and nowhere else. T511 advised that they were ventilating the structure and was advised to give the property owner/responsible party an LEPC form. There was no hazardous risk to the public, HM506 decided there was no need to go to the scene. HM506 advised that based on a fuel container being placed on a loading dock, was more than likely not properly placed to contact the duty Fire Marshal. FM523 was placed on the call.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 12/6/2017	Date:
Time: 20:17	Time:
Name: Olivia	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

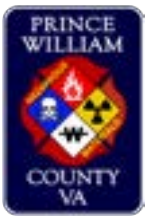
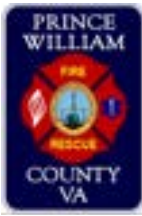
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: FM523 Cozdeba



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 180001673	Date: 1/12/2018
Location: 16927 Old Stage Rd, Dumfries VA 22025	Time: 08:25
Report Completed By: Technician II Eric Weaver	Incident Commander: Captain Scott
HM 506 Personnel Responding: Technician II Eric Weaver, Technician II Davin Hoffman, Technician I Jason Kolbas, Technician I Kyle Lautenbacher HS 516 Personnel Responding: Other HMT Personnel Responding: HMO 502	

INCIDENT DESCRIPTION	
R506/HM506 responded to a call of a 1000 gallon propane tank that was leaking. E523 requested a phone consult. R506/HM506 went enroute to the call. R506/HM506 arrived onscene to find a 1000 gallon tank venting. R506/HM506 investigated and found the relief valve was venting. The fuel level guage was maxed out above 95%. R506/HM506 monitored around the tank and got normal readings. The construction company had a heater on the third floor that was connected to the propane tank. The heater was turned on to burn some of the product off so that it would slow down the leak. Once the heater was running the venting stopped. R506/HM506 waited on scene until suburban propane arrived onscene. Scene was turned over to them.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Butch Marshall	Name:
Company: ICM Consulting LLC.	Company:
Address: 14325 Willard Rd Suite 101, Chantilly VA 20151	Address:
Phone#: 1-571-334-6474	Phone#:
Notes:	Notes:

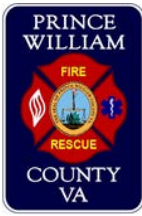
NOTIFICATIONS/CONTACTS	
Date: 1/12/18	Date: 1/12/18
Time: 0825	Time: 1400
Name: Gerald Williams	Name: Olivia
Comp/Agency: Suburban Propane	Comp/Agency: VA EOC
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

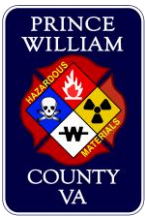
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: LT Hinson





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180001673	Date: 1/12/2018
Location: 16927 Old Stage Rd, Dumfries VA 22025	Time: 08:25
Report Completed By: Technician II Eric Weaver	Incident Commander: Captain Scott
HM 506 Personnel Responding: Technician II Eric Weaver, Technician II Davin Hoffman, Technician I Jason Kolbas, Technician I Kyle Lautenbacher HS 516 Personnel Responding: Other HMT Personnel Responding: HMO 502	

INCIDENT DESCRIPTION	
R506/HM506 responded to a call of a 1000 gallon propane tank that was leaking. E523 requested a phone consult. R506/HM506 went enroute to the call. R506/HM506 arrived onscene to find a 1000 gallon tank venting. R506/HM506 investigated and found the relief valve was venting. The fuel level guage was maxed out above 95%. R506/HM506 monitored around the tank and got normal readings. The construction company had a heater on the third floor that was connected to the propane tank. The heater was turned on to burn some of the product off so that it would slow down the leak. Once the heater was running the venting stopped. R506/HM506 waited on scene untill suburban propane arrived onscene. Scene was turned over to them.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Butch Marshall	Name:
Company: ICM Consulting LLC.	Company:
Address: 14325 Willard Rd Suite 101, Chantilly VA 20151	Address:
Phone#: 1-571-334-6474	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 1/12/18	Date: 1/12/18
Time: 0825	Time: 1400
Name: Gerald Williams	Name: Olivia
Comp/Agency: Suburban Propane	Comp/Agency: VA EOC
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: LT Hinson

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 180005603	Date: 2/15/2018
Location: I66 MM37 W	Time: 06:50
Report Completed By: T. Forbes	Incident Commander: BC McCabe
HM 506 Personnel Responding: Forbes, Cook, Markley, Dehand HS 516 Personnel Responding: Perez, Stickland, Hufford Other HMT Personnel Responding: HMO 501-Adkins, Reader, Saxon, McCabe, John Higginbotham, VDEM HMO	

INCIDENT DESCRIPTION	
<p>Hazmat unit was dispatched to an overturned tractor-trailer on I66 at mile marker 37 in the center median. Hazmat 506 arrived on scene and met with incident command, command advised that they had a tractor-trailer with 16 chemical totes it was unknown if any were leaking. Incident Command had the SDS for the chemical that stated the totes contained DI-polyisocyanate for the production polyurethanes. Crews of HM 506 and HM Support 516 established an entry team and backup crew, to enter the trailer for recon to determine if any of the totes were leaking. Rescue 504 crew assisted HM506 entry crew to gain access to the rear of the tractor-trailer via the rear doors. HM506 monitored the area of the at the back of the tractor-trailer, PID-0 Four gas LEL-0, CO-0 H2s-0 O2 20.8, HM506 crew observed a brown liquid approximately 1 gallon or less leaking from the area of the totes. HM506 entered the trailer to determine where the leak was coming from and monitor the area. Monitoring in the trailer was PID -0, four gas LEL-0 CO-0 H2s-0 O2-20.9, during the recon the trailer became unstable and HM506 crew exited the trailer. Officer of HM506 HMS R504 and HMO501 met with Incident Command and determined that the small leak was contained to the trailer. Waggy's Towing and Hepaco Environmental was selected by the responsible party to conduct recovery and cleanup under the direction of VDOT.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Kevin Thompson	Name:
Company:	Company:
Address:	Address:
Phone#: (901)848-2179	Phone#:
Notes: Contacted at 0900	Notes:

NOTIFICATIONS/CONTACTS	
Date: 02/15/2018	Date: 02/15/2018
Time: 0653	Time: 0655
Name: John Higginbotham	Name: Brian Misner
Comp/Agency: Region 7 Vdem Hazmat Officer	Comp/Agency: PWC Emergency Management
Notes: Responded to incident provided technical support	Notes: Situation Awareness Notification
Date: 02/15/2018	Date: 02/15/18
Time: 0655	Time: 0800
Name: AC Smolsky	Name: Lt. J knight
Comp/Agency: PWCDFR	Comp/Agency: PWCFMO
Notes: PIO Awareness	Notes: Requested help finding the responsible party contact information

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date: 02/15/2018	Date: 02/15/2018
Time: 0830	Time:
Name: Alan Lacy	Name:
Comp/Agency: DEQ	Comp/Agency: VAEOC
Notes: Requested update/ situation awareness	Notes: Notified by VDEM HMO
Date: 02/15/2018	Date:
Time: 0745	Time:
Name: Chad Blake	Name:
Comp/Agency: Covestco Co	Comp/Agency:
Notes: Chemical Company rep.	Notes:
Date: 02/15/18	Date:
Time:	Time:
Name: Heather Dixon	Name:
Comp/Agency: ERTS	Comp/Agency:
Notes: contractor that does emergency work for Insurance company. Stated that HEPCO would be coming to handle HAZMAT cleanup.	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**



SAFETY DATA SHEET



1. Identification

Covestro LLC
1 Covestro Circle
Pittsburgh, PA 15205
USA

TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300
INTERNATIONAL: (703) 527-3887

NON-TRANSPORTATION

Emergency Phone: Call Chemtrec
Information Phone: (844) 646-0545

Product Name: MONDUR MR LIGHT
Material Number: 83186292
Chemical Family: Aromatic Isocyanate
Use: Di-/polyisocyanate components for the production of polyurethanes

2. Hazards Identification

GHS Classification

Acute toxicity (Inhalation): Category 4
Specific target organ toxicity - single exposure: Category 3 (Respiratory system)
Respiratory sensitisation: Category 1
Specific target organ toxicity - repeated exposure: Category 1 (Respiratory Tract)
Skin irritation: Category 2
Skin sensitisation: Category 1
Eye irritation: Category 2B

GHS Label Elements

Hazard pictograms:



Signal word: Danger

Hazard statements: Harmful if inhaled.
May cause respiratory irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
Causes eye irritation.
Causes damage to organs (Respiratory Tract) through prolonged or

Material Name: MONDUR MR LIGHT

83186292

repeated exposure if inhaled.

Precautionary statements:

Prevention:

Avoid breathing dust, mist, gas, vapors or spray.
Do not eat, drink or smoke when using this product.
Wash skin and face thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves.
In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards. For additional details, see section 8 of the SDS.

Response:

Get medical attention if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical attention.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical attention.
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
If experiencing respiratory symptoms: Call a doctor or emergency medical facility (i.e. 911).

Storage:

Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

3. Composition/Information on Ingredients

Hazardous Components

<u>Weight Percent</u>	<u>Components</u>	<u>CAS-No.</u>	<u>Classification</u>
58%	Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9	Acute toxicity Category 4 Inhalation. Skin irritation Category 2. Eye irritation Category 2B. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 1 Respiratory Tract.

Material Name: MONDUR MR LIGHT

83186292

38%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	Acute toxicity Category 4 Inhalation. Skin irritation Category 2. Eye irritation Category 2B. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 1 Respiratory Tract.
3.8%	2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1	Acute toxicity Category 4 Inhalation. Skin irritation Category 2. Eye irritation Category 2B. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 1 Inhalation Respiratory Tract.
0.2%	2,2'-Diphenylmethane Diisocyanate	2536-05-2	Acute toxicity Category 4 Inhalation. Skin irritation Category 2. Eye irritation Category 2B. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 1 Inhalation Respiratory Tract.

4. First Aid Measures

Most Important Symptom(s)/Effect(s)

Acute: Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

Causes skin irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration.

Causes eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Eye Contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention.

Skin Contact

If direct skin contact with isocyanates occurs, immediately remove contaminated clothing and shoes. Wipe off the isocyanate product from the skin using dry towels or other similar absorbent fabric. If readily available, apply a polyglycol-based cleanser (e.g. Colorimetric Laboratories, Inc. (CLI) D-TAM™ Skin Cleanser) or corn oil. Wash with soap and warm water and pat dry. If a polyglycol-based cleanser is not available, wash with soap and warm water for 15 minutes. If available, use a wipe test pad to verify decontamination is complete (e.g. CLI SWYPE™). Get medical attention if irritation develops. Discard or wash contaminated clothing before reuse.

Inhalation

Move to an area free from further exposure. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

Ingestion

Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

Notes to Physician

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

5. Firefighting Measures

Suitable Extinguishing Media: Dry chemical, Carbon dioxide (CO₂), Foam, water spray for large fires.

Unsuitable Extinguishing Media: High volume water jet

Fire Fighting Procedure

Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

Hazardous Decomposition Products

Material Name: MONDUR MR LIGHT

83186292

By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Isocyanate, Isocyanic Acid, Other undetermined compounds

Unusual Fire/Explosion Hazards

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO₂ formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

6. Accidental Release Measures

Spill and Leak Procedures

Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area and prevent access of unauthorized personnel. Notify management. Call CHEMTREC at 1-800-424-9300 for assistance and advice.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material (e.g., vermiculite, kitty litter, Oil-Dri®, etc.). Allow for the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface. For spills involving a solid product, remove mechanically (sweep up, vacuum, shovel etc.) and collect and place into an approved metal container.

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Residual surface contamination can be checked using a wipe test pad to verify decontamination is complete (e.g. CLI Surface Swype™). If the wipe test pad demonstrates that isocyanate remains on the surface (red color on pad), repeat applications of neutralization solution, with scrubbing, followed by absorbent until the surface is decontaminated (no color change on wipe pad). Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralization process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

Additional Spill Procedures/Neutralization

Products or product mixtures that have been shown to be effective neutralization solutions for decontaminating surfaces, tools, or equipment that have been in contact with an isocyanate include, but are not limited to:

- Colorimetric Laboratories, Inc. (CLI): 1-847-803-3737
 - o Isocyanate Decontamination Solution
- Spartan Chemical Company: 1-800-537-8990
 - o Spartan® ShineLine Emulsifier Plus (stripping solution)
 - o Spartan® SC-200 Heavy Duty Cleaner
- ZEP Commercial Heavy Duty Floor Stripper
- A mixture of 90% water, 10% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10)

Material Name: MONDUR MR LIGHT

83186292

- A mixture of 75% water, 20% non-ionic surfactant, and 5% n-propanol
- A mixture of 80% water, 10% non-ionic surfactant, 5% isopropanol, 5% ammonium hydroxide (household ammonia)

For more information about neutralization solutions, please refer to spill cleanup and neutralization information available on Covestro's Product Safety First website. www.productsafetyfirst.covestro.com
Note: Always wear proper PPE when cleaning up an isocyanate spill or when decontaminating surfaces, tools, or equipment using a neutralization solution. It may take two or more applications of the neutralization solution to decontaminate the surface. Residual surface contamination can be checked using a surface wipe method such as the CLI Swype™ pad.

7. Handling and Storage

Handling/Storage Precautions

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

Storage Period:

6 Months: after receipt of material by customer

Storage Temperature

Minimum: 10 °C (50 °F)
Maximum: 30 °C (86 °F)

Storage Conditions

Store separate from food products.

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Substances to Avoid

Water, Amines, Strong bases, Alcohols, Copper alloys

8. Exposure Controls/Personal Protection

The recommendations in this section should not be a substitute for a personal protective equipment (PPE) assessment performed by the employer as required by 29 CFR 1910 Subpart I.

Exposure Limits

4,4'-Diphenylmethane Diisocyanate (MDI) (101-68-8)

US. ACGIH Threshold Limit Values
Time weighted average 0.005 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Ceiling Limit Value 0.02 ppm, 0.2 mg/m³

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Industrial Hygiene/Ventilation Measures

Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program. NIOSH, OSHA, Covestro, and others have developed sampling and analytical methods. Covestro methods can be made available, upon request.

Respiratory Protection

Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

Hand Protection

Ensure gloves remain in good condition during use and replace if any deterioration is observed.

Gloves should be worn., Nitrile rubber showed excellent resistance., Butyl rubber, neoprene and PVC are also effective.

Eye Protection

When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

Skin Protection

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction., This data reinforces the need to prevent direct skin contact with isocyanates.

Medical Surveillance

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted. Refer to the Covestro pamphlet (Medical Surveillance Program for Isocyanate Workers) for additional guidance.

Additional Protective Measures

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

9. Physical and Chemical Properties

State of Matter:	liquid
Appearance:	liquid
Color:	Brown
Odor:	musty
Odor Threshold:	No Data Available
pH:	No Data Available
Boiling Point:	Approximately 208 °C (406.4 °F)
Flash Point:	198 °C (388.4 °F) (ASTM D 93)
Evaporation Rate:	No Data Available
Lower explosion limit:	No Data Available
Upper Explosion Limit:	No Data Available
Vapor Pressure:	< 0.0001 mmHg @ 25 °C (77 °F)
Vapor Density:	No Data Available
Density:	1.234 g/cm ³ @ 20 °C (68 °F)
Relative Vapor Density:	No Data Available
Specific Gravity:	1.24 @ 25 °C (77 °F)
Solubility in Water:	Insoluble - Reacts slowly with water to liberate CO ₂ gas
Partition Coefficient: n-octanol/water:	No Data Available
Auto-ignition Temperature:	No Data Available
Decomposition Temperature:	Not established
Dynamic Viscosity:	150 - 250 mPa.s @ 25 °C (77 °F)
Kinematic Viscosity:	No Data Available
Bulk Density:	1,234 kg/m ³
Self Ignition:	not applicable

10. Stability and Reactivity

Hazardous Reactions

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization

Stability

Stable under normal conditions of use and storage.

Materials to Avoid

Water, Amines, Strong bases, Alcohols, Copper alloys

Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Isocyanate, Isocyanic Acid, Other undetermined compounds

11. Toxicological Information

Likely Routes of Exposure: Skin Contact

Material Name: MONDUR MR LIGHT

83186292

Inhalation
Eye Contact

Health Effects and Symptoms

Acute: Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

Causes skin irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration.

Causes eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to isocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.,

Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

Prolonged vapor contact with the eyes may cause conjunctivitis.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Toxicity Data for: MONDUR MR LIGHT

Toxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).

Acute Oral Toxicity

LD50: > 2,000 mg/kg (rat, male/female)

Acute Inhalation Toxicity

LC50: 0.49 mg/l, 490 mg/m³, 4 h, aerosol (rat)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: > 9,400 mg/kg (rabbit, male/female) (OECD Test Guideline 402)

Skin Irritation

rabbit, Slightly irritating

Repeated Dose Toxicity

90 Days, inhalation: NOAEL: 1 mg/m³, (rat, Male/Female, 6 hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

2 years, inhalation: NOAEL: 0.2, (rat, Male/Female, 6 hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

Bacterial - gene mutation assay: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity

rat, Male/Female, inhalation, 2 Years, 6 hrs/day 5 days/week

LOAEL: 6mg/l

Polymeric MDI has been classified as IARC Group 3 (“Not classifiable as to its carcinogenicity to humans”) (1999) indicating there is inadequate evidence available to describe the carcinogenic potential. Epidemiological studies found no association between isocyanates and cancer. In chronic exposure studies in rodents, pMDI produced tumors only at the highest exposure level of 6 mg/m³. This exposure level is significantly above the TLV for MDI (0.051 mg/m³). Based on the weight of the evidence, a determination of not classified for carcinogenicity is justified.

Developmental Toxicity/Teratogenicity

rat, female, inhalation, gestation days 6-15, 6 hrs/day, NOAEL (teratogenicity): 12 mg/m³, NOAEL

(maternal): 4 mg/m³

No Teratogenic effects observed at doses tested., Fetotoxicity seen only with maternal toxicity.

Toxicity Data for: Polymeric Diphenylmethane Diisocyanate (pMDI)**Toxicity Note**

See data above for polymeric MDI.

Toxicity Data for: 4,4'-Diphenylmethane Diisocyanate (MDI)**Acute Oral Toxicity**

LD50: > 7,616 mg/kg (rat) (OECD Test Guideline 401)

Acute Inhalation Toxicity

LC50: 0.368 mg/l, 4 h, dust/mist (rat, male) (OECD Test Guideline 403)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: > 9,400 mg/kg (rabbit, male/female) (OECD Test Guideline 402)

Studies of a comparable product.

Skin Irritation

rabbit, Draize Test, Slightly irritating

Human, irritating

Eye Irritation

rabbit, Draize, Moderately irritating

Human, irritating

Sensitization

Skin sensitization (local lymph node assay (LLNA)):: positive (Mouse, OECD Test Guideline 429)

Respiratory sensitization: positive (Guinea pig)

Repeated Dose Toxicity

90 Days, inhalation: NOAEL: 0.3 mg/m³, (rat, Male/Female, 18 hrs/day, 5 days/week)

Irritation to lungs and nasal cavity.

(Human)

Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

Ames: (Salmonella typhimurium, Metabolic Activation: with/without)

Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive mutagenicity results.

Genetic Toxicity in Vivo:

Micronucleus Assay: (Mouse)

negative

Micronucleus test: negative (rat, male, Inhalative (exposure period: 3x1h/day over 3 weeks))

negative

Carcinogenicity

rat, Female, inhalation, 2 Years, 17 hrs/day, 5 days/week negative

Other Relevant Toxicity Information

May cause irritation of respiratory tract.

Toxicity Data for: 2,4'-Diphenylmethane Diisocyanate (MDI)**Toxicity Note**

See data above for polymeric MDI.

Toxicity Data for: 2,2'-Diphenylmethane Diisocyanate**Toxicity Note**

See data above for polymeric MDI.

Carcinogenicity:

No carcinogenic substances as defined by IARC, NTP and/or OSHA

12. Ecological Information

Ecological Data for: MONDUR MR LIGHT

Ecotoxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).

Biodegradation

0 %, Exposure time: 28 d, i.e. not degradable

Bioaccumulation

Oncorhynchus mykiss (rainbow trout), Exposure time: 112 d, < 1 BCF
Does not bioaccumulate.

Acute and Prolonged Toxicity to Fish

LC0: > 1,000 mg/l (Danio rerio (zebra fish), 96 h)

LC0: > 3,000 mg/l (Oryzias latipes (Orange-red killifish), 96 h)

Acute Toxicity to Aquatic Invertebrates

EC50: > 1,000 mg/l (Water flea (Daphnia magna), 24 h)

Toxicity to Aquatic Plants

NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 h)

Toxicity to Microorganisms

EC50: > 100 mg/l, (activated sludge, 3 h)

Ecological Data for Polymeric Diphenylmethane Diisocyanate (pMDI)

Additional Ecotoxicological Remarks

See data above for polymeric MDI.

Ecological Data for 4,4'-Diphenylmethane Diisocyanate (MDI)

Acute and Prolonged Toxicity to Fish

LC50: > 500 mg/l (Zebra fish (Brachydanio rerio), 24 h)

Acute Toxicity to Aquatic Invertebrates

EC50: > 500 mg/l (Water flea (Daphnia magna), 24 h)

Ecological Data for 2,4'-Diphenylmethane Diisocyanate (MDI)

Additional Ecotoxicological Remarks

See data above for polymeric MDI.

Ecological Data for 2,2'-Diphenylmethane Diisocyanate

Additional Ecotoxicological Remarks

See data above for polymeric MDI.

13. Disposal Considerations

Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws.
Incineration is the preferred method.

Empty Container Precautions

Material Name: MONDUR MR LIGHT

83186292

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

14. Transportation Information

Land transport (DOT)

Proper Shipping Name: Other regulated substances, liquid, n.o.s. (contains 4,4'-Diphenylmethane Diisocyanate (MDI))
Hazard Class or Division: 9
UN/NA Number: NA3082
Packaging Group: III
Hazard Label(s): CLASS 9

RSPA/DOT Regulated Components:

4,4'-Diphenylmethane Diisocyanate (MDI)

Reportable Quantity: 5040 kg (11111 lb)

Sea transport (IMDG)

Non-Regulated

Air transport (ICAO/IATA)

Non-Regulated

Additional Transportation Information

When in individual containers of less than the Product RQ, this material ships as non-regulated.

MARPOL/IBC

PRODUCT NAME: Diphenylmethane Diisocyanate

POLLUTION CATEGORY: Y

SHIP TYPE: 2

FLASH POINT: 390°F

15. Regulatory Information

United States Federal Regulations

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

No substances are subject to TSCA 12(b) export notification requirements.

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:

4,4'-Diphenylmethane Diisocyanate Reportable quantity: 5000 lbs
(MDI)

SARA Section 311/312 Hazard Categories:

Acute Health Hazard

Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components:

Material Name: MONDUR MR LIGHT

83186292

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:

Polymeric Diphenylmethane Diisocyanate (pMDI)
4,4'-Diphenylmethane Diisocyanate (MDI)

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

This product contains a trace (ppm) amount of phenyl isocyanate (CAS# 103-71-9) and monochlorobenzene (CAS# 108-90-7) as impurities.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
58%	Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9
38%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
3.8%	2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
58%	Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9
38%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8

California Prop. 65:

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

CFATS (Chemical Facility Anti-Terrorism Standards) Chemicals

To the best of our knowledge, this product does not contain Appendix A Chemicals of Interest (COI), at or above the Screening Threshold Quantity (STQ), as defined by the Department of Homeland Security Chemical Facility Anti-terrorism Standard (CFATS, 6 CFR Part 27.

Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

16. Other Information

The method of hazard communication for Covestro LLC is comprised of product labels and safety data sheets. Safety data sheets for all of our products and general product declarations are available for download at www.productsafetyfirst.covestro.com.

Material Name: MONDUR MR LIGHT

83186292

Contact: Product Safety Department
Telephone: (412) 413-2835
SDS Number: 112000021929
Version Date: 09/26/2017
SDS Version: 2.9

Information contained in this SDS is believed to be accurate but is furnished without warranty, express or implied, including warranties of merchantability or fitness for a particular purpose. The information relates only to the specific material designated herein. Covestro LLC. assumes no legal responsibility for use of or reliance upon the information in this SDS and such information shall in no case be considered a part of our terms and conditions of sale. The user is responsible for determining whether the Covestro product is suitable for user's method of use or application. Covestro is not liable for any failure to observe the precautionary measures described in this SDS or for any misuse of the product.

|| Changes since the last version are highlighted in the margin. This version replaces all previous versions.



Covestro LLC
1 Covestro Circle
Pittsburgh PA 15205

Page: 1
Date Printed: 2018-02-09
Straight Bill of Lading-
Original- Not Negotiable

Ship To: Stonhard 7 Esterbrook Ln Cherry Hill NJ 08003-4034 US	Bill of Lading No: 292148 For prepaid shipment, show bill of lading no. on freight acc. to the given Incoterm, please issue your invoice to Covestro c/o Cass Information Systems PO Box 67 St.Louis, MO 63166-0067	24 Hour Number Emergency Contact Covestro (CCN2472) via CHEMTREC 1-800-424-9300 International +1-703-527-3887
Shipper: Covestro LLC 8406 FM 1405 Baytown TX 77523-9913 ORH5	Delivery Number: 4003339118 Shipping Date: 12.02.2018 Delivery Date: 16.02.2018 08:00:00 Carrier: FV: Customer Requested Carrier Trailer/Container:	Payment/Invoice Instructions Customer: Please reference Delivery Number with Payment: 4003339118 Customer POs: 299197 Carrier: Please reference Bill of Lading Number 292148 with Freight Invoice

RECEIVED, subject to the Contract Carrier Master Agreement for Trucking Service, if applicable, between Carrier and Shipper in effect on the date, the shipment is tendered to Carrier, the property described below in apparent good order, except as noted (contents and conditions of packages unknown), marked consigned and destined as shown below. This Bill of Lading is not subject to any rates, rules, tariffs or classifications, whether individually determined or filed with any federal or state regulatory agency, except as specifically agreed to in writing by Carrier or Shipper.

No. of Packages	Container Type Material and Description	Quantity	Weight	HM	
16	TOTE Material Number: 01668998		40036 LB 18160 KG		2 55920
		Weight Totals:	NET: 40036 LB 18160 KG	TARE:	GROSS: 42011 LB 19056 KG

Special Instructions for Delivery:

Tanker Endorsement Needed

SHIPPER'S INTERMODAL CERTIFICATION

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. This certification includes IMDG 5.4.2.1.

Date: _____
Shipper Per: Jennifer Zawada
FEB 17 2018

DRIVER'S CERTIFICATION AND RECEIPT

Driver hereby certifies that the above Special Instructions have been read and understood that:
1. Emergency response information in accordance with 49 CFR part 172
Subpart G is present on board the vehicle.
2. The required placards have been offered and the required placards are properly affixed to the vehicle.

Received _____ pallets _____ pieces
Carrier: KALYND TRANSPORT
Trailer: 181169
[Signature]
Driver's Signature

SECTION 7

If this shipment is to be delivered to the Consignee without recourse on the Shipper/Consignor for any charges that are not prepaid or agreed to be prepaid, the Shipper/Consignor shall sign the following statement:

Carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Covestro LLC
FREIGHT CHARGE TERMS
Line Haul charges will be paid as Follows:
COLLECT

FMCSA Motor Carrier

USDOT Number: **2474595**
Docket Number: **MC855868**
Legal Name: **VALUED TRANSPORT LLC**
DBA (Doing-Business-As) Name



Addresses

Business Address: **5050 POPLAR AVE SUITE 900
MEMPHIS, TN 38157**
Business Phone: **(901) 312-3316** Business Fax: **Fax: (901) 259-0565**
Mail Address:
Mail Phone: Mail Fax: Undeliverable Mail: **NO**

Authorities:

Common Authority:	ACTIVE	Application Pending:	NO	
Contract Authority:	ACTIVE	Application Pending:	NO	
Broker Authority:	NONE	Application Pending:	NO	
Property:	YES	Passenger:	NO	Household Goods: NO
Private:	NO	Enterprise:	NO	

Insurance Requirements:

BIPD Exempt:	NO	BIPD Waiver:	NO	BIPD Required:	\$750,000	BIPD on File:	\$1,000,000
Cargo Exempt:	NO			Cargo Required:	NO	Cargo on File:	NO
BOC-3:	YES			Bond Required:	NO	Bond on File:	NO

Blanket Company: **PROCESS AGENT SERVICE COMPANY, INC.**

Comments:

Active/Pending Insurance:

Form: 91X	Type: BIPD/Primary	Posted Date: 03/17/2017
Policy/Surety Number: CA170065	Coverage From: \$0	To: \$1,000,000
Effective Date: 03/19/2017	Cancellation Date:	

Insurance Carrier: **CHEROKEE INSURANCE COMPANY**
Attn: **MARK J. DADABBO, PRES.**
Address: **34200 MOUND RD.
STERLING HEIGHTS, MI 48310 US**
Telephone: **(800) 201 - 0450** Fax: **(810) 795 - 3130**

Rejected Insurances:

Form:	Type:	Coverage From:	\$0	To:	\$0
Policy/Surety Number:		Received:	Rejected:		
Rejected Reason:					

FMCSA Motor Carrier

USDOT Number: **2474595**
 Docket Number: **MC855868**
 Legal Name: **VALUED TRANSPORT LLC**
 DBA (Doing-Business-As) Name



Insurance History:

Form: 91X	Type: BIPD/Primary		
Policy/Surety Number: CA 1434825	Coverage From	\$0	To: \$750,000
Effective Date From: 03/19/2014	To: 08/22/2014	Disposition: Replaced	

Insurance Carrier: PROGRESSIVE HAWAII INSURANCE CORP
 Attn: CUSTOMER SERVICE
 Address: P. O. BOX 94739
 CLEVELAND, OH 44101 US
 Telephone: (800) 444 - 4487 Fax: (440) 603 - 4555

Form: 91X	Type: BIPD/Primary		
Policy/Surety Number: CA 1434825	Coverage From	\$0	To: \$750,000
Effective Date From: 08/22/2014	To: 03/19/2016	Disposition: Cancelled	

Insurance Carrier: PROGRESSIVE HAWAII INSURANCE CORP
 Attn: CUSTOMER SERVICE
 Address: P. O. BOX 94739
 CLEVELAND, OH 44101 US
 Telephone: (800) 444 - 4487 Fax: (440) 603 - 4555

Form: 91X	Type: BIPD/Primary		
Policy/Surety Number: ATR0047275	Coverage From	\$0	To: \$750,000
Effective Date From: 03/19/2016	To: 03/19/2017	Disposition: Cancelled	

Insurance Carrier: GREENWICH INSURANCE COMPANY
 Attn: RECECCA CLARK
 Address: 505 EAGLEVIEW BLVD
 EXTON, PA 19341 US
 Telephone: (800) 327 - 1414 Fax: (610) 458 - 8667

Authority History:

Sub No.	Authority Type	Original Action	Disposition Action
	MOTOR PROPERTY CONTRACT CARRIER	GRANTED	03/25/2014
	MOTOR PROPERTY COMMON CARRIER	GRANTED	03/25/2014

Pending Application:

Authority Type	Filed	Status	Insurance	BOC-3

FMCSA Motor Carrier

USDOT Number: **2474595**

Docket Number: **MC855868**

Legal Name: **VALUED TRANSPORT LLC**

DBA (Doing-Business-As) Name

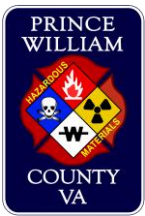


Revocation History:

Authority Type	1st Serve Date	2nd Serve Date	Reason



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180005750	Date: 2/16/2018
Location: 8801 Sudley Rd. Manassas 20110	Time: 08:46
Report Completed By: Mark Schwab	Incident Commander: BC582
HM 506 Personnel Responding: M. Schwab, B. Abel, J. Sawicki, C. Malone HS 516 Personnel Responding: T. Samuels, G. Clark Other HMT Personnel Responding: H. Pereira, N. Budkiewicz, M. Cone, M. Adkins	

INCIDENT DESCRIPTION	
<p>HM506 was dispatched to assist with an inside gas leak at a post office. E501 together with E521 did initial investigation and reported no abnormal readings inside the post office, but found a possible source of smell from two boxes that was inside of a mail cart. E521 moved two boxes to outside loading dock and closed bay doors, the smell was reported to be similar to Natural Gas. The post office was evacuated and HAZMAT response was requested. Upon arrival HM506 and HM516 were briefed by HMO 501 on the situation, HM506 took background samples to ready monitors (09:17). PRD= 3µr/h; PID= 0ppb; Identifinder2= 6µr/h; Ludlum= 10µr/h; QRAE=all normal HM506 entry team 1 made entry (09:22) to area where packages were located using bunker gear and SCBA. HM516 provided the back up team and emergency DECON was established by E521. HM506 entry team approached location of the boxes and noticed no leaks or any smells coming from the boxes. No abnormal readings were found: PRD= 3µr/h; PID= 0ppb; Identifinder2= 4µr/h; Ludlum= 10µr/h; QRAE=all normal HM506 entry team 1 also used pH paper, water paper, fluoride paper, and M8 paper to sample around boxes (09:32) and no abnormal finding were noted. HM506 entry team one relayed the findings to command and the entry team leader then entered the building to check readings for any other possible sources. Readings in the post office were normal/background, PRD= 3µr/h; PID= oppb; Identifinder2= 6µr/h; Ludlum= 10µr/h; QRAE=all normal. HM506 entry team 1 exited the post office and reported to command. Postal service made contact with the sender of the package (09:23) and found contents of the package was food for the chinese new year. Scene was turned over to postal service employees and HM506 was placed in service by BC582.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company: United States Postal Service	Company:
Address: 8801 Sudley Road Manassas, VA 20110	Address:
Phone#: 1-800-275-8777	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 02/2016/2018	Date:
Time: 11:13	Time:
Name: Bryan Geoffrion	Name:
Comp/Agency: VA EOC	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



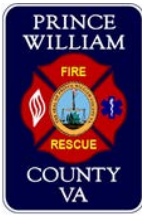


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

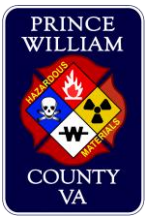


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180006119	Date: 2/19/2018
Location: 10910 Balls Ford Road, Manassas VA 20109	Time: 14:40
Report Completed By: Mark Schwab	Incident Commander: Lt. Cozdeba
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding:	

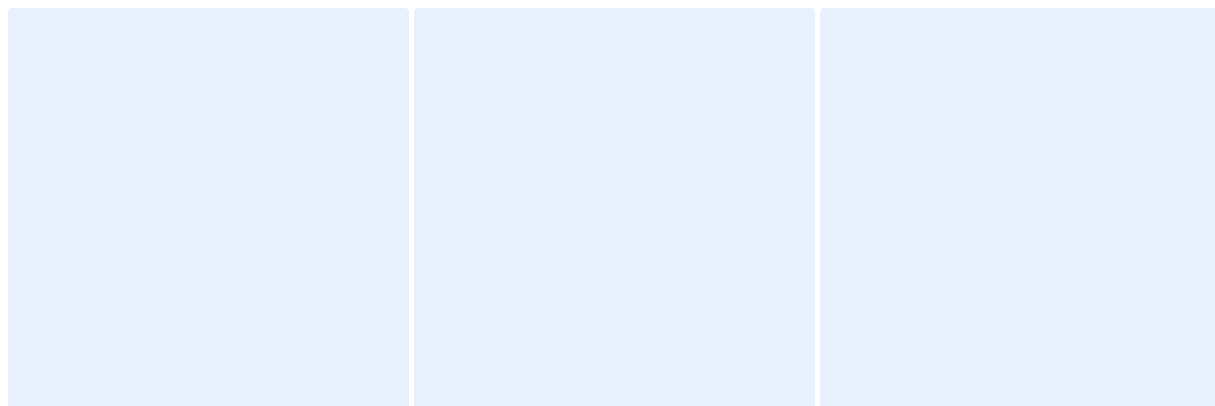
INCIDENT DESCRIPTION	
<p>PSCC contacted FS506 to alert Hazmat Duty officer of Incoming Hazmat Phone Consult. Hazmat Duty Officer received a phone call from FM523 with a report of two containers of possibly containing used motor oil that was disposed of inside of a dumpster of a Hotel. FM523 stated that there was a 12-gallon container of used motor oil that was disposed in a dumpster, and a 2.5-gallon container that seemed to have an "unidentified liquid". FM523 stated that suspect responsible for disposal was in custody. Duty Hazmat Officer inquired if there was any leaks or spill, and FM523 stated that there was none. Duty Hazmat Officer advised FM523 that since there was no immediate danger or life safety issue, that is was the obligation of responsible party [the property owner at this point and time] to contact a Hazmat clean-up company to handle containers.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Jonathan Rogers	Name:
Company: Woodspring Suites	Company:
Address: 10910 Balls Ford Road	Address:
Phone#: 703-335-5009	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 02/19/2018	Date:
Time: 15:13	Time:
Name: Darshan Parik	Name:
Comp/Agency: VA EOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

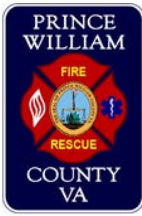
NOTIFICATIONS/CONTACTS	
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Comp/Agency:	Comp/Agency:
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Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

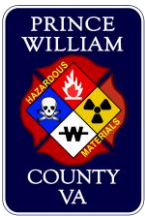


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180007130	Date: 2/28/2018
Location: 4255 Seeton Sq, Woodbridge, VA 22192	Time: 15:11
Report Completed By: Mark Schwab	Incident Commander:
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding:	

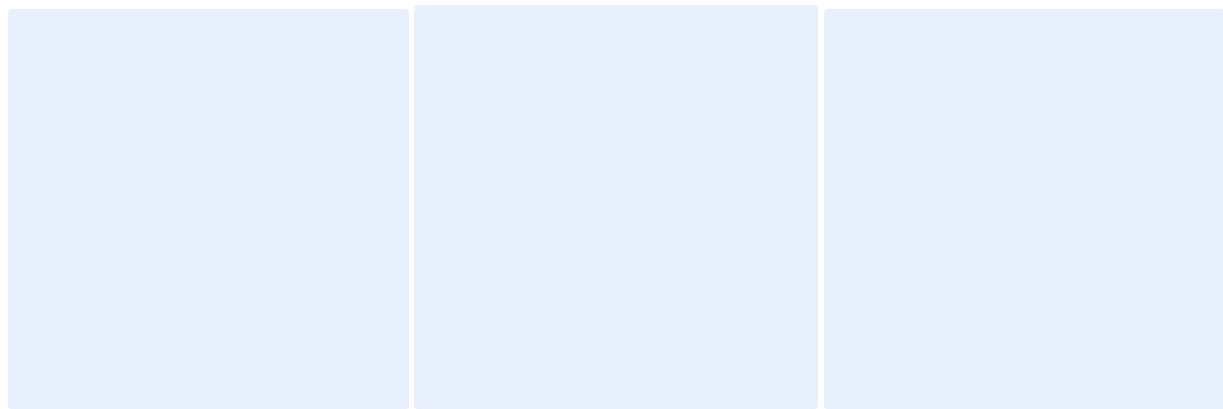
INCIDENT DESCRIPTION	
<p>FS506 received a phone call from UFRO at PSCC in regards to a possible Hazmat phone consult. E526 Officer contacted FS506 to consult with Hazmat Duty Officer in regards to a fuel spill at a gas station. E526 was on scene, where approximately 6-10 gallon of premium gasoline was spilled on the ground. E526 was able to dam and dike around the spilled fuel with absorbent. No fuel reached any storm drains or water run off. Fuel spill was contained to the gas station property. E526 was advised by Hazmat Duty Officer to make sure Gas Station owner was given an L.E.P.C. form so the necessary clean up could be performed. Hazmat Duty Officer did not deem necessary for HM506 to be dispatched given the situation posed no threat to life or property and that hazard was controlled.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Nashib Patel	Name: Tess Jackson
Company: Exxon Fueling Station	Company:
Address: 4255 Seeton Sq, Woodbridge, VA 22192	Address:
Phone#: 571-296-3384	Phone#: 703-680-0524
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 02/29/2018	Date:
Time: 20:57	Time:
Name: Lorenzo Cavana	Name:
Comp/Agency: VA EOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

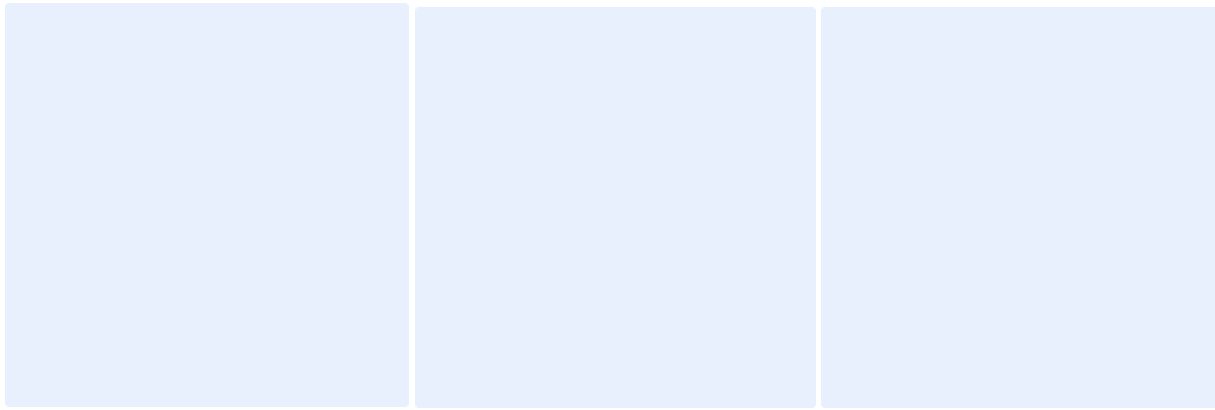
**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

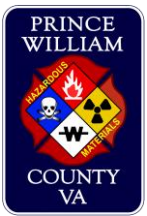


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180009148	Date: 3/16/2018
Location:Dumfries Rd/Cobb Rd	Time: 13:57
Report Completed By: Lt. Shannon	Incident Commander: BC McCoy
HM 506 Personnel Responding: Lt. Shannon, Capt. McCleese, Weaver, Snitwongse, Sawicki, Parisi, Ackerman HS 516 Personnel Responding: Capt. Newell Other HMT Personnel Responding: BC Heindricks, Capt. Stewart, Lt. Briggs, Gonzales	

INCIDENT DESCRIPTION	
<p>R506/HM506 arrived on scene to find an overturned mixed use compressed gas cylinder deliver truck. There were multiple cylinders thrown from the truck with additional cylinders still under the truck. You could see one cylinder venting a white gas upon arrival. R506 officer made contact with the driver who was uninjured. He advised that he was carrying Acetylene (3 cylinders), Oxygen and liquid Nitrogen. Once we established an entry team, back-up team and had DECON in place we sent two HMT to investigate what was leaking. With the report of what was on the truck R506's Officer felt comfortable monitoring with a 4 Gas monitor. The entry team was able to retrieve the Bill of Lading. The Bill of Lading confirmed the contents of the truck. All 3 acetylene cylinders were accounted for, none of them were damaged or leaking. The entry team was able to confirm the leak was from a venting Liquid Nitrogen tank. They were able to upright the tank and stop the valve from venting. Once PD was done conducting their investigation we moved all of the loose cylinders to a safe area while continuing atmospheric monitoring. Once all of the loose tanks were moved we coordinated with the tow company to pick the truck up and move it to the road way. The effort was carefully coordinated because we still had inverted liquid nitrogen and liquid oxygen tanks. The tow company was able to move the truck with little issue. We did experience some additional venting from one of the liquid nitrogen tanks but it was not a large enough release to cause a hazard. All of the remaining tanks were up righted and the scene was turned over to PD, VDOT, and the Roberts Oxygen Rep that was on scene. The tow company advised that they were able to handle any liquids that had already leaked or could leak from the truck.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Mike Creighton	Name:
Company: Roberts Oxygen	Company:
Address:	Address:
Phone#: 301 948 8100	Phone#:
Notes:	Notes:

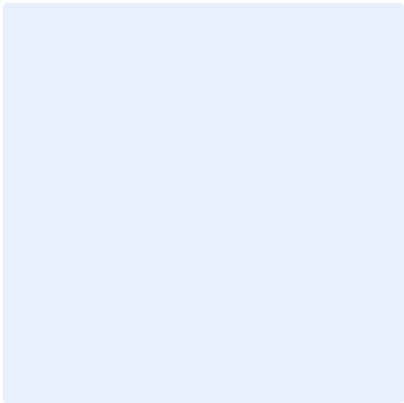
NOTIFICATIONS/CONTACTS	
Date: 03/16/2018	Date:
Time: 21:50	Time:
Name: Brandon	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

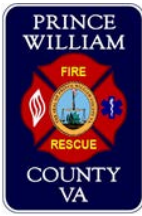


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

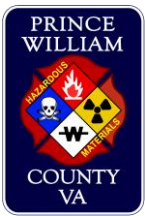


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180011745	Date: 4/9/2018
Location: 2700 Potomac Mills	Time: 14:48
Report Completed By: Capt. McCleese	Incident Commander: Captain Prysock
HM 506 Personnel Responding: Phone Consult- Captain McCleese HS 516 Personnel Responding: None Other HMT Personnel Responding: none	

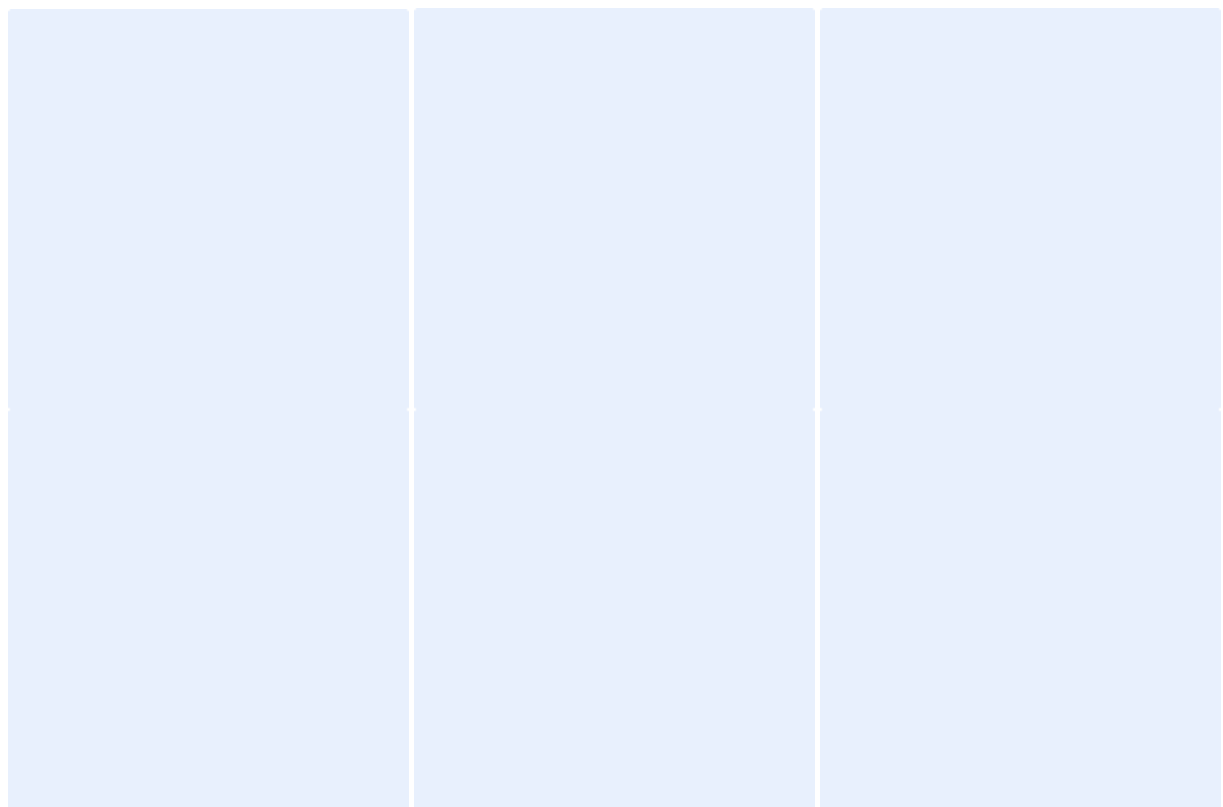
INCIDENT DESCRIPTION	
<p>Phone Consult to E520's Officer (Prysock) for a Outside Fire "OUTF" Incident. Comcast Contractor working alongside of the road had small ditch digging equipment turn over and leak fluids gas/oil of estimated 3 gallons or less was leaked onto the ground. LEPC forms were handed to the Contractor by E520's Officer. E520's Officer consulted with the DUTY HM to make sure that the only requirement was to hand the LEPC to the responsible party. Duty HM informed E520's OIC to gather contact information for their responsible party for the report. Discussion about whether or not the area was along roadway and possibly near VDOT right-of-way. DUTY HM would follow up and inform the VA EOC/VDOT.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Daniel Augilar	Name:
Company: J-CH Malers, LLC	Company:
Address:	Address:
Phone#: 301-254-9711	Phone#:
Notes:	Notes:

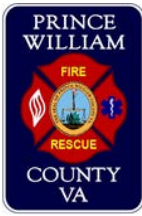
NOTIFICATIONS/CONTACTS	
Date: 04/9/2018	Date:
Time: 17:12	Time:
Name: Dan	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

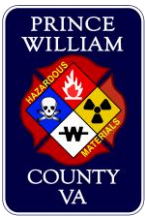
NOTIFICATIONS/CONTACTS	
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180011951	Date: 4/1/2018
Location: Joplin Rd Eastbound on ramp/ I95	Time: 1444
Report Completed By: Lt. Schwab/T-II Williams	Incident Commander: Technician II A. Cassel
HM 506 Personnel Responding: Lt. Schwab, Technician II D. Williams, Technician II Abel, Technician I Gibson HS 516 Personnel Responding: Other HMT Personnel Responding:	

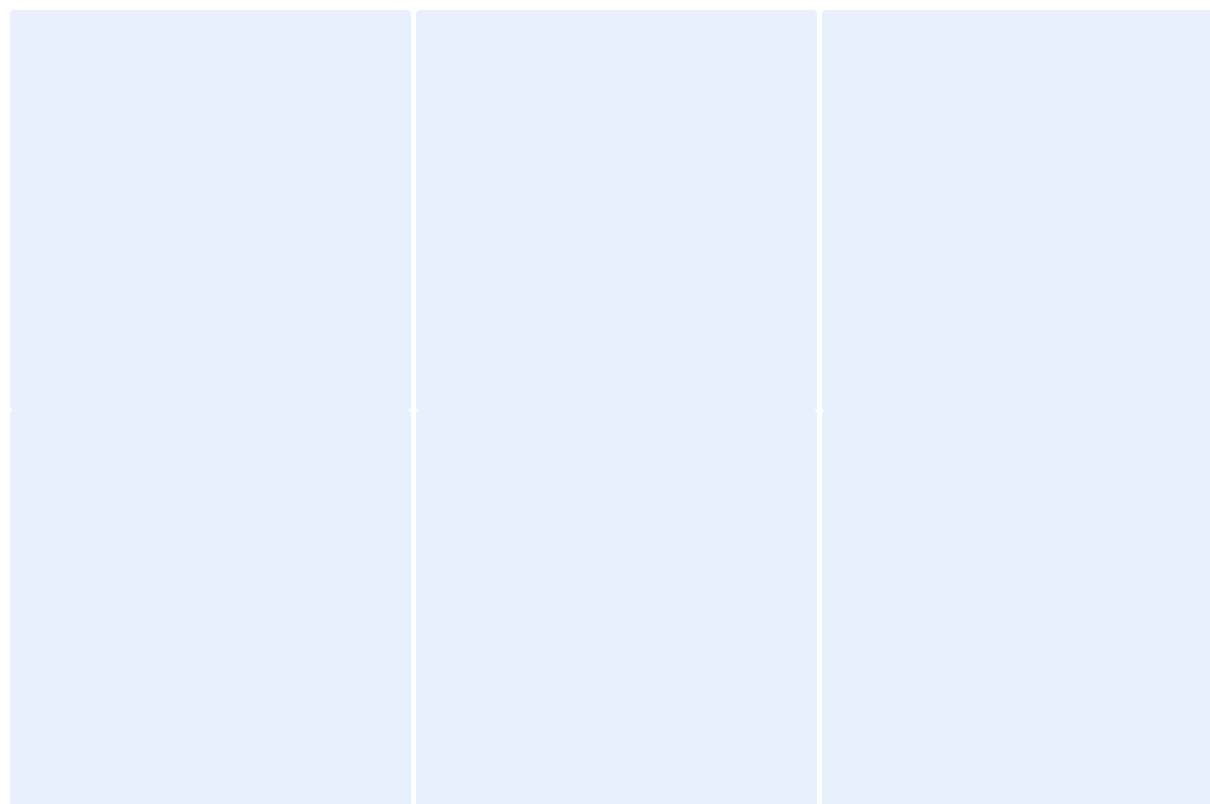
INCIDENT DESCRIPTION	
An apparent saddle tank from a tow truck fell off the vehicle. The tank was found lying on its side leaking. Approx. 15 gal of fuel leaked into the ground. No waterway exposure reported. E503 put absorbent down and placed the tank on the side of the road upright. The leaking discontinued. There were no disguisable marks on the tank and VDOT was notified as the responsible party.	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDOT	Name:
Company:	Company:
Address:	Address:
Phone#: 703.877.3401	Phone#:
Notes:	Notes:

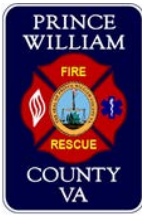
NOTIFICATIONS/CONTACTS	
Date: 04/11/2018	Date:
Time: 1619	Time:
Name: Daniel Maxfield	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

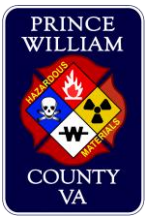
NOTIFICATIONS/CONTACTS	
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Comp/Agency:	Comp/Agency:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180012769	Date: 4/18/2018
Location: Jefferson Davis Hwy/Marys Way	Time: 00:12
Report Completed By: Schwab	Incident Commander: CH505
HM 506 Personnel Responding: Schwab, Williams, Cone HS 516 Personnel Responding: Other HMT Personnel Responding:	

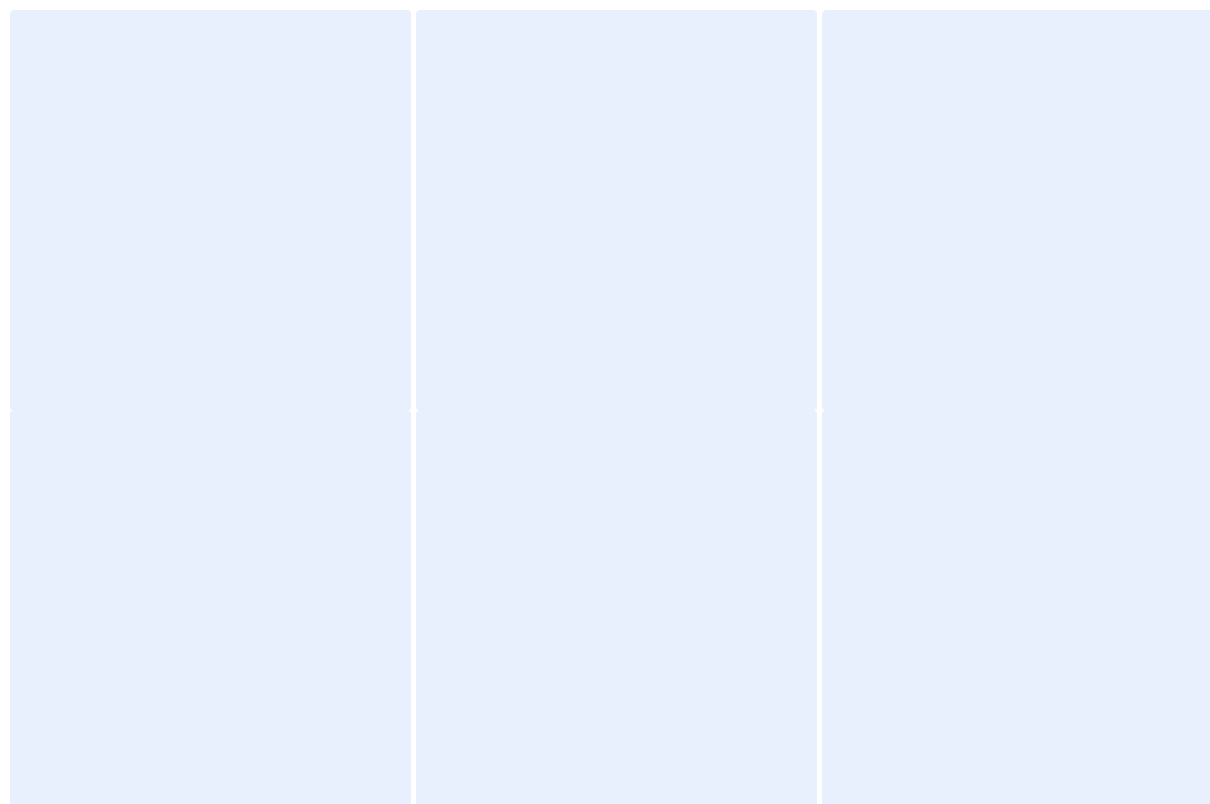
INCIDENT DESCRIPTION	
Patient stuck in a trench, placed in service by command.	
RESPONSIBLE PARTY	OTHER PARTY
Name: N/A	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

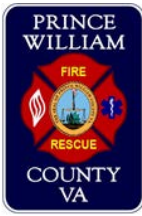
NOTIFICATIONS/CONTACTS	
Date: 4/18/18	Date:
Time: 13:14	Time:
Name: Harper	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

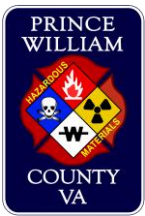
NOTIFICATIONS/CONTACTS	
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180013446	Date: 4/24/2018
Location: 10021 Balls Ford Rd.	Time: 12:12
Report Completed By: Lt. Shannon	Incident Commander: TII Rinaldis
HM 506 Personnel Responding: Lt. Shannon HS 516 Personnel Responding: Other HMT Personnel Responding:	

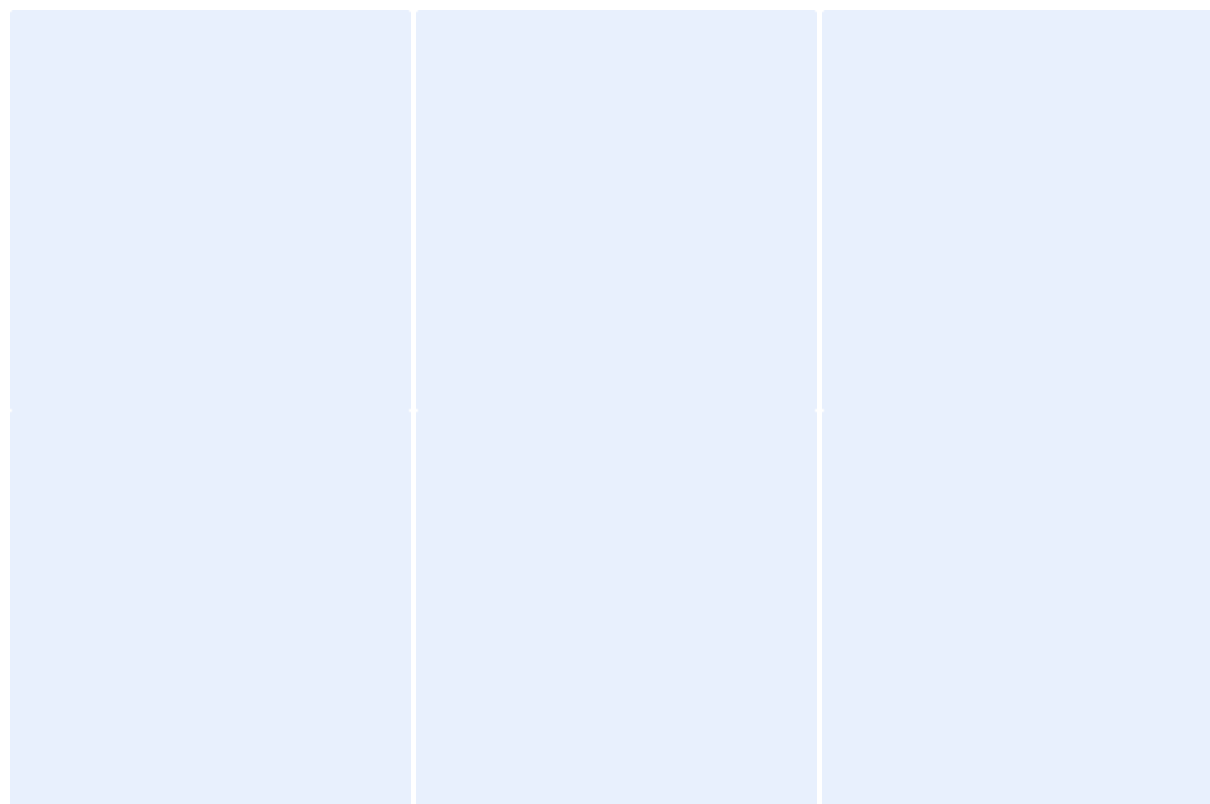
INCIDENT DESCRIPTION	
Hazmat phone consult for a tractor trailer that was leaking motor oil. Units on scene estimated it was a total of 13 gallons. E511 officer advised that a two company was on the way and that all of the oil was on the road way with no threat to any water ways. They also advised that they used adsorbant on the spill to contain it. I advised him that the tow company is required to have the ability take care of the leak. If not he should provide the LEPC paperwork and call me back if he had any issues. I did not receive a return phone call.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

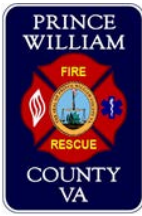
NOTIFICATIONS/CONTACTS	
Date: 04/24/2018	Date:
Time: 23:26	Time:
Name: Bartol	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

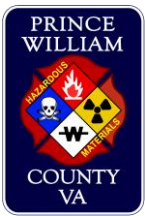
NOTIFICATIONS/CONTACTS	
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180014261	Date: 5/1/2018
Location: I-66, 37mm	Time: 11:12
Report Completed By: Lt. T. Forbes	Incident Commander: BC McCabe
HM 506 Personnel Responding: Lt. Forbes, S. Jones, D. Bell, J. Campbell HS 516 Personnel Responding: Lt. Perez, S. Tornee, Steele, Ramos-Allen, D. Hufford Other HMT Personnel Responding: Lt. B. Reader	

INCIDENT DESCRIPTION	
HM506 was dispatched to an 18-wheeler leaking diesel fuel from the passenger side saddle tank. The saddle tank had been pierced on the bottom left side. The driver had just filled the the saddle tanks with diesel and each tank carried 150 gallons. E524 began defensive operations by placing an oil catch pan under the leak, placing an absorbent dike between the leak and the grass shoulder, and digging a 24' ditch in the grass. Lt. Reader plugged the saddle tank with a wooden plug. The driver's side saddle tank was shut off so that no further fuel was transferred to the leaking tank. There was no further hazard. Driver was provided an LEPC form and chose Atlas to perform the clean up.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Riley Thomas Myer	Name: Patricia Rogers
Company: Wilkins Trucking	Company: Wilkins Trucking Supervisor
Address: 1535 Lost River St. Pk. Rd., Moorefield, WV 26836	Address:
Phone#: 304-897-5991	Phone#: 304-897-5158
Notes: DL# C027553	Notes:

NOTIFICATIONS/CONTACTS	
Date: 5/2/18	Date:
Time: 1:31 am	Time:
Name: Brandon	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

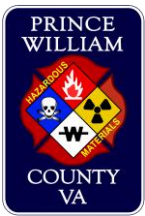








**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180015096	Date: 5/9/2018
Location: I-95 N 154.5 MM	Time: 04:40
Report Completed By: Schwab	Incident Commander: BC 507
HM 506 Personnel Responding: Lt.Schwab, T-II Williams, T-II Abel HS 516 Personnel Responding: T-II Mateo, T-I Mernard Other HMT Personnel Responding: Capt. Stewart	

INCIDENT DESCRIPTION	
<p>HM506 was dispatched to an auto accident that got upgraded to a hazmat. Two tractor trailers were involved, one under riding the other. E523 reported that the saddle tanks were leaking and that they were full with approximately 400 gallons of fuel, according to the driver. E523 had taken defensive measures by placing absorbent around the truck and the edge of the road. E523's crew was unable to access the fuel shut off due to the truck being stuck underneath the trailer. Upon arrival at the scene HM506's crew met up with T523's officer and E523's officer, they were able to confirm that only one of the tanks was leaking on the driver side. There was a wet spot on the road that appeared to be a mixture of engine, transmission oil and diesel fuel. Most the spill was from the engine oil and transmission oil due to the damage of the drive train. A slow leak was noted from the driver's side tank and a pop up pool was placed to capture the fuel. The fuel shut off switch was located on the driver's side tank and was also shut off. There was a creek on the side of the road, but was not affected by the spill. A small amount of product got into the drainage rock on the edge of the interstate but no more than 8-10 ft. away, and far away from any waterways. HMO502 spoke with the driver and representatives from the trucking company and they got a cleanup contractor (HEPACO) on the way. Redman's towing company separated the two trucks and HM506's crew checked for any additional hazards, none were found. Scene turned over to Police.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Edward Polyak	Name: Butch
Company: OFF All Trans/Crane Freight & Cartage	Company: Crane Freight
Address:	Address: 3270 Urbancrest Industrial Dr. Grove City, OH
Phone#: 717-816-9666	Phone#: 614-875-8800 ext. 1
Notes: MC 676488/DOT1873432	Notes:

NOTIFICATIONS/CONTACTS	
Date: 5/9/2018	Date: 5/9/2018
Time: 05:55	Time:
Name: Collins	Name:
Comp/Agency: VAEOC	Comp/Agency: HEPACO
Notes:	Notes: Clean Up Contractor

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 180015228	Date: 5/10/2018
Location: 14101 Whitney Rd Gainesville	Time: 08:58
Report Completed By: T. Forbes	Incident Commander: BC McCabe
HM 506 Personnel Responding: Forbes, Uriba, Campbell, Cook HS 516 Personnel Responding: Other HMT Personnel Responding: Capt. Stewart	

INCIDENT DESCRIPTION	
<p>Hazmat 506 was dispatched for a smell of gasoline in the stairwell of 7500 Iron Bar Ln Gainesville and in the storm drain at 14101 Whitney Rd Gainesville VA. Hazmat 506 arrived on scene and started to monitor storm drains around 14101 Whitney Rd. All storm drains had normal reading, some drains had a odor of gasoline. Hazmat 506 tested the water in three storm drains around 14101 Whitney Rd sample came back as water. Hazmat 506 investigation of the smell determined that there was no gasoline in the storm drain. Our investigation also determined that there was no life hazard to the in 7500 Iron Bar Ln. During our investigation we did determine that the Gas Station at 14101 Whitney Rd had a leak in one of the gas despesing island that was running back to the tank liner. This leaking gasoline did not get into the water way or storm drains. The service station manager stated that he had no loss of product per the stations leak monitoring system. Prince William County Fire Marshals, Storm water management Repersenive and VA DEQ were on scene to deal with the leaking tank. WI-Not stop was using Mid Alantic LLC to preform the clean up of the leaking gas tank.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Shrestha, Jagat Prasad	Name:
Company: WI-Not stop	Company:
Address: 8008 Duck Pond Ter. Manassas VA 20111	Address:
Phone#: 571 471 4142	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 05/10/18	Date: 05/10/2018
Time: 11:00	Time: 17:35
Name:	Name:
Comp/Agency: DEQ	Comp/Agency: VAEOC
Notes: Notification made by Capt. Stewart	Notes: Tyler
Date: 05/10/2018	Date:
Time: 11:00	Time:
Name:	Name:
Comp/Agency: Storm Water Management	Comp/Agency:
Notes: Notification made by Capt. Stewart	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input checked="" type="checkbox"/> Lead Investigator: Lt. P. Smiljanich

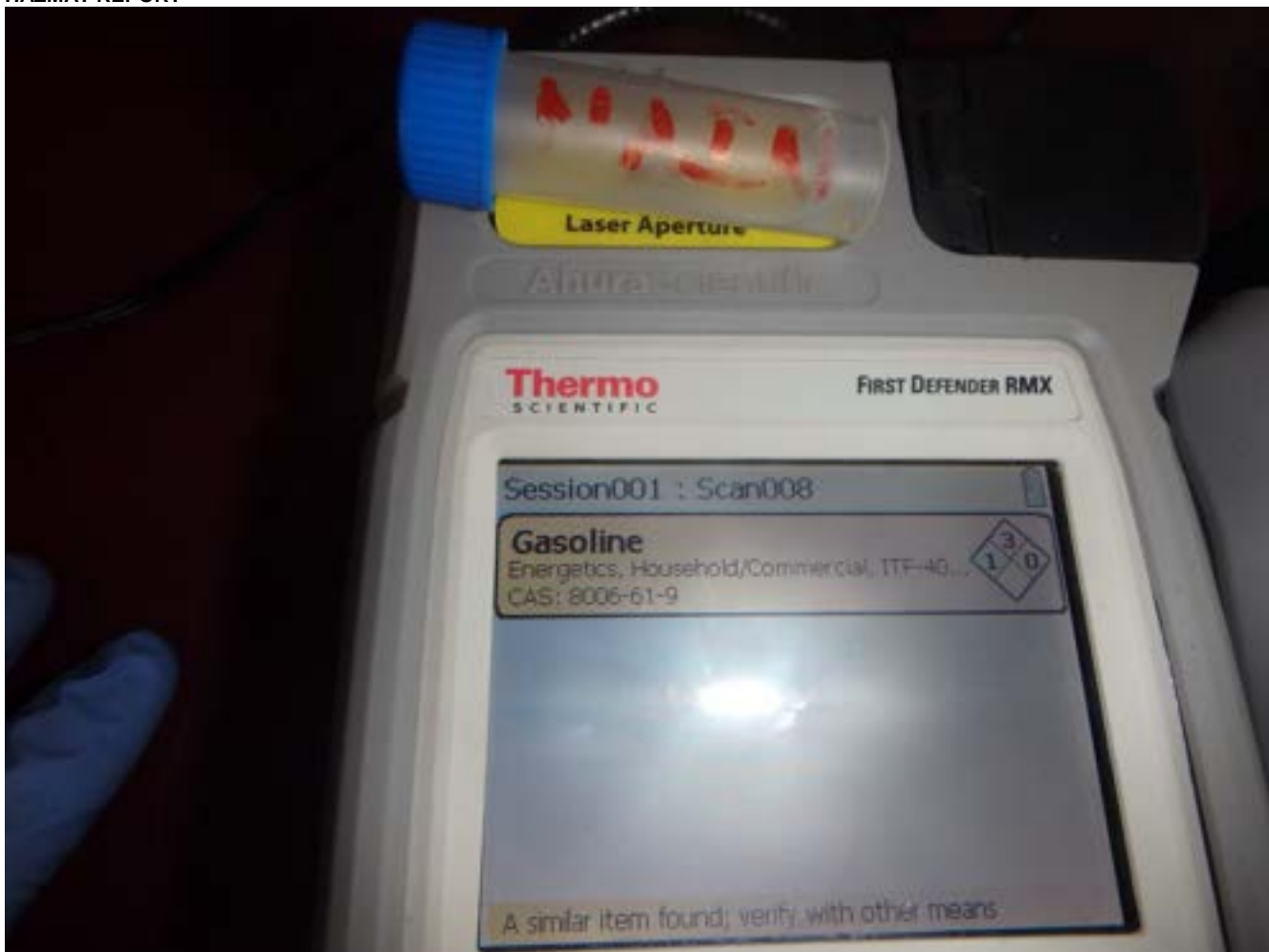


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

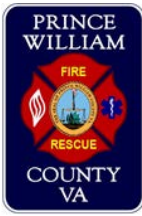


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180015362	Date: 5/11/2018
Location: 11994 Livingston Rd	Time: 11:37
Report Completed By: Schwab/Williams	Incident Commander: Lt. D. Miner
HM 506 Personnel Responding: Lt Schwab, Technician II Abel, Williams, Technician I Davis HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>At 2005 on 05/10/2018 a fire was reported at 11994 Livingston Rd. The fire was extinguished, and the scene was turned over to the Fire Marshals (FM). At 1137 on 05/11/2018, the FM's reported a strong smell of propane coming from the scene. The DHM was contacted and after consulting it was determined that HM506 was needed to further investigate the source. HM506 aos and met up with the FM's on scene. The PID and Multirae Pro were deployed to obtain readings. The PID identified the area where the source was to be believed to be located. It was determined that the source was a propane cylinder and the plastic fuse burned away and the smell was residual product from the earlier fire. This was supported by the burn pattern coming from the cylinder. No further hazards were determined to be present.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 5/11/2018	Date:
Time: 16:45	Time:
Name: Tyler	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

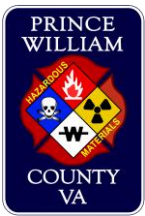


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180015369	Date: 5/11/2018
Location: 7500 Iron Bar Ln	Time: 09:22
Report Completed By: Schwab	Incident Commander: Capt. Adams
HM 506 Personnel Responding: Schwab HS 516 Personnel Responding: Other HMT Personnel Responding:	

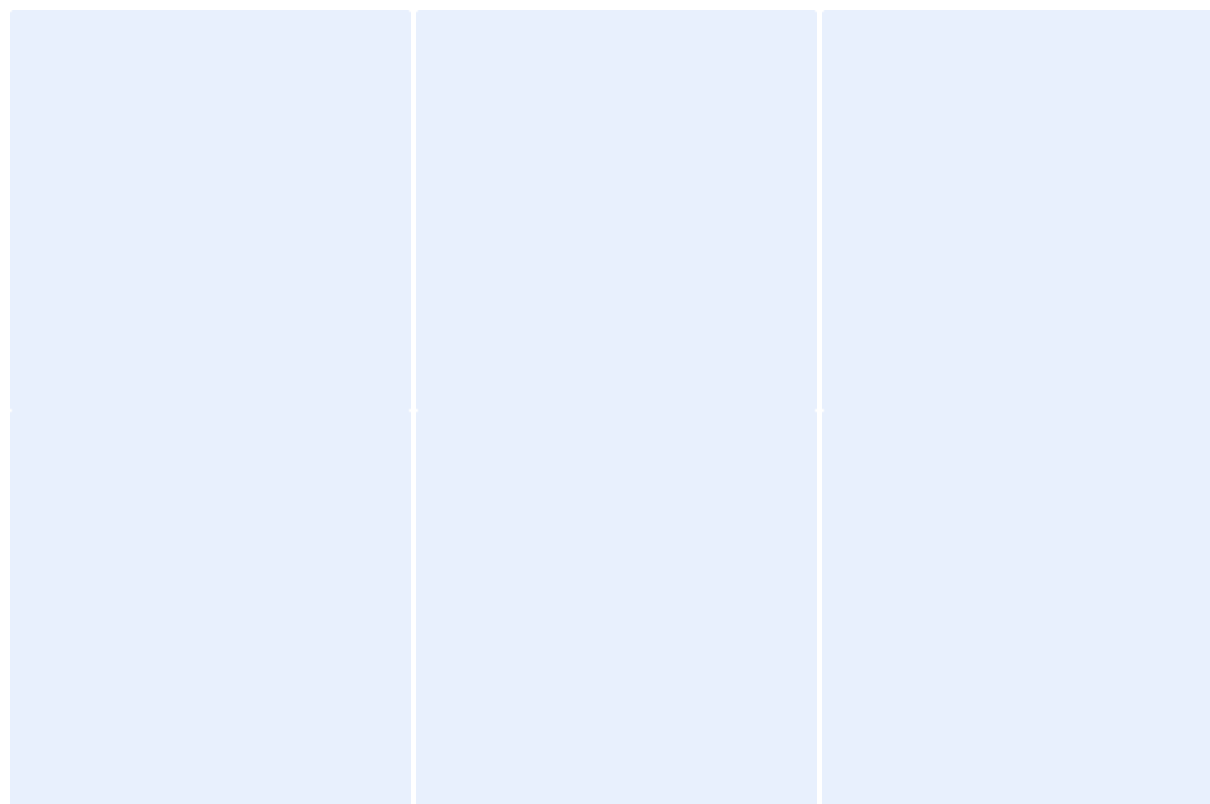
INCIDENT DESCRIPTION	
E504 called a phone consult about a smell of gasoline at the dispatched address, the same place as yesterday's Hazmat call. Occupants claim that the smell had become stronger, E504's crew investigated and all readings were within normal limits with no LEL. Occupants were also not complaining of any sickness or anything else that identify a hazard at the property. E504 was advised to explain to the occupants that the smell may take a while to dissipate and that there was no hazard present other than a nuisance.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

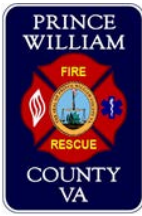
NOTIFICATIONS/CONTACTS	
Date: 5/11/2018	Date:
Time: 14:11	Time:
Name: Tyler	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

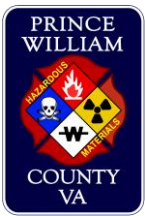
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180016131	Date: 5/17/2018
Location: 11997 Hazelwood Dr	Time: 07:43
Report Completed By: Lt. M. Schwab	Incident Commander: Captain R. Faye
HM 506 Personnel Responding: Lt. Schwab, Technician II D. Williams, Technician I A. Davis, C. Malone HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
E505 responded to reports of a 55-gallon drum which fell off the backup of a pickup truck. Caller advised that a white pickup, with the tail gate down, had multiple drums in the bed of their truck. With one falling out. E505 arrived on scene to find that there was a sheen on the road from the drum. Upon inspection of the drum there was discovered multiple punctures in it. The drum was placed upright by E505 which stopped the leak. The drum was inspected for any form of identifying marks and was unsuccessful. E505 upgraded to a HAZMAT call. HM506 and R506 responded to the incident. Once HM506 arrived on scene, the 55-drum was inspected by HM506 and R506 personnel. No active leak detected. E505 dammed the ditch where the drum leaked into and HM506 placed booms to prevent the spilled liquid from draining further. Plastic was placed and secured on the drum to prevent rain from getting into the drum. VDOT was also notified. After which all units on scene went in service.	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDOT	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 05/17/2018	Date:
Time: 1751	Time:
Name: Dan Maxfield	Name:
Comp/Agency: VEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**



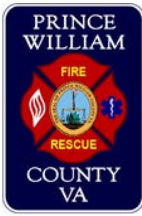


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

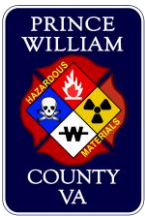


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180016370	Date: 5/19/2018
Location: 8116 Bethlehem Rd	Time: 10:07
Report Completed By: Tech II Cook	Incident Commander: T511
HM 506 Personnel Responding: Technician II Cook, S. Jones, Technicians Bell, Kent HS 516 Personnel Responding: Lt Perez, Technician II C. Smith, Technicians Ramos-Allan, Hufford Other HMT Personnel Responding: HMO502	

INCIDENT DESCRIPTION	
HM506 arrived on scene to find a 275 gallon above ground fuel tank leaking behind the residence. It was estimated that around 100 gallons had leaked out of the tank and onto the surrounding soil. A 150 gallon pop up pool was placed under the tank to capture the remaining fuel oil that was leaking. The origin of the leak could not be accessed due to the tanks proximity to the house. Due to the rain fall, it is believed that water and product seeped into the crawl space causing a strong odor and unsafe PID readings inside the residence 3000+PPB at front door and 20PPM 15 feet into the house. A LEPC form was given to the homeowner to contact an appropriate clean up company. HMO502 arrived on scene and continued with proper notifications. Due to continued elevated readings the homeowner and family was displaced and red cross was notified and responded to the scene to assist the family.	
RESPONSIBLE PARTY	OTHER PARTY
Name: Ruby Wiggins, Lilian Wiggins	Name:
Company:	Company:
Address: 8116 Bethlehem Rd	Address:
Phone#: C-(301)642-3051 H-(301)735-4083	Phone#:
Notes: Ladoris Wiggins- caller and resident	Notes:

NOTIFICATIONS/CONTACTS	
Date: 5/19/2018	Date: 5/19/2018
Time: 1054	Time: 1130
Name: Alan Lacey	Name: Brian
Comp/Agency: DEQ	Comp/Agency: VA EOC
Notes: Notification only	Notes: call requested from after hours DEQ representative
Date: 5/19/2018	Date: 5/19/2018
Time: 1134	Time: 1148
Name: John Higsbotham	Name: Tadic
Comp/Agency: VDEM	Comp/Agency: DEQ
Notes: Notification only	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



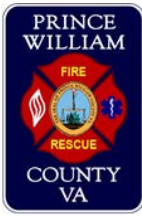
PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



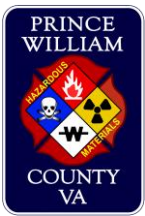


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180016741	Date: 5/22/2018
Location: 18314 Jefferson Davis HWY	Time: 12:04
Report Completed By: Lt. T. Forbes	Incident Commander: Lt. Forbes
HM 506 Personnel Responding: T. Forbes, S. Jones, Uriba, Bell HS 516 Personnel Responding: Other HMT Personnel Responding:	

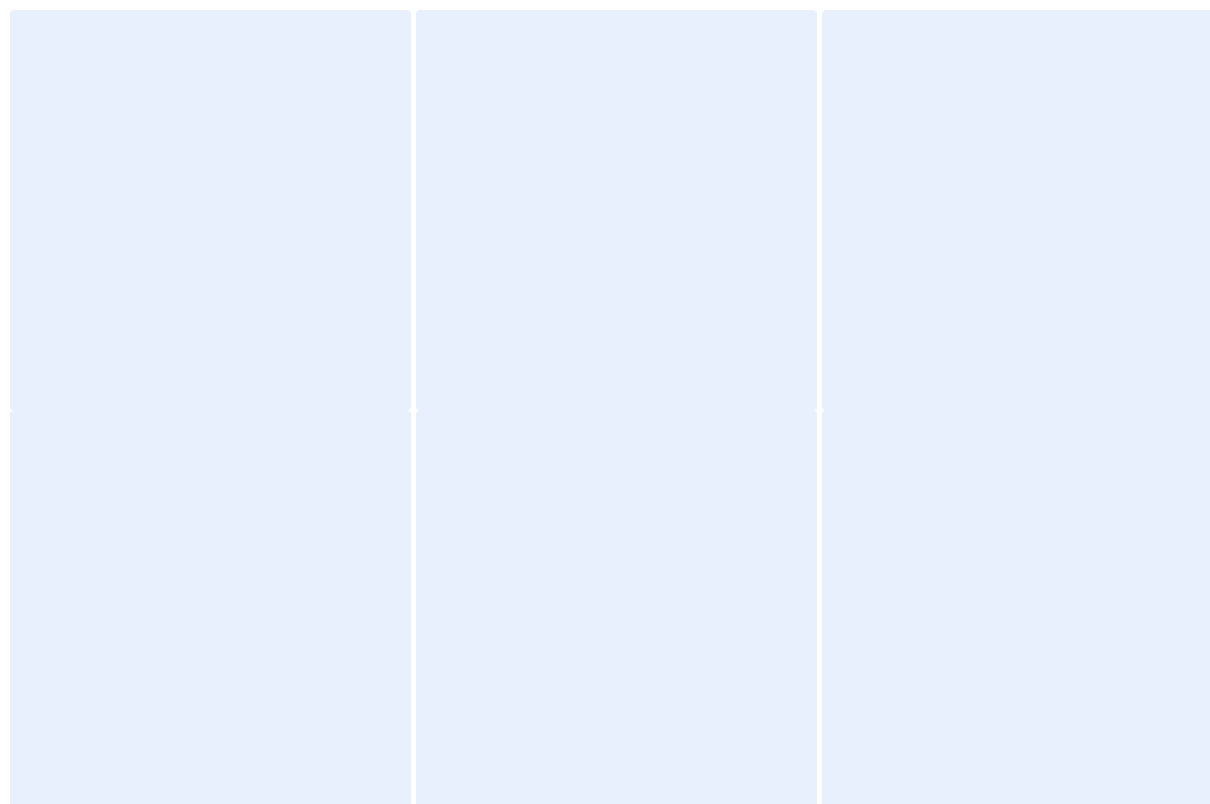
INCIDENT DESCRIPTION	
HM506 responded to assist Columbia Gas of Virginia with an investigation. Columbia Gas reported that two air samples taken came back with a organic compound that was not natural gas, but they could not determine what it was. HM506 monitored the area that Columbia Gas reported high readings. HM506 had normal readings on four gas and a reading of 140 PPB, there was no reading on the M908. HM506 monitored the building on the property and readings were all normal. HM506 determined there was no life hazard. Scene was turned over to Columbia Gas of Virginia.	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDot	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

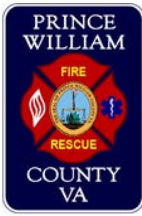
NOTIFICATIONS/CONTACTS	
Date: 05/22/2018	Date:
Time:	Time:
Name: Paul Panicone	Name:
Comp/Agency: Columbia Gas of VA	Comp/Agency:
Notes: 5719210914	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

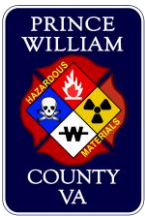
NOTIFICATIONS/CONTACTS	
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
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Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180017938	Date: 5/31/2018
Location: Easy Street and Rt. 1 (Jefferson Davis HWY)	Time: 21:30
Report Completed By: Adkins	Incident Commander: BC506 Haight
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding:	

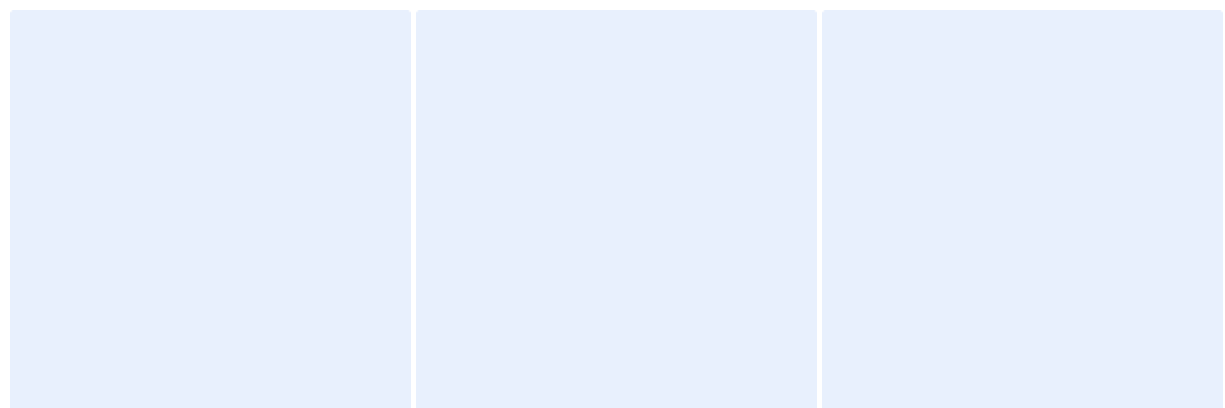
INCIDENT DESCRIPTION	
BC506 requested phone consultation regarding sheen and odor during high water in the area of easy street and Rt. 1 (Jefferson Davis Highway) He stated that there were unconfirmed reports of 55 gallon drums being swept down stream. He was wanting to make sure that proper notifications were made for followup. I advised that we would make VDOT and DEQ aware and that if a source was found that HM units would investigate. Duty FM was contacted and will attempt survey the area once it is safe. Followup will be done in the morning by VDOT personnel. The on Duty HMO will also conduct an assessment during day light hours.	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDOT	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 5/31/2018	Date: 5/31/2018
Time: 2217	Time: 2210
Name: Olivia	Name: Mike Wood
Comp/Agency: VDEM EOC/SAU	Comp/Agency: VDOT Incident Manager
Notes: Courtesy Notification	Notes: Email contact - further contact was made with additional VDOT personnel who will survey the area in the morning.
Date: 5/31/2018	Date: 5/31/2018
Time: 2210	Time: 2210
Name: Lt. Barbara Quick	Name: Alan Lacy
Comp/Agency: Duty FMO	Comp/Agency: VA DEQ
Notes: Will attempt to survey the area overnight once the waters recede and it is safe to do so.	Notes: Email - additional contact - DEQ will survey the area in the morning.

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date: 5/31/2018	Date:
Time: 2230	Time:
Name: PWC Watershed	Name:
Comp/Agency: Environmental Services	Comp/Agency:
Notes: Courtesy Notification per MS4 agreement	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

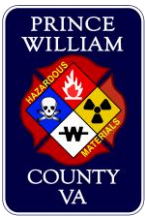


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180018010	Date: 6/1/2018
Location: Easy Street and Rt. 1	Time: 08:00
Report Completed By: Adkins	Incident Commander: N/A
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding: Adkins	

INCIDENT DESCRIPTION	
Followup investigation from previous night reports of flooding and fuel sheen in the area. VDOT crew requested assistance with insuring 55 gallon drum was safe to remove from a stream. Drum was removed from the stream and placed in a secure location for VDOT contractor to remove.	
RESPONSIBLE PARTY	
Name: Bobby Shetley	Name:
Company: Prince William Residency VDOT	Company:
Address:	Address:
Phone#: 571-749-8044	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 6/1/2018	Date: 6/1/2018
Time: 0900	Time: 0900
Name: VAEOC - SAU	Name: Alan Lacy
Comp/Agency:	Comp/Agency: DEQ
Notes:	Notes:
Date: 6/1/2018	Date:
Time: 0900	Time:
Name: Mike Wood	Name:
Comp/Agency: VDOT Incident Manager	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

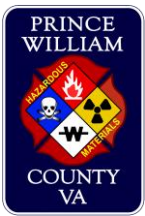
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180018043	Date: 6/1/2018
Location: ANTIETAM RD / OLD BRIDGE RD	Time: 14:00
Report Completed By: Adkins	Incident Commander: BC502 Artone
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding: Adkins	

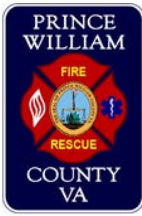
INCIDENT DESCRIPTION	
<p>Outside Gas Leak - Storm Drain Construction crew severed a 4 inch gas main on Old Bridge Road near Antietam Rd. Release of gas was forced into storm drain system, resulting in % of LEL readings in numerous locations. Engine Crews initial reported 98% of LEL at the top of the trench, 38% of LEL was reported at man hole cover near a row of town houses and additional increased % of LEL was observed at other storm drains in the area. Suppression and specialty units checked numerous structures, evacuated a number of the town homes and also conducted assessment of the Middle School across the street. BC Artone requested HAZMAT support to insure that all aspects of the release were fully assessed. HMO501 responded and provided consultation. Washington Gas responded and secured the leak. Additional readings were taken given time for gas to dissipate. Units were released once normal readings returned at all locations.</p>	
RESPONSIBLE PARTY	
Name: Canizales, Ricardo	Name:
Company: Prince William County Transportation	Company:
Address:	Address:
Phone#: 703-792-5985	Phone#:
Notes: Project is being managed by PWC Transportation.	Notes:

NOTIFICATIONS/CONTACTS	
Date: 6/1/2018	Date:
Time: 1800	Time:
Name: VAEOC - SAU	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

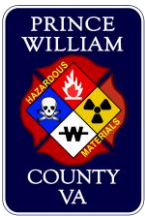
**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180019129	Date: 6/10/2018
Location: 5026 Davis Ford Rd., Woodbridge VA 22192	Time: 09:40
Report Completed By: Tech II Blake Abel	Incident Commander: n/a
HM 506 Personnel Responding: Tech II Abel, Tech II Williams, Tech I Cone, Tech I Shatzer HS 516 Personnel Responding: Tech II Lynch, Tech II Mateo, Tech I Gray, Tech I Moskat, Tech I Menard Other HMT Personnel Responding: n/a	

INCIDENT DESCRIPTION
<p>HM506 and HS516 responded to the dispatched address for the report of a diesel exhaust fluid (DEF) spill behind Fire Station 26. Upon arrival we were greeted by FS 26 personnel, and directed to the areas inside and behind the housing for their DEF pump system. Inside the pump system housing, we noted a large container/tote that appeared to be capable of storing approximately 250 gallons of fluid. There was no DEF remaining inside the container. E526 advised that the container was roughly 3/4 full when they checked it about 2 weeks ago. We estimated that approximately 200 gallons of DEF leaked out of the container.</p> <p>Inspection of the pump system housing did not reveal any obvious cracks or damage, but the inside was coated with crystalized/dried DEF.</p> <p>Due to recent rainfall, there did not appear to be any significant amount of DEF remaining above ground in the affected area. However, there was damage to vegetation and soil which clearly marked the path of the fluid, which we followed down to both of the retention ditches behind FS 26. PH paper was used in several locations in the soil and retention ditches but did not register a positive hit for an acid or base (DEF has a PH of 9.5).</p> <p>HMO 502 was notified of our findings and actions while on scene, and Lt. Loftus (E526 officer) was advised to complete a Spill Report Form and submit it to Risk Management.</p>

RESPONSIBLE PARTY	OTHER PARTY
Name: Captain Leif Ericson	Name:
Company: PWCDFR	Company:
Address: 5026 Davis Ford Rd. Woodbridge, VA 22192	Address:
Phone#: 703-792-5026	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 6/10/18	Date:
Time: 1100 hours	Time:
Name: Lieutenant Jeremy Moore	Name:
Comp/Agency: DFR Health & Safety	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Comp/Agency:	Comp/Agency:
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Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

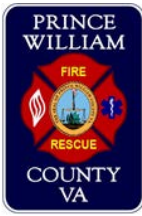
Additional Notes/Information:
HAZMAT Officer Comments:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

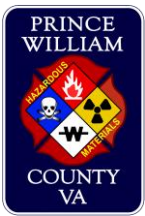


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180019479	Date: 6/13/2018
Location: Intersection of Minnieville Rd. and Dale Blvd.	Time: 09:27
Report Completed By: Lt. Chad Briggs	Incident Commander: Lt. Erik Culkowski
HM 506 Personnel Responding: Phone Consult HS 516 Personnel Responding: Other HMT Personnel Responding:	

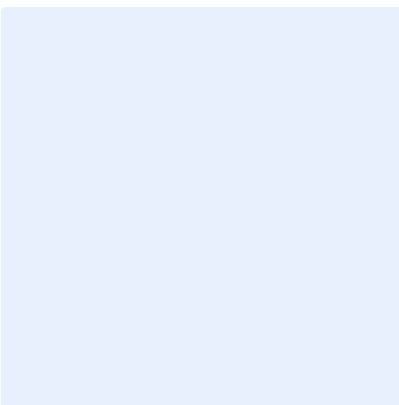
INCIDENT DESCRIPTION	
<p>E-513B was dispatched for a "hazard" at the intersection of Minnieville Rd. and Dale Blvd. They arrived to find two, 2 gallon gas cans sitting on the side walk near the intersection. There was a stain from a product on the roadway which did not enter any storm drains or sewers. There was no need to place absorbent on roadway stain as product had dried already. It was apparent that the two gas cans had fallen off a vehicle and struck the roadway only one can had leaked its contents which was determined to be gasoline and was under 2 gallons in amount. E-513B notified Duty Hazmat Tech for phone consult. Duty Hazmat Tech informed E-513B officer that VDOT has responsibility for retrieval of both gas cans. VDOT was notified through UFRO and arrived on scene to collect both gas cans. E-513B cleared the scene. Duty Hazmat Tech. notified Va-EOC as a courtesy.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company: VDOT	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 6-13-18	Date:
Time: 09:40	Time:
Name: Tyler Ellis	Name:
Comp/Agency: Va-EOC	Comp/Agency:
Notes: # HMVA-31153	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

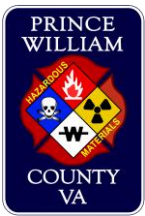


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180019741	Date: 6/15/2018
Location: 16227 Thoroughfare Rd Broadrun	Time: 11:20
Report Completed By: T.Forbes	Incident Commander: D.Jones
HM 506 Personnel Responding: Forbes, Jones Cook Bell HS 516 Personnel Responding: Other HMT Personnel Responding:	

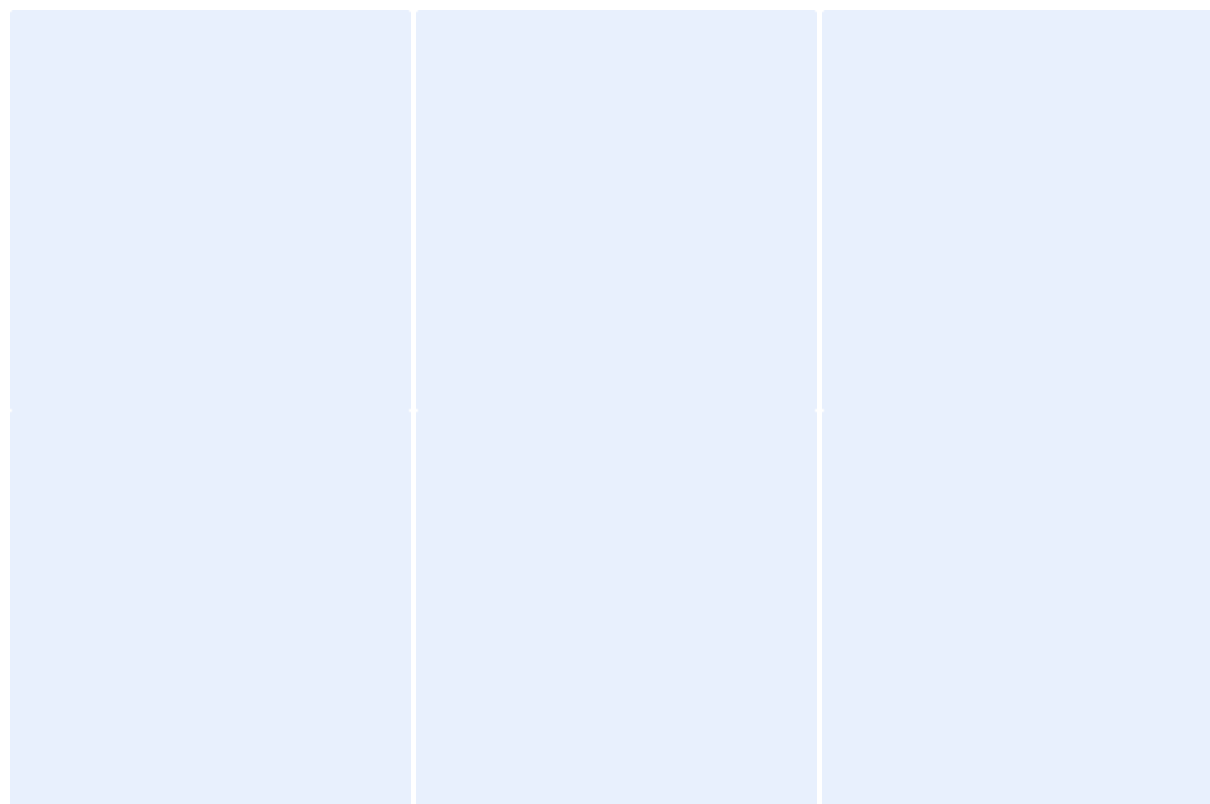
INCIDENT DESCRIPTION	
E524 was dispatched to a trash bag on the side of the road. E524 found that there were two trash bag with what looked like motor oil leaking out of it. E524 slowed the leaking. VDOT is the responsible party, and was responding to handle the clean up. No waterway were effected. This was a phone consult only.	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDOT	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

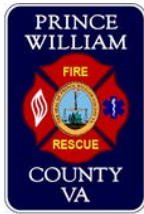
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name: Olivia	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

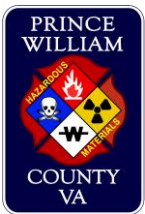
NOTIFICATIONS/CONTACTS	
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Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 180019747	Date: 6/15/2018
Location: 11286 Edgemoor Ct Woodbridge VA	Time: 12:05
Report Completed By: T. Forbes	Incident Commander: K. Sweet
HM 506 Personnel Responding: Forbes, Jones, Cook, Bell HS 516 Personnel Responding: Other HMT Personnel Responding: Captain Stewart	

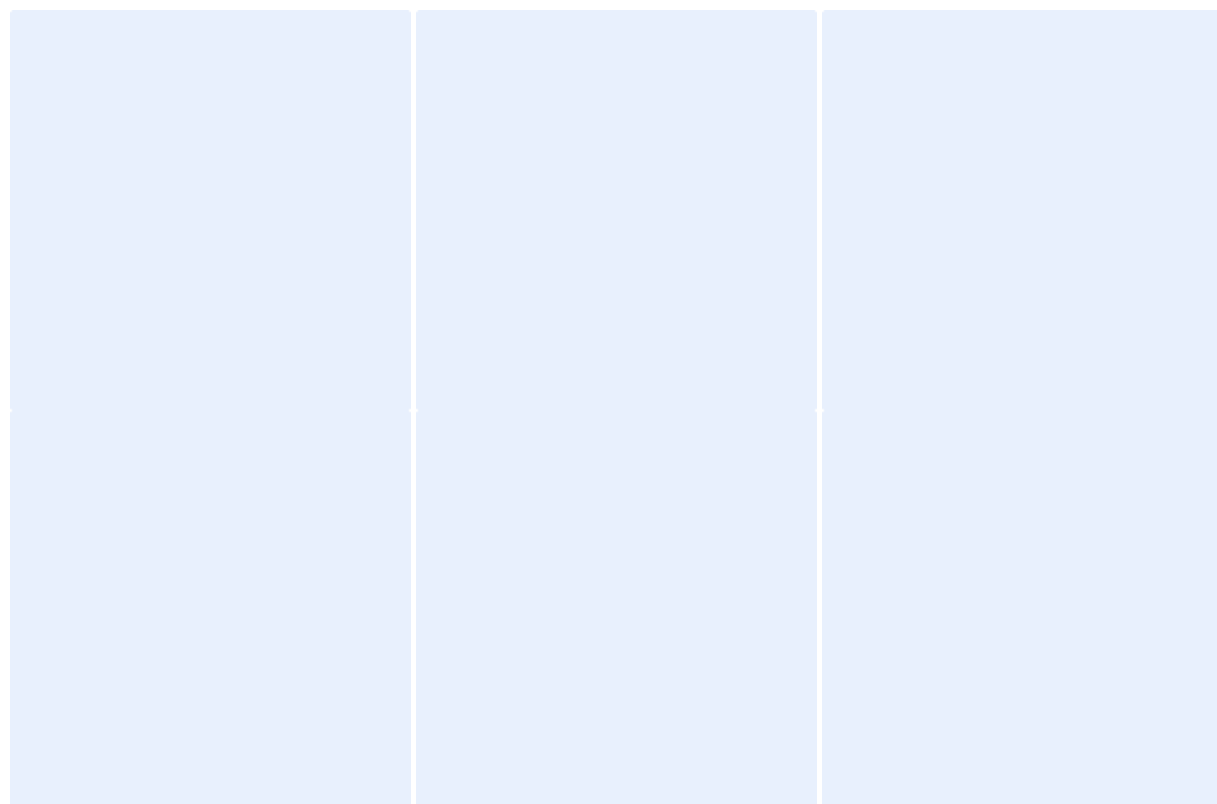
INCIDENT DESCRIPTION	
E514 responded to a fire alarm where a Ozon generator was smoking. E514 officer call for a hazmat consult because he was concerned about being exposed to the smoke. After a little research by HM506 and Captain Stewart it was determined that there was little to no hazard. there was no	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

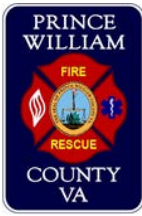
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
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Name:	Name:
Comp/Agency:	Comp/Agency:
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Date:	Date:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

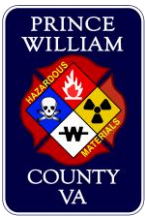
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD180020225	Date: 6/19/2018
Location: Gordon Blvd/Horner Rd	Time: 10:39
Report Completed By: Lt. Schwab	Incident Commander: Capt. Hubble
HM 506 Personnel Responding: Schwab, Abel, Malone, Budkiewicz, Cone HS 516 Personnel Responding: Other HMT Personnel Responding:	

INCIDENT DESCRIPTION	
<p>Received a phone consult from Engine 502 who was on scene of two vehicles that were involved in a collision. A car had run a red light and T-boned a dump truck which punctured the saddle tank. Both vehicles were moved into Gordon Plaza, prior to any Fire Department personnel. Diesel fuel had leaked out of the tank, according to the driver there was about 20 gallons of fuel left in the tank prior the incident. Upon Engine 502's arrival they noticed that there was a streak of diesel fuel about 35' long that was leading into the storm drain. HM506 added themselves to the call to investigate, E506 also added themselves since they were clearing a call in 10's first due. When Engine 506 arrived on scene they investigated the storm drain to find a small amount of diesel fuel had leaked inside, but did not enter the drain pipe. They placed the 4-gas in the storm drain and all readings were normal. Engine 502's crew dammed the area around the drain to keep any other fuel from entering, prior to our arrival. There was dirt and debris in the storm drain box that absorbed the diesel fuel. The police charged the driver of the car at fault and she was given a list of cleanup contractors to call, Atlas was contacted with a 45 min ETA. HM506's crew plugged the leak on the diesel tank so the dump truck could be moved out of the way of traffic. The truck was moved and a 5-gallon bucket placed underneath the tank in case it started to leak again. No further services needed.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Karen Walshe	Name:
Company:	Company: Lil Buddy's Trucking LLC
Address: 7900 Hollington Place Fairfax Station, VA 22039	Address:
Phone#: 703-928-0800/703-622-3705	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 6/19/2018	Date: 6/19/2018
Time: 11:30	Time:
Name: Collins	Name: David Unger
Comp/Agency: Atlas	Comp/Agency: PWC Watershed
Notes: Called by the responsible party ETA 45 mins.	Notes: Notified by HMO501
Date: 6/19/2018	Date:
Time: 17:39	Time:
Name:	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

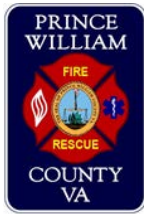
PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



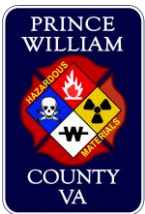


**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 201739002	Date: 9/22/2017
Location: 9250 Lee Ave, Manassas	Time: 09:30
Report Completed By: Adkins, HMO501	Incident Commander: N/A
HM 506 Personnel Responding: HS 516 Personnel Responding: Other HMT Personnel Responding: Adkins, Moreau	

INCIDENT DESCRIPTION	
<p>FM Dustin Miner reported to HMO501 Adkins that a suspicious container was noted placed underneath an EMS Operations Vehicle parked at this location. Location is the Office for FMO, HAZMAT and EMS Operations. This location also houses Office of Elections, today is the first day of absentee balloting. The Container appeared to be a small glass jar with what appeared to be a paper towel in the bottom and a note folded inside the jar. The jar was a container for minced garlic based on the label on the lid. There appeared to be no other items or hazard associated with the jar. HAZMAT units were not dispatched on this call due to another working incident that was ongoing. HMO Adkins and Lt. Moreau were already on scene and assumed the responsibilities for HAZMAT adjudication. PWC PD was contacted and responded. First Sergeant Jimmy Pearce arrived and assigned officers to canvas the area for additional containers or suspicious activities. After this canvas and consulting with Detective M.Y. Armstrong, it was determined the container could be safely moved and it was taken to the rear of the complex and placed into a glove in box container for additional assessment. Prior to removal, all gas and radiation detection was normal. After placing the container into the box, Lt. Moreau swabbed for pH, Oxidizer, and conducted a visual inspection for other hazards. PID readings were also normal. Upon determining it was safe to open the container, it was opened so PD could inspect the note. There was no writing on the note. Lt. Moreau did another set of tests found all indications normal and that there was no chemical hazard associated with this container. PD took pictures and did not intend to take the container into evidence. HMO Adkins took care of properly disposing of the package and testing materials. Contact was made with FBI-WMD and Police Department will file a report. Voter Registration was advised of the situation and this incident did not impact access to the site for voters.</p>	
RESPONSIBLE PARTY	
Name: Prince William County	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 09/22/2017	Date: 9/22/2017
Time: 1300	Time: 0940
Name: Bartoll	Name: Elections Staff
Comp/Agency: VAEOC	Comp/Agency:
Notes: Courtesy Notification	Notes: Were advised of the situation and asked that they contact Ms. White to advise her of the situation.

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date: 9/22/2017	Date: 9/22/2017
Time: 1000	Time: 1000
Name: Rick Gaylord	Name: Detective M.Y. Armstrong
Comp/Agency: FBI-WMD	Comp/Agency: PWC PD – Intelligence Unit
Notes: Advised of the situation, stated he would move in our direction, but if nothing was found would break off. Additional call made at approximately 1100 to indicate no hazard.	Notes: Investigating Detective
Date: 9/22/2017	Date:
Time: 940	Time:
Name: 1 st Sergeant Jimmy Pearce	Name:
Comp/Agency: PWC-PD Patrol – Western District	Comp/Agency:
Notes: Lead PD Official on scene, called directly by HMO501	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



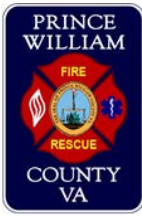
PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



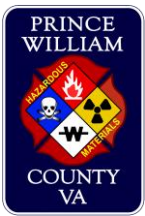


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 1700355000	Date: 11/9/2017
Location: I95 N 152.4	Time: 05:00
Report Completed By: Ted Forbes	Incident Commander: Assistant Chief Redman
HM 506 Personnel Responding: T.Forbes, L.Berecz, D.Bell, S.Jones, Z Markley HS 516 Personnel Responding: R. Perez, J. Renfro, M. Strickland, D.Wolford Other HMT Personnel Responding: K. Stewart	

INCIDENT DESCRIPTION	
<p>Hazmat 506 was dispatched to a hazardous materials incident on I95N at the 152.4-mile marker. A tractor-trailer had a mechanical breakdown and broke a fuel line that was connected to the driver side saddle tank. The trucks saddle tanks each held 100 gallons of fuel, and the driver reported the tanks to be full. There was approximately 20-30 gallons of fuel that leaked from the driver side fuel tanks. The fuel line was plugged this slowed the leak; a pop-up pool was used to contain the remainder of the leaking fuel. The fuel was contaminated to the roadway and grass shoulder; no waterway or storm drains was affected by the leak. The driver was provided a LEPC form and after his clean up companies could not make a timely response he contracted with Atlas Environmental to handle the cleanup.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Alberto Barahona	Name: Floyd Ellmore
Company: Mclane Food	Company: VDOT
Address:	Address:
Phone#: 540 374 2417	Phone#:
Notes: Truck # 213138	Notes: Contacted FDA because the truck driver turned off the refrigerator on the trailer.

NOTIFICATIONS/CONTACTS	
Date: 11/09/20017	Date:
Time: 0645	Time:
Name: Brian	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

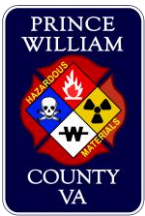
NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
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Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 1800191143	Date: 6/10/2018
Location: 15721 Hunton Ln. Haymarket, VA 20169	Time: 11:51
Report Completed By: Tech II Blake Abel	Incident Commander: BC Mirabile
HM 506 Personnel Responding: Tech II Abel, Tech II Williams, Tech I Cone, Tech I Shatzer HS 516 Personnel Responding: Tech II Lynch, Tech II Mateo, Tech I Gray, Tech I Moskat, Tech I Menard Other HMT Personnel Responding: HMO 501 (Matt Adkins) VDEM HMO Higginbotham	

INCIDENT DESCRIPTION	
<p>HM506 and HS506 arrived to the dispatched address for the report of a 1000 gallon underground propane tank leak. E515 officer (Lt. Horvath) and BC Mirabile stated that the tank cover had been struck by a work pickup truck, which resulted in extensive damage to the valves. The driver of the vehicle, as well as the homeowner remained on scene during the incident. The homeowner advised that the tank was filled within the last week. The home was continuously monitored by FD personnel for the remainder of the incident.</p> <p>Lt. Horvath initially noted a white vapor cloud at the scene, but the vapor had since dissipated by the time HAZMAT units arrived. Hot, warm, and cold zones were established and a hoseline was in place prior to our arrival. Upon inspection of the tank, we noted that the propane was leaking through a hole that was approximately 3 inches in diameter. The involved pickup truck was still in place over the damaged tank.</p> <p>Valley Energy, the company who installed the propane tank, was contacted. They advised a 1 hour ETA for representatives to arrive on scene. The decision was made to force the remaining propane out by placing a hoseline into the hole, and using water to fill the tank. We remained on scene until the tank was full of water, and the atmosphere around the tank no longer contained hazardous amounts of propane.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Brian Phillips	Name: Peter Meffert
Company: Self Employed	Company:
Address:	Address: 15721 Hunton Ln. Haymarket, VA 20169
Phone#: Cell: 540-316-7625	Phone#: Cell: 650-270-7818 Work: 571-248-0128
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 6/10/18	Date:
Time: 2200 hrs	Time:
Name: Olivia Cassada	Name:
Comp/Agency: VAEOC	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
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Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

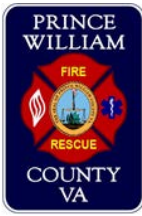


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT

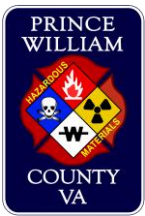


PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD 1801270000447	Date: 1/27/2018
Location: 5026 Davis Ford Rd: Station 26	Time: 10:00
Report Completed By: Technician II Greiner	Incident Commander:
HM 506 Personnel Responding: Tech II Weaver, Tech II Greiner, Tech I Waln, Tech I Kolbas	
HS 516 Personnel Responding:	
Other HMT Personnel Responding: HM501 Matt Adkins	

INCIDENT DESCRIPTION	
<p>LT. Hart from station 26 called station 6 stating that he found that the large tote full of DEF outside of the station was leaking and heading towards the retention pond. He asked that station 6 personnel come look at it since there was a threat of the product going into the retention pond. Rescue/Hazmat 6 went over to station 26 along with safety 502. When we arrived LT Hart had already shut off the valve to the system and turned the breaker off. The leak stopped after those steps were taken. Rescue/Hazmat 506 confirmed the leak had stopped and that no chemical had reached the retention pond. Pictures were taken and are attached to this report. HM501 and Safety 502 assisted station 26 with filling out the proper forms. LT Hart's spill report form is attached to this email as well. Per HM501 the EOC did not need to be contacted for this incident.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: Captain Ericson	Name:
Company: Fire Station 26	Company:
Address: 5026 Davis Ford Road	Address:
Phone#: 703-792-5026	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
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**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

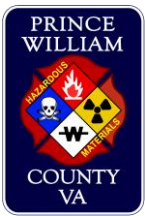
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD18042500017590	Date: 4/25/2018
Location: Gordon Blvd & Horner Rd.	Time: 12:59
Report Completed By: Abe Uribe, TII	Incident Commander: Lt. Chris Klahr
HM 506 Personnel Responding: Lt. Forbes, TII Cook, TI Bell, TII Uribe HS 516 Personnel Responding: N/A Other HMT Personnel Responding: N/A	

INCIDENT DESCRIPTION	
<p>Conducted a Hazmat consult via phone with E502's Officer, Lt. Chris Klahr. During the phone consult the incident was described as a quart of oil container laying on the side of Horner road with a visible water run off and visible sheen. The run off along Horner Rd was approximately 150 to 200 feet, leading into the storm drain. Prior to HS506's arrival, E502 had constructed a small dam of absorbent to prevent run off from going into the storm drain. Upon HS506's arrival to the scene, we positioned up hill and up wind and did a face to face with E502's Officer and reiterated what was discussed during the phone consult. HS506's crew conducted a survey and recon of the run off, deployed tools and a box light to open the storm drain cover to verify the presence of run off with visible sheen. Upon inspection of the first storm drain aperture and the subsequent storm drain hole, no visible sheen was noticed on the water. The only visible sheen was the run off on the surface of Horner Rd. HS506's personnel proceeded to spread more absorbent. We proceeded to test the water with oil paper, results were negative and documented by taking pictures. VDOT Rep. Brad Miller was contacted via phone and he verbalized understanding of the incident and needs. Shortly after, a VDOT truck arrived on the scene, the VDOT personnel commenced the clean up process according to VDOT's procedure. The incident was released to E502, PWCPD and VDOT, HS506 cleared the scene.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: VDOT	Name:
Company: VDOT	Company:
Address: 10228 Residency Rd, Manassas, VA 20110	Address:
Phone#: (703) 539-9444	Phone#:
Notes: Contacted VDOT Rep. Brad Miller	Notes:

NOTIFICATIONS/CONTACTS	
Date: 04/25/2018	Date:
Time: 2053	Time:
Name: Rep. Bartell	Name:
Comp/Agency: VAEOC (800) 468-8892	Comp/Agency:
Notes: Rep. asked for a brief description, nothing further.	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
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Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:

PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

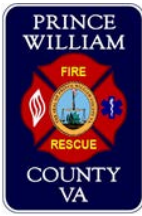




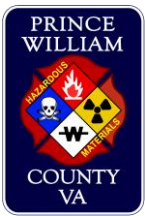
PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT







**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: 18051300020356	Date: 5/13/2018
Location:10641 Flory Rd	Time: 11:58
Report Completed By: T.Forbes	Incident Commander: Lt Jones
HM 506 Personnel Responding: Forbes, Cook, Uriba, Kent HS 516 Personnel Responding: Other HMT Personnel Responding:	

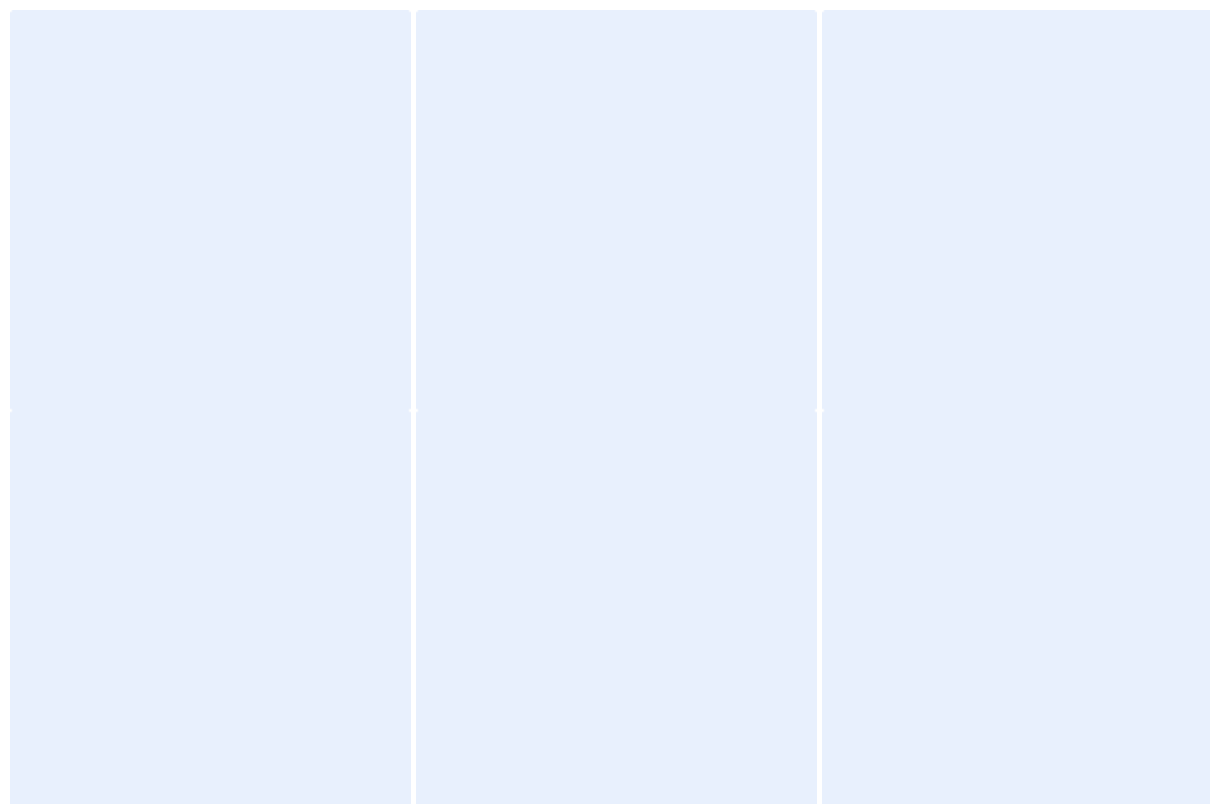
INCIDENT DESCRIPTION	
Phone consult with E507. Lt Jones of E507 was dispatched for a report of unknow containers dumped on the side of the road. E507 arrived to find construction debris on the side of the road. Containers of roof tar and liquid sand paper were dumped. One container of roofing tar leaked out of it container slightly. E507 uprighted the container to stop the leak. E507 stated that there roofing tar did not go into any waterway and was on the VDOT right away. HM506 determined there was not need for a hazmat response.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

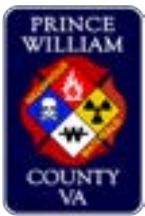
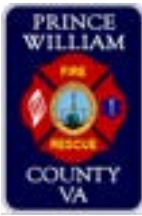
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Comp/Agency:	Comp/Agency:
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Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
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Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**

INCIDENT INFORMATION	
Fire Dept. Incident #: 170103000044936	Date: 10/30/2017
Location: I-95 mm150	Time: 13:16
Report Completed By: Technician I J. Campbell and Lt David Jones	Incident Commander: Technician II A. Cassell
HM 506 Personnel Responding: Lt. Jones, Tech II Saxon HS 516 Personnel Responding: None Other HMT Personnel Responding: None	

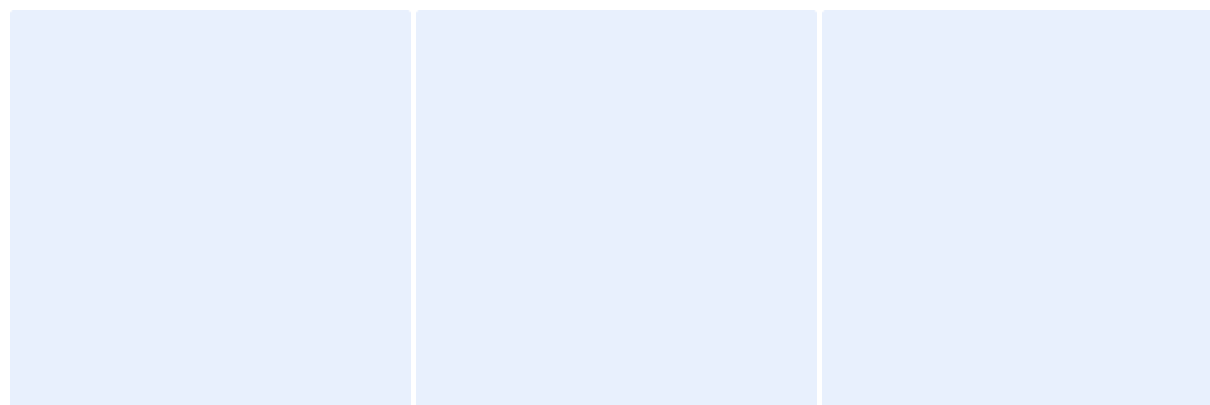
INCIDENT DESCRIPTION	
<p>A truck driven by John Dieson of Douglasville, GA was driving in the Northbound lanes of I-95 when his turbo failed catastrophically, causing a significant oil leak. The incident occurred at the 150 mile marker, and extended for roughly a quarter of a mile. There was a thin spread of oil in the breakdown lane, with a total of 15-20 gallons of oil being suspected as having been lost. No oil was in the travel lanes, and no waterways were impacted.</p> <p>E503 arrived on scene to find it as described above and consulted with HM506. HM506 advised that there was no further support that could be given, and E503 turned control of the scene over to Eric McCabe from VDOT and officers from VSP.</p>	
RESPONSIBLE PARTY	OTHER PARTY
Name: John Wade Dieson	Name:
Company: WD Trucking	Company: WD Trucking
Address: 3074 Carmel Drive Douglasville, GA	Address: 8074 Carmel Drive Douglasville, GA
Phone#: None Given	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date: 10/30/2017	Date:
Time: 13:16	Time:
Name: Eric McCabe	Name:
Comp/Agency: VDOT	Comp/Agency:
Notes:	Notes:
Date: 10/30/2017	Date:
Time: 21:33	Time:
Name: Delma Blair	Name:
Comp/Agency: VA EOC	Comp/Agency:
Notes: Reachable at 804-674-2400	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
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Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:



**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200003903	Date/Time: 2/3/2020 11:04
Location: 42 I-66 WB HWY	
Report Completed by: Knight	Incident Commander: Strong

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Phone Consult. E511 was dispatched to 49 I-66 WB. Actual incident occurred in Fairfax County at 52mm I-66 WB. E511 requested a phone consult. Stay dry was applied and dammed to mitigate further leak. Drive shaft ruptured oil pan of a commercial truck. VDOT and VSP on scene. FFX was advised of the situation.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200003983	Date/Time: 2/4/2020 00:34
Location: I-95 SB 151mm	
Report Completed by: Knight	Incident Commander: BC Luckinbill

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Walsh, Williams, Horvath, Shatzer
HS516 Unit personnel: Howard
Other HM Personnel: Knight, Mirabile, Pistole (E506)

INCIDENT NARRATIVE
E506 dispatched for a Hazmat. A tractor trailer traveling SB on I-95 struck debris and ruptured a saddle tank. The truck had approximately 50 gallons of diesel. The driver continued for approximately one mile before he realized he had ruptured his tank. Once stopped he continued to lose product and called 911. Initial units applied stay-dry and dammed product with stay-dry. Initial units attempted to plug the hole with a wooden plug. Upon arrival we noted the tank still leaking, deployed a pop up pool. Applied a wax ring to the leak and stopped it. Applied a little more stay-dry to the spill way. Advised the driver of his responsibility for clean-up and gave him an LEPC. Also gave V-DOT an LEPC. Spoke to V-DOT supervisor via phone and he was making proper notifications. Returned to service and restocked units.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 02/04/2020 0100
Name: Dominic Sarago
Company/Agency: Dominic Sarago
Address: Click to enter text.
Phone/Email: 717-350-6052
Notes: Leased to Leon's Transportation Co.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Property Owner
Date/Time: 02/04/2020 0100
Name: Mr. Pinkney
Company/Agency: V-DOT
Address: Click to enter text.
Phone/Email: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Drivers Insurance Sentry Insurance, Leon's Transportation Co. Inc (leased to)	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 02/04/2020 0100 Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 2/4/2020 00:00	Name: Brian Geoffrion



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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Repeating Section Click [+](#) to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Water not product

Repeating Section Click [+](#) to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Water not product

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 20027024	Date/Time: 8/24/2020 15:36
Location: PW Parkway / Clover Hill	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Capt. Sanderson

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Horvath
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Completed a phone consult with Captain Sanderson.</p> <p>They were on the scene of a tractor trailer with a power steering leak from an auto accident. They had the leak contained with dirt and absorbent. He asked if the tow co. would clean that up. I explained that it is the responsibility of the tow co. to do that on small leaks. I requested that he get the name of the driver, his contact info and the name of the co. who owns the tractor trailer. I also asked him for the name of the tow co. as well as there contact info. Please see all contact info below.</p> <p>Due to this leak being so small no other notifications were made and haz-mat didn't respond. All station 506 units were cleared at 1544.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 08-24-2020
Name: Jason Ray Lambert
Company/Agency: Super Concrete
Address: 9207 Venture Ct. Manassas Park, VA 20111
Phone/Email: 703-980-8580
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 08-24-2020
Name: Click to enter text.
Company/Agency: Willow Springs Towing and Recovery
Address: 14395 Penrose Place Chantilly, VA 20151
Phone/Email: 703-631-9339



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notes: Click to enter text.

Repeating Section Click + to add additional entries:

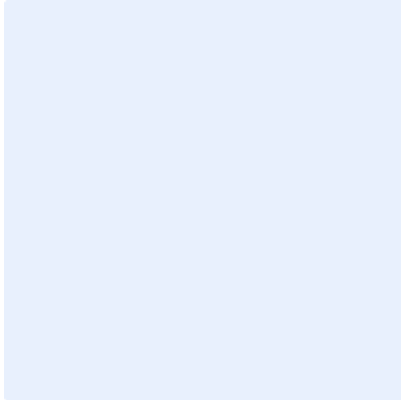
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190021825	Date/Time: 4/3/2019 16:00
Location: 7025 Sudley Road	
Report Completed by: Shannon	Incident Commander: Reingruber

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Shannon, Weaver, Snitwongse, Bergstreser
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT DESCRIPTION
Phone consult with E504. The ran a brake fire on a RV and once they finished fire suppression they had a small amount of hydrocarbon, less than a gallon, fluid leak from the rear differential. Capt Reingruber advised that the leak had stopped, the fluid was contained to the parking lot and that it was controlled with absorbant. He advised that he was going to give the RV owner a LEPC form. I advised that the owner should comfirm with the tow company before calling a clean-up company, that they should be able to handle.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/3/2019 18:06	Name: Bartol



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Photos:



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS RESPONSE PROGRAM
INCIDENT REPORT FORM**



INCIDENT INFORMATION	
Fire Dept. Incident #: FD190022142	Date: 7/7/2019
Location: 10480 Dumfries Rd	Time: 18:00
Report Completed By: Technician II D. Williams	Incident Commander:
HM 506 Personnel Responding: Lt. R. Dimmel, Technician II D. Williams, Technician I M. Cone, Technician I M. Walsh	
HS 516 Personnel Responding:	
Other HMT Personnel Responding:	

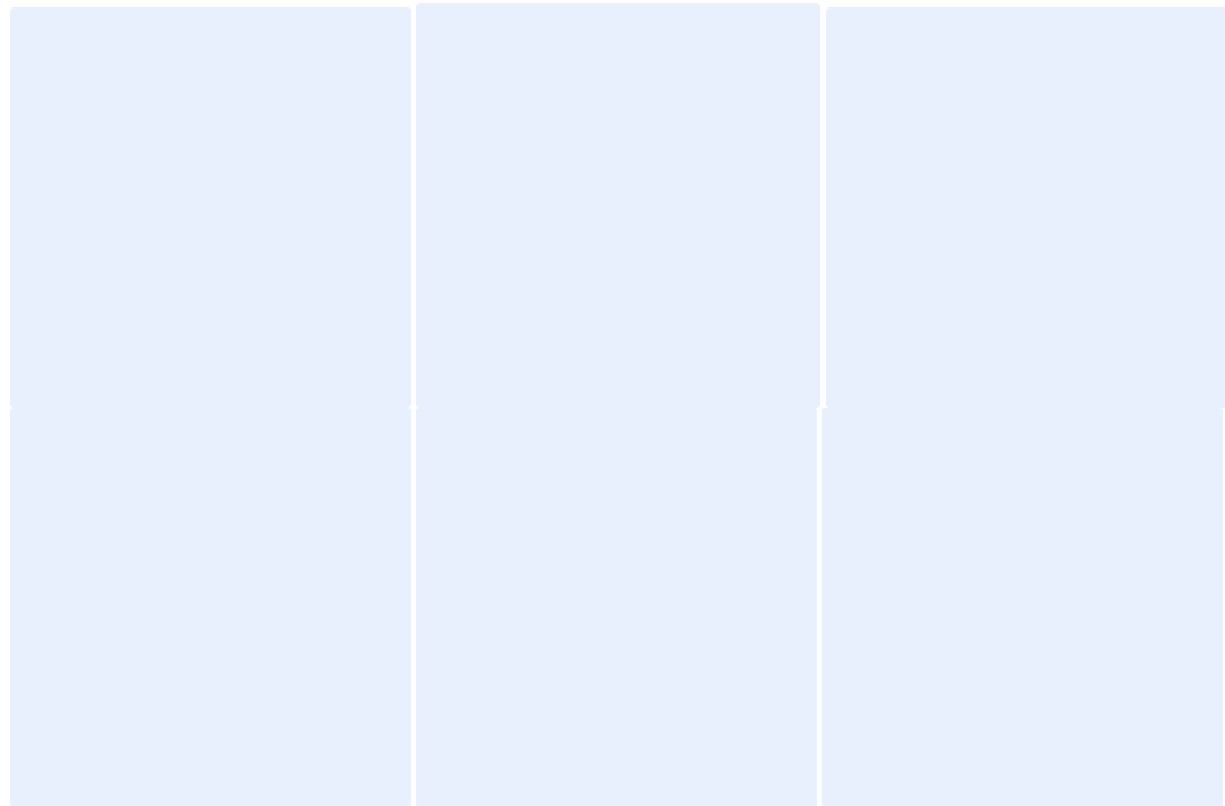
INCIDENT DESCRIPTION	
HM506 was dispatched initially for a cargo truck involved in a MVA, with propane leaking out of a portable propane tank. Once members reached the HM506, other dispatched units were on scene and determined that there was no leak and placed the HAZMAT compliment in service.	
RESPONSIBLE PARTY	OTHER PARTY
Name:	Name:
Company:	Company:
Address:	Address:
Phone#:	Phone#:
Notes:	Notes:

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

**PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE
HAZMAT REPORT**

NOTIFICATIONS/CONTACTS	
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:
Date:	Date:
Time:	Time:
Name:	Name:
Comp/Agency:	Comp/Agency:
Notes:	Notes:

Additional Notes/Information:
HAZMAT Officer Comments:
Fire Marshal requested/on scene: <input type="checkbox"/> Lead Investigator:





**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190023005	Date/Time: 7/12/2019 18:30
Location: PWC BMX Track – 7 County Complex Court - Woodbridge	
Report Completed by: M. Adkins	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT DESCRIPTION
<p>Park Ranger Hurtado (571-361-6507) contacted Communications regarding a spill of sewage near a dumpster at the BMX track and there is an ongoing activity at this location. The communications Lieutenant contacted the Duty HAZMAT Officer (Lt. Shannon) who contacted me to determine what steps needed to be taken. I attempted contact with Marlene Mears who is the Parks Environmental and Safety Manager who was on vacation and was able to make contact with Kathy Pierce from Parks who is covering for her. Ms. Pierce will make contact with Ranger Hurtado and they will address the issue. I advised Ms. Pierce that while we would like to help, HAZMAT does not handle human waste issues. I also followed up with an email to Ms. Pierce with the same information in writing.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 7/12/2019 1857
Name: Kathy Pierce
Company/Agency: PWC Parks
Address: Click to enter text.
Phone/Email: kpierce@pwcgov.org
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

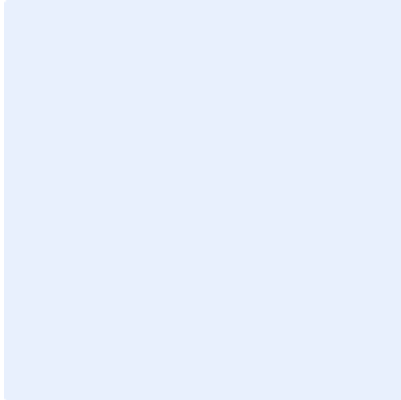
Additional Notes/Information: This was a referral only. – No report to VDEM or VAEOC required. FD# 19071200030037	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: N/A



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190023406	Date/Time: 7/15/2019 21:18
Location: 12936 Aden Rd	
Report Completed by: Lt. Mark Nicol	Incident Commander: Lt. Mark Nicol

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Cook, Snitwongse, Spangler, Phillips, Nicol
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Capt. Chris Adams

INCIDENT DESCRIPTION
<p>HAZMAT 506 responded to 12936 Aden Rd. Nokesville, Va 20181 for a report of 7 – one gallon size plastic containers, each half full with an unknown liquid substance. HAZMAT 506 arrived on scene and made contact with Ofc Poling who directed us to where the containers were located. HAZMAT 506 did a recon and took samples. The samples were then tested in a controlled area in the warm zone. The readings were as follows:</p> <p>PID – normal background readings PH – 7 Water paper – water Oil paper – no oil LEL – none VOC's – none First Defender – No results True defender – water</p> <p>Our findings were consistent with water and no known hazards were found.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 07/15/2019 2309
Name: John Zelsnack
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Fire Marshal Assigned: Choose an item. Lead Officer: Ofc. Poling	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/15/2019 00:00	Name: John Zelsnack



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190023494	Date/Time: 7/16/2019 15:26
Location: 16593 River Ridge Blvd. (J&J International Market)	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Capt. Brett Hamby

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: HM502

INCIDENT DESCRIPTION
<p>E523 responded to a vehicle fire. The vehicle was a steam roller at a construction site. The fire was extinguished by E523. After the fire was extinguished E523 found a fuel leak at a fitting on the exhaust manifold. E523 contacted the UFRO and requested a phone consult. On Duty Haz-Mat technician Lt. Stephen Horvath contacted Captain Brett Hamby via cell # and Captain Hamby explained the situation. They had a steam roller fire that was extinguished. The steam roller has a 80 or a 100 gallon fuel cell. Per the operator the tank is only filled with 50-60 gallons of diesel. Per Captain Hamby due to the location and nature of the leak it wont be able to be stopped. So he had the excavator on-scene build a half moon dirt berm around the steam roller to contain the leak. Captain Hamby was advised to provide the responsible party with a LEPC Discharge form, and ensure a contractor has been selected to cleanup the spill. Captain Adams (HMO502) was also on scene and coordinated with the responsible party. The responsible party has made contact with Atlas Environmental which will be on scene early tomorrow morning. HAZMAT Officers will followup tomorrow to ensure cleanup. There are no storm drains or waterways affected.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 1610
Name: Click to enter text.
Company/Agency: Ed Lawrence Construction Co.
Address: 964 Belle Plains Rd. Fredericksburg, VA 22405
Phone/Email: 540-371-6800
Notes: They contacted Atlas to handle the clean up. Atlas will be out tomorrow AM between 0700 and 0800.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 07/16/2019 1748
Name: Alan Lacy



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 07-16-2019/1610	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190023558	Date/Time: 7/17/2018 04:54
Location: 7527 Linton Hall Rd. (El Tio Tex-Mex Gainesville)	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Capt. Steve Brubaker

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
E504 was dispatched to a CO call. American Pest control was on the scene and called in the alarm. E504 checked the structure and all readings on there 4 gas monitor were normal. They found a carbon dioxide tank that was alarming. They were unable to read the text on the control panel because it was in Spanish. That's when they requested a phone consult. Advised them if the O2 levels were normal to leave the occupancy a note to have the system checked and Captain Adams will stop by later to follow up.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

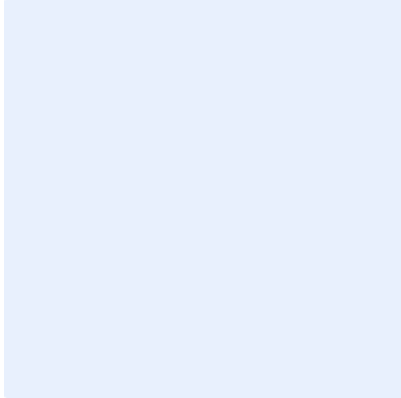
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190023775	Date/Time: 7/18/2019 00:00
Location: 14888 Persistence Court	
Report Completed by: Capt. Chris Adams	Incident Commander: Click to enter text.

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Horvath
HS516 Unit personnel: N/A
Other HM Personnel: HMO502 Capt. Adams

INCIDENT NARRATIVE
<p>Engine 512 was dispatched for a possible Chlorine spill in a business. The caller was complaining of a bad smell coming from the neighboring business. Engine 512 arrived on the scene to find a slight smell coming from the business. Engine 512 deployed their monitors and obtained normal readings in the structure. E512 advised business owner to use fans to assist with removal of the smell. Thru discussion with business owner, it was learned that the next door business had a "Chlorine" leak the day before. HMO502 arrived on the scene, to assist with monitoring the next door business. Normal range readings were found at that time. Department members were not able to gain access to the business, and remained on the scene until business owner arrived. HMO502 learned thru conversation with the business owner, Thomas Thorgensen, that they did have a spill the day before that had managed to leak into the neighboring property, but it was properly cleaned up. HMO502 noted a large plastic storage tote of Sodium Hypochlorite inside the business, #14888. Mr. Thorgensen was unable to say how much had spilled or how he cleaned it up. HMO502 noticed no evidence of a spill, only a slight odor. HMO502 noted numerous possible code violations, at which point Capt. Adams took down contact information to pass on to the FMO. Hazard appeared to be mitigated and no life safety issues were seen. Scene was turned over to the business owner.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: Click or tap here to enter text.
Name: Thomas Thorgensen
Company/Agency: Aqua Clean Solutions, INC
Address: 14888 Persistence Court
Phone/Email: 703 754- 2222
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



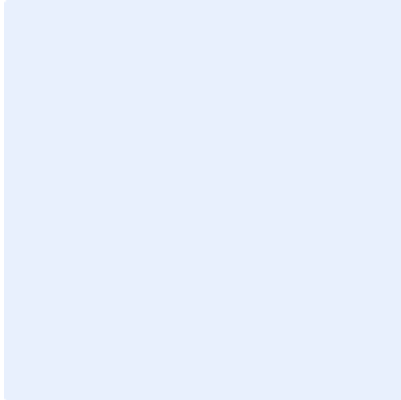
Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190023778	Date/Time: 7/18/2019 10:00
Location: 14807 Bristow Road – PWC Animal Shelter	
Report Completed by: Matt Adkins	Incident Commander: Capt. Jason Knight

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: HMO501 Adkins, HMO502 Adams

INCIDENT NARRATIVE
<p>Animal control reported an abandoned vehicle on their property at the intersection of Route 234 and Bristow Raod. A dump truck with a plow, no registration and no one around. There was a spill under the vehicle into soil from vehicle fluids consistent with oils and diesel fuel. E506 was dispatched to the site, and applied a small amount of absorbent, and provided the animal control with a discharge form. The amount appeared to be less than 25 gallons, but the leak was still active. Police Department was on scene and a case number was provided by the Officer (see contacts). Readmon Towing was contacted and was at the scene upon HMO arrival. The truck was removed from the site. Risk Management contacted HMO Adkins and was advised that the spill would require cleanup and remediation. Atlas Environmental was contacted and conducted a site assessment, advising that the spill was deeper than first anticipated and soil would need to be removed. They would contact miss utility and begin the process but it would be next week before the work could begin. It was discussed if the product could enter the storm water system and it is believed that it is very unlikely. HMO Adkins will periodically monitor the site to ensure product remains. Animal Control should also do a daily site assessment as well until it is cleaned up and the hazard abated.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 7/18/2018 0955
Name: Rosie Clark
Company/Agency: PWC Risk Management
Address: Click to enter text.
Phone/Email: 703-792-8302
Notes: Advised me of the situation and requested that we investigate.

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 7/18/2018 10:15
Name: Officer Eldredge
Company/Agency: PWC Police
Address: Click to enter text.
Phone/Email: 7037928555
Notes: Case Officer on removing the vehicle from County Property and working the abandoned vehicle issue. Case Number: PD19071800193715

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 7/18/2019 10:15
Name: Suzette Kapp
Company/Agency: PWC Animal Control
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Visited with Ms. Kapp to advise that we would investigate the issue further.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 7/18/2019 Provided to Name: Suzette Kapp by E506	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190023823	Date/Time: 7/18/2019 16:18
Location: 9624 Leeta Cornus Ln.	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Click to enter text.

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Horvath, Shatzer, Ling, Walsh
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>A Mr. Tom Gardner at the address for this report contacted the National Response Center to report a telephone pole with a transformer that had broken in the storm the previous night spilling approximately 30 gallons of transformer oil. Virginia DEQ requested PWC HAZMAT investigate. HM506 Arrived on scene to find C.W. Wright Construction Co. already on scene and sizing up the scene to complete repairs. I made contact with the C.W. crew leader and he reached out to his Novec rep. to get contact info for me as well as the Novec rep who is responsible to make sure the spill gets cleaned up. All contact info is listed below. We confirmed that the transformer oil did not contact PCB's. Took photos of the scene (posted below).</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 07-18-2019/1628
Name: Jason Owens
Company/Agency: C.W. Wright Construction co.
Address: 11500 Ironbridge Rd. Chester, VA 23831
Phone/Email: O:804-768-1054 / C: 540-931-1423
Notes: Crew leader

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: : 07-18-2019/1628
Name: Lori Spence
Company/Agency: Novec
Address: 10323 Lomond Dr. Manassas, VA 20109
Phone/Email: O: 1-888-335-0500 / C:703-850-7849
Notes: Risk Rep./ Responsible for clean up

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 07-18-2019/1628
Name: Randy Gonche
Company/Agency: Novec
Address: 10323 Lomond Dr. Manassas, VA 20109
Phone/Email: O: 1-888-335-0500 / C: 571-229-6108
Notes: Construction Supervisor for Novec

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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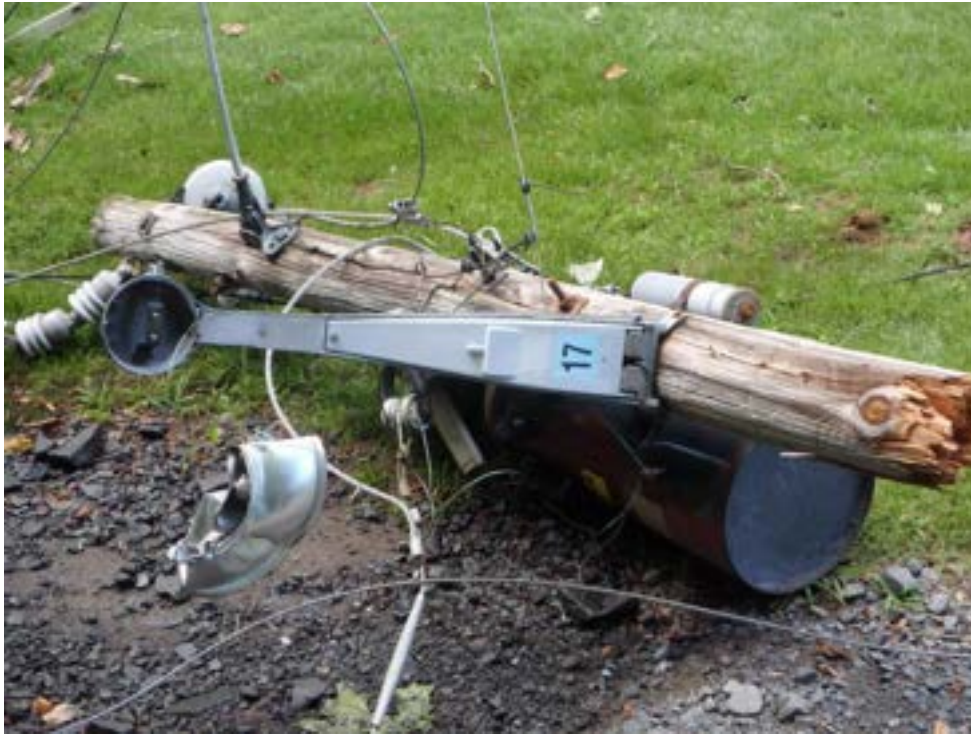


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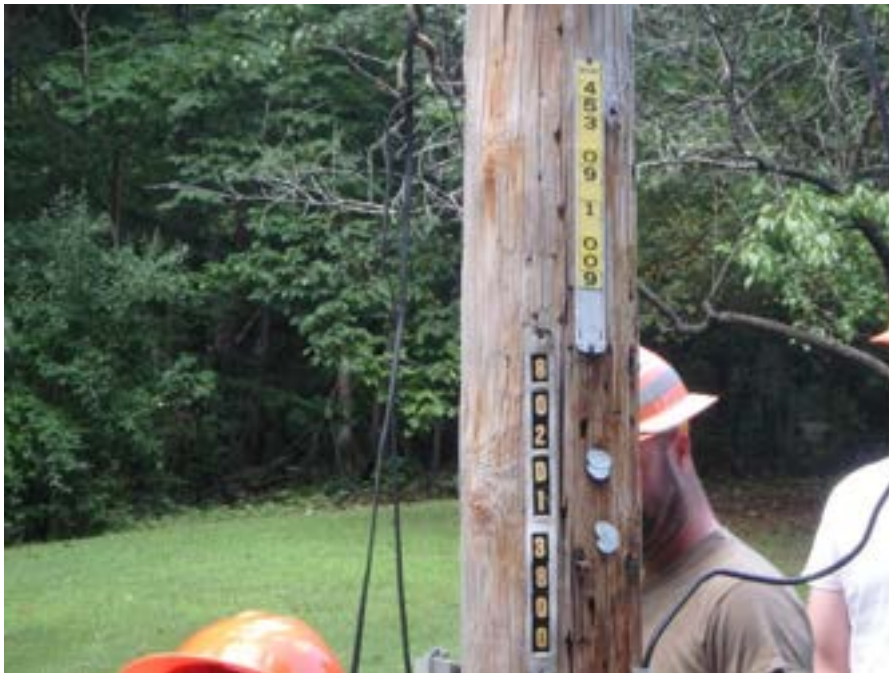


PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190024028	Date/Time: 7/20/2019 03:00
Location: Prince William Parkway/Hoadly Rd	
Report Completed by: Lt. Shannon	Incident Commander: Lt. Hart

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Shannon, Hoffman, Waln, Jones
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
E526 requested a phone consult. They advised that a box truck had struck a utility pole and leaked motor oil. They estimated 1-2 gallons. They advised that it was not affecting any water ways. I advised that if it was not still leaking and not threatening any waterways due to the amount no action was needed. E526 also advised that no other fluid were leaking from the truck.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

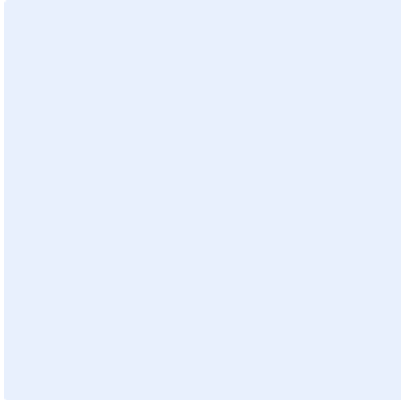
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/21/2019 11:26	Name: Bartol



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190024052	Date/Time: 7/20/2019 09:57
Location: 1540 Fog Mountain Cir. Haymarket Va.	
Report Completed by: Capt. J. Knight	Incident Commander: Capt. M. Forbes

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. S. Horvath, T2 D. Williams, T2 J. Kwak, T1 M. Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
On 7/20/19 Engine and Truck 524 responded to investigate a possible chloine leak at a neighborhood pool located at 1540 Fog Horn Cir Haymarket. Engine 524 noticed a smell similar to pool chemicals. Engine 524 monitored the air quality and had no notable readings on their 4 gas monitor. Engine crew spoke with the site supervisor and it was determined that the pool had been over chlorinated and that was the cause of the smell. No further action was taken. Co. 506 and 516 were placed in service prior to their arrival. HMO 502 arrived on scene and confirmed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 7/20/2019 1045
Name: Amanda David
Company/Agency: PWC Heath District
Address: Click to enter text.
Phone/Email: Amanda.david@vdh.virginia.gov
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

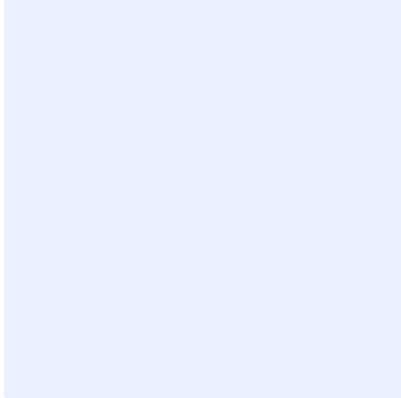
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Not required	
VA EOC Notified Date/Time: 7/20/2019 11:45	Name: Brian Geoffrion



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Photos:



Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD19024203	Date/Time: 7/21/2019 17:32
Location: 13490 Dumfries Road	
Report Completed by: Lt. Shannon	Incident Commander: Capt. Moreau

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Shannon, Hoffman, Waln, Jones, Moreau, Greiner, Bergstreser, Sawicki
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
E506 was dispatched to the Food Lion for a report of a leaking 20lb. propane cylinder that was leaking. Upon arrival they found that it was leaking from the thread where the valve screws into the tank, They requested R506 and HM506 so we could flare the remaining contents of the tank. The tank was estimated to be a little over half full when R506 and HM506 arrived on scene. Once the tank was empty it was tagged and turned over to the store manager. The store manager had already contacted Blue Rhino's emergency number and they advised they would send someone out to pick up the tank. We consulted with the on duty FM (Lt. Cozdeba). He advised to pass his info along to the store manager so they could follow up if they had the person dropping the tank off on video. Other than the small leak that was no damage noted to the tank. It appeared to be in relative good condition otherwise.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 07/21/2019 17:45
Name: Michelle Galando
Company/Agency: Foodlion Manager
Address: Click to enter text.
Phone/Email: 703-791-5360
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/21/2019 20:26	Name: Curtis



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Photos:



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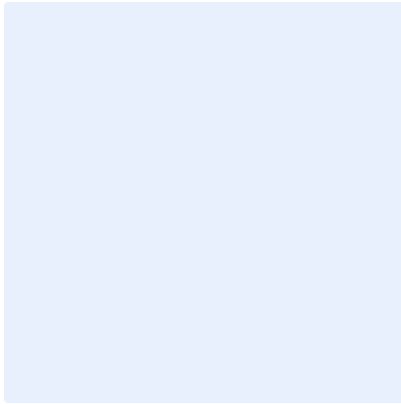


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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190024597	Date/Time: 7/24/2019 18:00
Location: 14051 Spriggs Rd. Woodbridge, Va. 22193	
Report Completed by: Lt. Mark Nicol	Incident Commander: Lt. Mark Nicol

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mark Nicol, James Snitwongse, Katherine Adzemovic, Jacob Phillips
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
HM506 monitored the refrigerant room #11 on side Charlie of Hylton High School. The Freon alarm was activated upon our arrival to the scene. We used the 4-gas meter, PID and two Freon detectors. The readings on the 4-gas meter and PID were normal background and no Freon was detected. I spoke with the caller Mark Schaeffer, PWC Environmental Project Manager Facilities Management Services and to his knowledge the system has not been serviced recently however, there was indications that some work has been done within the room on some piece of machinery.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 07/24/19 18:45
Name: Mark Schaeffer
Company/Agency: PWC Environmentl Project Manager Facilities Management Services
Address: P.O. Box 389 Manassas, Va. 20108
Phone/Email: (703)791-8918
Notes: Informed him to have the system checked by maintenance.

Repeating Section Click + to add additional entries:

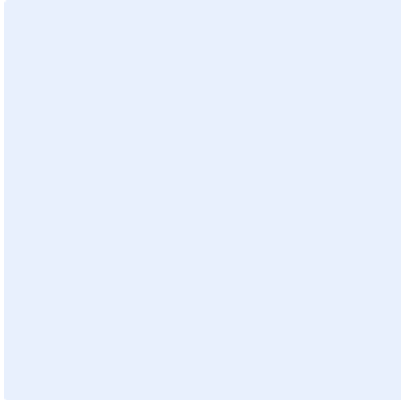
Additional Notes/Information: See R506's report.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/24/2019 19:40	Name: Jake Dutton



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Photos:



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**PRINCE WILLIAM COUNTY
FIRE AND RESCUE SYSTEM
HAZARDOUS MATERIALS INCIDENT REPORT**



INCIDENT INFORMATION	
Incident #: 190025252	Date/Time: 7/30/2019 12:50
Location: 13958 Jefferson Davis Highway	
Report Completed by: Matthew Adkins	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: HMO501 Adkins

INCIDENT NARRATIVE
<p>I was contacted by Mr. Mohammad Ayyoubi from Prince William County Transportation regarding contamination at a County managed construction site for the widening of Jefferson Davis Highway (Route 1). During work to install a manhole for this project the contractor on site discovered soil contamination during excavation at least to a depth of 16 feet. This location was the site of a former fueling station. While the product I observed smelled like gasoline I conducted no tests to confirm the identify of the product on site. This was discovered on or before July 25, 2019 and was not reported to the HAZMAT Coordinator or Risk Management until the date of this report. Prior to notifying HAZMAT or Risk, Atlas Environmental was contacted to obtain soil samples and provide them for laboratory analysis. These results will be appended to this report and were made available to the HAZMAT Coordinator on 7/30/2019. Upon arriving on site I was able to observe a pit that was covered to prevent access, there was a pool of liquid at the bottom of the pit, and there was an odor that was consistent with the odor of gasoline. I utilized a LEL meter and did not observe any flammable concentrations, but I could not account for anything further than the immediate foot below ground level. It is possible there is a flammable vapor mixture as you go deeper into this pit. The soil that was excavated from the pit was placed near the site and was covered with plastic. The contractor on site also showed me a trench about 50 feet away from the pit, where they believe they could start smelling a hydrocarbon odor. Risk Management personnel on site and I gave direction for no smoking signage as well as enhancing the barriers around the pit to prevent someone from throwing a cigarette in the pit, and to prevent access. I made contact with Alan Lacy from DEQ per our reporting requirements and he directed me to the Petroleum Program personnel in which I spoke to Mr. Chris McCandless to conduct the proper notification. A Discharge form was provided to Mr. Ayyoubi via email prior to my site visit. Prince William County Transportation is the Responsible Party for this incident. Mr. Ayyoubi is the point of contact.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 07/30/2019
Name: Mohammad Ayyoubi
Company/Agency: Prince William County Department of Transportation



**PRINCE WILLIAM COUNTY
FIRE AND RESCUE SYSTEM
HAZARDOUS MATERIALS INCIDENT REPORT**



Address: 5 County Complex Court
Phone/Email: 703-792-7193 mayyoubi@pwcgov.org
Notes: Mr. Parks conducted the site visit with me to represent PWC Risk Management.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 07/30/2019
Name: Germaine Parks
Company/Agency: PWC Risk Management Safety
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: PWC Risk Management Safety

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 7/30/2019
Name: Anthony Gartrell
Company/Agency: PWC Risk Management – Environmental Specialist
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Mr. Gartrell conducted the site visit with me to represent Risk/Environmental

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 7/30/2019 13:15
Name: Alan Lacy
Company/Agency: DEQ Pollution Prevention
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Made telephone contact with Mr. Lacy to make required report.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 7/30/2019 11:50
Name: Jennifer Boeder
Company/Agency: PWC Risk Management – Environmental Manager
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: I contacted Ms. Boeder immediately after speaking with Mr. Ayyoubi to ensure the



**PRINCE WILLIAM COUNTY
FIRE AND RESCUE SYSTEM
HAZARDOUS MATERIALS INCIDENT REPORT**



process of reporting and coordinating a response was established.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 7/30/2019 13:16
Name: Chris McCandless
Company/Agency: VA DEQ Petroleum Program
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Spoke to Mr. McCandless on the phone. Conducted required reporting for contamination events and provided details of the situation.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 7/30/2019 Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/30/2019 15:28	Name: Brandon



PRINCE WILLIAM COUNTY FIRE AND RESCUE SYSTEM HAZARDOUS MATERIALS INCIDENT REPORT



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PRINCE WILLIAM COUNTY FIRE AND RESCUE SYSTEM HAZARDOUS MATERIALS INCIDENT REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190027194	Date/Time: 8/14/2019 20:28
Location: 66 W at MM 48.9 (Rest Area)	
Report Completed by: Lt. Stephen Horvath	Incident Commander: BC Jim Mirabile

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Stephen Horvath, Michael Shatzer, Dan William, Marc Walsh
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Was advised by E511 who arrived on scene first that a tractor trailer had a leaking saddle tank and 25-30 gallons of diesel had leaked out. They put absorbent down to dam it and it had just reached the edge of the road where the gravel begins. E511 also advised that there was no waterway or sewers effected. HM506 requested thru command that E511 give the responsible party a LEPC form and advise them of their legal responsibility to cleanup the spill. HM506 and R506 arrived on-scene and did a face to face with BC501. BC501 advised what they had and appointed Lt. Horvath HAZMAT Group Leader. HM506 and R506 crews put eyes on the situation and immediately put a pop up pool under the saddle tank to catch any more leaking fuel. Due to the plastic covers around the fuel tank we couldn't access the leak. We worked with the wrecker that was already on-scene to hook up to the tractor and secure it. Then the wrecker lifted the tractor up in the air so we could access the tank and attempt to stop the leak. Two Haz-mat technicians in proper PPE stopped the leak. HM506 continued to work with driver to find out who the clean up contractor was going to be. J.B. Hunt safety contact advised they contacted PES who then sub-contracted with Miller environmental to do the cleanup. At 22:05 we were advised that Miller environmental had a 2 hr. eta. HM506 worked with VSP to reach out to a VDOT supervisor. The VDOT supervisor was able to move the process along and speed up the clean-up company. VSP and VDOT advised they would wait onscene for the cleanup contractor so HM506 and R506 went in service.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 08/14/19 / 21:08
Name: Jamie Keeney (Driver)
Company/Agency: J.B. Hunt
Address: 615 J.B. Hunt Dr. Lowell, AZ 72745
Phone/Email: (800)452-4868
Notes: Informed driver he and his co. needed to get a cleanup contractor

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notification/Contact Type: Agency Representative
Date/Time: 08/14/19 / 21:25
Name: Matt
Company/Agency: J.B. Hunt
Address: 615 J.B. Hunt Dr. Lowell, AZ 72745
Phone/Email: (800)452-4868
Notes: J.B. Hunt Safety person/ advised that PES contracted Miller Environmental was enroute with a 2 hour ETA @ 22:05

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 08/14/19 / 21:09
Name: Patrick (Driver's Boss)
Company/Agency: J.B. Hunt
Address: 615 J.B. Hunt Dr. Lowell, AZ 72745
Phone/Email: (800) 452-4868
Notes: Drivers Boss – 540-932-3265

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 08/14/19 / 22:15
Name: John Stafford
Company/Agency: VDOT IMC / Supervisor
Address: Click to enter text.
Phone/Email: 571-238-4871
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Items used 2 sets of Tingley boots (Sizes 12 and 13), 2 x Level B suits (Sizes LG-XL and 2XL-3XL), 1 x Wax ring and 2 x tubs of putty.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 08/14/19 / 20:45 Provided to Name: Jamie Keeney
VA EOC Notified Date/Time: 8/14/2019 22:13
Name: Curtis



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190027342	Date/Time: 8/16/2019 09:56
Location: 4418 Costello Way, Haymarket, VA 20169	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Lt. Stephen Horvath

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Stephen Horvath, T-II Daniel Williams, T-I Michael Shatzer, T-I Marc Walsh
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE
<p>Received a phone consult from E504 officer. They were on-scene of a vehicle in a parking lot that had a leak from its fuel tank. The leak was no where near a storm drain. E504 had already put down absorbent to catch the small stream. E504 also advised the owner was on scene and already called AAA for a tow truck. HM506 and R506 responded to assist with possibly controlling the leak. HM506 and R506 arrived on scene and did a face to face with E504. Hazmat went and surveyed the situation. The fuel was slowly dripping and appeared to be coming from somewhere on top of the fuel tank. The owner stated they had picked it up earlier in the week from the Ford dealer. It was there for the second time due to a Ford recall on the fuel lines and tank. Today was the first time since the owner picked up the vehicle that they fueled up the car. Hazmat wasn't able to stop the leak due to lack of access to the top of the fuel tank. Hazmat waited for AAA tow truck to arrive. AARONS towing arrived and cleaned up all the kitty litter and towed the vehicle away.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 08-16-19 / 10:27
Name: Sanjoy Patel
Company/Agency: Vehicle owner
Address: Click to enter text.
Phone/Email: (703) 282-3232
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: 08-16-19
Name: Siri
Company/Agency: AARONS Towing
Address: 7803 Christiana Trce, Catlett, VA 20119



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Phone/Email: 703-439-4291
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: See R506's report.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 8/16/2019 18:00	Name: Tyler Ellis



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190027470	Date/Time: 7/17/2019 09:40
Location: 2498 Linwood Ln Woodbridge Va 22192	
Report Completed by: Tech II Weaver	Incident Commander: Capt Goldston

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Tech II Weaver, Tech II Hoffman, Tech I Kolbas, Tech I Bergstresser, Captain Moreau, Tech II Sawicki
HS516 Unit personnel: Click to enter text.
Other HM Personnel: BC Stewart, Tech II Laganga

INCIDENT NARRATIVE
<p>E514 was dispatched to 2498 Linwood for a complaint that homeowner was dumping carpet cleaning chemicals down the storm drain. E514 arrived and talked to homeowner. Homeowner said that he was dumping his used dirty water from cleaning carpet into buckets and some spilled over. The fluid flowed out of his driveway and down the street to the storm drain. E514 placed some absorbent in front of storm drain and cleared the call. HAZMAT Personnel reviewed E514 comments for this call and contacted the E514 officer. The Duty Hazmat talked to E514's officer and asked about the situation. E514 stated that the dirty water from homeowner overflowing a container had run down the driveway into the storm drain and that it was such a small amount that they put some oil dry into the storm drain and they told homeowner to fill containers in the yard rather than in the driveway. E514 also didn't have any info on the products that homeowner was using, and the homeowner had left location. E514 said that they got in contact with homeowner. The home owner had a carpet cleaning business (G+S Carpet and Upholstery Service) and that he was dumping the dirty water that was left over from cleaning carpets. The Duty Hazmat asked E514 if any of the fluid had gotten into the drain and he said yes and that E514 did not put any oil dry in to the storm drain but they put some in front of the storm drain. The duty hazmat then decided to respond out to the location with the new info. The call was redispached (E514, R506, HM506 and E506) and FM was requested. FM517 contacted Duty Hazmat tech while enroute to call. FM 517 was notified on what was going on. Once Hazmat arrived on scene, we talked with E514 and found the storm drain and address that responsible party was dumping. Home owner who called it in talked to Hazmat 506 and stated all summer they have noticed a dead animal smell out of the storm drain and that the carpet cleaning van parks near the drain and dumps it left over dirty water. Hazmat 506 tested fluids downstream from address and found an 8 on the PH. Hazmat 506 tried to follow the storm drains to see where they went but couldn't find anything. Hazmat 506 was unable to reach storm water collection point in neighborhood due to terrain. FM517 talked to the carpet company and they stated that they do dump in the drain if the are in a hurry or run out of time. They normally fill 5 gallon buckets up and then dump them in the toilet in the house. Hazmat 506 handed the carpet company an LEPC form for them to have the oil dry cleaned up. DEQ and PWC storm water management was contacted. Scene was turned over to FM517.</p>



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 8/17/2019 1012
Name: Elizabeth
Company/Agency: Virginia EOC
Address: Click to enter text.
Phone/Email: 1-800-468-8892
Notes: Try to call DEQ and they were closed, Virginia EOC said that they would contact DEQ

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 8/17/19 1015
Name: David Ungar
Company/Agency: PWC Storm Water Management
Address: Click to enter text.
Phone/Email: 703-792-7104
Notes: Left Message on his voicemail

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 8/17/19 1000
Name: Tim Rapp
Company/Agency: G+S Carpet and Upholstry Service
Address: 2498 Linwood Ln Woodbridge Va 22192
Phone/Email: 1-703-987-0354
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: Lt Smiljamich	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 8/17/19 1120	
Provided to Name: Tim Rapp	
VA EOC Notified Date/Time: 8/17/2019 10:12	Name: Elizabeth



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
 DEPARTMENT OF FIRE AND RESCUE
 HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD 190027538	Date/Time: 8/17/2019 00:00
Location: Waterway Dr/ Fallstone PI Dumfries Va 22025	
Report Completed by: E. Weaver	Incident Commander: Battalion Chief Stewart

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Tech II Weaver, Tech II Hoffman, Tech Bergstresser, Tech I Kolbas, Capt Moreau, Tech II Sawicki,
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>R506, HM506 and E506 were dispatch to Waterway Dr/ Fallstone PI for a firetruck that was involved in an accident and rolled onto its side. When HM506 arrived, they found an engine that was on its side on top of the side walk and curb with transmission fluid, motor oil, and diesel fluid leaking out of the bottom and AFFF foam leaking out of the top of the foam tank. HM506 used dirt and oil dry to dam around the storm drain that was located near the accident. No product had entered the storm drain. HM506 also placed oil dry underneath the transmission leak and the engine oil leak. The leaking foam was contained by the hose that had come off the engine and stayed on the side walk and grass area around that. The diesel fluid was absorbed by the grass. HM506 issued BC502 a Discharge form and they contacted Atlas Environmental.</p> <p>After PD did the investigation Redmans towing was called in to up right the engine. HM506 worked with Redmans to make sure no more fluid leaked off the engine while being up righted. HM506 placed a V-dike behind the engine to catch any fluids that would leak while the up righted the engine. Once Redmans up righted the engine HM506 placed oil dry over the puddle of diesel fluid that was in the grass. Atlas arrived on scene and placed oil dry over the foam. HM506 loaded all the contaminated hose on the Atlas trailer. Scene was turned over to Atlas.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: 8/17/19 2058
Name: Click to enter text.
Company/Agency: Atlas Environmental Services
Address: Lorton Va
Phone/Email: 703-339-9770
Notes:

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 08/17/19
Name: Shawn Cheek
Company/Agency: Click to enter text.
Address: 15687 Pike Trail Dumfries Va 22025
Phone/Email: 703-225-9043
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 08/17/19
Name: RJ Davis
Company/Agency: Prince William PD
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 8/17/19 Provided to Name: BC Stewart	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190027736	Date/Time: 8/19/2019 00:00
Location: 14010 Smoketown Road Woodbridge Va 22192	
Report Completed by: Tech II Weaver	Incident Commander: Click to enter text.

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Tech II Weaver
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>HM506 received a phone consult from E520. E520 was dispatched to 14010 Smoketown Rd (Mary Washington Wound clinic) for a report of the liquid oxygen system was leaking. E520 arrived onscene and talked to employees and they stated that it had been leaking all weekend. E520 found a liquid oxygen tank located outside of the building that had a slow leak near the piping going into the tank. E520 got in contact with the oxygen company and they said that they were sending someone out to work on it and that if they were able to turn a valve to shut off the system, E520 was unable to turn the valve because it was completely frozen over. E520 monitored around the tank and got normal readings. The tank was behind a locked door so none of the public could be in contact with the tank. HM506 advised E520 that since the oxygen was converting to a gas right away and that they were getting normal reading to leave the system alone and the business to wait for the oxygen company to arrive to fix the leak.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 8/19/2019 00:00	Name: John

PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190029355	Date/Time: 9/1/2019 18:06
Location: 153mm on 95S	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Chief McAllister-BC506

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Horvath, T-II James Lind, T-II Daniel Williams, T-I William Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Was requested by E510 due to a leaking saddle tank.</p> <p>Arrived on-scene and did a face to face with command. He informed me that the 40 to 50 gallon saddle tank had leaked all of it's fuel out into the culvert. Units on scene had built a dam which the fuel started to leak over so they built a second dam. HM506 went below the dam and tested the water for fuel in it and it was negative. Spoke with VSP and asked where the driver was. VSP stated the driver was transported to the hospital. I requested VDOT to get a supervisor on-scene. VDOT supervisor on call was Rodney Frye. He called station 506 and Captain Knight texted me his contact info. I contacted him and updated him of the situation. He stated the closest supervisor was in Leesburg, VA so he was going to try to hadle the incident over the phone. I explained to him that the driver (responsible party) wasn't on the scene so since it's VDOT property I needed him to take responsibility of the spill. He said we should goto the hospital or call Budget rental trucks and have them handle it. I again explained it's VDOT property so they would be the lead. He again said he couldn't do that but would make some calls and call me back. I called BC Denner and advised him of the situation. BC Dener agreed with me and I gave him Mr. Frye's number to him so they could speak. BC Denner got the same results. I then notified the VAEOC and requested a VDEM officer to call me back to hopefully assist with the situation. I also worked with VSP to see if they could help. Niether were able to get any further with VDOT. I called back the VDEM and DEQ reps and advised them that we were leaving the scene there was nothing else we could do. Both parties agreed.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 09-01-2019 / 1833
Name: Joseph Few
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Infor per VSP / driver transported to Sentera by A510

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 09-01-2019 / 1835
Name: Chris Dorsey (952)
Company/Agency: SSP
Address: Click to enter text.
Phone/Email: 703-909-3365
Notes: Contacted VDOT for a Supervisor to come to the scene

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 09-01-2019 / 1857
Name: Rodney Frye
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 571-318-3454
Notes: Per Rodney VDOT will not accept responsibility for the spill.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 09-01-2019 / 1910
Name: Curtis Thompson
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Courtesy Notification / requested to speak with VDEM officer

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Represenative
Date/Time: 09-01-2019 /
Name: Mark Rensbeng
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: 703-609-8310
Notes: Called to follow up with me on the incident. I also called him back with an update at 2006.

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NOTIFICATIONS/CONTACTS



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notification/Contact Type: Agency Notification
Date/Time: Click or tap here to enter text.
Name: Mike
Company/Agency: Waggys Towing
Address: Click to enter text.
Phone/Email: 703-609-8310
Notes: Wanted me to describe scene to Paul from Atlas. Mike called him to try to get Atlas to the scene for cleanup.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 09-01-2019 / 1928
Name: Craig Strawderman
Company/Agency: VDEM Officer
Address: Click to enter text.
Phone/Email: 804-316-7163
Notes: Was looking for assistance with VDOT from VDEM officer

Repeating Section Click + to add additional entries:

Additional Notes/Information: Equipment used: 2 x 3" Pieces of PVC Pipe / 1 x disposable tarp / 2 x 15' booms and 2 x 40lb. bags of absorbent.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 9/1/2019 19:10	Name: Curtis Thompson



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190029879	Date/Time: 9/6/2019 09:00
Location: 6933 Colchester Drive Manassas VA 20112	
Report Completed by: Capt. Robert Moreau	Incident Commander: Capt. Robert Moreau

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Capt. Robert Moreau, Technicain II Kristen Greiner, Technician I Lee Bergstreser
HS516 Unit personnel: None
Other HM Personnel: Technicain II Davin Hoffman, Technician II Eric Weaver, Technician II John Sawicki, Technicain I Matthew Waln

INCIDENT NARRATIVE

On 09/06/2019, Hazmat 506 (HM506) was being staffed with a crew of three. HM506 and Rescue 506 (R506) was attending a drill when a request was received for a "Hazmat Phone Consult" from Engine 506 (E506). E506 was on scene of a fuel spill with an estimated 100 gallons of diesel fuel that had traveled into a storm water retention pond. E506 reported that there was a sheen on the water and they could smell the fuel. HM506 and R506 responded to the noted address. Upon arrival, HM506's officer met with E506's officer. E506's officer stated that the water line for the retention pond was right at the overflow drain on the far side of the pond. E506 had placed dirt between the pond and overflow drain for defensive measures. E506 noted that they found a truck at the top of the property that had leaked approximately 100 gallons of diesel fuel into a drain that terminated into the retention pond. E506 stated that the owners of the truck informed them that a saddle tank had been damaged by a rock, creating a hole in the tank. R506 was directed to investigate the overflow drain. They placed two booms in the drain at 0923 hours for defensive measures. HM506's crew was directed to investigate the truck that caused the leak. HM506's crew reported that the saddle tank had been removed from the truck and was standing vertical in front of the truck. The truck had been parked directly over a storm drain and gravel had been placed over the suspected spilled diesel fuel. Test of the area confirmed that a hydrocarbon had been spilled. Tests of the retention pond confirmed that the sheen was a hydrocarbon.

The property owner was interviewed by Captain Robert Moreau. The property owner stated that he was driving into work when he saw someone "pressure washing" a saddle tank. He stated he instructed the person to stop and upon further investigation, discovered that the saddle tank had leaked into the retention pond. The property owner contacted 911 and units were dispatched. The property owner stated he leases the property to various trucking companies and introduced Captain Moreau to the two co-owners of the truck. The owners stated that their driver had arrived at the lot this morning and hit a rock or piece of concrete. They stated this created a hole in the saddle tank and the diesel fuel began to leak out. The owner stated the tank could hold 150 gallons and that at the time of the incident, it could have had between 100 and 150 gallons in the tank. The driver contacted the owners who sent their mechanic to fix the tank. The mechanic removed that saddle tank from the truck to stop the leak and then washed the saddle tank. The owner of the truck stated they regularly washed their trucks and he thinks the mechanic was rinsing the fuel off of the tank. The owner of the truck was notified that he and the co-owner were the responsible parties and would be responsible



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



for cleaning up the fuel in the retention pond. A LEPC form was issued to the co-owners and they were instructed to make necessary notification as required by the LEPC. Both owners acknowledged their understanding of the LEPC form.

HM506 contacted the on duty fire marshal and requested his response to the scene. Upon his arrival, he was briefed on the incident and advised of the location of the truck. HM506 obtained incident photos and remained on scene for the cleanup contractor. Atlas Environmental Services (703/339/9770) arrived on scene at 1009 hours and was briefed on the incident. Incident clean-up and mitigation was turned over to Atlas.

Vehicle information for the truck leaking fuel is as follows. Make: International, Model: 9200i, Year: 2007, VIN#: 2HZCEAPR17C517293, License Tag: VA Tuck 52 322, DOT#: 3175715

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 09/06/2019 at 0914
Name: Alan Lacy
Company/Agency: Virginia Department Environmental Quality
Address: Click to enter text.
Phone/Email: 804-396-0150
Notes: HMO Matt Adkins contacted Alan Lacy and was liason with DEG.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 09/09/2019 at 0925
Name: Click to enter text.
Company/Agency: PWC Storm Water Management
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Phone call made by HMO Matt Adkins. No answer from agency. Courtesy email notification made on 09/06/2019 at 1315

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 09/06/2019 12:28
Name: Brandon Wykert
Company/Agency: Virginia Emergency Operations Center
Address: Click to enter text.
Phone/Email: 800/468/8892
Notes: Case # HMVA37823

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 09/06/2019 09:20
Name: Clyde Barbour
Company/Agency: IGH Trucking
Address: Click to enter text.
Phone/Email: 703/200/5185
Notes: Co-Owner of IGH Trucking

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 09/06/2019 09:20
Name: Ishmael Howard
Company/Agency: IGH Trucking
Address: Click to enter text.
Phone/Email: 571/233/0088
Notes: Co-Owner of IGH Trucking

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 09/06/2019 09:16
Name: Gerald D. Cooper
Company/Agency: GDC Incorporated
Address: 6933 Colchester Park Drive
Phone/Email: (office) 703/497/2717 (cell) 703/814/0102
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: YES Lead Officer: Lieutenant Hinson
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 9/6/2019 at 0930 hours Provided to Name: Clyde Barbour and Ishmael Howard/ Co-Owners of IGH Trucking
VA EOC Notified Date/Time: 7/6/2019 12:28 Name: Brandon Wykert



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190030239	Date/Time: 9/9/2019 11:42
Location: 12742 Occoquan Rd Woodbridge VA 22192	
Report Completed by: Chris Adams	Incident Commander: BC Artone

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: NA
HS516 Unit personnel: NA
Other HM Personnel: HMO502 Captain Chris Adams

INCIDENT NARRATIVE
<p>Units were dispatched to a reported Hazmat spill at 12742 Occoquan Road. E502 AOS to find a blue substance across the roadway, possibly entering small drainage ditch on the side of the road. Engine immediately blocked off the road and utilized absorbent materials to stop any possible movement of liquids into the drainage ditch. E502 Officer made contact with the individual who was on the scene and took responsibility of the spilled substance. Hector Vargas, is a worker for a small contracting crew working across the street. While entering the worksite a 5 gallon can of Water Based blue paint fell off the truck and spilled across the roadway. Prior to Fire Department’s arrival, Mr. Vargas had attempted to “wash away” the paint by applying a bucket of water to the spill. This action diluted the paint and spread the spill over a larger section of roadway. BC502 AOS to established command and immediately down graded the incident by placing Hazmat units Inservice. E502 requested permission to “hose down the area” but was stopped BC502. BC502 informed units to reframe from mitigation efforts unit a proper Hazmat consult was obtained with either HMO501 or HMO502. Captain Adams continued to the scene in Hazmat 502 to assist. Upon arrival HMO502 was informed of the situation. Units were placed in service and HMO502 remained on scene to continue with mitigation process. Capt. Adams interviewed the responsibility party and immediately deemed this to be a accidental discharge, and no need for FMO involvement. The spilled liquid, prior to HMO502 arrival, had already dried to the road therefore eliminating the possibility of further runoff. Capt. Adams, as a precautionary measure, notified David Ungar of the PWC Storm Water Management office via phone. Mr. Ungar did not answer, and a detailed message was left. As no product had appeared to have made it to the drainage ditch, and the relatively small quantity, Capt. Adams deemed a phone message and follow up would suffice. Mr. Vargas was then informed of the dangers of washing materials, such as paint, down a drainage ditch. Mr. Vargas was then instructed to clean up the reaming materials, in the form of used absorbent and dispose of it properly. Hmo502 remained on the scene to ensure clean up was completed. The scene was then turned over to PD, who opened the road to normal traffic.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 9/9/19



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Name: Hector Vargas
Company/Agency: Click to enter text.
Address: Not Obtained
Phone/Email: 703 269-7510
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190030343	Date/Time: 9/10/2019 00:00
Location: 13604 Shelter Lane	
Report Completed by: J. Knight	Incident Commander: BC Barbachano

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: J. Knight, M. Favole, Jo. Mirabile, C. Pistole, B. Herd
HS516 Unit personnel: R. Howard, L. Gray, A. Turner
Other HM Personnel: S. Horvath, M. Walsh

INCIDENT NARRATIVE
<p>On 9/10/2019 @ 0902 E515 was dispatched to and outside gas leak. Upon arrival they noted a large plum of what appeared to be propane gas. The gas was coming from a 1250 gallon compressed tank that was buried underground approximately 100 ft from the house. E515 requested a hazmat response. Due to the limited personnel at the station tanker 506 was unstaffed and HM506 was taken to the call. The call required a 30min response time. Upon arrival I had a face to face with BC504. I determined the best course of action was to go down range with E506, HM506 and R506 to assess the situation. While walking down no gas was visible and I could not smell anything. Reading were being taken around the tank and in the exposures. No notable readings were taken. While walking up to the tank the Suburban propane rep arrived on scene. He approached and placed his gloved hand over the leak which contained it. We retrieved a wooden cone plug and plugged the leak. Suburban propane was sending a truck to pump out the remainder of the tank. I was told that the tank was filled yesterday. An undetermined amount of fuel was lost. According to FD personnel the property rep stated that the dogs ran into the valve and cover. It is quite obvious that this was not the case and the valve was backed into by a vehicle. It appeared that the property representative was likely the one who did it and did not want to admit it. It appeared to be accidental in any case. Photos were taken and contact information gathered. The scene was then turned back over to the property representative.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 09/10/2019 1000
Name: Juan Moreno
Company/Agency: Suburban Propane
Address: 14111 Dave's Store Lane
Phone/Email: 703-627-2323
Notes: Requested a truck to pump remaining fuel

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Notification/Contact Type: Responsible Party
Date/Time: 09/10/2019 1000
Name: James Buie
Company/Agency: Looking after the property
Address: 13604 Shelter Lane
Phone/Email: 571-775-9553
Notes: Likely hit the tank

Repeating Section Click + to add additional entries:

Additional Notes/Information: One wooden cone plug was used.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Not needed	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Repeating Section Click + to add additional entries:

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190030509	Date/Time: 9/11/2019 15:49
Location: Opitz Boulevard/Jefferson Davis Hwy	
Report Completed by: Capt. Robert Moreau	Incident Commander: BC Doug McCabe

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lieutenant Ross Shannon, Technician II Davin Hoffman, Technician II Kristen Greiner Technician I Jason Kolbas, Technician II Eric Weaver, Technician II Mike Militello, Technician II John Sawicki, Technician I Lee Bergstreser
HS516 Unit personnel: Lieutenant Paul Hebert, Technician Tyler Barnikel, Technician Mollie Bodmer
Other HM Personnel: Captain Robert Moreau (HM502)

INCIDENT NARRATIVE
H506 was dispatched to the above noted address for a smoking package. R506 responded from station 10's first due (fill for training). E506 responded from Sentara Hospital (assisting EMS unit on previous call), K506 driver unstaffed to pull HM506. HMO 502 was being staffed by Captain Moreau who responded from station 26. Units responded and were downgraded to a priority two response. R506 arrived on scene and performed recon of the package. Package was a "cooler" that was not smoking or on fire. R506 reported the cooler was empty and was not a hazard. All units were placed into service. FBI representative contacted BC502 Chief Stewart who passed on contact information for HMO 502 to reach out and update on situation and incident. FBI representative contacted and informed of incident, that no hazard was found, and no further actions were needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 09/11/2019 16:11
Name: Special Agent John Souvlis
Company/Agency: FBI
Address: Click to enter text.
Phone/Email: 202-731-7753
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 09/11/2019 11:01
Name: Curtis Thompson
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: 800-468-8892



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Notes: Case #HMVA-37859

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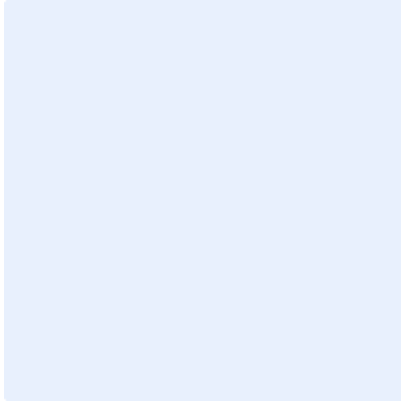
Additional Notes/Information: .	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 9/11/2019 11:01	Name: Curtis Thompson



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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photos:



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190030740	Date/Time: 9/13/2019 14:48
Location: 5245 Midway Ct Woodbridge Va 22193	
Report Completed by: E. Weaver	Incident Commander: Click to enter text.

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: E. Weaver
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>HM506 received a phone consult from E518s officer. She stated that a homeowner had dumped an unknown amount of gasoline in the back yard. None of the product had entered any water way. The spill was accidental. E518 gave homeowner LEPC form. E518 contacted FM521 Minor and stated that since it was an accidental discharge they didn't need to come out.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 9/13/19
Name: Sandy Lawmaster
Company/Agency: Click to enter text.
Address: 5245 Midway Ct Woodbridge Va 22193
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 9/13/1600	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 9/13/2019 17:39	Name: McKenley



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190030791	Date/Time: 9/13/2019 22:10
Location: 16530 River Ridge Boulevard	
Report Completed by: Capt. Robert Moreau	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: N/A
HS516 Unit personnel: N/A
Other HM Personnel: Captain Robert Moreau

INCIDENT NARRATIVE
<p>Phone call was received by station personnel from Captain Bill Phillips at fire station 23. He notified us that M526 was at station 23 receiving service. The unit had been moved and an oil catch pan had been run over. The operator was unaware of the oil catch pan being under the unit. The operator proceeded around the fire station and to the stop light. At that time the oil filter came off the unit and rolled in front of the unit. The operator noticed this and returned to the station. An estimated 5 quarts was released between the oil catch pan and filter. The crew at station 23 placed oil dry on the oil, swept the oil dry up and disposed of it in a trash can. No water ways were or storm drains were impacted. Oil was isolated to pavement. This occurred at approximately 1600 hours. Conversation with Captain Phillips did not occur until 2200 hours due to operational incidents. Captain Phillips confirmed that no waterways or storm drains were impacted and stated the oil dry had been disposed of in a trash can and was now in the dumpster. No further mitigation efforts needed. I informed Captain Phillips that the oil dry needed to be retrieved from the dumpster and moved to the car training pad located at station 23. At this location was an over pack drum meant for used oil dry. Email sent to Captain Chris Adams and Matt Adkins for notification. Incident number requested through communications. VAEOC not notified.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

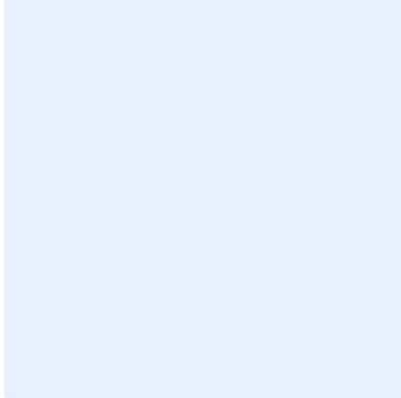
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190031039	Date/Time: 9/16/2019 10:33
Location: 37 I66 E. Hwy	
Report Completed by: M. Nicol	Incident Commander: Captain Saager

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: M. Nicol, B. Cook, E. Spangler, K. Adzemovic
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
On 9/16/2019 at 10:33 A.M. HM506 was dispatched to a diesel fuel leak from a tractor trailer located at the 37MM on I66 E. Hwy. HM506 was placed in service by units on scene and communications. The determination was made that approximately ¼ of a tank of transmission fluid leaked out and the leaking fluid had stopped. HM506 did not make it to the scene and no HAZMAT actions were taken on this call. See E504's report.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 09/16/2019 1033
Name: Unknown
Company/Agency: Unknown
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 09/16/2019 1035 by first arriving Engine Company
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



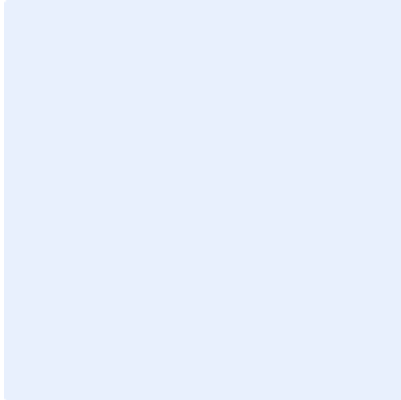
Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Not needed	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



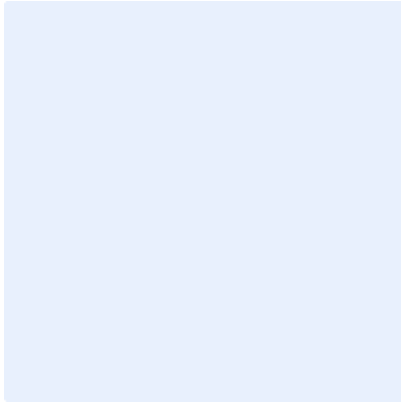
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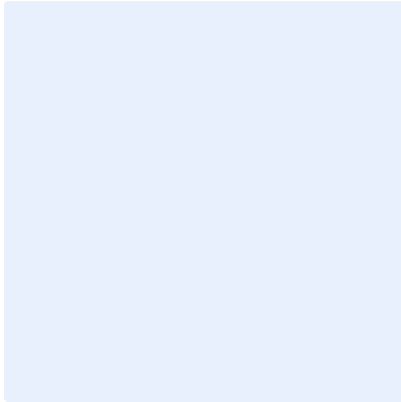


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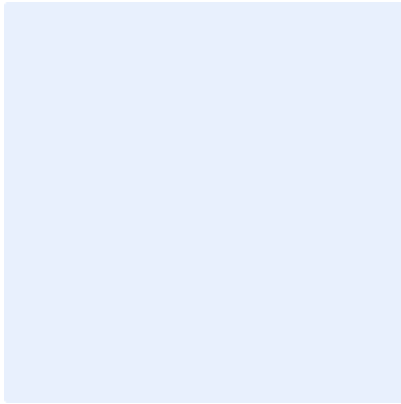


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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190032018	Date/Time: 9/24/2019 08:56
Location: 11507 Valley View Dr.	
Report Completed by: T-II Hoffman	Incident Commander: BC Morrison

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Weaver, Hoffman, Militello, Jones
HS516 Unit personnel: E516, HS516
Other HM Personnel: Adams, Greiner, Sawicki, Bergstresser

INCIDENT NARRATIVE
<p>E505 initially dispatched for an outside fire and once on scene they upgraded to a structure fire. It was determined that the fire was in a storage shed at a golf course. While responding to the call BC501 requested a HAZMAT response since it was determined that there were pallets of fertilizer and grass seed involved. E506 arrived on scene first and took the role of investigating the Hazardous Materials portion of the call. It was confirmed that there was both grass seed and fertilizer involved. The initial worry was the run off due to firefighting operations. Upon the arrival of R506/HM506 they met with BC501 and HMO502. They developed a plan to investigate and confirm E506s findings. R506 personnel confirmed the findings and found that all of the runoff was contained to the storage shed with no waterway or watershed effected. Ph was obtained and was neutral. After conferring with HMO502 it was determined that there was no hazard and the runoff was to be cleaned up by the golf course. No other resources needed.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 09/24/2019
Name: Curtis
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 9/24/2019 21:40	Name: Curtis



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190032053	Date/Time: 9/24/2019 12:58
Location: 16910 Porters Inn Drive	
Report Completed by: Captain Robert Moreau	Incident Commander: BC Craig Beavers

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>E523 arrived on scene for a patient who was complaining of dizziness, nausea, and a headache due to an unknown smell. E523 requested a hazmat phone consult due to a mothball odor in the dispatched address and around the townhouse complex. E523 was unable to narrow down the source and reported background readings on their 4-gas monitor. HM506 responded along with R506 and E506. Units arrived on scene and investigated the dispatched address. HM506 identified the address as a 2 over 2 stacked townhouse. The source address was identified as 16912 Porters Inn Drive. The source address was floor 1 and floor 2. Readings were obtained using PID and 4-gas. PID readings were 163 PPM at the seal of the garage at the source address. 4-gas readings were background. HM506 backed out from the address and spoke with county PD. Concern for unknown hazards at the address were noted and county PD requested State PD assistance. VDEM regional Hazmat Officer responded along with PWC Hazmat Officer 501. DC500 responded as well. FBI WMD team responded for assistance. Multiple attempts were made to make contact with resident at source address. Resident was thought to be home and contact was made with resident's mother. State PD made one last contact prior to making entry. Resident came out of the address and was brought to the command post. Resident stated he did not hear units and PD knocking on his address. He stated he had placed moth balls around his house due to concerns for snakes. Resident agreed to let PWC Hazmat investigate address. PID readings in source garage was 907 ppm. PID readings in source address was 1103 ppm. Resident was advised to clean up the moth balls and that his use of them was not in line with manufacture recommendations. Resident complied and resident from dispatched address was advised of findings and recommended to follow up with PCP or the ER if her symptoms continued. Resident of dispatched address was checked out by M523. Dispatched address was investigated and PID readings were within normal limits. 4-gas readings were background.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 9/24/19 14:30
Name: 1st Sgt. Karl Williams



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Company/Agency: Prince William County PD
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 9/24/19 14:32
Name: Det. Dan Sekely
Company/Agency: Prince William County PD/Narcotics
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 9/24/2019 1509
Name: Special Agent John Souvlis
Company/Agency: FBI WMD
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: SA John Preston on scene.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 9/24/2019 1505
Name: John Higgenbothan
Company/Agency: VDEM Regional Hazmat Officer
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 9/24/19 13:55
Name: Lt. Mike Cozdeba
Company/Agency: Prince William County Fire Marshal
Address: Click to enter text.
Phone/Email: Click to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: Click or tap here to enter text.
Name: Troy Eugene Miller
Company/Agency: Resident – Person of Interest
Address: 16912 Porters Inn Drive.
Phone/Email: Click to enter text.
Notes: This is the resident that placed the mothballs.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Representative
Date/Time: 9/24/19 1430
Name: Lieutenant Michael B Shelley
Company/Agency: PWC PD
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FM Cozdeba	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 9/24/2019 15:05	Name: VDEM HMO on scene



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190032346	Date/Time: 9/26/2019 16:44
Location: 11138 Marsh Road – Bealeton VA – Cedar Lee Middle School Fauquier County	
Report Completed by: M. Adkins	Incident Commander: BC RJ Arft - Fauquier

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mirabile, Kwak, Lind, Walsh (Placed in Service)
HS516 Unit personnel: Click to enter text.
Other HM Personnel: M. Adkins (HMO501), C. Saxon (BST501), K. Smith (EM1101)

INCIDENT NARRATIVE
<p>HMO501, HM506, R506 and BC501 responded to Cedar Lee Middle School in Fauquier County Mutual Aid for a container in the school lab that was “fizzing”. HMO501 was the first HAZMAT Unit to arrive on scene and reported to command. Units from E1113 were already inside monitoring near the lab area upon arrival. HMO501 provided the units with a camera and PID to conduct additional monitoring and recon. The container was in a laboratory flammable cabinet, reported to be Sodium Sulfide and was making noises. Pictures showed the container was sealed and had never been opened but the label was stained. E1113 personnel placed the container in a plastic bin and removed it from the school. PID readings were consistent with what was observed in the flammable cabinet and readings were not from this container but other spills and poor housekeeping inside the cabinet. Once outside the PW HM506 and R506 were placed in service before arriving. BC501 was already on scene. The Fauquier HAZMAT Officer (EM1101) HMO501 and TII Saxon coordinated to render the container safe and and it was removed from the scene by EM1101 for disposal.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: 09/26/2019 1658
Name: SA John Hughes
Company/Agency: FBI Washington Field Office WMD team
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: SA Hughes contacted HMO Adkins to request additional information based on the call notes from PWC Communications.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 9/26/2019 00:00	Name: McKinley



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190033078	Date/Time: 10/2/2019 15:30
Location: James Madison Hwy/Logmill Rd	
Report Completed by: Mark Nicol	Incident Commander: Captain Adamo

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mark Nicol, James Snitwongse, Eric Spangler, Jacob Phillips
HS516 Unit personnel: Click to enter text.
Other HM Personnel: HMO2 Captain Chris Adams

INCIDENT NARRATIVE
HM506 did a phone consult for a ruptured saddle tank on a VDOT vehicle located near the intersection of James Madison Hwy/Logmill Rd. HM506 went to the scene and upon our arrival the tow company and contracted clean-up crew were already working to mitigate the leak and clean up the roadway. The clean-up crew were able to reclaim approximately 90 gallons of diesel fuel from the two 55 gallon (each) saddle tanks. We estimate that between 10 – 15 gallons of fuel were leaked out. PE515 utilized damming and diking techniques to prevent any spilled fuel from leaving the roadway. Nothing was leaked into any waterways and the VA EOC was notified.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 10/02/2019 13:35
Name: Mr. Charles Sutphin
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Willow Springs Towing and clean-up handled cleaning up and re-claiming the fuel.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 10/2/2019 13:35	Name: Ms. Archer



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190033139	Date/Time: 10/2/2019 21:34
Location: 16931 Old Stagecoach Rd.	
Report Completed by: Mark Nicol	Incident Commander: Mark Nicol

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mark Nicol, James Snitwongse, Eric Spangler, Jacob Phillips
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>After conducting a phone consult HM506 went to the Comfort Inn at 16391 Stagecoach Rd. to do some further investigating into an odor of rotten eggs and a 4-gas reading of 29.8 ppm H₂S which was taken by FM, Lt. Cozdeba and Lt. LeFever at which time they backed out of the area to fresh air and notified communications. HM506 made entry at around 21:55 in full PPE and on air. We took readings using the 4-gas, MultiRAE and PID and confirmed the initial readings by Lt. Cosdeba and Lt. LeFever. The area of origin was traced back to a drain located in the fire sprinkler room. The trap for the drain was dry and the odor was coming from the drain. Our strongest readings were taken directly over the drain and we also had a reading of 4390 ppb on the PID, in the same location. We flushed the drain and ventilated the room and sampled the area again at which time the readings were normal background of 0 ppm CO, 0 ppm H₂S, 0%LEL and 20.9% O₂. We waited another ten minutes and then took more samples with the results being the same as the previous, 0 ppm CO, 0 ppm H₂S, 0%LEL and 20.9% O₂.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 10-02-2019 21:50
Name: Click to enter text.
Company/Agency: Comfort Inn
Address: 16391 Old Stagecoach Rd.
Phone/Email: Click to enter text.
Notes: Spoke with the maintenance manager

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 10/03/2019
Name: Amanda David
Company/Agency: PW Health District
Address: EMAIL
Phone/Email: Click to enter text.
Notes: Emailed HAZMAT incident report for courtesy notification

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: Lt. Cozdeba	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 10/2/2019 11:52	Name: Jake Dutton



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

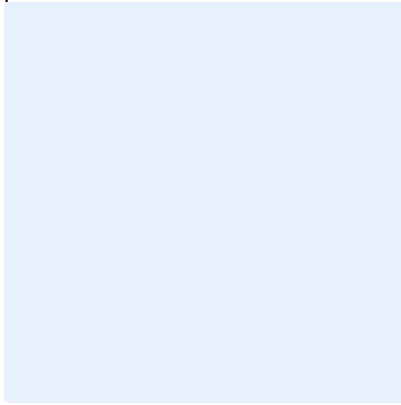


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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

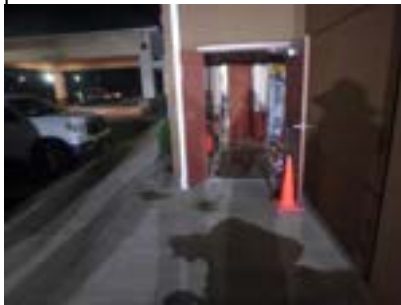


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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190033932	Date/Time: 10/8/2019 18:01
Location: 2532 Port Potomac Avenue	
Report Completed by: Captain Robert Moreau	Incident Commander: Battalion Chief Craig Beavers

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Robert Moreau, Ross Shannon, Kristen Greiner, John Sawicki, Eric Weaver, Mike Militello, Matt Waln
HS516 Unit personnel: E516 and HS516
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>On 10/8/2019, Hazmat units (E506, R506, HM506, E516, HS516) were dispatched to 2532 Port Potomac Avenue for a chemical spill (Ammonia and Bleach mixed). The call was initially dispatched as a hazard with only E523 responding. The UFRO contacted station 6 via land line and confirmed with Captain Moreau that the incident needed to be upgraded to a Hazmat call type. While responding, R506 notified E523 that the product they would be dealing with was heavier than air. E523 reported that they had one occupant in the structure and would be making entry. R506 recommended they removed the occupant via ground ladder. T523 assisted and the occupant was removed safely. All occupants in the house (3 adults, 1 child, and 1 dog) were accounted for and denied any symptoms. R506 advised command to set up emergency decontamination for E523. Company 6 units arrived on scene as E523 was exiting the structure. E523 was hosed down with front bumper line in the grass. Captain Moreau and Lieutenant Shannon met with command for incident update. Homeowner initially reported that she mixed Ammonia and Bleach together in her laundry room in a sink. Quantities were reported to be "several ounces of one and a glug glug of another". The resident reported a strong odor and then called 911. House was noted to have windows open and residents were confirmed to not be symptomatic. Assignments were as follows (Capt. Moreau – Group Supervisor, Lt. Shannon – Entry Group Supervisor, Research – TII Millitello, Entry Team 1 – TII Weaver, TI Waln, Entry Team 2/RIT TII Greiner, TII Sawicki). Capt. Moreau spoke to homeowner who provided an updated story. She stated she mixed the two chemicals accidentally in the soup reservoir for her washing machine. She stated that "911 told me to run a wash cycle and that the fire department would come check it out". Safety brief performed and Hot, Warm, Cold zones identified. Decontamination procedures reviewed. Entry Team 1 made entry @ 1828 with the following monitors (4-gas, PID, Multi-Rae Pro with Cl2 sensor, and bear claw with standard papers). Entry team 1 found background readings throughout the structure. CL2 background was 0.2ppm at monitor start up. They located a trash can with a closed container of bleach and a closed container of ammonia in it. This trash can was relocated to the back yard. They obtained readings at the washing machine soap reservoir (0.8ppm). Washing machine was actively in a wash cycle. Entry team 1 exited the structure at 1835. Face to face performed. Incident believed to be isolated to the washing machine only with no readings in washing room. Command informed of updates and provided recommendation that E506, R506, HM506, and E523 remain on scene. Hazmat units were going to wait for wash cycle to be completed and then confirm readings returned to background. Command agreed and terminated</p>



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



command and released the channel. Entry team 1 made a second entry and confirmed background readings in the washing room and obtained Cl2 readings of 0.3ppm inside of the washing machine. Homeowner was advised to run a clean cycle with hot water. Homeowner advised to call 911 if family began experiencing any symptoms such as irritation to the eyes, sore throat, difficulty breathing, chest pain, or any abnormal symptom/general unwell feeling. Hazmat units turned the house back over to the homeowner and went back in service.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 10/08/2019
Name: Cynthia Monroe
Company/Agency: Click to enter text.
Address: 2532 Port Potomac Avenue Woodbridge VA 22191
Phone/Email: 240-406-3539
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 10/08/2019 19:46
Name: Brandon Wykert
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Case # HMVA38195

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FMO John Hornaday (FM514)	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 10/8/2019 19:46	Name: Brandon Wykert



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190036337	Date/Time: 10/27/2019 22:21
Location: 2300 Opitz Blvd	
Report Completed by: Knight	Incident Commander: Faye E512B

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight

INCIDENT NARRATIVE
Phone Consult. MVC resulting in ruptured gasoline tank. Minimal amounts of fluid leaked into storm drain, no more than 5 gallons. No RP on scene due to driver fleeing. Absorbant applied and tow company removed the vehicle. Storm drain was monitored for UEL and LEL. No notable readings.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

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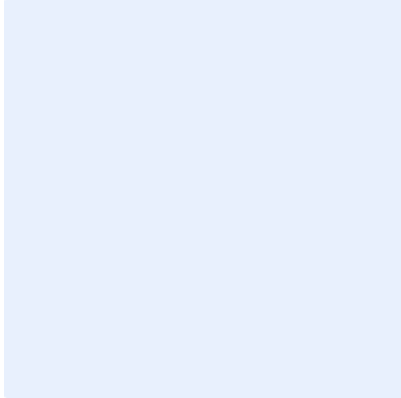
Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.
VA EOC Notified Date/Time: Click to enter a date. Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190036767	Date/Time: 10/31/2019 07:10
Location: 10908 Pennycress St. Manassas, VA. 20110	
Report Completed by: Mark Nicol	Incident Commander: Lt. Matt Pullen

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mark Nicol, Bobby Cook, Kate Adzemovic, Timothy Heard
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Dale Minks (E507)

INCIDENT NARRATIVE
<p>HM506 answered a phone consult and self dispatched to a unidentified odor in a single family home. Upon our arrival we began our investigation and consulted the home owner and E507 personnel. No one on scene was asymptomatic, but one of the family dogs threw up this morning. When we approached the garage area of the home we noticed a skunk odor and as we moved to the front door the odor become more pungent and resemble a "hot mustard type smell, T-II Dale Minks E507". E507's crew naturally ventilated the structure and then closed the home up and the odor came back as strong as when they first arrived on scene. HM506 utilized the QRae 4-gas meter and the PID with all readings inside of the home reading normal background levels of CO - 0ppm, H2S - 0ppm, Oxygen - 20.9%, LEL - 0%. The PID read less than 200PPB for VOC's. HMO501 was notified while we were on scene fro further direction. He concurred with our plan of action and offered a suggestion for a clean-up company to rid the home of the odor. Our investigation concluded that a skunk had been chased into the home by the family dogs and sprayed while inside the home. The home owner was informed of our findings and recommendation for eliminating the odor. For further reference, once we returned to the station our station uniforms smelled of the distinctive skunk odor.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 10/31/2019 07:45
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: 10908 Pennycress St.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: HMO501 concurred with plan of action and comfortable with the normal readings in the



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



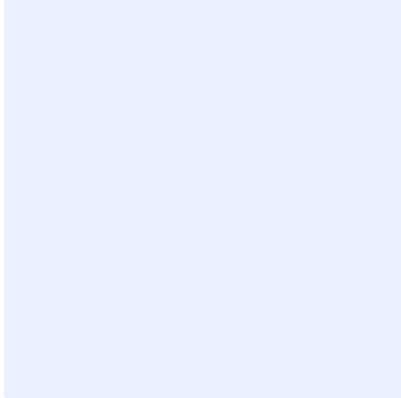
home.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 10/31/2019 09:19	Name: D. Wykert



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190037099	Date/Time: 11/2/2019 17:21
Location: Alps Dr/Manet Ct.	
Report Completed by: Mark Nicol	Incident Commander: Mark Nicol

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mark Nicol, James Snitwongse, Bobby Cook Jr., Katherine Adzemovic
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>HM506 arrived on scene and found approximately 30 – 35 small piles of rat poison scattered on the roadway. I spoke with the caller and he said that, “between 2:30 and 3:00 he took his dog for a walk when he saw the material in the roadway”. He said that “he noticed some pellets that were still whole as being rat poison pellets and that is when he called 911”. The caller also stated that, “he used to work for a pest control company and this is how he recognized what the product was”. We began to analyze the product using the First Defender Meter and the True Defender Meter. The active ingredient was determined to be 0.005% Bromadiolone (an anticoagulant) and the size and shape was consistent with the Boot Hill brand of Rat & Mouse Bait- Pellets, Mini-Blocks. PWC PSCC notified DEQ and VDOT while we were on the scene and I spoke with HMO502, Captain Chris Adams over the phone to relay our findings and plan of action. VDOT was the owner of the roadway and when notified, they stated that “they would not come out to cleanup rat poison from the road’. Captain Adams and myself decided that it was best for us to sweep up the bulk of the product and then dilute any remnants with water. Our PPE was gloves and the M100 respirator during the cleanup and Tanker 506 was dispatched to the scene to assist with rinsing the street off. Just prior to clearing the scene, a representative from VDOT showed up and I explained that they would be considered the responsible party for cleanup on roadways where another party cannot be identified. The representative said that he would relay that information to his higher ups. We retrieved approximately 1 pound of ground up product from the roadway and placed it into a biohazard bag and then disposed of it once back at the station, (recommended by DEQ representative during phone consult).</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 11/02/2019 17:31
Name: Click to enter text.
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 11/2/2019 19:31	Name: John Zelsnack HMVA # 38523



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

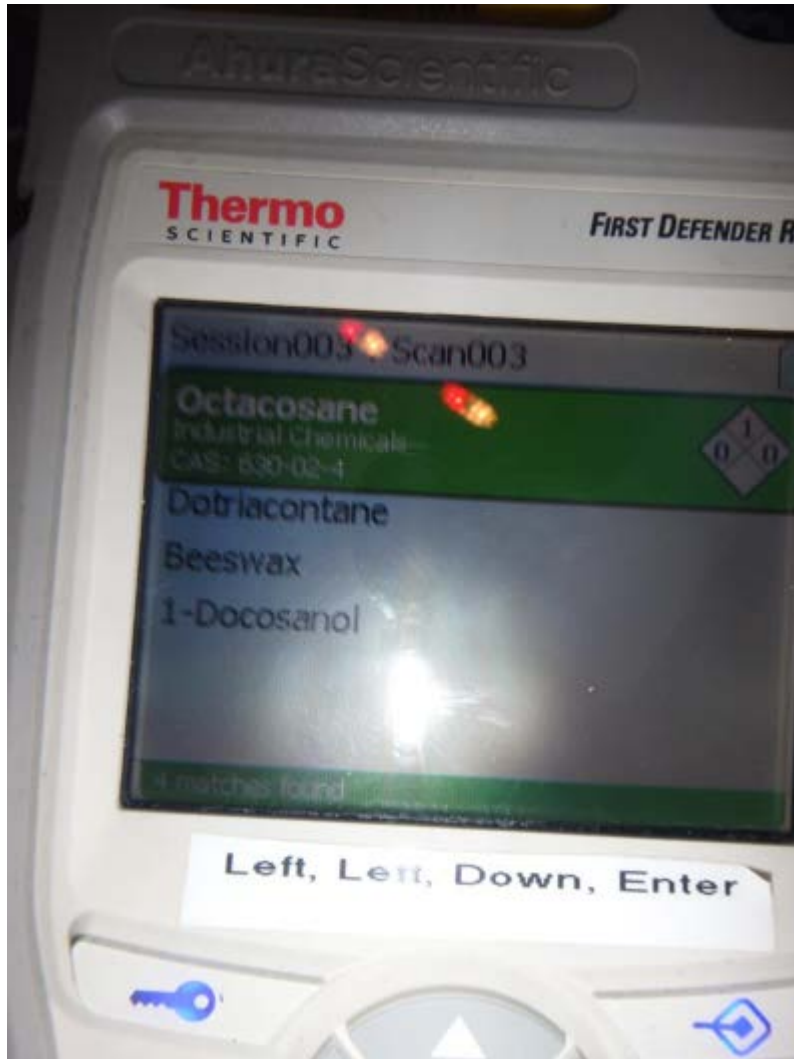


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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190038359	Date/Time: 11/13/2019 11:46
Location: 6989 Gateway Court Manassas VA 20109	
Report Completed by: Captain Robert Moreau	Incident Commander: Technician II Brian Bell

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II Kristen Greiner, Technician II Mike Militello, Technician I Lee Bergstreser, Lieutenant Ross Shannon, Technician II Davin Hoffman, Technician I Jason Kolbas, Technician I Matthew Waln
HS516 Unit personnel: N/A
Other HM Personnel: Technician I Stephen Mickle

INCIDENT NARRATIVE

Captain Robert Moreau received a phone call from Matt Adkins at 1136 hours regarding an investigation that FM523 (Mike Cozdeba) was responding to at 6989 Gateway Court, Manassas VA 20109. A citizen had contacted the Fire Marshal's office regard a strong odor at her employer that had resulted in the office closing for the day. FM523 and E511 were assigned to the incident. Captain Moreau contacted FM523 via mobile phone for more information. It was reported that another business in the same complex was transferring paint thinner from one container to another, resulting in strong odors in adjoining businesses. Communications was contacted by Captain Moreau and Lieutenant Mark Schwab was notified that E506, R506, and HM506 would be responding to the incident. All units responded priority two. While responding, E506 contacted E511 to confirm that all occupancies had been evacuated and to see if any patients were symptomatic. E511 reported that evacuations had not occurred and that they had no symptomatic patients. E511 was directed to evacuate the dispatched address and adjoining addresses. No product information was available prior to arrival. Upon arrival, Captain Moreau performed face-to-face with E511's officer (Technician II Brian Bell). Technician Bell stated that the business owner who leased the address of concern stated he used a paint thinner called MEK (methyl ethyl ketone). No SDS was available and Technician Bell stated the business owner stated "he did not have one". Evacuations were confirmed and E511 was identified as the unit having command. The building was a commercial strip center in an industrial park. The dispatched address of 6989 Gateway Court was leased to Wunna Contracting and was the address of concern where chemical smells were thought to be originating from. The bravo 1 exposure was 6985, bravo 2 exposure was 6981. The delta 1 exposure was 6993 and the delta 2 exposure was 6997. The strip center was managed by a property management company whose representative was on scene (James Huggins). Captain Moreau met with the business owner who was also identified as the responsible party (Nyein Min). He stated that his company paints bridges and uses MEK to clean the paint from equipment. He stated that he then pours the used MEK from 5 gallon buckets into a 55 gallon drum. Once the drum is full, he stated he has a company come pick up the barrel. He confirmed that this morning, around 0830-0900 hours that his company was pouring used MEK from 5 gallon buckets into a 55 gallon drum. This was done in the back of 6989 Gateway Court where a commercial roll up door was located. Owner confirmed he did not have an SDS sheet for MEK or for any chemical he had on site. He stated that he stores most his chemicals in Leesburg and uses this office for "small



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



stuff". Owner confirmed that no leak had occurred and that no spill was present. Offensive operations determined to be needed for atmospheric monitoring of dispatched address and exposures. Medic unit requested due to Hazmat team making entry. Hazmat group assignments were confirmed (Group Supervisor Moreau, Safety Ross, Entry Team 1 Greiner & Bergstreser, Entry Team 2/RIT Hoffman & Kolbas, Research/Meters Militello & Waln). Decon determined to be emergency decon via hose line from E511 if needed. Protective ensemble determined to be structural firefighting ensemble with SCBA. Monitors included 4-gas (1 on methane, 1 on MEK), Multi-Rae Pro with PID and RAD sensors, bear claws, and shopping basket with associated papers and baseline devices. Pre-entry brief performed with Hazmat Team, IC, and FM523. IDLH identified with crews and turn back readings were identified. Entry made by entry team 1 into 6989 Gateway Court. Entry team 1 reported readings on PID to be 12ppm at front of the office and 5ppm at the back of the office near the MEK drum. The entry team denied seeing any active leak from the MEK drums. They did report multiple drums/barrels inside the business. Readings were obtained from exposures and were noted as follows (highest readings obtained); bravo 1 exposure 9ppm, bravo 2 exposure 4ppm, delta 1 exposure 11ppm, delta 2 exposure 7ppm. LEL on both monitors remained 0% with radiation levels remaining background. No color changes noted on papers in bear claw. Readings were noted to be below IDLH and STEL limits. All businesses were ventilated for 10 minutes and readings were taken again. In the business of concern, PID readings had decreased to 6ppm in the front and 3ppm in the rear of the business. The large roll up door in the back of the business was kept open. Readings in exposures were noted as follows (highest readings obtained); bravo 1 exposure 2ppm, bravo 2 exposure 0.6ppm, delta 1 exposure 1ppm, delta 2 exposure 0.2ppm. Remainder of readings remained background with no changes noted on papers in bear claw. Occupants were allowed back into the businesses. Walkthrough of 6989 Gateway Court performed by Group Supervisor and Safety. Large amounts of chemicals were noted to be stored in container in rear of business. Empty 5 gallon plastic buckets were found and owner confirmed that they previously contained MEK and were dumped into the 55 gallon drum. Owner was able to provide email and contract of the vendor (Safety-Kleen) he contracted to remove the MEK in the 55 gallon drum. Company was contacted and confirmed they had a contract with the owner. However, they stated the contract was not for the dumping of 5 gallon buckets into a single drum. The representative (Whitney King) from Safety-Kleen stated that the contract was for the owner to place 3, 5-gallon buckets into the 55 gallon drum in an "over pack" style. FM523 present when this conversation happened as well as when this was relayed to the business owner. The business owner was informed that he could no longer dump 5 gallon buckets of MEK into the 55 gallon drum due to the impact on the adjoining businesses. He was advised to contact the company he contracted and inform them of how he was storing of the MEK for disposal. The business owner was asked if he had any questions and he stated "no." E506, R506, HM506 went in service and turned the scene over to FM523.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 11/13/2019 19:24 hours
Name: John Zelsnack
Company/Agency: VAEOC
Address: Click to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Phone/Email: 800-468-8892
Notes: Incident notification only, no resources needed. Report number HMVA38698

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: Click or tap here to enter text.
Name: James Higgins
Company/Agency: J Street Companies Property Management
Address: Click to enter text.
Phone/Email: 202-296-6999 jhiggins@jstreetcompanies.com
Notes: Property management company representative

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Witness
Date/Time: 11/13/2019
Name: Barbara Rowdon
Company/Agency: My Plumber
Address: 6897 Gateway Court Manassas VA 20109
Phone/Email: 703-675-1754
Notes: Reporting party who contacted Fire Marshals Office.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 11/13/2019
Name: Nyein Min
Company/Agency: Wunna Contracting
Address: 6989 Gateway Court Manassas VA 20109
Phone/Email: 703-303-6142 (cell) 571-292-2776 (office) nmin@wunnacontracting.com
Notes: Owner of Wunna Contracting who leased 6989 Gateway Court.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 11/13/2019 14:15
Name: Whitney King
Company/Agency: Safety-Kleen
Address: 11530 Balls Ford Road Manassas VA 20109
Phone/Email: 571-437-6621
Notes: Safety-Kleen representative for MEK disposal contract.

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 11/14/2019 01:48 hours
Name: Alan Lacy
Company/Agency: Virginia DEQ
Address: Click to enter text.
Phone/Email: alan.lacy@deq.virginia.gov
Notes: Courtesy notification via email only.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: Lieutenant Mike Cozdeba	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 11/13/2019 19:24	Name: John Zelsnack



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Rear of 6989 Gateway Court looking from charlie to alpha sides of building.

Repeating Section Click + to add additional entries:

photos:



into.

Red 55 gallon drum that business owner was pouring 5 gallon buckets of MEK

Repeating Section Click + to add additional entries:

photos:



Entrance into rear of 6989 Gateway Court looking from alaph to charlie sides of building. Two empty red 55 gallon drums.

Repeating Section Click + to add additional entries:

photos:



Business card of business owner for 6989 Gateway Court. Also identified as the responsible party.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190038372	Date/Time: 11/13/2019 14:29
Location: 12357 Dillingham Square Lake Ridge VA 22192	
Report Completed by: Captain Robert Moreau	Incident Commander: Captain Kenard Golston

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II Kristen Greiner, Technician II Mike Militello, Technician I Lee Bergstreser, Lieutenant Ross Shannon, Technician II Davin Hoffman, Technician I Jason Kolbas, Technician I Matthew Waln
HS516 Unit personnel: N/A
Other HM Personnel: Technican I Stephen Mickle

INCIDENT NARRATIVE
<p>On 11/13/2019 at approximately 14:25 hours, Battalion Chief 502 (BC502) requested a Hazmat phone consult in reference to a trash truck fire. Engine 506 (E506) verified the request via mobile radio. Prior to initiating the phone consult, BC502 contacted E506 via radio and stated that they had a trash truck whose contents has been extinguished and water from firefighting operations was now running into the storm drains. E506 responded along Hazmat 506 (HM506). Rescue 506 (R506) also responded but was responding from a different location in the county. While responding, E506 contacted BC502 and confirmed that E514 had performed defensive measures to limit the amount of water running into the storm drain. BC502 stated they had performed defensive measures. R506 arrived on scene prior to E506 and HM506. Upon E506 and HM506's arrival, Captain Moreau performed a face-to-face with BC502. She advised that the trash truck noted smoke coming from the back of his truck and dumped his load in the street. The driver noted active fire and called 911. Upon arrival of fire department units, the fire was extinguished. As a result of firefighting operations, water from the extinguishment of the fire was running into the storm drain. Trash was confirmed to be residential pick up only. Testing of the water revealed a neutral pH and oil paper showed no hydrocarbon in water runoff. E514 had placed earth dams in front of storm drains but due to water volume they were no longer successful. Prior to hazmat units arriving on scene, the operator of the trash truck had contacted his supervisor who contacted a cleanup contractor. Waggy's Recovery was on scene with a rollback dumpster and equipment. An LEPC form was provided to the operator of the trash truck by R506 prior to E506's arrival. R506 cleared the incident. E506 and HM506 remained on scene to ensure no additional extinguishment agents were utilized. Water from E514 was the only extinguishment agent used. E506 and HM506 went in service.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 11/14/2019 02:06
Name: Thelma Blair
Company/Agency: VA EOC



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Notification only, no resources requested. Report number HMVA38700. VAEOC stated they would notify VA DEQ rep for Prince William County via email.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 11/14/2019 02:34 hours
Name: Marc Aveni
Company/Agency: PWC Storm Water Management
Address: Click to enter text.
Phone/Email: 703-792-4064 maveni@pwcgov.org
Notes: Courtesy notification via email only.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 11/13/2019 Provided to Name: Roger Smith Sr. ; Driver of American Disposal	
VA EOC Notified Date/Time: 11/14/2019 02:04	Name: Thelma Blair



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Rear of trash truck.

Repeating Section Click + to add additional entries:

photos:



Rear of trash truck.

Repeating Section Click + to add additional entries:

photos:



Front of trash truck.

Repeating Section Click + to add additional entries:

photos:



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Front of trash truck.

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photos:



Rear plate of trash truck.

Repeating Section Click + to add additional entries:

photos:



Trash that was dumped from truck onto street. Equipment located in right of picture belonged to the clean up contractor.

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190038910	Date/Time: 11/18/2019 08:00
Location: 4901 Dale Blvd. Woodbridge, VA. 22193	
Report Completed by: Mark Nicol	Incident Commander: BC Kevin Artone

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Jonathan Newell, Mark Nicol, Tim Luke, James Snitwongse, Michael Gonzalez, Eric Spangler, Timothy Heard
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Matt Atkins

INCIDENT NARRATIVE
<p>Fire Alarm Incident at Belville Middle School upgraded to a HAZMAT Call. HM506 set up HM Group Supervisor, Entry team Leader and two entry teams of comprised of three personnel on each team. I was told by Captain Barbara Cafini, E513's officer that "the construction workers were removing a chiller unit and cut a pipe prior to the Freon being properly evacuated from the system. She said that the person who was going to evacuate the Freon was running late and the workers began cutting insulation and cut the pipe prior to his arrival". We did research and a safety brief prior to making entry. Entry team 1 made entry into the room where the leak was reported and assessed the situation. Team 1 reported readings of 32 ppb PID and 0ppm – CO, 0ppm – H2S, 20.9% - O2, and 0% LEL using the QRae 4-gas meter.. Entry team 2 was in reserve and RIT for team 1 and gross decon was established by E513 on side D prior to entry. The area was naturally ventilated and readings were deemed to be at an acceptable range before Command allowed the building to be reoccupied. There were no patients reported and a discharge form was given to Mr. Troy Hart of Taft Construction (cell #540-972-8393). HM506 made ready and cleared the event with nothing further to report. <input type="checkbox"/></p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 11/18/2019 09:15
Name: Troy Hart
Company/Agency: Taft Construction
Address: 1300 Sunset Ln. Suite 3230 Culpeper, VA. 22701
Phone/Email: 540-825-9007
Notes: Cell # 540-972-8393

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NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Representative
Date/Time: 11/18/2019 08:15



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Name: Jim Honeycutt
Company/Agency: Schools Risk Safety
Address: Click to enter text.
Phone/Email: (571)259-5262
Notes: Notified by Matt Atkins

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 11/18/2019 08:20
Name: Frank Sanford
Company/Agency: Schools Maintenance
Address: On site
Phone/Email: Click to enter text.
Notes: Confirmed product to be R-22 Refrigerant

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Followup – 11/25/2019 – HMO501 Adkins – email from Schools Project Manager - Jason Mastrangelo – there wre two chillers involved in this incident. The recovery ticket from the freon recovery was able to recover approximately 217 lbs of product. This results in a release of 320 pounds released to the environment. An SDS was also supplied for this product and has been appended to this report.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 11/18/2019 09:15 Provided to Name: Troy Hart
VA EOC Notified Date/Time: 11/18/2019 10:43 Name: Brennan Wykert



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

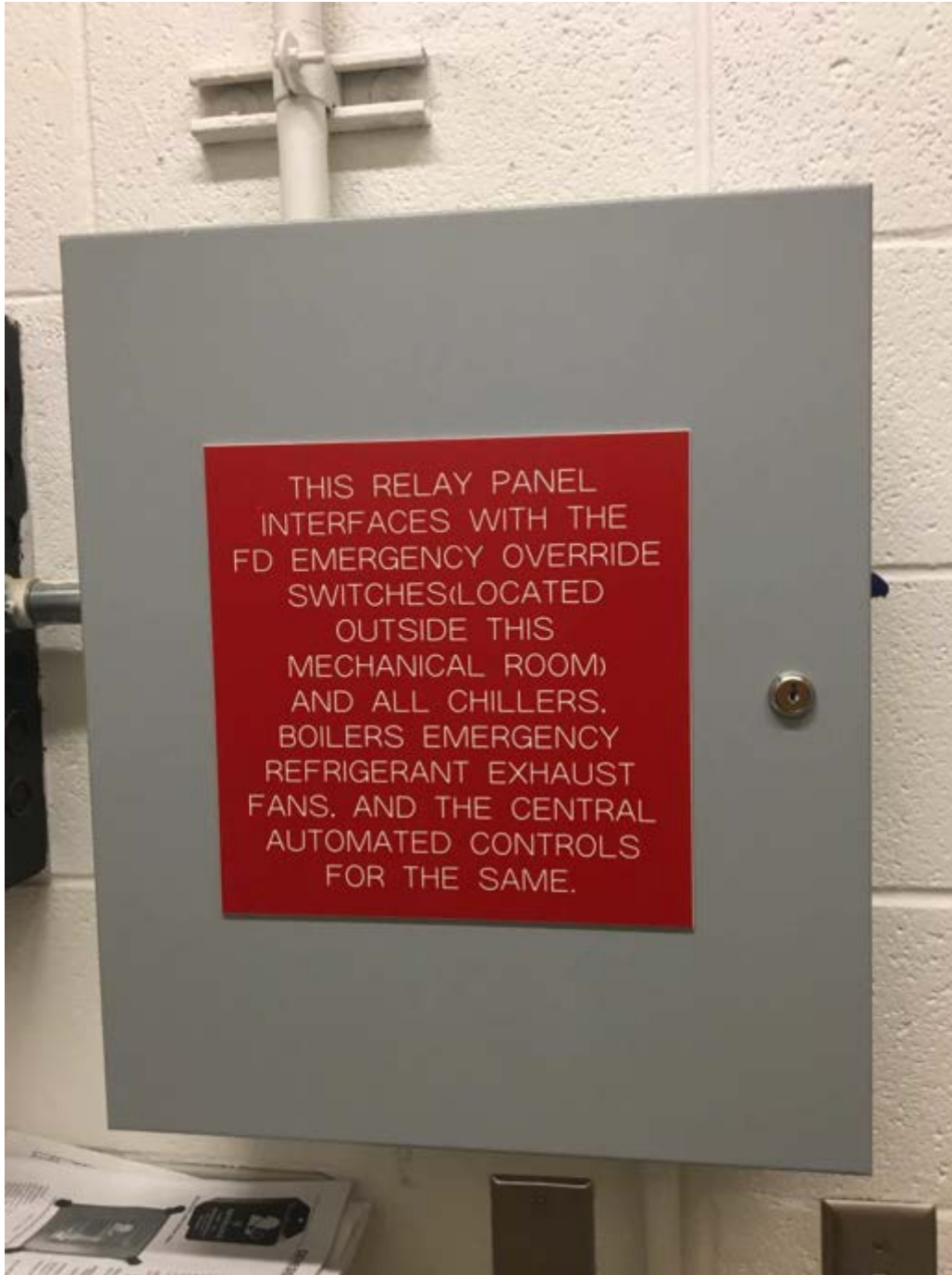


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PRINCE WILLIAM COUNTY
 DEPARTMENT OF FIRE AND RESCUE
 HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



SITE SAFETY AND CONTROL PLAN ICS 208 HM		1. Incident Name: Beville Command	2. Date Prepared: 11-18-19		3. Operational Period Time: Current							
Section I. Site Information												
4. Incident Location: 4901 Dalve Blvd, Woodbridge, VA												
Section II. Organization												
5. Incident Commander: BC Kevin Artone		6. HM Group Supervisor: Captain Jon Newell		7. Tech. Specialist - HM Reference: Matt Adkins								
8. Safety Officer: Lt. Graham Clark		9. Entry Leader: Lt. Mark Nicol		10. Site Access Control Leader: PWC PD								
11. Asst. Safety Officer - HM:		12. Decontamination Leader: Lt. Jason Byler		13. Safe Refuge Area Mgr:								
14. Environmental Health:		15.		16.								
17. Entry Team: (Buddy System)				18. Decontamination Element:								
Name:		PPE Level		Name:		PPE Level						
Entry 1 Snitwongse, Gonzalez, Heard		Turnout		Decon 1 E518		Turnout						
Entry 2 Luke, Spangler, Nicol		Turnout		Decon 2								
Entry 3				Decon 3								
Entry 4				Decon 4								
Section III. Hazard/Risk Analysis												
19. Material:	Container type	Qty.	Phys. State	pH	IDLH	F.P.	I.T.	V.P.	V.D.	S.G.	LEL	UEL
Freon												
Comment: Normal Readings with exception of 20.0 % initially in leak room, level did return to 20.9%												
Section IV. Hazard Monitoring												
20. LEL Instrument(s): 4-gas				21. O ₂ Instrument(s): 4-gas								
22. Toxicity/PPM Instrument(s): 4-gas				23. Radiological Instrument(s):								
Comment: 32 ppb on PID												
Section V. Decontamination Procedures												
24. Standard Decontamination Procedures: YES: <input checked="" type="checkbox"/> NO: <input type="checkbox"/>												
Comment: Emergency Decon set up by E518												
Section VI. Site Communications												
25. Command Frequency: 5C		26. Tactical Frequency: 5C		27. Entry Frequency: 5C								
Section VII. Medical Assistance												
28. Medical Monitoring: YES: <input type="checkbox"/> NO: <input checked="" type="checkbox"/>		29. Medical Treatment and Transport In-place: YES: <input checked="" type="checkbox"/> NO: <input type="checkbox"/>										
Comment: Rehab on standby if needed												

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Section VIII. Site Map	
30. Site Map: Freon leak caused by contractor cutting pipe to system he thought was empty; it was full. Entry team 1 &2 cleared building and checked for hazards.	
Weather <input type="checkbox"/> Command Post <input type="checkbox"/> Zones <input type="checkbox"/> Assembly Areas <input type="checkbox"/> Escape Routes <input type="checkbox"/> Other <input type="checkbox"/>	
Section IX. Entry Objectives	
31. Entry Objectives: Confirm leak, and mitigate hazard	
Section X. SOP S and Safe Work Practices	
32. Modifications to Documented SOP s or Work Practices: YES: <input type="checkbox"/> NO: <input checked="" type="checkbox"/>	
Comment:	
Section XI. Emergency Procedures	
33. Emergency Procedures:	
Section XII. Safety Briefing	
34. Asst. Safety Officer - HM Signature: _____ Safety Briefing Completed (Time): _____	
35. HM Group Supervisor Signature: _____	36. Incident Commander Signature: _____

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version	Revision Date	SDS Number	Date of last issue: 09/27/2019
11.0	11/21/2019	1329809-00041	Date of first issue: 02/27/2017

SECTION 1. IDENTIFICATION

Product name : Freon™ 22 (R-22) Refrigerant
 SDS-identcode : 130000024323

Manufacturer or supplier's details

Company name of supplier : The Chemours Company FC, LLC
 Address : 1007 Market Street
 Wilmington, DE 19801 United States of America (USA)
 Telephone : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
 Emergency telephone : Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-773-2000) ; Transport emergency: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

Recommended use of the chemical and restrictions on use

Recommended use : Refrigerant
 Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Gases under pressure : Liquefied gas
 Simple Asphyxiant

GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H280 Contains gas under pressure; may explode if heated.
 May displace oxygen and cause rapid suffocation.

Precautionary Statements : **Storage:**
 P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Other hazards

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardi-

Section Click + to add additional entries:

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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Freon™ 22 (R-22) Refrigerant

Version: 11.0 Revision Date: 11/21/2019 SDS Number: 1329809-00041 Date of last issue: 09/27/2019
Date of first issue: 02/27/2017

no effects.
Rapid evaporation of the product may cause frostbite.
Dangerous for the ozone layer.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Substance name : Chlorodifluoromethane
CAS-No. : 75-45-6

Components

Chemical name	CAS-No.	Concentration (% w/w)
Chlorodifluoromethane	75-45-6	99.8

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Thaw frosted parts with lukewarm water. Do not rub affected area.
Get medical attention immediately.

In case of eye contact : Get medical attention immediately.

If swallowed : Ingestion is not considered a potential route of exposure.

Most important symptoms and effects, both acute and delayed : May cause cardiac arrhythmia.
Inhalation of high concentration may cause Anaesthetic effects.
Dizziness
confusion
Light-headedness
Drowsiness
Unconsciousness
Irregular cardiac activity
fainting
Weakness
Lack of coordination
Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Protection of first-aiders : No special precautions are necessary for first aid responders.

Notes to physician : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version 11.0	Revision Date: 11/21/2019	SDS Number: 1329809-00041	Date of last issue: 09/27/2019 Date of first issue: 02/27/2017
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situations of emergency life support should be used with special caution.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Not applicable
Will not burn
- Unsuitable extinguishing media : Not applicable
Will not burn
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fight fire remotely due to the risk of explosion.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Avoid skin contact with leaking liquid (danger of frostbite).
Ventilate the area.
Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
- Methods and materials for containment and cleaning up : Ventilate the area.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use equipment rated for cylinder pressure. Use a backflow preventative device in piping. Close valve after each use and when empty.

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



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SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version 11.0	Revision Date: 11/21/2019	SDS Number: 1329609-00041	Date of last issue: 09/27/2019 Date of first issue: 02/27/2017
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- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling :
 - Avoid breathing gas.
 - Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
 - Wear cold insulating gloves/ face shield/ eye protection.
 - Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point.
 - Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.
 - Prevent backflow into the gas tank.
 - Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems.
 - Close valve after each use and when empty. Do NOT change or force fit connections.
 - Prevent the intrusion of water into the gas tank.
 - Never attempt to lift cylinder by its cap.
 - Do not drag, slide or roll cylinders.
 - Use a suitable hand truck for cylinder movement.
 - Keep away from heat and sources of ignition.
 - Take precautionary measures against static discharges.
 - Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage :
 - Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
 - Separate full containers from empty containers.
 - Do not store near combustible materials.
 - Avoid area where salt or other corrosive materials are present.
 - Keep in properly labeled containers.
 - Keep in a cool, well-ventilated place.
 - Keep away from direct sunlight.
 - Store in accordance with the particular national regulations.
- Materials to avoid :
 - Do not store with the following product types:
 - Self-reactive substances and mixtures
 - Organic peroxides
 - Oxidizing agents
 - Flammable liquids
 - Flammable solids
 - Pyrophoric liquids
 - Pyrophoric solids
 - Self-heating substances and mixtures
 - Substances and mixtures which in contact with water emit flammable gases
 - Explosives
 - Acutely toxic substances and mixtures
 - Substances and mixtures with chronic toxicity
- Recommended storage temperature : < 126 °F / < 52 °C

Section Click + to add additional entries:

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



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SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version: 11.0 Revision Date: 11/21/2019 SDS Number: 1329809-00041 Date of last issue: 09/27/2019
Date of first issue: 02/27/2017

Storage period : > 10 y
Further information on storage stability : The product has an indefinite shelf life when stored properly.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Chlorodifluoromethane	75-45-6	TWA	1,000 ppm	ACGIH
		ST	1,250 ppm 4,375 mg/m ³	NIOSH REL
		TWA	1,000 ppm 3,500 mg/m ³	NIOSH REL

Engineering measures : Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection Material : Low temperature resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!

Eye protection : Wear the following personal protective equipment: Chemical resistant goggles must be worn. Face-shield

Skin and body protection : Skin should be washed after contact.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version	Revision Date:	SDS Number:	Date of last issue: 09/27/2019
11.0	11/21/2019	1329809-00041	Date of first issue: 02/27/2017

Protective measures : Wear cold insulating gloves/ face shield/ eye protection.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquefied gas

Color : colorless

Odor : odorless, slight, sweet

Odor Threshold : No data available

pH : No data available

Melting point/freezing point : -256 °F / -160 °C

Initial boiling point and boiling range : -41.4 °F / -40.8 °C (1,013 hPa)

Flash point : Not applicable

Evaporation rate : > 1 (CCL4=1.0)

Flammability (solid, gas) : Will not burn

Self-ignition : The substance or mixture is not classified as pyrophoric.

Upper explosion limit / Upper flammability limit : Upper flammability limit
Method: ASTM E681
None.

Lower explosion limit / Lower flammability limit : Lower flammability limit
Method: ASTM E681
None.

Vapor pressure : 9,135 hPa (68 °F / 20 °C)

Relative vapor density : 3

Relative density : 1.19 (77 °F / 25 °C)

Density : 1.191 g/cm³ (77 °F / 25 °C) (as liquid)

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



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SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version	Revision Date:	SDS Number:	Date of last issue: 09/27/2019
11.0	11/21/2019	1329809-00041	Date of first issue: 02/27/2017

Solubility(ies)	
Water solubility	: 2.6 g/l (77 °F / 25 °C)
Partition coefficient: n-octanol/water	: log Pow: 0.053 (77 °F / 25 °C)
Autoignition temperature	: 1170 - 1175 °F / 632 - 635 °C
Decomposition temperature	: 1170 °F / 632 °C
Viscosity	
Viscosity, dynamic	: 0.22 mPa·s (50 °F / 10 °C)
Viscosity, kinematic	: Not applicable
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Particle size	: Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable if used as directed. Follow precautionary advice and avoid incompatible materials and conditions.
Possibility of hazardous reactions	: Can react with strong oxidizing agents.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Oxidizing agents
Hazardous decomposition products	: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Eye contact

Acute toxicity

Not classified based on available information.

Components:

Chlorodifluoromethane:	
Acute inhalation toxicity	: LC50 (Mouse): > 150000 ppm

Repeating

Section Click + to add additional entries:
photos:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version 11.0	Revision Date: 11/21/2019	SDS Number: 1329809-00041	Date of last issue: 09/27/2019 Date of first issue: 02/27/2017
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Exposure time: 4 h
Test atmosphere: gas

Lowest observed adverse effect concentration (Dog): 50000 ppm
Test atmosphere: gas
Symptoms: Cardiac sensitization

No observed adverse effect concentration (Dog): 25000 ppm
Test atmosphere: gas
Symptoms: Cardiac sensitization

Cardiac sensitisation threshold limit (Dog): 175,000 mg/m³
Test atmosphere: gas
Symptoms: Cardiac sensitization

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Components:

Chlorodifluoromethane:

Routes of exposure	: Skin contact
Species	: Not tested on animals
Result	: negative

Germ cell mutagenicity

Not classified based on available information.

Components:

Chlorodifluoromethane:

Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
-------------------------------------	--

Carcinogenicity

Not classified based on available information.

Components:

Chlorodifluoromethane:

Carcinogenicity - Assessment	: Weight of evidence does not support classification as a carcinogen.
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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



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SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version 11.0	Revision Date: 11/21/2019	SDS Number: 1329809-00041	Date of last issue: 09/27/2019 Date of first issue: 02/27/2017
-----------------	------------------------------	------------------------------	---

- IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
- NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

Components:

Chlorodifluoromethane:
Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Components:

Chlorodifluoromethane:
Assessment : No significant health effects observed in animals at concentrations of 250 ppmV/8h/d or less.

Repeated dose toxicity

Components:

Chlorodifluoromethane:

Species	: Mouse
NOAEL	: 10000 ppm
LOAEL	: 50000 ppm
Application Route	: inhalation (gas)
Exposure time	: 581 d
Remarks	: No significant adverse effects were reported

Aspiration toxicity
Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Chlorodifluoromethane:
Toxicity to fish : LC50 (Zebrafish): 777 mg/l

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version	Revision Date:	SDS Number:	Date of last issue: 09/27/2019
11.0	11/21/2019	1329809-00041	Date of first issue: 02/27/2017

	Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 433 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: EC50 (algae): 250 mg/l Exposure time: 96 h

Persistence and degradability

Components:

Chlorodifluoromethane:

Biodegradability : Result: Not readily biodegradable

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Components:

Chlorodifluoromethane:

Ozone-Depletion Potential : 0.055
Where a range of ODPs is indicated, the highest value in that range shall be used for the purposes of the Protocol. The ODPs listed as a single value have been determined from calculations based on laboratory measurements. Those listed as a range are based on estimates and are less certain. The range pertains to an isomeric group. The upper value is the estimate of the ODP of the isomer with the highest ODP, and the lower value is the estimate of the ODP of the isomer with the lowest ODP.
Regulation: UNEP - Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer (Update: 2016-11-23)
Group: Annex C - Group I: HCFCs (consumption and production)

0.055
Includes all isomers of the substance, regardless of whether the isomer is explicitly listed on its own.
Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class II Substances (Update: 2014-10-28)



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Repeating Section Click + to add additional entries:
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SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version	Revision Date:	SDS Number:	Date of last issue: 09/27/2019
11.0	11/21/2019	1329809-00041	Date of first issue: 02/27/2017

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Dispose of in accordance with local regulations.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty pressure vessels should be returned to the supplier, if not otherwise specified. Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

- UN number : UN 1018
- Proper shipping name : REFRIGERANT GAS R 22
- Class : 2.2
- Packing group : Not assigned by regulation
- Labels : 2.2

IATA-DGR

- UNID No. : UN 1018
- Proper shipping name : Refrigerant gas R 22
- Class : 2.2
- Packing group : Not assigned by regulation
- Labels : Non-flammable, non-toxic Gas
- Packing instruction (cargo aircraft) : 200
- Packing instruction (passenger aircraft) : 200

IMDG-Code

- UN number : UN 1018
- Proper shipping name : REFRIGERANT GAS R 22
- Class : 2.2
- Packing group : Not assigned by regulation
- Labels : 2.2
- EmS Code : F-C; S-V
- Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

- UNIDNA number : UN 1018
- Proper shipping name : Refrigerant gas R 22
- Class : 2.2
- Packing group : Not assigned by regulation
- Labels : NON-FLAMMABLE GAS
- ERG Code : 126

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version 11.0	Revision Date: 11/21/2019	SDS Number: 1329809-00041	Date of last issue: 09/27/2019 Date of first issue: 02/27/2017
-----------------	------------------------------	------------------------------	---

Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Gases under pressure
Simple Asphyxiant

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Chlorodifluoro- methane	75-45-6	99.8 %
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US State Regulations

Pennsylvania Right To Know

Chlorodifluoromethane 75-45-6

California List of Hazardous Substances

Chlorodifluoromethane 75-45-6

California Permissible Exposure Limits for Chemical Contaminants

Chlorodifluoromethane 75-45-6

International Regulations

Montreal Protocol (Ozone Depleting Substances) : Chlorodifluoromethane



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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SAFETY DATA SHEET



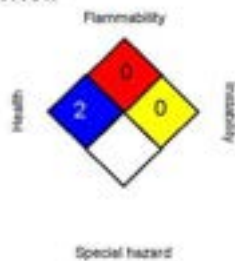
Freon™ 22 (R-22) Refrigerant

Version	Revision Date:	SDS Number:	Date of last issue: 09/27/2019
11.0	11/21/2019	1329809-00041	Date of first issue: 02/27/2017

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMS® IV:

HEALTH	/ 0
FLAMMABILITY	0
PHYSICAL HAZARD	3

HMS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "/" represents a chronic hazard, while the "0" represents the absence of a chronic hazard.

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For further information contact the local Chemours office or nominated distributors.
All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

Full text of other abbreviations

- ACGIH : : USA, ACGIH Threshold Limit Values (TLV)
- NIOSH REL : : USA, NIOSH Recommended Exposure Limits
- ACGIH / TWA : : 8-hour, time-weighted average
- NIOSH REL / TWA : : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- NIOSH REL / ST : : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EMS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



SAFETY DATA SHEET



Freon™ 22 (R-22) Refrigerant

Version 11.0	Revision Date: 11/21/2019	SDS Number: 1329809-00041	Date of last issue: 09/27/2019 Date of first issue: 02/27/2017
-----------------	------------------------------	------------------------------	---

50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 11/21/2019

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190041893	Date/Time: 12/12/2019 14:32
Location: 2700 Potomac Mills Circle	
Report Completed by: Captain Robert Moreau	Incident Commander: Captain Chris Eddy

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II John Sawicki, Technician I Stephen Mickle, Lieutenant Dylan Moore, Technician II Eric Weaver, Technician I Jason Kolbas, Technician I Matthew Waln
HS516 Unit personnel: N/A
Other HM Personnel: Battalion Chief Kim Stewart, Technician II Anthony Laganga

INCIDENT NARRATIVE
<p>On 12/12/2019 at approximately 1425 hours, a phone consult was received from E520's officer (Captain Chris Eddy). E520 had been dispatched to a fuel leak of a vehicle at the noted address. Address is a warehouse club store (Costco) that has a gas station. The warehouse club store is attached to a shopping mall. Gas station is located in the parking lot of the warehouse club store. Vehicle was located in large parking lot with no storm drains or drain covers in the immediate vicinity. E520 arrived on scene to find a four door sedan leaking gasoline from the bottom of the vehicle. Vehicle owner was not present. Vehicle located near light pole #20. Costco staff was on scene and had placed absorbent pads and booms on the ground to limit gasoline leak from spreading. Owner of the vehicle arrived on scene and had been shopping. She stated she just filled her vehicle up before going inside to shop. E520 reported the vehicle was still leaking from under the car and they believed the fuel line had been compromised. E520 was given instructions to prevent the leak from spreading and notified that E506, R506, and HM506 would be responding. The hazmat team responded to the location without incident. Upon arrival, E506's officer (Captain Moreau) performed face to face with E520's officer. No changes in the incident were reported. Captain Moreau made contact with the vehicle owner (Patricia Lynn Daniels). She reported that she did not know her car was leaking fuel and confirmed that she had filled her car up approximately 30 minutes prior. Vehicle estimated to have 18 gallon fuel tank per owner. E520 had issued a LEPC form to the vehicle owner prior to the hazmat team's arrival. Contact was made with fuel pump supervisor for Costco (Kelvin Yates). Fuel pump supervisor had placed absorbent pads and booms down prior to calling 911. He was also in contact with the shopping mall management company. Mall management stated they would be sending a representative to the scene but no representative arrived prior to hazmat team leaving. E520 reported they had put six bags of absorbent down. R506 applied Plug N Dike to location of the leak. Vehicle was leaking from the fuel tank. Fuel tank appeared to have a crack on the side wall. Vehicle owner was able to contact AAA and a tow truck company was dispatched to tow her car. Captain Moreau informed the vehicle owner to inform the tow truck company that they would need to clean up the fuel spill and dispose of the absorbent properly. Vehicle owner was informed that if the tow truck company was unable to clean up the absorbent, pads, and booms that she would need to contact a cleanup contractor on the LEPC to have the service performed. Duty Fire Marshal (Lieutenant Smiljanich) was notified of the incident as a courtesy in the event the vehicle owner did not</p>



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



have the area cleaned up as directed. E520 was also informed of the plan and was ok to remain on scene to ensure the vehicle was towed from the scene and that the absorbent was cleaned up. R506 and HM506 went in service followed by E506. E520 contacted Captain Moreau at 16:41 and stated that the tow company (JKJ Transport) arrived on scene and refused to clean up the absorbent. E520 reported that the tow company was verbally abrasive and refused to perform the tow. The vehicle owner contacted AAA and they were able to dispatch another tow company to perform the service. At 1800 hours, E520 contacted Captain Moreau again and advised that the second tow company (Safe-n-Sound Towing) had arrived on scene and was towing the car. E520 expressed concern that the tow company was sweeping up the absorbent with a residential broom into residential trash bags. E520 also reported that the company loaded the trash bags into the back of a POV that arrived on scene separately from the tow truck. Information was passed onto Hazmat 501 for additional follow up.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 12/12/2019
Name: Patricia Lynn Daniels
Company/Agency: Click to enter text.
Address: 3250 Birchdale Square Woodbridge, VA 22193-1320
Phone/Email: pldaniels38@hotmail.com 703-470-1661
Notes: VA Driver License (B23812787) Vehicle Info: 2017 Nissan Altima VA Tags UVY 4933 Vin # IN4AL3APXHC290708

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 12/12/2019
Name: Kelvin Yates
Company/Agency: Costco Fuel Pumps Supervisor
Address: 2700 Potomac Mills Circle
Phone/Email: w626adm@costco.com 703-338-6948
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 12/12/2019 15:13 hours
Name: Click to enter text.
Company/Agency: Potomac Mills Mall Management
Address: Click to enter text.
Phone/Email: 703-496-9301
Notes: Costco fuel pump supervisor contacted mall management and informed them of the situation. Mall management informed supervisor that they would send a representative out to



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



the incident. No representative arrived on scene while Hazmat units were on scene.

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NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 12/12/2019 22:15
Name: Brian Geoffrion
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Courtesy notification only. Case # HMVA40063.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 12/12/2019 1800 hours
Name: Ray Hackley
Company/Agency: Safe-n-Sound Towing
Address: Click to enter text.
Phone/Email: 571-201-6669
Notes: Tow company that towed responsible party vehicle from the scene and cleaned up absorbent.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 12/12/19	
Provided to Name: Patricia Lynn Daniels (Responsible Party)	
VA EOC Notified Date/Time: 12/12/2019 22:15	Name: Brain Geoffrion



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Front of vehicle.

Repeating Section Click + to add additional entries:

photos:



Driver's side of vehicle.

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photos:



Passenger side of vehicle.

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Rear of vehicle.

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



View of leak with absorbent, pads, and booms.

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View #2 of leak with absorbent, pads, and booms.

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photos:



View #3 of leak with absorbent and pads.

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photos:



View #4 of leak with absorbent, pads, and booms.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



View of Plug N Dike on cracked fuel tank.

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD 190042103	Date/Time: 12/14/2019 10:38
Location: Vint Hill Rd & Sudley Manor Dr	
Report Completed by: TII E. Weaver	Incident Commander: BC Morrison

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Weaver, Militello, Waln, Burgstresser
HS516 Unit personnel: NA
Other HM Personnel: Sawicki, Greiner

INCIDENT NARRATIVE
E525 was dispatched to an auto accident at Sudley Manor Dr and Vint Hill Rd. TII A, Marsh Notified the Duty HM Technician of approx five gallons of gasoline that had leaked from an overturned vehicle into a drainage ditch. HM units arrived on scene to find the product contained to the drainage ditch, E525 had dammed in front the drain. Absorbant pads were placed in the drainage ditch and booms were placed at both ends of he containment area. HM501 notified and advised to notify VAEOC and have the tow company collect the pads and booms

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1038
Name: VDOT
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 7/24/2019 20:00	Name: Raquel



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190042301	Date/Time: 12/16/2019 02:16
Location: I95 N @154 Truck Rest Area	
Report Completed by: Tech II Cook	Incident Commander: BC503

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Cook, Spangler, Heard, Adzemovic
HS516 Unit personnel: NA
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>HM506 was dispatched to I95 N 154 at the truck rest area for a truck leaking diesel fuel. HM506 arrived on scene to find a trail of fuel leading to where the truck had stopped at the truck stop, off ramp. Approximately 5-10 gallons had spilled in the area where the truck had come to a stop. The truck driver had already stopped the leak from the hose that had broken and E523 had absorbent down to contain what had leaked upon our arrival. No water ways or soil was affected and leak was contained to the pavement area. A LEPC form was given to the truck driver and Atlas was contacted to discuss clean up of the fuel trail at the request of VSP. Ultimately the decision was made to have the tow company clean up the absorbent and for VDOT to lay sand down on to the fuel trail. HM506 went back inservice with no further incident.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 12/16/2019 02:30
Name: Bryan Grayle
Company/Agency: Bargayle Transport Inc.
Address: Jacksonville, FL
Phone/Email: 786-286-6496 Bargayletransport@gmail.com
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Representative
Date/Time: 12/16/2019 02:30
Name: Trooper M. J. Kryznefski
Company/Agency: Virginia State Police
Address: Division 7, Area 11
Phone/Email: 703-803-0026
Notes: Click to enter text.

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 12/16/2019 02:30 Provided to Name: Bryan Grayle	
VA EOC Notified Date/Time: 12/16/2019 03:50	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190042435	Date/Time: 12/17/2019 08:49
Location: 15721 Forest Park Dr. Woodbridge, Va. 22193	
Report Completed by: Lt. Mark Nicol	Incident Commander: BC Kevin Artone

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Mark Nicol, T-I Eric Spangler, T-I Katherine Adzemovic, Capt. Jonathan Newell, T-II Michael Gonzalez
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE
<p>R506 was dispatched to this address for a RESCUE call with E517 and M517. While we were at the rescue call the Carbon Monoxide meter that is located on the EMS Aid bag began to alarm. This meter alarmed approximately 4 minutes after R506 arrived onscene. We attempted to clear out the meter by turning it off and then back on and the meter immediately went back into alm mode. E517’s officer Lt. McParland sent his firefighter to retrieve their QRae, 4-gas meter and they were recording higher than normal Carbon Monoxide readings within the same area of the school. I sent my firefighters in with our two QRae, 4-gas meters off of R506 and we showed readings of 31 – ppm in room #1150 and a high of 35 – ppm in room #1149. At this point we cleared all personnel from these rooms to include school staff and special needs children. I instructed all fire personnel on the scene to dress in firefighting PPE to include SCBA and on air while investigating the cause. I was told by one of the special needs teachers that “she recently sought medical treatment at Urgent Care for symptoms to include headaches and nausea”. She said “that her staff members and students were having similar symptoms within the past month”. I asked to speak with whom was in-charge and spoke with the Assistant Principle to explain the situation and my plan of action to evacuate the school. Once the school was being evacuated E517 and R506 worked together to further investigate the areas effected. This included the science labs directly above the area, the roof, the kitchen and loading dock areas. Our 4-gas readings in these areas were normal background and the initial two classrooms and one additional classroom #1147 were the area of concern. Once additional units arrived on scene we began to ventilate the structure at which time the Carbon Monoxide readings were beginning to come down. We stopped the ventilation and tried to re-create the problem, but our readings did not go back up. We continued to ventilate until the readings were normal background.</p> <p>One of the school maintenance personnel told me that “the fresh air unit that supplied air to the zone in question was not running at the time and that they turned the unit on to help circulate air into the three classrooms”. E506 officer, Captain Jonathan Newell told the Assistant Principle to, “deny entry into the three classrooms for the remainder of the day and have maintenance personnel check for any Cartbon Monoxide readings later in the afternoon and again first thing in the morning, prior to anyone entering the rooms the next day. The scene was then turned back over to the Assistant Principle and the school maintenance personnel. R506 made ready with nothing further to report.</p>



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

<p>Additional Notes/Information: HMO501 Matt Adkins and HMO502 Captain Chris Adams were notified on 12/18/2019 of the situation.</p>	
<p>HAZMAT Officer Comments: PW Schools Facility Manager John Windley contacted BC Jarman who referred him to HMO501 Adkins, at 1400 on 12/18 – Captain Newell, Lt. Nicol and HMO Matt Adkins attended a meeting with school staff and faculty at Forest Park. During this meeting the schools plan of action to mitigate and investigate the issue was discussed with faculty. In discussing this with the facilities and environmental staff at schools, it was determined that the source was likely a number of school buses that sit idle in the area behind the school near these rooms in the mornings. The makeup air intakes are close to this area as well. Schools would work to investigate the source and have considerable resources allocated to ensure the safety of students and staff. – M. Adkins</p>	
<p>Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.</p>	
<p>Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.</p>	
<p>Provided to Name: Click or tap here to enter text.</p>	
<p>VA EOC Notified Date/Time: Click to enter a date.</p>	<p>Name: Click to enter text.</p>



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190042607	Date/Time: 12/18/2019 00:00
Location: 1990 Old Bridge Rd. Suite 101 Woodbridge, VA 22192	
Report Completed by: Lt. Stephen Horvath	Incident Commander: Click to enter text.

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Communications called with a question from a caller at All Pediatrics about a broken thermometer and toluene. I asked for the callers name and contact number.</p> <p>Callers name was Jennifer Benedict at ext. 929. Jennifer explained that they have a thermometer that is kept in a cylinder of toluene which is kept in a fridge with the vaccines to make sure they are stored at the correct temperature. When one of the other nurses went to check the thermometer she noticed it looked funny. The thermometer was broken. Part of it is still in the toluene container and the other part is in a vip lock bag (because they pulled it out to confirm it was broken. Jennifer stated no mercury came out of the thermometer. Jennifer also stated that the toluene didn't spill. As she was asking assistance with is how they properly dispose of both of them properly.</p> <p>I explained the LEPC form to Jennifer over the phone and advises her I would email it to her (jbenedict@allpeds.com) along with the office number to Alan Lacy @ VA DEQ. I informed Jennifer that HM501 or HM502 would be following up with her in the next day or two to assure they properly disposed of the two items correctly since it's the law.</p> <p style="color: red; text-align: center;">*This was a phone consult only</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 12-18-19
Name: Jennifer Benedict
Company/Agency: Nurse
Address: 1990 Old Bridge Rd. Suite 101 Woodbridge, VA 22192
Phone/Email: 703-491-4131 Ext. 929
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



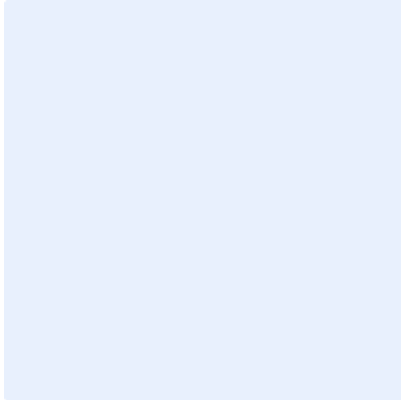
Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 12-18-19 / 1400 Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190042816	Date/Time: 12/19/2019 22:20
Location: 15948 Donald Curtis Drive Woodbridge VA 22191	
Report Completed by: Captain Robert Moreau	Incident Commander: Captain Robert Moreau

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II Militello, Technician I Lee Bergstreser, Technician I Stephen Mickle (HM OPS)
HS516 Unit personnel: NA
Other HM Personnel: NA

INCIDENT NARRATIVE

Captain Robert Moreau received a phone call from Prince William County Public Safety Communications (PWCPSCC) Center in reference to a fuel spill at the Garfield Substation fueling station. PWCPSCC provided a call back number for the individual who was requesting the phone consult. The individual was contacted and was identified as First Sergeant Christopher Rice with Prince William County Police Department (PWCPD). First Sergeant Rice stated that one of his officers had reported to him that there was a fuel spill at the Garfield Sub-Station fuel tanks. First Sergeant Rice was contacting Hazmat to ensure the hazard was mitigated properly. He reported that it was near the diesel fuel tanks and was approximately 2ft by 8ft. He confirmed that the spill was contained and that the fuel pumps were not actively leaking. He also confirmed that no waterways or storm water drains were impacted. He stated he believes it may have been a Department of Fire and Rescue (DFR) vehicle that caused the leak. PWCPD had placed absorbent pads from the spill kit on top of the spill and blocked it with cones. R506's crew assisted in station with contacting DFR station nearby Garfield Sub-Station to see if any units had spilled fuel. Station 503 was contacted and M503 confirmed they had spilt fuel. M503 was requested to return to the location of the spill and communication was notified that E506 and R506 would be responding to the incident location. BC503 (Captain Bill Phillips) was notified of the incident. Safety 502 (Lieutenant Regina Miller) was notified of the incident. E506 and HM506 responded without lights and siren. Upon arrival, face-to-face was performed with M503. They stated that they did not cause the spill that was found by DFR units upon arrival. M503 (Ron Pace) stated he did spill some fuel when he was filling the unit up but that it was a "small amount," approximately a half cup. M503 stated they put two absorbent pads down over the spill and left. M503 stated that they did not spill enough fuel to cause the larger leak. Prior to the Hazmat Team's arrival, county PD had placed more absorbent pads onto the spill. Approximately 16 absorbent pads had been placed on the ground. M503 was provided information on the proper notification of spills and reporting to risk management via the spill report form. M503's crew was not aware of this form. M503 given was given the direction to complete the form upon their return to the station. Hazmat team cleaned up the absorbent pads and placed them into the over pack drum located at the fueling station. Absorbent placed onto the spill. Absorbent was also cleaned up and placed into the over pack drum located at the fueling station. The spill had already permeated into the concrete pad. No puddle or liquid was present. Examination of the spill revealed a smaller "wetter" spot and a larger "drying" area that was consistent with M503's report that they only spilled



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



approximately a half cup of fuel. Hazard was mitigated by the hazmat team. Face-to-face was performed with PWCPD First Sergeant Rice. Mitigation steps were reviewed to ensure PWCPD was informed of DFR's response and post incident notifications. BC503 arrived on scene and was provided with an overview of the incident and the mitigation steps taken by the Hazmat team.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 12/19/2019 22:12
Name: First Sergeant Christopher Rice
Company/Agency: Prince William County Police
Address: 15948 Donald Curtis Drive
Phone/Email: 703-792-4194 (desk) 703-209-2435 (mobile) crice2@pwcgov.org
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 12/20/2019 00:28
Name: Thelma Blair
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Courtesy notification only. No resources requested.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 12/20/2019 05:43
Name: Alan Lacy
Company/Agency: Virginia Department of Environmental Quality
Address: Click to enter text.
Phone/Email: alan.lacy@deq.virginia.gov
Notes: Courtesy notification only.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 12/20/2019 00:28	Name: Thelma Blair



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

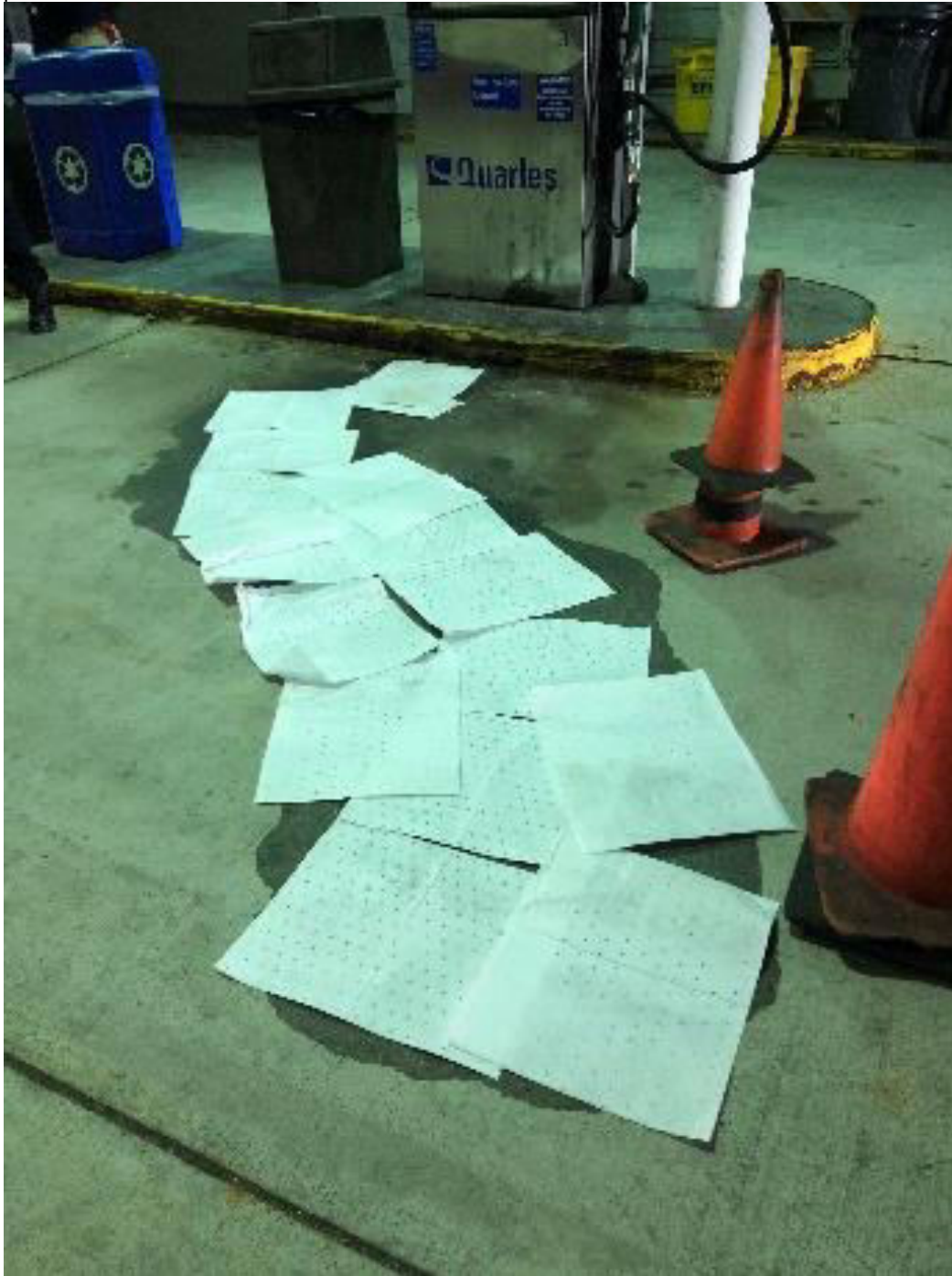




PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Fuel spil at Garfeild Sub Station.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



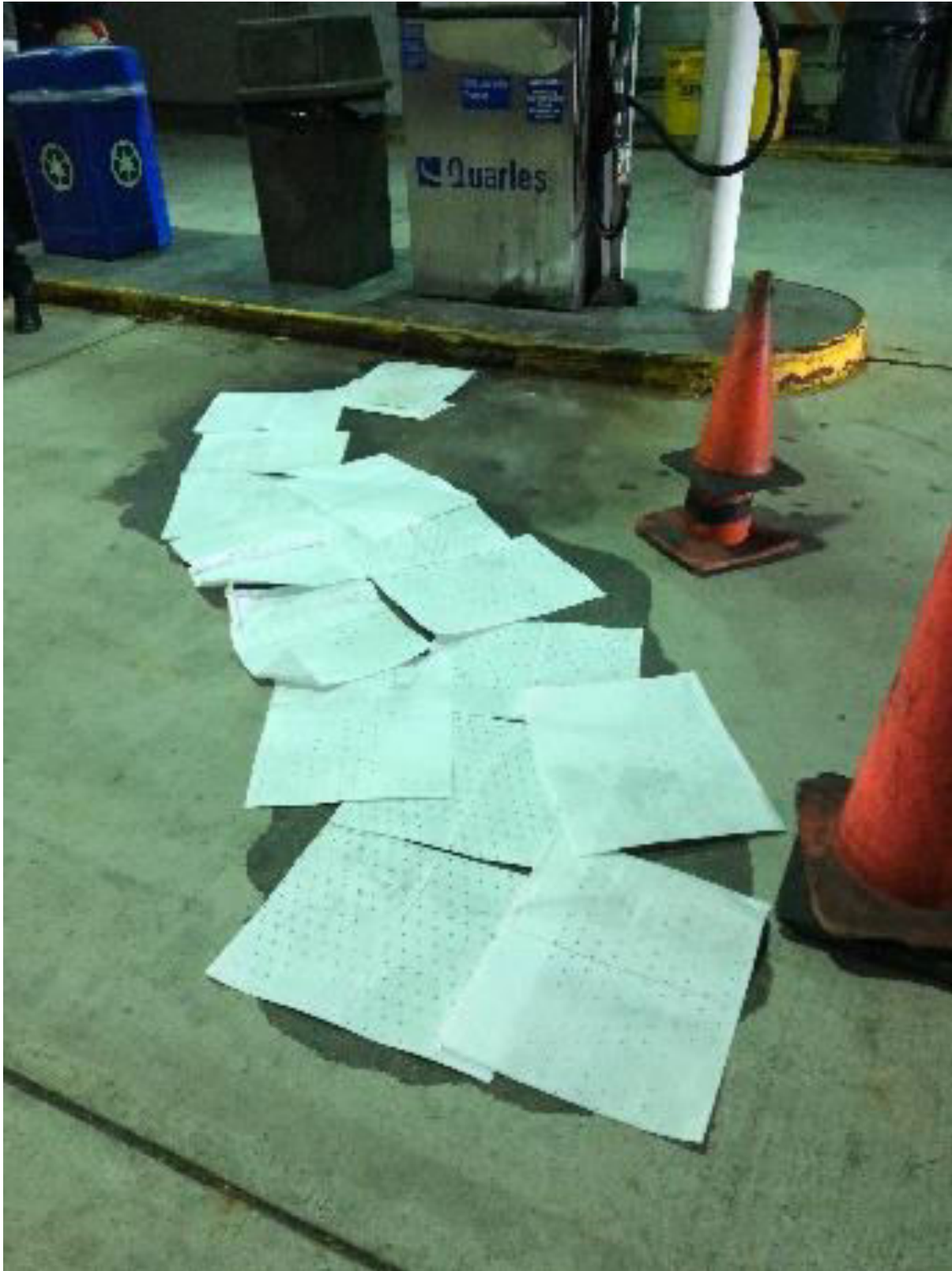
Fuel spil at Garfeild Sub Station.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Fuel spill at Garfeild Sub Station.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Fuel spil at Garfeild Sub Station.

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD190043248	Date/Time: 12/23/2019 11:51
Location: 14389 Aden Road Nokesville VA 20181	
Report Completed by: Captain Robert Moreau	Incident Commander: Battalion Chief Eric McCoy

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II Eric Weaver, Technician II Mike Militello, Technician II Davin Hoffman, Technician I Jason Kolbas, Technician I Lee Bergstreser, Technician I Matt Waln, Technician I Stephen Mickle (Hazmat Ops)
HS516 Unit personnel: N/A
Other HM Personnel: Captain Chris Adams

INCIDENT NARRATIVE

E506 and R506 were dispatched to 14389 Aden Road for an accident with entrapment. Units arrived on scene to find a single dump truck off the roadway into the woods. The dump truck was on its passenger side with a confirmed patient trapped. R506 performed the extrication and patient care was transferred to M507. The driver of the dump truck was transported via helicopter to Fairfax Hospital. After life safety objectives were completed, HM506 was requested through BC504. Approximately 80 gallons of diesel fuel had leaked from the ruptured saddle tank. Additional vehicle fluids (antifreeze, oil, etc.) were leaking from the dump truck. The fuel and other vehicle fluids were contained to the crash site. No waterways or storm drains were impacted. Vehicle was an International tow truck with VIN# 2HSFMAHR4SC013859. Prince William County Police Department (PWCPD) were on scene and requested two rotators. Waggy's towing was the towing company that arrived. Request was made to have Hazardous Materials Officer respond to the scene. Prior to the towing company up righting the tow truck, discussion regarding fuel level in the saddle tank occurred. The Hazmat Team discussed drilling an inspection hole in the tank to confirm the saddle tank was empty. Hazmat Team was able to confirm that the saddle tank had been compromised and that all fuel had leaked out. No inspection holes were drilled. A representative (Santos Juan Rivera) from the dump truck company arrived on scene. A LEPC form was issued to Mr. Rivera. A translator was used to assist in explaining the LEPC form. When discussing the LEPC form, it was identified that the dump truck had overturned onto Marine Corps Base Quantico (MCBQ) property. Command was notified and a request was made for a representative from MCBQ to come to the scene. HM502 arrived on scene and was provide with incident overview and current actions. Waggy's towing up righted the dump truck onto Aden Road. Two absorbent booms were placed along the roadway to contain residual fluids. Fuel spill and other vehicle fluids were contained to large divots created in the ground by the dump truck crash. The responsible party representative identified Atlas as the cleanup contractor. The responsible party representative informed the Hazmat Team that Atlas was not coming out until they received the following; verified the dump truck companies insurance, notified VDOT and received approval to shut down the roadway for mitigation efforts, and received permission from MCBQ to perform mitigation efforts on their property. HM502 notified VDOT via phone and instructed Captain Moreau to perform courtesy notification via email. R506, HM506, and BC504 cleared the call. E506 remained on scene with HMO502. The MCBQ Environmental Representative arrived on scene and an



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



incident overview and brief of actions were provided. MCBQ representative was introduced to the dump truck company representative. The MCBQ representative did not need any more resources. E506 went in service.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 12/23/2019 13:39
Name: Frank Duncan
Company/Agency: Marine Corps Base Quantico
Address: Click to enter text.
Phone/Email: 931-581-6770 / frank.duncan@usmc.mil
Notes: Head of Environmental Planning for MCBQ.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 12/23/2019 22:16
Name: John Zelsnack
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Notification only, no resources requested. Report # HMVA40209

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 12/23/2019 22:49
Name: Matthew Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 571-328-6836 / matthew.maiorana@vdot.virginia.gov
Notes: Courtesy notification. HM502 contacted VDOT via phone while on scene and left voice mail @ 13:40 hours.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: Click or tap here to enter text.
Name: Oscar Rivera
Company/Agency: Wonderful Home Services
Address: Unable to obtain.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Phone/Email: 301-771-1725
Notes: Owner of dump truck company. Owner was out of the country and not available by phone. Family/business partner was present on his behalf. Unable to obtain residential address or email.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: Click or tap here to enter text.
Name: Arturo A Reyes
Company/Agency: Wonderful Home Services
Address: 14934 Hyatt Place Woodbridge VA 22191
Phone/Email: Unable to obtain.
Notes: Driver of dump truck. Driver was transported via helicopter to Fairfax Hospital.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: Click or tap here to enter text.
Name: Santos Juan Rivera
Company/Agency: Wonderful Home Services
Address: 7500 Clemson Court Manassas VA 20109
Phone/Email: 703-665-8988 / No email available
Notes: Family/business partner that was on scene and identified as the "responsible party."

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 12/23/2019 12:51 Provided to Name: Juan Santos Rivera	
VA EOC Notified Date/Time: 12/23/2019 22:16	Name: John Zelsnack



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Overturned dump truck.

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photos:



Overturned dump truck.

Repeating Section Click + to add additional entries:

photos:



Overturned dump truck.

Repeating Section Click + to add additional entries:

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Overturned dump truck.

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Overturned dump truck.

photos:



Overturned dump truck.

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Overturned dump truck.

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Overturned dump truck.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Leak of fuel tank and other vehicle fluids.

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photos:



Leak of fuel tank and other vehicle fluids.

Repeating Section Click + to add additional entries:

photos:



Leak of fuel tank and other vehicle fluids.

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190043572	Date/Time: 12/26/2019 08:20
Location: 10797 University Blvd. Manassas, Va. 20110	
Report Completed by: Lt. Mark Nicol	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mark Nicol, B Cook Jr., Eric Spangler, Katheryn Adzemovic
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE
HM506 added onto the FALARM call that was dispatched for Hazmat Support Unit at the ATCC Campus. All units were placed in service by communications per the alarm company.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: N/A
Name: N/A
Company/Agency: N/A
Address: N/A
Phone/Email: N/A
Notes: N/A

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 190043917	Date/Time: 12/28/2019 18:05
Location: 10230 Bridwell Dr Nokesville, VA	
Report Completed by: Tech II Greiner/LT Moore	Incident Commander: Captain Newell

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Tech I Waln Tech I Bergstreser
HS516 Unit personnel: Click to enter text.
Other HM Personnel: DHM Tech II Greiner handled phone consult with BC504

INCIDENT NARRATIVE
R506 was called for a rescue involving a Kubota farm tractor with front scoop which had rolled down an approximately 100' embankment and landed upright in a large creek varying in depth from approximately 1' to 4'. The tractor did not appear to be leaking any fluids, there was no odor or visible sheen on the water, but it was dark and visibility was limited. The tractor was left in place and was not disturbed during or after the incident. LEPC form was not able to be given to the responsible party because homeowner was transported to Fairfax accompanied by all residents of the property. Matt Adkins was notified of the situation and will follow up with the homeowners regarding the removal of the tractor.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: Click or tap here to enter text.
Name: Marian Daszkilewicz
Company/Agency: Click to enter text.
Address: 10230 Bridwell Dr Nokesville, VA
Phone/Email: Click to enter text.
Notes: LEPC was not able to be given to homeowner due to being transported. Will be handled by Matt Adkins.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 13-30-2019 0900
Name: Alan Lacy, Steven Fontenot
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Notified via email on behalf of the resident, responsible party.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: HMO501 – Matt Adkins – 0900 30 DEC – Mr. Joe Coffineau, the cousin of the responsible party contacted me and stated that a wrecker company was at the site yesterday to remove the tractor and that they did not have long enough cables, and would be back today to finish the job. There was still no sheen or any other issues. Mr. Coffineau stated he would advise when the tractor was removed. I emailed DEQ to notify.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 12/28/2019 20:47	Name: John Zelsnack



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD1911120050150	Date/Time: 11/12/2019 06:28
Location: 7500 Cushings Rd. Manassas, VA 20109	
Report Completed by: Lt. Horvath	Incident Commander: Captain Nate Strong

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Lt. Horvath
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Matt Adkins

INCIDENT NARRATIVE
<p>*PHONE CONSULT ONLY* - E511 was on an auto accident call and noticed NOT related to their call that the road had a sheen across it. Multiple PD officers also mentioned it to Captain Strong asking "what was up with the road?". Captain Strong called for a phone consult to the duty Haz-Mat tech. I asked Captain Strong to check the area for a source. E511 checked the area and couldn't find the source. Lt. Horvath notified VDOT area supervisor Matthew Maiorana of the situation and he stated he and a few others from VDOT would go check it out. Matt Adkins was also notified, and he was going to check it out as well.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 11-12-19/0712
Name: Matthew Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Courtesy notification

Repeating Section Click + to add additional entries:

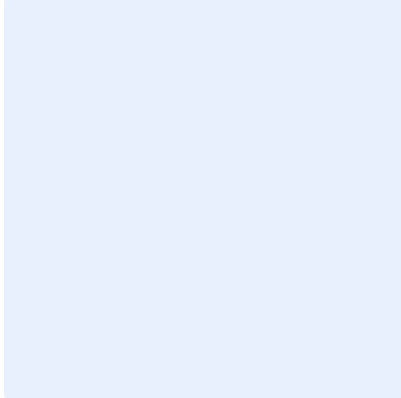
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200000630	Date/Time: 1/6/2020 00:00
Location: 530 Harbor Side St.	
Report Completed by: Hoffman	Incident Commander: BC Beavers

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT DESCRIPTION
Multiple units responded to a report of an overturned boat on the Potomac river. Crews found a 14 ft jon boat capsized 95% under water. The boat had approx. 2-3 gallons of gasoline on it before sinking. BC Beavers called for a phone consult. He advised there was no smell, visible sheen on the water or recoverable product in the river. After consulting with Capt. Adams, the DHM determined that there was no reason for hazmat personnel to respond to scene. The proper notifications were done. (EOC and DEQ) No other hazmat services needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 1/6/2020 1409
Name: Brennan
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 1-800-468-8892
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 1/6/2020 1407
Name: Alan Lacy
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: 703-583-3864
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



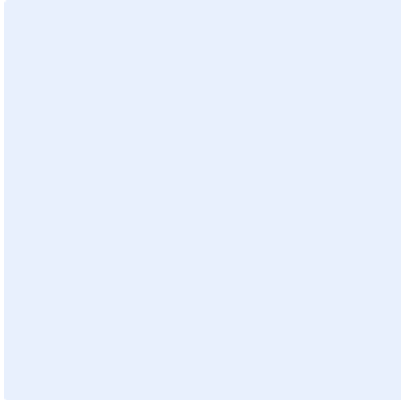
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 1/6/2020 00:00	Name: Brennan



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: MNSS200000684	Date/Time: 2/7/2020 02:29
Location: 10661 Frank Marshall Ln Manassas Va 20110	
Report Completed by: Hoffman	Incident Commander: Nary

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Hoffman, Kolbas, Berstresser
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Captain Adams

INCIDENT NARRATIVE
<p>RE521 requested phone consult for foam after system activation in airport hanger. After speaking with RE521 the DHM decided to go enroute to the scene to assess situation and document event. The magnitude of the foam activation was unknown until arrival. Due to the amount of foam and the positioning of it all there was no way to tell if it made it into any storm drains. There was approximately a 500 ft x 500 ft area of foam, at some areas as much as 15 ft deep. HMO 502 arrived on scene and spoke with the responsible party. The responsible party stated that the clean up would be performed by the installing company but he was unable to get intouch with them. After an extended period of time the responsible party was given an LEPC form and told to contact someone to clean up. He stated that he contacted Atlas and spoke with Paul. Paul advised him "he had no way of cleaning up bubbles and that it wasn't a hazard". HMO 502 advised that he would take care of notifying DEQ, EPA, and PWC watershed. As such he would enter the contacts and notification into the report once done. HMO 502 released HM506 and R506 from scene advising that he would remain on scene until a clean up company got there.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

<p>Additional Notes/Information: Click to enter text.</p>
<p>HAZMAT Officer Comments: HMO502 arrived on the scene proximity 0330 hrs. HMO502 received a situation update from HAZMAT 506. Captain Adams spoke with the responsible party on the scene, Ron Fleming, and</p>



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



advised of the importance of contracting a company to perform clean up of the released product. It was unclear at this time what type of foam was released as two types were housed on site, CHEMGUARD 3% AFFF and CHEMGUARD C2. After some delay Mr. Fleming contact a known contractor on the Department's Discharge Paperwork. This contractor did not feel their services were necessary and provided incorrect information to the responsibility. This added to delay clean up efforts. HAZMAT 506 performed run off conservation efforts, by creating a Dam to collect product in a near by drainage ditch. Other drains in the area were not addressed as they were inaccessible due to the large covering of Foam. At proximity 0500hrs, Mr. Fleming contacted Another known contractor, HEPACO. HEPACO quoted the responsible party a 1 hour time frame for contract paperwork, and an additional two plus hour until units would be on the scene. I deemed this response to be unacceptable and reached out to HEPACO representative Chris Ward. I advised him of the size of the spill and its importance. He was not given the proper information from the responsible party, and as a result had to change this company's response. This added to another delay. HMO502 made notifications to Virginia Department of Environmental Quality, Alan Lacy at 0440hrs. Manassas FMO was notified at 0400 hrs. David Ungar of PWC Storm Water Management was contacted at 0445. HMO502 and Manassas City BC Nary turned the scene over to Manassas Airport Management and Manassas PD, after the HEPACO acknowledged they were in route. HMO502 Follow up actions. At 0600 a large storm entered the area with heavy rain and high winds. HMO502 returned to the scene to receive a update on clean efforts. Captains found a majority of the foam product had been washed and was now in the form of runoff into local streams. PW Emergency Management was notified prior to the storms and took the lead on addressing environmental impact outreach to neighboring Counties. 0900hrs HEPACO arrived on the scene to address clean up. Virginia Department of Emergency Management was giving a courtesy notification at 1030hrs.

Fire Marshal Assigned: YES Lead Officer: Manassas FM

Discharge/LEPC Form Provided: Date/Time: 02/07/2020 0345hrs

Provided to Name: Ron Flemings

VA EOC Notified Date/Time: 2/7/2020 10:30	Name: unknown
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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200000723	Date/Time: 1/7/2020 00:00
Location: 1612 Mount High Street Woodbridge Va	
Report Completed by: Knight	Incident Commander: Feliciano N

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Phone consult Only
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
E502 was dispatched for a gas leak. Upon arrival they located a faulty appliance in the basement leaking fuel oil. E502 placed stay-dry absorbant and secured all valves to stop the leak. The homeowners called the fuel oil company and a repair company for the furnace. No further action required. Call occurred at 0813

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 01/07/2020 1800
Name: Tyler Ellis
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200000858	Date/Time: 1/8/2020 00:00
Location: 149.9 NB Woodbridge Va	
Report Completed by: Knight	Incident Commander: BC Luckinbill

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight, Mirabile ,Pistole
HS516 Unit personnel: Bob Howard
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
E506 and HM506 was dispatched for an Acc X with leaking fluid suspected to be hydraulic fluid. Arrived on scene and appeared to be a release of approximately 40 gallon release. A Pop up pool was deployed and stay dry was deployed to absorb and dam the product. After further investigation it appeared to be Sodium Chloride and Beet juice brine used to de-ice the road way. VDOT rep on scene and had already contacted Atlas environment for a consult. LEPC was not given due to proper steps being taken.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 01/08/2020 0530
Name: John Zelsnack
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Click to enter text.

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NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 01/08/2020
Name: Carter Crawford
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 571-220-1956
Notes: Atlas contacted

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Additional Notes/Information:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



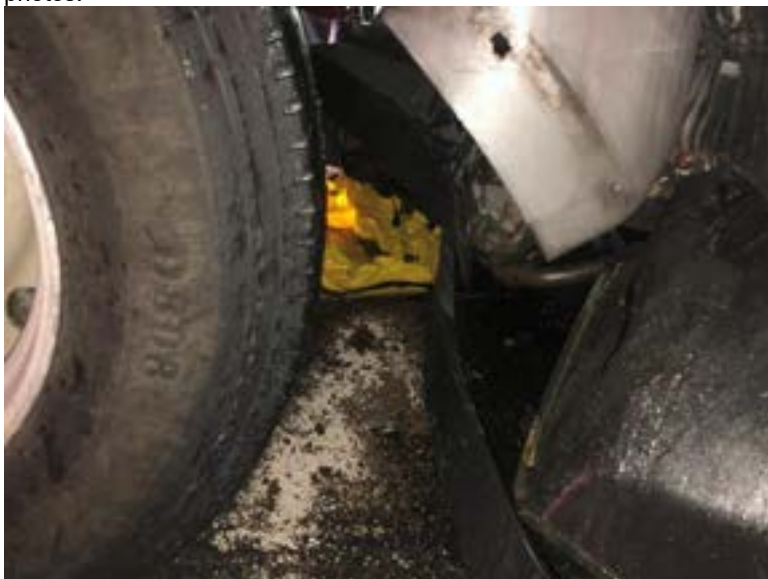
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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200000962	Date/Time: 1/8/2020 19:14
Location: 149 I95 N	
Report Completed by: Tech II Weaver	Incident Commander: Captain Bill Phillips

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: T2 Eric Weaver, T1 Jason Kolbas, T1 Lee Berstreger, Lt Dylan Moore, T2 Mike Millitello, T2 John Sawicki, T1 Stephen Mickle, Cap. Chris Adams
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Stafford County and Quantico were dispatched for an auto accident involving a tractor trailer at the 149 N MM on I95. Stafford established command and reported tractor was leaking “a small amount of fuel”. HM506 units added on to the call and arrived onscene to find a tractor trailer hauling roofing shingles down an embankment into the woods on the right hand side of I-95 N. Tractor was leaking diesel fuel and other engine fluids onto the ground into a large depression formed by the accident. A small creek was located approximately 20 feet downhill from the vehicle’s location. HM506 personnel created a earthen dam to contain the fluid about 5 feet from the vehicle and placed a boom just behind it. Two more booms were placed in the creek which was only a few inches deep. The fuel did not appear to have travelled more then a few feet from the vehicle and there was no sheen or sign of fuel in the waterway. The driver side saddle tank was empty and the passanger side saddle tank was half full and there was no sign of an active leak. The amount of fuel in the depression in the ground was approximately 50 gallons. After HM506 personnel contained the diesel spill with a dam and booms Waggy’s towing winched the tractor and trailer out and back onto the roadway. HM506 personel verified that no further leakage had occurred. While the winching was going on hazmat personel worked with VSP to contact the responsible party, the driver of the vehicle who had been transported to Sentera Hospital, He was provided with a LEPC and elected to have Hepaco perform the clean up. They reported an eta of approximately 30 minutes. HM506 remained on scene until HM502 arrived and took over the scene after being briefed by hazmat 6 crews. Station 6 units then went in service and HM502 remained on scene to coordinate with Hepaco.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 1/8/20
Name: Lee Campbell
Company/Agency: C Cross transport
Address: 3216 Lagrange Dr, Nashville TN 37218
Phone/Email: Click to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/8/20
Name: Click to enter text.
Company/Agency: HEPACO
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Cleanup company

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/8/20
Name: David Ungar
Company/Agency: PWC Storm Water Illicit Discharge
Address: Click to enter text.
Phone/Email: 703-792-7104
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/8/20
Name: Mathew Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Mathew.Maiorana@VDOT.Virginia.gov
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 1/8/20 2000	
Provided to Name: Lee Cambell	
VA EOC Notified Date/Time: 1/8/2020 11:42	Name: Mckinley



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200001138	Date/Time: 1/10/2020 13:32
Location: 17108 Silver Arrow Drive	
Report Completed by: Stewart	Incident Commander: Stewart

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: N/A
HS516 Unit personnel: N/A
Other HM Personnel: Stewart, Laganga, Clatterbuck

INCIDENT NARRATIVE
<p>E523 and T523 were dispatched for a fire alarm which was caused by a CO detector. They found 60PPM CO in the house with readings highest at the carpet level. All other readings on the 4 gas monitor were normal. BC502 was dispatched as command officer. Homeowners reported that they had their carpets cleaned recently. Units on scene thought that there could be a cross sensitivity issue with the CO monitors and requested a Hazmat Consult. Due to Hazmat units being on another incident, BC502 conducted the hazmat consult with Company 23 units upon arrival. The problem was narrowed down to a cross sensitivity with a chemical in the carpet cleaning products. Rae Systems Technical note 121 CO cross sensitivity was used in combination with generic carpet cleaning SDS sheets to make the determination. The house was ventilated with fans with a reduction of CO readings and no return of elevated levels when mechanical ventilation was stopped. BC502 cleared the scene and left E523 and T523 to finish natural ventilation and to advise homeowner to call 911 if they felt ill or the CO detector continued to alarm.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

<p>Additional Notes/Information: Click to enter text.</p>
<p>HAZMAT Officer Comments: Click to enter text.</p>
<p>Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.</p>
<p>Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.</p>



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 1/10/2020 22:38	Name: Thelma



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200001139	Date/Time: 1/10/2020 13:40
Location: Interstate 95 NB MM154	
Report Completed by: James Sanchez	Incident Commander: BC Craig Beavers

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: James Sanchez, John Sawicki, M. Militello, M. Waln, J. Kolbas, L. Bergstreser
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>On Jan 10, 20/20 at 13:40 hrs, HM 506 was dispatched to assist with a possible Anhydrous Amonia leak from a tanker trailer at the Interstate 95 North Bound Rest Area/Truck Weigh Scales / mile marker 154. Arriving on scene, located a white tractor trailer (MC330) parked at weigh scales. Units positioned upwind approximately 300-500 feet from tractor trailer. Current temperature was approximately 54 degrees partly cloudy with winds SE 6mph. Met with Engine 503 officer to get situational report. Engine 503 officer stated spoke to driver, tank was empty, State Police Inspector stated he smelled a strong odor near rear left/right of trailer while facilitating inspection. Plan of action was to send a Recon entry team to monitor around the trailer (emphasis on rear of trailor/purge valve location) and confirm if leak existed. Spoke to driver of tractor trailer. Driver stated tank was empty and did not notice any ammonia smell, nor did he notice anything abnormal. Instructed Engine 503 crew to position a charged hoseline upwind approximately 300 feet from tractor trailer. Results: Recon team did not discover any leaks from the tanker trailer using monitoring equipment. Advised Command nothing found, no leak and recommended all units return in service.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: Jan 10, 2020 @ 13:40
Name: Patrick Griffin (Driver)
Company/Agency: Tanner Industries
Address: 753 Davisville Rd. 3rd Floor Southhampton, PA 18966-3271
Phone/Email: 800-643-6226 Cell: 215-322-7791
Notes: Click to enter text.

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Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 1/10/2020 20:05	Name: Brian



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200001452	Date/Time: 1/13/2020 11:15
Location: 7350 Williamson Blvd. Manassas, Va. 20109	
Report Completed by: Lt. Mark Nicol	Incident Commander: Lt. Joseph Melville

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Jonathan Newell, Lt. Mark Nicol
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 1/13/2020 11:15
Name: Walter Alvarez (Driver)
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Ford Van License Plate: (MD) A314764

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NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: Click or tap here to enter text.
Name: David Ungar
Company/Agency: PWC Stormwater
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: by Matt Adkins

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NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: Click or tap here to enter text.
Name: Alan Lacy/Steven Fontenot
Company/Agency: DEQ



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: by Matt Adkins

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 1/13/2020 11:20 Provided to Name: Walter Alvarez	
VA EOC Notified Date/Time: 1/13/2020 14:28	Name: Archer Stark



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200002802	Date/Time: 1/18/2020 16:35
Location: I66 E rest area @ 48/8 MM.	
Report Completed by: Lt. Mark Nicol	Incident Commander: Captain Joseph Melvin

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: None
HS516 Unit personnel: None
Other HM Personnel: None

INCIDENT NARRATIVE
<p>Captain Newell and myself answered a phone consult from E511B for a Toyota RAV4 leaking gasoline onto the roadway and possibly into the storm drain system. E511B officer, Captain Melvin was given direction to dam and dike the affected area and utilize absorbant on the fuel spilled on the ground and to get the vehicle owner's information and give an LEPC form. It was determined that there was approximately half a tank of fuel in the car when the leak was noticed. E511B's crew determined that between 1 to 8 gallons of gasoline possibly spilled out.</p> <p>E511B statement Here is the information for Inc. 200002802</p> <p>Incident was at I66 EB Car Rest Area, rainy condition, standing water in parking area in front of Car rest station. Driver/Owner of vehicle stated she had struck something in the road and then pulled into the car rest area, another citizen looked at vehicle for driver saw a small stream of fuel coming from under vehicle. Arrived on scene, vehicle in parking space, smell of gasoline noticed along with sheen on top of standing water at the curb, water and fuel possibly went down drain prior to arrival, damming was performed to stop fuel and water from entering the drain, drain daylighted behind rest station to above ground spill into soil, no odor of fuel detected at daylight location. Spill of fuel contained in standing water at curb. Vehicle examined and found to have damage to fuel tank, in location other citizen saw fuel leaking, no active leak now, fuel probably under pressure but not now, vehicle owner stated she had approximately same amount of fuel (1/2 tank) as she did when she struck the object in the road, possible 1-2 gallons of fuel possibly leaked from vehicle.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 1/18/2020 17:15
Name: Jayne Elizabeth Robinson
Company/Agency: Click to enter text.
Address: 135 Charles Place, Indian Head, MD. 20640
Phone/Email:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notes: License Plate – MD, Lady J55

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/18/2020 17:50
Name: Click to enter text.
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 571-328-2017
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/18/2020 17:53
Name: Charlie Fitzsimmons
Company/Agency: EPA
Address: Click to enter text.
Phone/Email: 410-305-3027
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/18/2020 17:55
Name: Alan Lacy
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: 804-396-0150
Notes: Left voice mail

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/18/2020 17:58
Name: David Ungar
Company/Agency: PWC Storm Water/Environmental Services
Address: Click to enter text.
Phone/Email: 703-792-7104
Notes: Left voice mail

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 1/18/2020 17:30 Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 1/18/2020 18:00	Name: Mr. Wykert



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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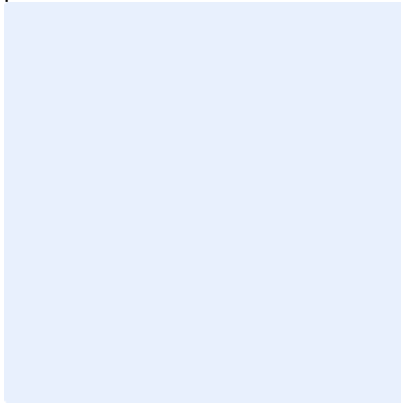
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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200002826	Date/Time: 1/24/2020 14:54
Location: 10318 Portsmouth Rd	
Report Completed by: Militello	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Militello, Sawicki, Burgstresser, Hoffman, Waln, Kolbas, Moreau
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Arrived on scene with E511B. E511 crew reports a 55 gallon metal drum that was on its side leaking approximately 30-35 gallon of what appears to be waste motor oil onto a blacktop loading dock. The barrel contained no identifying marks or shipping papers. Defensive measures were put in place preventing entry into drains. Phone conversation with HMO502. Contacted property management company who contacted their own clean up company. Spoke to the store manager who stated that he had never noticed the drum there before today. Requested FM due to suspicious circumstances. Remained on scene awaiting arrival of clean up contractor. Scene turned over to clean up contractor.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 1/24/2020 1535
Name: Dave Bouchard
Company/Agency: Rosenthal
Address: 1945 Old Gallows Rd STE 300 Vienna VA 22182
Phone/Email: 7036392792 dbouchard@rosenthalproperties.com
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 01/24/2020 1916
Name: Alan Lacy
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Courtesy Notification

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: M Cozdeba	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 1/24/2020 19:11	Name: John



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200002934	Date/Time: 1/25/2020 13:02
Location: 8537 Centreville Rd. Manassas Va.	
Report Completed by: Knight	Incident Commander: BC589

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight, Mirabile, Walsh, Williams
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Briggs

INCIDENT NARRATIVE
<p>Dispatched to a Suburban Propane fill tank owned by U-haul at the above location. U-haul employee (John Nessessary) noticed the cabinet frozen and the smell of propane. John pulled the emergency sop and did not feel that it worked so he dialed 911. E508 arrived and assessed and shut the leaking fill line with its ¼ turn valve. Hazmat response continued and assessed. Determined the the hazard was mitigated. U-haul rep stated that Suburban propane was direct and en route. Returned to service.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Represenative
Date/Time: 1/25/2020 1330
Name: John Nessessary
Company/Agency: U-haul
Address: 8537 Centreville Rd
Phone/Email: 703-369-6080
Notes: Suburban propane notified.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 1/25/2020 1430
Name: Tyler Ellis
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 800-468-8892
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

<p>Additional Notes/Information: Click to enter text.</p>
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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



HAZMAT Officer Comments: No LEPC given due to nothing to clean up.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 1/25/2020 14:30	Name: Tyler Ellis



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





PRINCE WILLIAM COUNTY
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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200004116	Date/Time: 2/5/2020 01:34
Location: 17416 Jeff Davis Hwy Dumfries VA 22026	
Report Completed by: Hoffman	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Waln, Kolbas, Militello, Sawicki, Bergstresser
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>E523 requested phone consult for pickup truck leaking fuel out of the bed. DHM spoke to Capt. Phillips (E523) and he advised they had 3 55 gallon drums leaking fuel, as well as another container that held approximately 40 gallons leaking. E523 they had a pin hole leak and that it had not made into any storm drain. They were advised to perform defensive measures (damming and diking) until the arrival of hazmat. E506, R506 and HM506 responded to scene. Upon arrival it was determined that the vehicle owner had been transported by police for unrelated matters. The vehicle had 3 35 gallon drums of diesel fuel along with another metal container that held approxitally 50 gallons. The drums were not leaking and the 50 gallon container was. E523 had placed a plastic bottle under the leak to catch it and placed absorbant on the ground to protect the storm drain. The other plastic drums were not leaking. An acquaintance of the vehicle owner was there and advised that he would be taking responsibility of the leak and the subseqant off loading of the diesel fuel. HM 506 placed more absorbant into the bed of the pickup truck. Due to the uncertain nature of the call and the containers not being labeled for fuel the duty fire marshall was requested. After talking to Capt. Adams and FM 514 (Lt. Hornaday) it was deteremined that no hazmat services were needed and the the fire marshall would remain on scene and handle overseeing the clean up.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 02/05/2020 02:00
Name: Timothy Goodwin
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: 702-884-9448
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FM514 (Lt. Hornaday)	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 02/05/2020 02:00 Provided to Name: Timothy Goodwin	
VA EOC Notified Date/Time: 2/5/2020 03:50	Name: John



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200004252	Date/Time: 2/6/2020 08:01
Location: Fitzwater Dr / Aden Rd. Nokesville	
Report Completed by: Hoffman	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Click to enter text.
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>PE505 requested phone consult for diesel fuel spill. An American Disposal trash truck had a mechanical failure and lost approximately 20 – 25 gallons of diesel fuel onto the parking lot of Brentsville High School. DHM spoke to PE505 and they advised the fuel was spread of a significant area with no product pooling anywhere. Any runoff was going into the grass area with no waterways affected. The trash company already had a mechanic on scene repairing the truck. They also already had a clean up company enroute (Atlas). PE505 stayed on scene until the arrival of Atlas, they spread absorbant over the entire area and used a skid steer sweeper to clean up the used absorbant. They also layed out several absorbant pad and booms and would be back tomorrow to pick up the pads and booms. No response needed from county hazmat resources.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 02/06/2020 08:21
Name: John Kay
Company/Agency: American Disposal Services
Address: Click to enter text.
Phone/Email: 703-932-9527
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notes: Click to enter text.

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Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 2/6/2020 14:16	Name: Brendan



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200004267	Date/Time: 2/6/2020 10:27
Location: 12109 Aden Rd.	
Report Completed by: Hoffman	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Hoffman, Militello, Sawicki, Bergstresser, Kolbas
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Captain Adams

INCIDENT NARRATIVE
<p>FM525 requested phone consult for a sheen on the water in the drainage ditch along Aden Rd. This was noticed by the employees of Atlas cleaning up a diesel spill at Brentsville School. (This was uphill from the incident at Brentsville Highschool). HM, Engine and Rescue 506 and HMO 502 went enroute to the scene. Upon arrival we found a sheen in the drainage ditch stretching approximately 300 yards up the road. We tested the water in several places with oil finding paper and ph paper. Oil paper was positive and ph was neutral. Atlas had already placed down absorbant pads. The source of the sheen was not able to be located. With no other services needed we returned to service. Captain Adams stated he would take care of notifying VDOT, DEQ and watershed. The situation will be monitored several times over the next week or so when it is not inclement weather.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 02/06/2020
Name: David Unger
Company/Agency: PWC Storm Water
Address: Click to enter text.
Phone/Email: 703-792-7104
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 02/06/2020
Name: Matthew Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 571-350-2017



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 2/6/2020 18:50	Name: Brendan



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200007336	Date/Time: 3/2/2020 18:04
Location: 10920 George Mason Drive Manassas VA 20109	
Report Completed by: Captain Robert Moreau	Incident Commander: NA

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Lieutenant Dylan Moore, Technicain II Eric Weaver, Technician II Davin Hoffman, Technician II Mike Militello, Technician II John Sawicki, Technician I Matt Waln, Technicain I Lee Bergstresser, Technicain I Stephen Mickle
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE
Duty Hazmat Officer was contacted by communications via mobile phone. They notified the DHO that a patient had a chemical exposure at George Mason Drive. E525 and M525 had already been dispatched. E506, R506, and HM506 responded. E525 arrived on scene and stated the patient had inhalation exposure only and place the responding hazmat team in service. Patient was evaluated by M525 and signed a patient refusal. Request was made for M525 to contact Captain Moreau for further details. M525 stated the patient had been exposed an hour prior while working under a fume hood. The exposure chemical toluene was confirmed as the chemical. M525 stated the patient experienced dizziness and a hot feeling. George Mason University Police contacted 911. Hazmat Officer 501, Matt Adkins, notified facility representative via email. Hazmat units did not make it on scene.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Represenative
Date/Time: 03/02/2020 18:36
Name: Dr. David Farris
Company/Agency: George Mason University Representative
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Email notification by HMO501 Matt Adkins

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 03/03/2020 12:33
Name: Thelma Blair
Company/Agency: Click to enter text.
Address: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Phone/Email: Click to enter text.
Notes: Notification only. Report number HMVA-41152.

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Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 3/3/2020 12:33	Name: Thelma Blair



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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Google map of dispatched address.

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD20007762	Date/Time: 3/6/2020 10:40
Location: 13110 Nokesville Va	
Report Completed by: J. Knight	Incident Commander: J. Barbachano

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mirabile, Knight, Favole
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Horvath, Shatzer, Williams, Cramsey

INCIDENT NARRATIVE
On the above date. E506 was dispatched for an outside gas leak. Upon arrival we found a 100lb propane tank that was leaking near the bottom. The tank was recently filled. The owner stated he had smelled gas and called several companies to pump the product out of the tank. It was determined that the best course of action was to flare the product off. No issues encountered during the operation. The valve was removed from the tank prior to turning over to property owner.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 03/06/2020 1040
Name: Otto Steele
Company/Agency: N/A
Address: 13110 Nokesville Rd Nokesville Virginia
Phone/Email: 703-594-2255
Notes: Owner of the property

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Not applicable	
VA EOC Notified Date/Time: 3/6/2020 16:30	Name: R. Thomas



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200008031	Date/Time: 3/8/2020 14:22
Location: 11900 Livingston Rd Manassas Va.	
Report Completed by: Knight	Incident Commander: Barbachino

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Horvath, Kwak, Williams, Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight, Mirabile

INCIDENT NARRATIVE
Assessed scene and found a suboxone packet. It was reported that the property reps. daughter was feeling ill yesterday after cleaning out the desk. Items determined to be non hazardous. Turned over to PD. RP named not obtained. RP advised to clean surfaces with soap and water.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200008047	Date/Time: 3/8/2020 17:17
Location: 12435 Annagreen Court Manassas Va.	
Report Completed by: Knight	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Horvath, Williams, Kwak, Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight, Mirabile

INCIDENT NARRATIVE
Dispatched after phone consult for suspicious package. Arrived and tested suspicious package. Mx908 did not identify any trace elements. Turned the scene over to PD.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 03/08/2020
Name: John Souvlis
Company/Agency: FBI WMD team
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.
Provided to Name: Click or tap here to enter text.
VA EOC Notified Date/Time: Click to enter a date. Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200008103	Date/Time: 1/1/1901 00:00
Location: 15809 Jeff Davis Hwy	
Report Completed by: Militello	Incident Commander: Capt. Phillips

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Capt. Moreau, Militello, Weaver, Kolbas, Sawicki, Burgstresser
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
AOS with E523 to find a 5 gallon gasoline can that was upright sitting in the median of Jefferson Davis HWY. The vessel was empty at the time of our arrival. E523 had taken defensive measures by placing absorbent over approx. 5 gallons of product that had leaked onto the road. Adjacent Stream was checked and it was determined that it was not effected.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: 0624
Name: Click to enter text.
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Notified via PWC Communication

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 3/9/2020 16:02	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200008114	Date/Time: 3/9/2020 08:11
Location: 12826 Marsteller Drive Nokesville, VA 20182	
Report Completed by: Captain Moreau	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Phone consult from PE505. Captain Matt Smallwood contacted Captain Moreau at station 6 to report that their Engine had “dumped” all of its transmission fluid on the front ramp. Captain Smallwood reported that they had contained the spill with absorbant. Spill did not impact any storm drains or waterway. Captain Smallwood was emailed a copy of the spill reporting IB as well as the spill report poster. He was instructed to notify his BC and Safety of the spill and to complete risk management’s spill report form. Hazmat Officer 501, Matt Adkins, was notified by Captain Moreau of the spill. Atlas was contacted by Captain Smallwood for cleanup.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 03/09/2020 19:46
Name: Click to enter text.
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Report # HMVA41260

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 3/9/2020 19:46	Name: Brain Geoffrion



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD20008694	Date/Time: 3/13/2020 14:19
Location: 10100 Nokesville Road Manassas VA 20110	
Report Completed by: Captain Robert Moreau	Incident Commander: E501

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Lieutenant Dylan Moore, Technician II Eric Weaver, Technician II Davin Hoffman, Technician I Lee Bergstreser, Technician I Stephen Mickle.
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE
<p>E506 was dispatched to assist with a sickness at Micron (10100 Nokesville Road). Communications contacted the on duty hazmat via text message and stated they were adding E506 to a call for hazmat response. Comments noted that a worker had a chemical exposure and a Manassas City engine was requesting a Hazmat Response. R506 and HM506 were added to the call to complete the response compliment. While responding, E501 stated the patient had been decontaminated for 30 minutes and was being treated by M507. Due to the uncertainty of the chemical and unusual dispatch, the duty hazmat officer continued the hazmat compliment. Upon arrival, face-to-face was performed with E501. E501 stated the patient was decontaminated for 30 minutes under a shower by Micron’s onsite response team. The patient was stable and displaying no symptoms. The patient had a double glove failure resulting in a chemical exposure. The onsite response staff provided a SDS and confirmed the chemical that was in use at the time as Tetramethylammonium hydroxide solution. The staff stated the percentage was likely around 2% due to dilution of the solution that occurred prior to the chemical being involved in a manufacturing process. Face-to-face was performed with M507 who was treating the patient. Patient was stable and displaying no symptoms. Patient was wearing proper PPE. PPE was intact at time of exposure with exception of the double glove failure. Onsite response team was consulted and confirmed their decontamination procedures had been followed. M507 initiated transport to Prince William Hospital. No additional support was needed/requested from onsite response team. E506, R506, and HM506 cleared the incident.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 03/13/2020 21:56
Name: John Zelznack
Company/Agency: VA EOC



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Report number HMVA41307

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

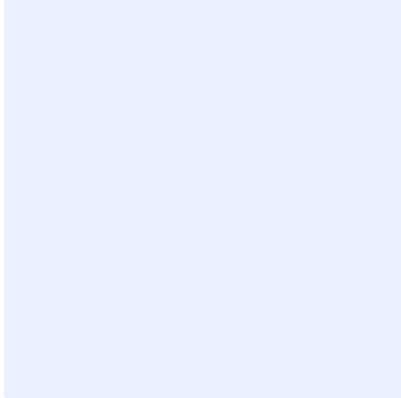
Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 3/13/2020 21:56	Name: John Zelznack



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200009517	Date/Time: 3/20/2020 14:29
Location: 17884 Fraley Blvd. Dumfries 22026	
Report Completed by: D. Hoffman	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Hoffman, Weaver, Waln, Militello, Kolbas, Bergstressor
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
E503 responded to auto accident and then requested phone consult due to gasoline leaking into drainage ditch with a slight sheen on the water. E506, R506, and HM506 responded to scene. We found a passenger car/sedan that had leaked approximately 5-10 gallons of gasoline into the drainage ditch that ran along the side of the road. E503 had already built a make shift dam out of dirt to slow the product down. HM personeel placed an absorbant boom and absorbant pads down to get up as much product as possible. The responsible party (driver of vehicle) was detained by police and not able to act as the responsible party. VDOT was notified of incident and they advised that they would send a crew out to clean up boom and absorbant pads. There was no recoverable product. Scene turned over to PD with no other hazmat services needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 03/20/2020 15:00
Name: Matthew Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 571-328-6836
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 03/20/2020 17:00
Name: Paula
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 03/20/2020 17:07
Name: Alan Lacy
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Left Message

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 03/20/2020 17:10
Name: David Ungar
Company/Agency: PWC Storm Water
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Left Message

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 3/20/2020 17:00	Name: Paula



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200010173	Date/Time: 3/26/2020 20:07
Location: 2007 Devlins Grove PI Bristow Va.	
Report Completed by: Knight	Incident Commander: M525

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Contacted via communications for a phone consult. M525 was dispatched for a sickness. A patient was mixing a pesticide(Sevin) and it splashed and got in his mouth. I determined there was no need to respond. No product was leaking. Advised to defer to poison control for patient care direction. Advised by Medic 525 the patient had no product on him.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 03/26/2020 2030
Name: Kevin Dewhurst
Company/Agency: PWCDFR M525
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.
Provided to Name: Click or tap here to enter text.
VA EOC Notified Date/Time: Click to enter a date.
Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200010394	Date/Time: 3/28/2020 21:53
Location: 16806 Sweeney Lane Dumfries Va	
Report Completed by: Knight	Incident Commander: Luckinbill

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Phone Consult only. Vehicle in garage had gas tank punctured. Approx. 7 gallons leaked on the ground. No waterways affected. Spill controlled. Advised to apply staydry and collect in a container. Let bucket sit in a well ventilated area to evaporate. Ventilate as appropriate

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 03/28/2020 2200
Name: Austin Wing
Company/Agency: PWC DFR
Address: Station 23
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.
VA EOC Notified Date/Time: Click to enter a date. Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200011059	Date/Time: 4/4/2020 13:25
Location: 16806 Jefferson Davis Hwy	
Report Completed by: Knight	Incident Commander: Darabond

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Phone Consult only: A vehicle was stuck in the mud while recreationally off-roading. The grass below the vehicle ignited and burned through a fuel line. Approximately less than 5 gallons was lost. Advised E523 to provide a LEPC for the vehicle owner and will forward to FMO. No waters or tributaries affected.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 04/04/2020 1430
Name: Dustin Miner
Company/Agency: PWC FMO
Address: Manassas Office
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 04/04/2020 1430
Name: Jesse Michael Ferguson
Company/Agency: Click to enter text.
Address: 3557 Eagle Ridge Drive
Phone/Email: Click to enter text.
Notes: DL # T62746465 12/27/1987

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: Cpt's discretion	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 04/04/2020	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200013143	Date/Time: 4/25/2020 00:00
Location: 4705 Kenny Court Woodbridge VA 22193	
Report Completed by: Captain Robert Moreau	Incident Commander: E513 Dale City VFD Captain Linda Wortham

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technicain II John Sawicki, Technicain I Lee Bergsteser, Technicain I Stephen Mickle (Hazmat Ops), Lieutenant Dylan Moore (Hazmat Ops), Technicain II Mike Militello, Technician II Davin Hoffman, Technicain I Matthew Waln.
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE
<p>On 4/25/25 at 1145 hours, PWC PSCC contacted Captain Moreau for a phone consult with E513. E513 was contacted via mobile phone and reported that they had a greasy liquid that was on the ground and had run into a storm drain. The caller who reported it was retired from DEQ and had concerns that someone was dumping a substance on the ground. E513 was unable to determine where the liquid had come from. They reported no readings on their 4-gas. One of the members of the crew also worked at Micron and had concerns that it was polymer. E513 advised that they had placed absorbant down to dam some of the product. E506, R506, and HM506 responded to the scene priority two. While responding, Captain Moreau requested the duty FM respond to the scene. FM511, Lt. Kronebusch, responded. Upon arrival, face-to-face was performed with officer from E513. They had placed absorbent on the ground and in front of the storm drain to prevent further spread of the liquid. Three distinct spots were noted where the liquid had started and where it appeared the liquid had been dumped. Recent rain had not washed all of the product away and the concrete was noted to have staining. No odor was present in the area and the liquid did not have a sheen. Storm drains were traced using county mapper. Storm drains led to creek which crews investigated. No product was noted in stream. Paper tests were run at the location of the spill with the following results. PH=12, Water Paper=positive for water, Oil Finder Paper=No oil present. Samples were obtained and run on the First Defender and True Defender. True defender indicated sample to be Water (household/industrial) CAS:7732-18-5. Physical characteristic of the product was a liquid that produced milky residue when rubbed together with gloved hand. Unable to determine origination of product. FM511 arrived on scene and spoke with caller. Unable to determine who may have been responsible for the spill. Captain Moreau spoke with neighbor at 4712 Kenny Court which is located above the location of the spill. Resident of this address owned a cleaning company and had various industrial cleaners. Resident showed crews his storage garage and was very forthcoming. He reported that any residual cleaning water was disposed of at the locations where he performed cleaning. The cause of the spill is not suspected to be from this address or the resident's business. VDOT was requested to the scene to perform cleanup of the spill. VDOT arrived on scene and the incident was turned over to them. Email courtesy notifications were made to PWC Strom Water Management and VA DEQ.</p>



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 4/25/2020 / 12:20
Name: Mike Collier
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: 703-590-7109 / Michael.collier@vdot.virginia.gov
Notes: Request for VDOT representative made through PWC PSCC.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 4/25/2020 / 14:54
Name: Alan Lacey & Steven Fontenot
Company/Agency: VA DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Courtesy Email Notification

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 4/25/2020 / 15:09
Name: David Ungar & Marc Aveni
Company/Agency: PWC Storm Water/Environmental Services
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Courtesy Email Notification

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Witness
Date/Time: 4/25/2020 / 11:15
Name: Andrew Michael Tirch
Company/Agency: Click to enter text.
Address: 4705 Kenny Court Woodbridge VA 22193
Phone/Email: 703-670-3203 / andy.tirch@tirchfamily.com
Notes: Homowner who reported the spill.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notification/Contact Type: Agency Notification
Date/Time: 04/25/2020 / 15:56
Name: VAEOC
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Notification only. Reprot # VDEM 2020-04-25-296

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FM511 Lt. Tammy Kronebusch	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 4/25/2020 15:56	Name: Brandon Wykert



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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Kenny Court and Kenny Road

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Overview from top of Kenny Court

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Kenny Road at Kenny Court

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Kenny Road at Kenny Court

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Spill on Kenny Court between 4701 and 4703

photos:



Spill in front of 4703 Kenny Court

photos:



Overview from 4703 Kenny Court looking at Kenny Road

photos:



Spill in front of 4705 Kenny Court

photos:

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Spill in front of 4705 Kenny Court # 2

photos:



Spill in front of 4705 Kenny Court # 3

photos:



Spill in front of 4707 Kenny Court

photos:



Spill and staining in front of 4707 Kenny Court

photos:

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Spill in cul de sac of Kenny Court

photos:



Spill in cul de sac of Kenny Court #2

photos:



Spill in cul de sac of Kenny Court #3

photos:



Paper testing on spill in cul de sac of Kenny Court

photos:

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Water paper testing on spill in cul de sac

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Water paper and oil finder paper testing on spill in front of 4707 Kenny Court

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200013362	Date/Time: 4/27/2020 15:34
Location: Yates Ford Rd/Prince William Pkwy	
Report Completed by: Weaver	Incident Commander: BC504

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Tech II Weaver, Tech II Hoffman, Tech II Militello, Tech I Kolbas
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
R506 was dispatched to Yates Ford/ Prince William Pkwy for an overturned dump truck and an overturned SUV with people trapped. R521 extricated the patient and R506 assed the dump truck for any hazards. The dump truck was leaking motor oil and transmission fluid into the ditch in the median, around 20 gallons. The dump truck had a load of sand that had come out of the truck and created a damn in the ditch, so all the oil stayed under the truck. R506 gave an LEPC form to the driver but the driver wouldn't give any information. Waggys said that they could handle the cleanup and R506 talked to HM502 and was ok with the decision. Waggys up righted the truck and no more fluids came out of the truck. Waggys handled the cleanup.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 4/27/2020 16:11
Name: Matt Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 4/27/2020 15:35
Name: Gerald McTague
Company/Agency: Eaheart Excavating Inc
Address: Click to enter text.
Phone/Email: 703-330-0504
Notes: Click to enter text.

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 4/27/2020
Name: Mike Waggy
Company/Agency: Waggy's Towing
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 4/27/2020 16:00 Provided to Name: Gerald McTague	
VA EOC Notified Date/Time: 4/27/2020 17:07	Name: Moore



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200013530	Date/Time: 4/29/2020 00:00
Location: 5244 Daybreak Ln Woodbridge Va.	
Report Completed by: Knight	Incident Commander: Wyks

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Mirabile, Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight, Favole

INCIDENT NARRATIVE
Requested to the scene by FM520 for a Hazmat. Arrived on scene to find a sheen on the lake behind the above address. Investigated to find an unknown product (possible paint) was discharged into a storm sewer drain. The potential location was identified by FM517 and 520. The property rep and responsible party were one in the same until a suspect is identified. The RP was contacted and came to the scene to talk to HMO502. HM506 depolyed floating booms. Ph paper was used in product which came back neutral. Samples were collected and Ph assessed were neutral as well. A sample was tested in the truedefender and cam back as water. No further steps were taken. According to HMO502 a clean up company arrived prior to his departure.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 04/29/2020
Name: Tiffany Kennedy-Kirby
Company/Agency: First Service Residential
Address: Click to enter text.
Phone/Email: 703-385-1133
Notes: LEPC was given

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: YES Lead Officer: FM520,517
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 4/29/2020 1300
Provided to Name: Tiffany Kennedy-Kirby
VA EOC Notified Date/Time: 4/29/2020 00:00 Name: Collins



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200013559	Date/Time: 4/29/2020 00:00
Location: 214 Breezewood Dr. Warrenton	
Report Completed by: Knight	Incident Commander: K. Smith

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Walsh, Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight, Favole

INCIDENT NARRATIVE
Cancelled Enroute by Fauquier.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.
Provided to Name: Click or tap here to enter text.
VA EOC Notified Date/Time: Click to enter a date. Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200013593	Date/Time: 4/29/2020 18:31
Location: Lake Terrapin/Painted Turtle Way	
Report Completed by: Knight	Incident Commander: Luckenbill

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Shatzer, Walsh
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight, Favole

INCIDENT NARRATIVE
Redundant Call. Ended up at 5244 Daybreak Lane again. A walker called and noticed a sheen on the water coming from the area where the storm drain dumps into the water. Atlas has already placed absorbant booms. Advised the bystanders that there was noting more that could be done. Notified HMO502. Did not re-notify Va EOC.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200013617	Date/Time: 4/30/2020 12:38
Location: 15315 Washington St. Haymarket	
Report Completed by: Knight	Incident Commander: Barbachano

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Walsh, Shatzer
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Knight, Favole

INCIDENT NARRATIVE
E506 and HM506 was dispatched to the above address for a saddle tank leak at Sheetz in Haymarket. Saddle tank ruptured due to road debris on I-66. Arrived on scene, HMO502 was already on scene and defensive measures were being taken with staydry and sod. The leak was unable to be accessed so a reciprocating saw was used to create a window to plug the leak. Leak was plugged with plumbers wax. The scene was photographed and pertinent information obtained. Returned to service. 2 level B suits were used during operations to plug the leak. Tow Company was Redmonds Tow and recovery.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 4/30/2020 12:50
Name: Sharod Cullum
Company/Agency: Sheetz
Address: 15315 Washington Street Haymarket
Phone/Email: 571-248-6457
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 4/30/2020 1300
Name: Anthony Tenhoeve
Company/Agency: Schneider Trucking
Address: 7101 W 17th ave
Phone/Email: 800-558-7010
Notes: Notified with LEPC truck #50287

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 4/30/2020 1300 Provided to Name: Anthony Tenhoeve	
VA EOC Notified Date/Time: 4/30/2020 02:30	Name: Moore



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200013861	Date/Time: 5/2/2020 12:37
Location: Whitney Road / Old Linton Hall Road	
Report Completed by: Captain Robert Moreau	Incident Commander: E504 Captain Moore

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau (Phone Consult Only)
HS516 Unit personnel: None
Other HM Personnel: None

INCIDENT NARRATIVE
<p>Captain Robert Moreau received a phone call from PWC PSCC Supervisor with a phone consult request from E504. E504 was contacted via mobile. E504's officer reported that they were on scene of approximately 5 gallons of fuel (suspected to be gasoline) that had been spilled in the intersection of Whitney Road and Old Linton Hall Road. They reported that a red gas can was previously in the road but had been retrieved prior to their arrival by an unknown party. E504 confirmed that no waterways were impacted, no storm drains were impacted, and no sewer drains were impacted. The spill was isolated to the asphalt and E504 confirmed that they had enough absorbent to cover the spill. E504 was advised to request VDOT to the scene to clean the absorbent up. E504 acknowledged the plan and was advised to notify DHM if they had any issues with VDOT response. E504 contacted Captain Moreau again due to VDOT reporting that they were unsure if they were going to be able to make it. CAD comments were reviewed and it was noted that PWC PSCC had requested a sand truck to the scene and VDOT provided a two hour ETA. Captain Moreau contacted VDOT Incident Manager Matthew Maiorana via mobile to advise him of the situation and to clarify the request. Mr. Maiorana was unaware of the request and advised he would head out to the location and return the sand truck that had been requested. E504's officer was contacted and advised he would remain on scene until VDOT arrived. E504 confirmed at 1330 hours that VDOT had arrived and the scene was turned over to them.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 05/02/2020 13:05
Name: Matthew Maiorana
Company/Agency: VDOT Incident Management
Address: Click to enter text.
Phone/Email: 571-328-6836
Notes: Contacted via phone to confirm proper resources and notifications had been made by PWC PSCC.

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 05/02/2020 21:40
Name: Thelma
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Notification Only. Report number VDEM-2020-05-02360

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 5/2/2020 21:40	Name: Thelma



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:



Fuel spill in interesection of Whitney rod and Old Linton Hall Road.

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200014237	Date/Time: 5/6/2020 09:32
Location: Prince William Parkway / Clover Hill Rode	
Report Completed by: Captain Robert Moreau	Incident Commander: Lieutenant Meagan Donelan

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technicain II John Sawicki, Technicain I Lee Bergstreser, Technicain I Stephen Mickle (Hazmat Ops), Lieutenant Dylan Moore (Hazmat Ops), Technician II Eric Weaver, Technician II Davin Hoffman, Technician I Jason Kolbas.
HS516 Unit personnel: NA
Other HM Personnel: NA

INCIDENT NARRATIVE
<p>E507 was on scene of an ACCX with an overturned dump truck. Dump truck was carrying a full load of sand. E507 reported hydraulic fluid and diesel fuel on the ground as well as into a ditch. R506 responded to the call and E506 returned to station 6 to get HM506. Both units were returning from a separate incident when they added to this call. R506 arrived on scene and reported that E507 had already dammed the runoff in the ditch with sand. Redmans towing was on scene for the up righting of the dump truck. Redmans was identified as being responsible for cleaning the roadway. R506 issued an LEPC form to the driver of the tow truck. The driver was instructed to identify a cleanup contractor for the hydraulic fluid and fuel spill that had reached the ditch. E506 and HM506 arrived on scene. Captain Moreau was brought up to speed and performed face to face with county PD lead, VDOT Incident Manager, Redmans Representative, and the driver of the vehicle. Incident was stable with no waterways impacted and all leaks contained. The driver was contacting his insurance company and requested that he allow his insurance company to identify a cleanup contractor. Redmans up righted the truck and R506 performed an assessment and verified that no fluids were leaking. R506 and HM506 were placed in service with E506 remaining on scene. The driver identified Hepaco as the cleanup contractor that his insurance would be using. Contact with Hepaco was made by the driver and verified by Captain Moreau. VDOT Incident Manager was updated with status of clean up contractor. VDOT was ok with managing the remainder of the incident. E506 went in service. While returning to the station, E506 received a phone call from Hepaco who advised that they would not be accepting the job due to not having any available staff. VDOT Incident Manager was contacted and advised that he would speak with the driver. VDOT called back and placed the driver on speaker phone. The driver stated he would be choosing Atlas for the cleanup. Atlas was confirmed as they were on scene previously.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 05/06/2020
Name: Walter Rivas



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Company/Agency: WR Services LLC
Address: 4709 Hood Drive Fredericksburg VA 22407
Phone/Email: 540-388-1097 / walter.rivas306@gmail.com
Notes: Virginia Drivers License # T62748771

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 05/06/2020
Name: Matthew Maiorana
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: On scene representative for VDOT Incident Management.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 05/06/2020 13:33
Name: Alan Lacy and Steven Fontenot
Company/Agency: VA DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Courtesy Notification via Email.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 05/06/2020 12:52
Name: Elizabeth Bartol
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Report # VDEM-2020-05-06-379 / Report only, no resources requested

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: NO Lead Officer: Click to enter text.
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 05/06/2020 Provided to Name: LEPC form provided to responsible party. Responsible party was also the owner of WR Services LLC.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



VA EOC Notified Date/Time: 5/6/2020 12:52	Name: Elizabeth Bartol
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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Overview of incident from Prince William Pkwy turn lane.



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photos:Overview of incident from Prince William Pkwy turn lane #2.



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photos:Overview of incident and defensive measures.



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photos:Overview of incident.



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photos:Overview of incident.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Overview of incident.

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photos:Overview of incident.

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photos:Overview of incident.

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photos:Overview of spill.

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Overview of spill.

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photos:Saddle tank leak.

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photos:Saddle tank leak.

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photos:Dump truck uprighted.

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Dump truck uprighted.

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photos:Dump truck uprighted.

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photos:Booms placed by Atals.

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photos:Clover Hill Road after truck was removed.

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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200014709	Date/Time: 5/10/2020 19:23
Location: 12008 Balls Ford Rd Manassas	
Report Completed by: Knight	Incident Commander: BC Barbachno

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight, Mirable
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Shatzer, Williams, Walsh, Kwak

INCIDENT NARRATIVE
<p>Dispatched for a Truck Fire that occurred at the above address. Commercial property belonging to Barrett Trucking. The runoff water from fire suppression activities was entering a retention pond. Materials involved with fire included roofing materials. No diesel fuel was noted to be release although suppression crews mistakenly thought there was leaking materials. It was noted one tractor was leaking a moderate amount of engine oil. A pop up pool was deployed under the oil leak and absorbent pads were deployed to collect the oil that drained out. Booms were placed to filter water going into the drains that lead to the retention pond. In total 4 booms, 1 small pop up pool and 20 absorbent pads were used. LEPC was given to the property owner.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 05/10/2020 20:20
Name: Joanne Barrett
Company/Agency: Barrett Trucking
Address: 12008 Balls Ford Road Manassas Va.
Phone/Email: 703-361-1212
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: Hinson	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 5/10/2020 20:20	
Provided to Name: Joanne Barrett	
VA EOC Notified Date/Time: 5/10/2020 22:00	Name: Tyler



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200015773	Date/Time: 5/20/2020 09:51
Location: Jefferson Davis Hwy and Prince William PKWY	
Report Completed by: Captain Robert Moreau	Incident Commander: Battalion Chief Craig Beavers

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II John Sawicki, Technician II Brendan Hayes, Technician I Stephen Mickle (Operations Level), Lieutenant Dylan Moore (Operations Level), Technician II Davin Hoffman, Technician II Michael Militello, Technician I Matthew Waln, Technician I Jason Kolbas
HS516 Unit personnel: N/A
Other HM Personnel: Captain Chirs Adams

INCIDENT NARRATIVE
Click to enter text.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 5/20/2020
Name: Robert Dijon Morrisey
Company/Agency: Click to enter text.
Address: 107 Lee Street Princeton, NC 27569-7372
Phone/Email: 252-640-5505 / robertdeemorrisey@gmail.com
Notes: Responsible Party / Operator of semi truck. Issued LEPC by Captain Chirs Adams.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Other
Date/Time: 5/20/2020
Name: Dwight Bell
Company/Agency: Owner of semitruck
Address: Click to enter text.
Phone/Email: 919-594-0202 / lglhbell@gmail.com
Notes: Responisble party identified Dwight Bell as the "boss" and owner of the company. Mr. Bell gave verbal approval to have Atlas Environmental clean up the incident. He was sent an LEPC via email on 5/20/2020 at 11:26.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notification/Contact Type: Agency Notification
Date/Time: 05/20/2020 / 10:18
Name: VA EOC
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Notified via mobile from the scene.
Notes: Notification made to VA EOC due to scale of incident and closure of roadway. No resources requested. VA EOC stated they would notify DEQ representative and regional hazmat officer. VA EOC later contacted at 20:20 hours to close the loop. Report # VDEM 2020-05-20-459.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 5/20/20 / 10:59
Name: David Ungar
Company/Agency: PWC Storm Water Management
Address: Click to enter text.
Phone/Email: Notified via mobile from the scene.
Notes: Notification made by Captain Chris Adams.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Requested to the scene prior to Hazmat Team arrival by command.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 5/20/2020
Name: Steven Fontenot
Company/Agency: VA DEQ
Address: Click to enter text.
Phone/Email: 571-287-0629
Notes: On scene representative for VA DEQ

Repeating Section Click + to add additional entries:

Additional Notes/Information: On 5/20/2020 a hazmat response was requested by E512. E512 was on scene of a multi



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



vehicle accident involving a flatbed tractor trailer and reported to have upwards of a hundred paint buckets on the ground. E512 also reported an active diesel fuel leak that had entered a storm drain. E506, R506, and HM506 responded. HS506 was placed in service. While responding, BC503 requested a phone consult with the duty hazmat technician. Captain Moreau contacted Battalion Chief Beavers who provided an update on the incident. BC Beavers reported upwards of 150 paint buckets in the roadway and a full saddle tank that was actively leaking. He confirmed that crews on scene and performed defensive operations but that the diesel leak had not been controlled. Hazmat units arrived on scene and positioned uphill and upwind. Captain Moreau reported to the command post for a face-to-face. Briefing was received and hazmat team was tasked with determining how far the diesel fuel had travelled, Ensuring current defensive tactics were sufficient to hold expected diesel volumes, and to provide damage assessment of the tractor trailer saddle tank. VA EOC was contacted due to scale of incident and closure of all lanes of Jefferson Davis Hwy. No resources requested from EOC. EOC advised they would notify the regional hazmat officer as well as DEQ. Active leak was identified on saddle tank and clamped off with pair of vice grips. Neither saddle tank was determined not to be compromised. Leak was determined to be coming from fuel line of the passenger side saddle tank. No other vehicles in the incident were found to have vehicle fluids leaking. Bill of lading was reviewed and product that was being referred to as "paint" was identified as a commercial weather sealer. None of the commercial weather sealer had entered the storm drain and was contained to the roadway. Crews reported that they had traced the diesel fuel and that it had entered Marumsco Creek. Station 6 was contacted and K506's crew was advised to load additional absorbent and booms onto HS506 and to come to the incident. Upon arrival additional booms and absorbent were used to contain the diesel fuel spill. Crews placed 20 booms and 40 pads in the creek for containment. PWC Storm water Management representative was walked to the site and provided an overview. Redman's towing was on scene and began cleaning the incident. An LEPC form was issued to the operator of the vehicle, via Captain Chris Adams, who had been identified as the responsible party. He provided Captain Moreau with his boss's name who he also identified as the owner of the truck. The owner, Mr. Dwight Bell was contacted via phone and advised of the situation and his need to identify a cleanup contracting company to clean the hazardous material spill. An email was sent to Mr. Bell via Captain Moreau's county email with the LEPC form attached. Mr. Bell provided a verbal acknowledgement via mobile phone to Captain Moreau that he had picked Atlas and had contacted them. Captain Adams contacted Atlas who stated they had not received any phone calls from the responsible party or the owner of the truck. FM was requested to the scene to assist with responsible party and identification of cleanup contractor. Redman's towing continued to clean the incident and an Atlas truck arrived on scene to remove diesel fuel from the ground from the saddle tanks. E512 was directed to deploy a hose line while Atlas used a VAC truck to remove fuel. Ambient temperatures were in the 50's. As Redman's towing began to hook tow the tractor trailer away, Atlas confirmed that a contract had been signed with them to mitigate the hazardous materials release. VDOT and DEQ were made aware. BC503 turned the incident over to E506. Prior to leaving the incident, VDOT and DEQ were consulted and confirmed that they had confirmed with Atlas the plan for mitigation. County PD to remain on scene for traffic control. Incident turned over to VDOT.

HAZMAT Officer Comments:

[Click to enter text.](#)

Fire Marshal Assigned: YES Lead Officer: Lieutenant Dustin Schultz

Discharge/LEPC Form Provided: Date/Time: 5/20/2020 / See narrative in reference to time.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Provided to Name: Robert Dijon Morrisey & Dwight Bell	
VA EOC Notified Date/Time: 5/20/2020 10:18	Name: VAEOC. Secodnary call to VAEOC @ 20:20 to Tyler McConon for final update.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Incidnet overview looking westbound PWC Pkwy



Repeating Section Click + to add additional entries:

photos:Incidnet overview looking southbound Jefferson Davis Hwy



Repeating Section Click + to add additional entries:

photos:Incidnet overview looking eastbound PWC Pkwy



Repeating Section Click + to add additional entries:

photos:Groundlevel overview looking westbound PWC Pkwy



Repeating Section Click + to add additional entries:

photos:Groundlevel overview looking southbound Jefferson Davis Hwy



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Groundlevel overview looking eastbound PWC Pkwy

Repeating Section Click + to add additional entries:



photos:Groundlevel overview looking eastbound PWC Pkwy #2

Repeating Section Click + to add additional entries:



photos:Groundlevel overview looking eastbound PWC Pkwy #3

Repeating Section Click + to add additional entries:



photos:Groundlevel overview looking northbound Jefferson Davis Hwy

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Groundlevel overview looking northbound Jefferson Davis Hwy #2

Repeating Section Click + to add additional entries:



photos:Street sign location of incident

Repeating Section Click + to add additional entries:



photos:Bill of lading page #1

Repeating Section Click + to add additional entries:



photos:Bill of lading page #2

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY
 DEPARTMENT OF FIRE AND RESCUE
 HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Waterproofing spill overview



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photos:Waterproofing spill overview #2



Repeating Section Click + to add additional entries:

photos:Truck overview #1



Repeating Section Click + to add additional entries:

photos:Truck overview #2

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Truck overview #3

Repeating Section Click + to add additional entries:



photos:Passenger side saddle tank

Repeating Section Click + to add additional entries:



photos:Diesel fuel leak

Repeating Section Click + to add additional entries:



photos:Diesel fuel spread looking E Longview Dr

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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Repeating Section Click + to add additional entries:

photos:Storm drain defensive ops



Repeating Section Click + to add additional entries:

photos:Storm drain defensive overview



Repeating Section Click + to add additional entries:

photos:Storm drain defensive overview # 3 with daming of diesel fuel



Repeating Section Click + to add additional entries:

photos:Marumsco Creek looking East



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Marumsco Creek looking East #2

Repeating Section Click + to add additional entries:



photos:Marumsco Creek looking at Jefferson Davis Hwy

Repeating Section Click + to add additional entries:



photos:Marumsco Creek looking at Jefferson Davis Hwy #2

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Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD20001687	Date/Time: 5/30/2020 16:16
Location: Gary Rd/ Balls Ford road	
Report Completed by: Knight	Incident Commander: E511

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Called by communications as we were getting dispatched. Was told by communications that there was a PDO auto accident involving a fuel tanker leaking. FD units arrived onscene prior to going enroute. FD units advised the leak was water and no hazard. Returned to service. No further Hazmat services needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200017243	Date/Time: 6/3/2020 13:20
Location: 4310 Fortuna Center Plaza	
Report Completed by: Lt. Mark Nicol	Incident Commander: Capt. Battenfeld

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Capt. Newell, T-II Gonzalez, T-I Adzemovic, Lt. Nicol, T-II Cook, T-II Sniwongse, T-I Spangler, T-I Heard
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Capt. Adams (HMO502)

INCIDENT NARRATIVE
<p>HM506 responded to the location of approximately 40 gallon diesel fuel spill where a delivery driver ruptured his saddle tank when colliding with a ballard. The driver checked for damage and went about his deliveries. I was told by the business representative that “the driver never informed them of the fuel leak and that another delivery driver notified them of the fuel spill”. They checked the security video footage and found that the driver hit the ballard and then inspected the damage and repositioned the truck to another loading dock door to make his delivery without reporting any damage. The video clearly showed the fuel visibly leaking after making contact with the ballard. Once the business staff were notified they immediately began to place absorbing pads down to help contain the leak. The fuel began moving towards a storm water drain and pads were placed in a manor to block the fuel from getting into the storm water drain. Once on the scene HM506 personnel placed absorbant, effectively daming and diking the fuel run-off from the storm drain. Notifications were made to the business representative as well as to the responsible party and LEPC forms were given to both parties. The delivery company has a retainer with Miller Environmental for the cleanup and were making notifications. All fuel was contained to the concrete pad at or near the loading dock for Target.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Property Owner
Date/Time: 06/03/2020 1325
Name: Gabe - receiving supervisor
Company/Agency: Target
Address: 4310 Fortuna Center Plaza, Dumfries, Va. 22025.
Phone/Email: Click to enter text.
Notes: LEPC form given.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Date/Time: 06/03/2020 14:08
Name: Paul Baily
Company/Agency: Canada Dry Corporation
Address: 5330 Port Royal Rd. Springfield, Va. 22151
Phone/Email: (703)321-6100
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 06/03/2020 14:30
Name: Mr. Bowen
Company/Agency: Canda Dry Corporation – Environmental
Address: Click to enter text.
Phone/Email: (609)686-6758
Notes: Spoke with Mr. Bowen on the phone to update him on the severity of the problem.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Delivery Driver – Kang Chung. FM514 received the rest of the driver info.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: YES Lead Officer: Lt. John Hornaday
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 06/03/2020 14:08 Provided to Name: Paul Baily
VA EOC Notified Date/Time: 6/3/2020 15:55 Name: Ms. Bartall



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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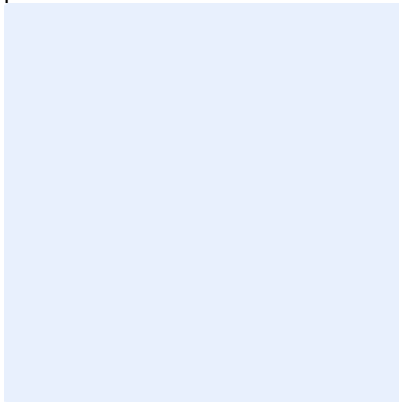
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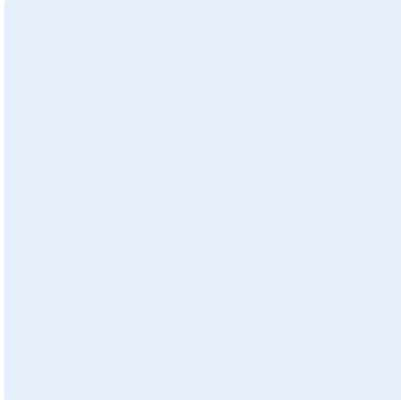


PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



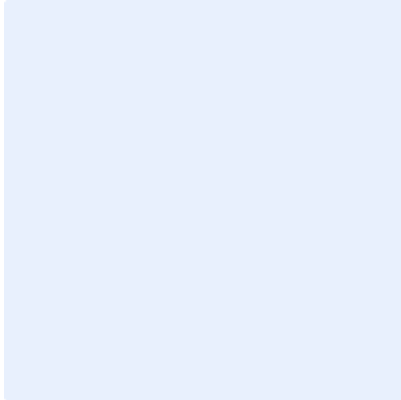
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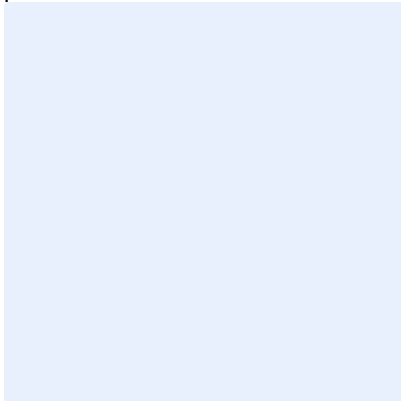
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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200017380	Date/Time: 6/4/2020 15:53
Location: Linton Hall Rd. Overpass	
Report Completed by: Knight	Incident Commander: Barbachano

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight, Walsh
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Favole, Mirabile, Shatzer

INCIDENT NARRATIVE
<p>Hazmat units dispatched to a MVC with no injuries at the above address. FD units arrived on scene and determined that a dump truck struck a jersey barrier. Initial units were able to plug the leak prior to our arrival. It was determined approximately 75 gallons of diesel were lost. Initial units used dirt to dam the product prior to it entering the storm drain. An unknown amount of product had already entered the storm drain. Several man holes were opened and product was noticed in 2 out of 3 culverts. An LEPC was given to the responsible party. 5 absorbent pads were placed in the first downstream man-hole culvert. Waggy's towing arrived and cleaned the product that was left in the roadway. The scene was then turned over to HMO502. Returned to service.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 06/04/2020 1630
Name: Don George
Company/Agency: D&J Excavating
Address: 15161 Washington St, Haymarket, VA 20169
Phone/Email: 703-928-3068
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 6/4/2020 1630 Provided to Name: Don George	
VA EOC Notified Date/Time: 6/4/2020 18:16	Name: McKinnley



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200017605	Date/Time: 6/6/2020 12:29
Location: 7797 Centreville Rd. Manassas	
Report Completed by: Knight	Incident Commander: BC508

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Phone Consult only. BC508 called for an RV that had leaked Gasoline from its fuel tank in the travel lanes on RT. 28. BC508 advised that the fuel was dry and only a stain in the road from FFX to the above location was left. I advised there was nothing anyone could do for this condition. No further notifications needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200018963	Date/Time: 6/18/2020 12:58
Location: 8239 Penny Ln Manassas VA 20112	
Report Completed by: Hoffman	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Hoffman, Waln, Hayes
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
HM501 received request to investigate a 55 gallon drum that was found in basement of house. The citizen advised it had a label on it indicating a dialysis acid, but he suspected it to be water. R506 investigated responded and investigated. R506 used ph paper, water finding paper and a 4 gas monitor. The ph paper showed neutral, the water finding paper was positive for water and all readings were normal on the 4 gas. R506 advised the citizen to dispose of into a grassy area and remove/destroy the label before taking the barrel to the landfill.

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: Click or tap here to enter text.
Name: Jerry Maddox
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: 540-834-9766
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 06/18/2020 14:55
Name: Morrikest
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text. Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 6/18/2020 14:55	Name: Morrikest



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200019268	Date/Time: 6/21/2020 00:00
Location: 5579 Wellington Rd	
Report Completed by: Technician II Snitwongse	Incident Commander: Capt. Forbes

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Technician II Snitwongse, Tech II Cook, Tech I Spangler, Tech I Heard, Technician II Gonzales, Technician II Luke, Technician I Adzemovich
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Captain Forbes, Technician II Greiner

INCIDENT NARRATIVE
E504 (Tech II McCoy) Initiated a phone consultation for a truck leaking an brown watery substance after a truck fire and extinguishment operations. Tech II McCoy stated that they used the deck gun on E504 to extinguish a recycling truck fire and afterwards a brown watery substance was flowing from the vehicle. E525 was also on scene with Captain Forbes (HMT) and Tech II Greiner (HMT) staffing the unit. Captain Forbes advised that they tested the substance with 'Oil paper' and determined that it was not a hydrocarbon leak and that it was "probably just dirty water from firefighting". Captain Forbes indicated that the call was being initiated due to fire marshalls on scenes concern for the leak. Captain forbes identified the leak with certainty and said that it was not a hazmat call. I advised him that if anything changed or if he needed hazmat to respond to let us know.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 6/21/20 1430
Name: Major Hennessy
Company/Agency: VAEOC
Address: Click to enter text.
Phone/Email: 1-800-462-2292
Notes: Courtesy notification

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FM517	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 6/21/2020 00:00	Name: Major Hennessy



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

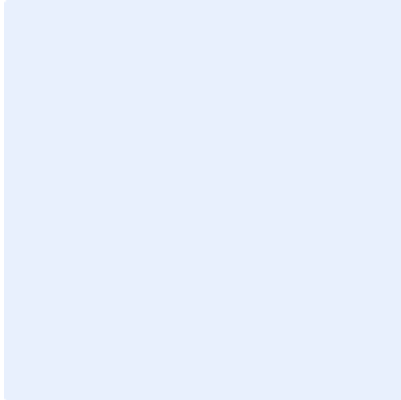




PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200019313	Date/Time: 6/21/2020 15:51
Location: 10701 Bulloch Dr	
Report Completed by: Technician II Snitwongse	Incident Commander: Capt. Forbes

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Technician II Snitwongse, Tech II Cook, Tech I Spangler, Tech I Heard, Technician II Gonzales, Technician II Luke, Technician I Adzemovich
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Captain Forbes

INCIDENT NARRATIVE
<p>E511 Responded to a HAZARD type call at Bulloch Dr. Upon arrival they identified a pickup truck towing a camper trailer that was actively leaking diesel fuel onto the roadway into the storm drain. The driver stated that he had recently filled his fuel tank and it contained approximately 45 gallons of diesel. E511 initiated a phone consultation with hazmat and based on the situation R506, E506, HM506 and HS506 responded. Upon our arrival on scene defensive daming operations using dirt and absorbant had been conducted by E511 along the curb leading downhill to the storm drain. The fuel tank of the vehicle was partially hanging from the bottom of the vehicle and still actively leaking diesel fuel. Company 6 units began adding supplemental absorbant to the curb dam as well as placing a 'popup' style catch basin. Additional Hazmat personal inspected storm drains and outfalls to gauge the extent of the spill. The spill was contained to the first Storm Drain Vault and had not extended to the retention pond nearby. Hazmat personel utilized wax-rings to plug the tank to stop the leak and obtained a ratchet strap provided by the responsible party to resecure the fuel tank to the vehicle frame to minimize further tank damage. The responsible party self notified their tow service and had the vehicle removed from the scene.</p> <p>Atlas was chosen by the responsible party as the cleanup contractor from the LEPC form provided and was requested to the scene for spill remediation. Upon arrival, Atlas assessed the extet of the spill and identified the spill was contained to within 10' of the storm drain inlet and along the roadway leading from the vehicle. HAZMAT personel remained on scene during the cleanup process to provide traffic control during cleanup and to ensure the hazard was properly mitigated.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 6/21/20 2215
Name: Brian
Company/Agency: VAEOC
Address: Click to enter text.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Phone/Email: 1-800-462-2292
Notes: Courtesy notification

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 6/21/20 1551
Name: William Joseph Allen
Company/Agency: Click to enter text.
Address: 5 Stoney Brae Rd. Newark, DE 19711
Phone/Email: (302)388-8363
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 6/21/20 1551
Name: Alan Lacey
Company/Agency: DEQ
Address: Click to enter text.
Phone/Email: 703-583-3864
Notes: Notified by Voicemail

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 6/21/20 1551
Name: Marc Aveni
Company/Agency: Storm water management
Address: Click to enter text.
Phone/Email: 703-792-4064
Notes: Notified by Voicemail

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 6/21/20
Name: Paul
Company/Agency: Atlas Environmental Services
Address: Click to enter text.
Phone/Email: 703-339-9770
Notes: Cleanup company notified by the responsible party

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FM520	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 6/21/20 1551 Provided to Name: William Joseph Allen (Responsible party)	
VA EOC Notified Date/Time: 6/21/2020 22:15	Name: Brian



PRINCE WILLIAM COUNTY
 DEPARTMENT OF FIRE AND RESCUE
 HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
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DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT





PRINCE WILLIAM COUNTY
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HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200019413	Date/Time: 6/22/2020 14:24
Location: 3511 Briarwood Dr.	
Report Completed by: Lt. Stephen Horvath	Incident Commander: N/A

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Horvath, Cramsey, Shatzer, Walsh
HS516 Unit personnel: N/A
Other HM Personnel: HM501- Adkins

INCIDENT NARRATIVE
E523 was out training and found a cylinder laying on the ground. Upon further investigation they found that the cylinder was marked Anhydrous Ammonia. They contacted dispatch and requested a phone consult with the duty haz-mat tech. They spoke to Captain Knight who said we would come out and check it for a leak. Arrived on-scene and did a face to face with Captain Darabond of E523. Captain stated they didn't think it was leaking. I had two haz-mat techs dress up in FF/PPE and SCBA. I also had two crew members of E523 do the same as a RIT team. I spoke with Raul Bonilla the property manager and got all his info. Hazmat went down range with PH paper and a PID. PH paper had NO change and PID had no increase in readings. HM501 arrived on-scene and passed on all the previous info and findings. HM501 gave the property manager a LEPC form and explained what needed to happen. FMO arrived on-scene and we were released. Va EOC notified as a courtesy.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Responsible Party
Date/Time: 06-22-2020 14:40
Name: Raul Bonilla
Company/Agency: Gates Hudson/ Pegasus Development
Address: 3511 Briarwood Dr. Dumfries, VA 22026 (Corporate: 3020 Hamaker Ct. Fairfax, VA)
Phone/Email: 703-221-7824
Notes: Click to enter text.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.
HAZMAT Officer Comments: Click to enter text.
Fire Marshal Assigned: YES Lead Officer: Quick
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 06-22-2020 14:56
Provided to Name: Raul Bonilla



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



VA EOC Notified Date/Time: 6/22/2020 16:30	Name: Sullivan
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PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



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**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: 200019433	Date/Time: 6/22/2020 16:39
Location: 11920 Oakwood Drive Woodbridge Va	
Report Completed by: Knight	Incident Commander: C. Davis

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Knight, Horvath, Williams
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
Phone Consult. Contacted for a truck leaking gasoline. The owner was having the vehicle towed and had small fuel leak. His insurance company advised the vehicle would need to be cleared prior to towing. Advised to place stay-dry below the vehicle and a container. No further services needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Choose an item.
Date/Time: Click or tap here to enter text.
Name: Click to enter text.
Company/Agency: Click to enter text.
Address: Click to enter text.
Phone/Email:
Notes: Click to enter text.

Repeating Section Click + to add additional entries.

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: Choose an item. Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: Click to enter a date.	Name: Click to enter text.



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200019710	Date/Time: 6/25/2020 09:47
Location: Interstate 95 Northbound MM154 at the Truck Rest Area	
Report Completed by: Captain Robert Moreau	Incident Commander: Battalion Chief Craig Beavers

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technicain II Brendan Hayes, Technicain I Stephen Mickle (HM OPS), Technicain II Shawn Riley (HM OPS), Technicain II Mike Militello, Technician I Matt Waln, Technician I Jason Kolbas
HS516 Unit personnel: N/A
Other HM Personnel: Technicain I Lee Bergstresser (E503B)

INCIDENT NARRATIVE
<p>Hazmat units were dispatched to Interstate 95 Northbound at the truck rest area (MM 154). E506, R506, HM506, HMO502, SAF502 responded from quarters. HS506 was placed in service by Captain Moreau. Initial reports were that a tractor trailer had a fire that involved fuel. E523 arrived on scene and reported no fire but a “decent” amount of fuel was on the ground. BC503 arrived on scene and established command. Command reported 400 gallons of diesel fuel was leaking from the saddle tank. E506 requested clarification regarding the nature of the tractor trailer (fuel truck) or whether leak was isolated to saddle tank. Command confirmed that the leak was from a saddle tank. Upon arrival, a wet surface was noted behind the leaking truck. Captain Moreau performed face-to-face with command. Command advised initial leak estimates were incorrect and were provided from the driver of the truck. It was confirmed by the Hazmat team that only the driver saddle tank was involved. Leak appeared to be coming from the seam of the saddle tank. Pop-up pool was placed beneath the leaking saddle tank. Wax ring was used to stop leak from tank. Driver of vehicle was identified and issued an LEPC form. Driver stated that the owner of the company already contacted Waggy’s towing to assist with the tow of the truck and trailer. Driver was notified that there may be a need for a cleanup contractor but that would be up to VDOT as the owner of the property. Owner of the trucking company was contacted and provided with the same information. Hazmat team verified that no diesel fuel had leaked into storm drain or any waterways. Fuel was isolated to the pavement and some grass beneath guardrail. Absorbent was placed on the ground by crews on scene. Waggys towing arrived on scene and placed more absorbent down. VDOT representative arrived on scene and evaluated scene. VDOT stated they were ok with Waggy’s towing performing cleanup of absorbent and grass. Scene turned over to VDOT. State Police were also remaining on scene as they had shut down the truck rest area. VAEOC notified with report only, no resources requested (VDEM-2020-06-25-720).</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Responsible Party
Date/Time: 06/25/2020 10:25



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Name: Enrique Silva
Company/Agency: Carolina's Elite Carriers LLC
Address: 185 Airport Road Fayetteville, NC 28306
Phone/Email: 910-273-4942
Notes: Owner of the Carolina's Elite Carriers LLC. U.S. DOT 1614764

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Other
Date/Time: 06/25/2020
Name: Altron Richardson
Company/Agency: Carolina's Elite Carriers LLC
Address: 120 Will Richardson Road Enfield, NC 27823
Phone/Email: 252-382-3527
Notes: Driver of tractor trailer

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 06/25/2020 10:25
Name: John Stafford
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Notified by Captain Chris Adams who left voicemail. VDOT requested to the scene via PWCPSCC.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Representative
Date/Time: 06/25/2020 10:21
Name: John Higgenbotham
Company/Agency: VDEM
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Notified by Captain Chirs Adams via mobile.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type:Agency Notification
Date/Time: 06/25/2020 17:05
Name: Alan Lacy / Steven Fontenot
Company/Agency: VA DEQ



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Courtesy notification via email.

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input checked="" type="checkbox"/> Date/Time: 06/25/2020 10:10 Provided to Name: Altron Richardson	
VA EOC Notified Date/Time: 6/25/2020 22:14	Name: Tyler McConnon



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Drivers side.



Repeating Section Click + to add additional entries:

photos:Overview from rear of truck.



Repeating Section Click + to add additional entries:

photos:Overview from front of truck.



Repeating Section Click + to add additional entries:

photos:DOT# of truck.



Repeating Section Click + to add additional entries:

photos:Rear of truck.



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT

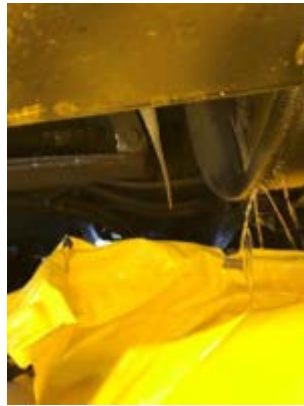


Repeating Section Click + to add additional entries:



photos:Rear of truck with plate.

Repeating Section Click + to add additional entries:



photos:Saddle tank leak.

Repeating Section Click + to add additional entries:



photos:Leak and defensive ops.

Repeating Section Click + to add additional entries:



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Leak and defensive ops.

Repeating Section Click [+](#) to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200019990	Date/Time: 6/27/2020 13:18
Location: 13060 Worth Ave Woodbridge VA 22192	
Report Completed by: Captain Robert Moreau	Incident Commander: Captain Robert Moreau

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau, Technician II Brendan Hayes, Technician I Stephen Mickle (Operations Level) Technician II Davin Hoffman, Technician I Matt Waln, Technician I Jason Kolbas, Technician I Lee Bergstreser
HS516 Unit personnel: N/A
Other HM Personnel: N/A

INCIDENT NARRATIVE

Captain Moreau received a phone call at the station from the fire supervisor at PWCPSCC. Supervisor stated that they had an incident that he wanted to ensure no further action was needed. He stated that they were notified by a PWC PD officer about a call they were on. At approximately 0700 hours on 06/27/2020, a tractor trailer struck a NOVEC transformer box behind LA Fitness. The tractor trailer left the scene. NOVEC was notified of a power outage and responded. NOVEC arrived on scene at approximately 0740 hours and began repairs and mitigation of the mineral oil reservoir that was in the transformer box. Atlas was enroute to the location to perform clean up. The supervisors stated that some of the oil may have gotten into the storm drain but he did not know how much. Due to the limited information and unknown amount of liquid that entered the storm drain, the supervisor was asked to place E506, R506, and HM506 on the call. Units responded priority two. Arrived on scene and made contact with Mr. Hengstebeck with Environmental Consultants and Contractors who handles/facilitates all environmental cleanup for NOVEC. Mr. Hengstebeck was unsure of how far the product had traveled and asked if we could provide the layout of the storm drains. No notifications had been made by NOVEC or contracting company. Absorbent and boom socks were placed on the ground and near storm drains by NOVEC. PWC Hazmat team removed storm covers and confirmed hydrocarbon product in the storm drains. Additional pads placed into the storm drain. County Mapper was used to trace the storm drains. A large storm water retention pond was identified as the location where the storm drains terminated. Storm retention pond located parallel to 2730 Prince William Pkwy Woodbridge VA 22192. Hazmat team members investigated the storm drain and confirmed hydrocarbon at the outlet into the pond via Oil Finder Paper. A sheen was visible on the pond as well as an odor. Atlas arrived on scene and Captain Moreau met with Matt from Atlas to provide him an overview of the incident. Phone calls made to both David Ungar and Marc Aveni for notification with no answer. Communications was requested to notify the on call storm water management representative. Attempt made to contact emergency contact for LA Fitness with no answer. Also unable to contact property management company of the shopping center. Phone consult performed with FM514, Lieutenant Hornaday, due to the discharge of the product into the storm drain and the "hit and run" as a causing factor. FM514 came to the scene and began his investigation. VA DEQ representative arrived on scene and stated he was notified by PWCPSCC of the incident. Mr. Fontenet was briefed on the incident and put in contact with FM514. Hazmat units were placed in service.



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Phone call made to Mr. Hengstebeck to notify him that VA DEQ was on scene and that storm water management would be notified by PWCPSCC. He was also notified that FM514 was on scene and would be contacting him if needed.

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 06/27/2020
Name: George Dodson
Company/Agency: NOVEC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Mr. Dodson was the supervisor on scene for the NOVEC crew. He provided contact information for their Risk Management Division. Contact is Laurie Spence at 703-392-1734.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 06/27/2020
Name: Drake H. Hengstebeck
Company/Agency: Environmental Consultants and Contractors
Address: 43045 John Mosby Highway Chantilly, Virginia 20152
Phone/Email: 703-327-2900 (main) 219-718-4111 (mobile) / drake.hengstebeck@eccfirst.com
Notes: Third party contractor that NOVEC uses to facilitate environmental cleanup of HAZMAT. Mr. Hengstebeck was on scene and was the party that hired Atlas to perform environmental cleanup on behalf of NOVEC.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Representative
Date/Time: 06/27/2020
Name: Stephen Fontenot
Company/Agency: Virginia DEQ
Address: Click to enter text.
Phone/Email: 571-287-0629 (mobile) / steven.fontenot@deg.virginia.gov
Notes: Mr. Fontenot arrived on scene after receiving notification from PWCPSCC. Face to face performed and Mr. Fontenot was put in touch with representative from Environmental Consultants and Contractors. Courtesy notification also made via email at 18:41 on 06/27/2020.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



Notification/Contact Type: Agency Notification
Date/Time: 06/24/2020 / 14:18 hours
Name: David Ungar & Marc Aveni
Company/Agency: PWC Storm Water/Environmental Services
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Phone notification attempted to both individuals. Communications notified and requested to also make notification to on-call representative from storm water management. Courtesy notifications made via email at 18:39 on 06/27/2020.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 06/27/2020 / 06:43
Name: Click to enter text.
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Report number VDEM 2020-06-27-730

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: YES Lead Officer: FM 514 Lieutenant John Hornaday	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 6/27/2020 18:43	Name: J. Hueges



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Overview



Repeating Section Click + to add additional entries:

photos:Overview



Repeating Section Click + to add additional entries:

photos:Overview



Repeating Section Click + to add additional entries:

photos:Transformer



Repeating Section Click + to add additional entries:

photos:Transformer



PRINCE WILLIAM COUNTY DEPARTMENT OF FIRE AND RESCUE HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Transformer

Repeating Section Click + to add additional entries:



photos:NOVEC deployed absorbant socks

Repeating Section Click + to add additional entries:



photos:NOVEC deployed absorbant socks

Repeating Section Click + to add additional entries:



Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



INCIDENT INFORMATION	
Incident #: FD200020242	Date/Time: 6/29/2020 13:58
Location: 14380 Mcgraws Corner Drive Gainesville VA 20155	
Report Completed by: Captain Robert Moreau	Incident Commander: Captain Johnathan Moore (E504)

HAZMAT PERSONNEL ON SCENE
HM506 Unit personnel: Captain Robert Moreau
HS516 Unit personnel: Click to enter text.
Other HM Personnel: Click to enter text.

INCIDENT NARRATIVE
<p>Phone consult received from E504. They were on scene of an incident with two 5 gallon containers that had been dropped off a truck. One container was leaking and was identified as coolant. The other container was not leaking and was labeled truck fluid. E504 stated the road was slick from the coolant and that they had applied absorbent. E504 confirmed the spill was isolated to the roadway and did not impact any waterways or storm drains. E504 reported they had enough absorbent on hand. E504 was directed to request VDOT to the scene to clean the roadway hazard and to take possession of the two containers. CAD comments reflected a 10 minute ETA for VDOT. Captain Moreau checked with E504 who confirmed VDOT was on the scene.</p>

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 06/29/2020
Name: Click to enter text.
Company/Agency: VDOT
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: VDOT notified by PWCPSCC and responded to the scene.

Repeating Section Click + to add additional entries:

NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 06/29/2020 / 14:40
Name: Alan Lacy / Steven Fontenot
Company/Agency: VA DEQ
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Email courtesy notification.

Repeating Section Click + to add additional entries:



**PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT**



NOTIFICATIONS/CONTACTS
Notification/Contact Type: Agency Notification
Date/Time: 06/29/2020
Name: Click to enter text.
Company/Agency: VA EOC
Address: Click to enter text.
Phone/Email: Click to enter text.
Notes: Report notification only. No resources requested. Report # VDEM-2020-06-29-743

Repeating Section Click + to add additional entries:

Additional Notes/Information: Click to enter text.	
HAZMAT Officer Comments: Click to enter text.	
Fire Marshal Assigned: NO Lead Officer: Click to enter text.	
Discharge/LEPC Form Provided: <input type="checkbox"/> Date/Time: Click or tap here to enter text.	
Provided to Name: Click or tap here to enter text.	
VA EOC Notified Date/Time: 6/29/2020 14:46	Name: Wilnton Hunter



PRINCE WILLIAM COUNTY
DEPARTMENT OF FIRE AND RESCUE
HAZARDOUS MATERIALS INCIDENT RESPONSE REPORT



photos:Spill Overview



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Appendix G – Industrial and High Risk Runoff

GPIN	ST_NO	ST_NAME	ST_TYPE	CITY	ZIP	NAME	PWC_MAP	usecode	use_descri	Use_Probab	owner_cur	BuildingNa
8390-06-4290	15801	NEABSCO	RD	WOODBRI	22191	PWC SERVICE AUTHORITY	8390NW	224	Sewage	2	PWC SERVICE AUTHORITY	MAINT BLDG
8391-59-7928	14227	JEFFERSON DAVIS	HY	WOODBRI	22191	JD HWY LLC	8391NE	361	Motor Vehicle Sales	3	JD HWY LLC	LUSTINE TOYOTA
7697-42-3704	7681	SUDLEY	RD	MANASSAS	20109	BTR MANASSAS INC	7697SW	313	Shopping Center	3	SUDLEY TOWNE PLAZA LLC	SUDLEY TOWNE PLAZA
8192-50-4578	14150	MINNIEVILLE	RD	WOODBRI	22193	MINNIEVILLE PLAZA LTD PTNSHP	8192SE	312	Shopping Center	3	MINNIEVILLE PLAZA LLC	MINNIEVILLE PLAZA
8292-81-3425	14050	TELEGRAPH	RD	WOODBRI	22192	SUSA PARTNERSHIP LP	8292SE	151	Mini Warehousing	3	ESS PRISA LLC	STORAGE USA-BLDG C
8192-50-8821	14119	MINNIEVILLE	RD	WOODBRI	22193	REGENCY REALTY GROUP INC	8192SE	313	Shopping Center	3	SVAP CHESHIRE LP	CHESHIRE W/ PETCO & SAFEWAY
8492-43-4786.01	559	HARBOR SIDE	ST	WOODBRI	22191	MARINA LANDING ASSOCIATES LLC	8492SW	318	Shopping Center	3	MARINA LANDING ASSOCIATES LLC	
8492-43-5380.01	551	HARBOR SIDE	ST	WOODBRI	22191	MARINA LANDING ASSOCIATES LLC	8492SW	318	Shopping Center	3	MARINA LANDING ASSOCIATES LLC	
8492-43-4192.01	567	HARBOR SIDE	ST	WOODBRI	22191	MARINA LANDING ASSOCIATES LLC	8492SW	318	Shopping Center	3	MARINA LANDING ASSOCIATES LLC	
8492-43-3795.01	571	HARBOR SIDE	ST	WOODBRI	22191	MARINA LANDING ASSOCIATES LLC	8492SW	318	Shopping Center	3	MARINA LANDING ASSOCIATES LLC	
8492-43-4489.01	563	HARBOR SIDE	ST	WOODBRI	22191	MARINA LANDING ASSOCIATES LLC	8492SW	318	Shopping Center	3	MARINA LANDING ASSOCIATES LLC	
8492-43-5083.01	555	HARBOR SIDE	ST	WOODBRI	22191	MARINA LANDING ASSOCIATES LLC	8492SW	318	Shopping Center	3	MARINA LANDING ASSOCIATES LLC	
7696-59-1631	8025	SUDLEY	RD	MANASSAS	20109	WESTGATE SHOPPING CENTER LLC	7696NE	311	Small Shopping Center	3	WESTGATE MZL LLC	WESTGATE
7397-28-0270	6876	PIEDMONT CENTER	PZ	GAINESVILLE	20155	PIEDMONT COMMERCIAL CENTER INC	7397NW	311	Small Shopping Center	3	PIEDMONT PLAZA LLC	PIEDMONT CTR Pcl B *see notes
7896-19-8912	8030	CENTREVILLE	RD	MANASSAS	20111	SCHICK RORY LEE	7896NW	216	Auto Parking	3	SCHICK RORY LEE	
8193-19-4944	4650	ASDEE	LN	WOODBRI	22192	OLD HICKORY GOLF CLUB LLC	8193NW	832	Golf Course	2	OLD HICKORY GOLF CLUB LLC	
8292-71-6115	14001	WORTH	AV	WOODBRI	22192	ARI POTOMAC MILLS AND D LLC ETAL	8292SE	312	Shopping Center	3	ALLIANCE HSP POTOMAC MILLS LLC	
7595-57-4944	9435	CONTRACTORS	CT	MANASSAS	20109	SWAN ROBERT E TR	7595NE	150	Wholesale Warehousing	4	GRR LAND OF VIRGINIA LLC	
7497-02-6514.01	7689	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	GATEWAY BUSINESS CENTER	BLDG D UNIT 100
8292-66-4137	13270	MINNIEVILLE	RD	WOODBRI	22192	GARBER PROPERTIES LLC	8292NE	390	Retail	3	GARBER PROPERTIES LLC	Holly Acres Marine
8292-56-8930	2826	GARBER	WY	WOODBRI	22192	MINNIEVILLE ROAD DEVELOPMENT CO LLC	8292NE	311	Small Shopping Center	3	LIBERIA INVESTMENTS LLC	GARBER SHOPPING CENTER
7497-02-7698	5524	WELLINGTON	RD	GAINESVILLE	20155	CRABTREE ROBERT ROSANNA CRABTREE	7497SW	190	Other Industrial	4	FULL OF SUNSHINE LLC	MASTERCRAFT AUTO
7497-23-0068	7300	RAIL LINE	CT	GAINESVILLE	20155	DALRYMPLE REALTY CORPORATION	7497SW	121	Durable Manufacturing	4	DALRYMPLE REALTY CORPORATION	NEWINGTON CONCRETE PLANT
8393-11-3391	12730	HARBOR	RD	WOODBRI	22192	MCDONALDS CORPORATION	8393SW	354	Restaurant	3	MCDONALDS CORPORATION	MCDONALDS- HARBOR
7892-54-6381	13641	DUMFRIES	DR	MANASSAS	20112	VARGAS FERNANDO R & GRACIELLA VARGAS	7892SE	312	Shopping Center	3	VARGAS FERNANDO R & GRACIELLA VARGAS	BRADFORD SQUARE
8192-58-7724	4071	PRINCE WILLIAM	PY	WOODBRI	22193	STOR ALL LPD LLC	8192NE	151	Mini Warehousing	3	PS WOODBRIDGE PRINCE WILLIAM 2013 LLC	PUBLIC STORAGE A
7397-45-1913	14251	JOHN MARSHALL	HY	GAINESVILLE	20155	CPC GAINESVILLE LLC	7397NW	190	Other Industrial	4	CPC-GAINESVILLE LLC	ATLANTIC COAST COTTON
7595-68-1509	9449	HAWKINS	DR	MANASSAS	20109	ROSS HAROLD M	7595NE	121	Durable Manufacturing	4	ROSS DAVID L	H.M. ROSS PAVING
8192-67-1576	4021	PRINCE WILLIAM	PY	WOODBRI	22192	STEICO INCORPORATED	8192NE	344	Convenience Store with Gas	4	STEICO INCORPORATED	SHEETZ - PW PKWY & HILLENDALE
8192-77-7307	3908	PRINCE WILLIAM	PY	WOODBRI	22192	3908 PRINCE WILLIAM LLC	8192NE	351	Restaurant	3	DJASSEBI JOE MEHRDAD & NORMA ISABEL SURV	JOE'S AMERICAN DINER
7697-33-9426	7500	BROKEN BRANCH	LN	MANASSAS	20109	LOWES HOME CENTERS INC	7697SW	320	Building Materials	3	LOWES HOME CENTERS INC	LOWE'S HOME CENTER
8093-52-8034	5304	HOADLY	RD	MANASSAS	20112	CHRISTOPHER CLAYTON C AND DORIS N	8093SE	911	Agricultural Resources	3	CHRISTOPHER CLAYTON C & DORIS N	
8289-33-3480	17247	WAYSIDE	DR	DUMFRIES	22026	ATLANTIC INVESTMENT CORPORATION	8289NW	311	Small Shopping Center	3	PREMIER SOUTHBRIDGE LLC	
7697-32-9173	7501	BROKEN BRANCH	LN	MANASSAS	20109	GENERAL MILLS RESTAURANTS INC	7697SW	351	Restaurant	3	ARCP RL/OG MANASSAS VA LLC	RED LOBSTER
7696-76-9773	8345	SUDLEY	RD	MANASSAS	20109	MANAPORT PLAZA LLC	7696NE	313	Shopping Center	3	MANAPORT PLAZA LLC	
7497-01-6194.01	7689	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	INDIE LLC	BLDG D UNIT 125
7497-02-6302.01	7689	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	GATEWAY BUSINESS CENTER	BLDG D UNIT 120
7497-02-3717.01	7679	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	BLUE LABEL CUSTOMS LLC	BLDG B UNIT 120
7497-02-2519.01	7679	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	NATIVE VENTURES LLC	BLDG B UNIT 140
7695-28-5649	10801	UNIVERSITY	BL	MANASSAS	20110	PWC BOARD OF COUNTY SUPERVISORS	7695NW	140	Research and Testing	2	PWC BOARD OF COUNTY SUPERVISORS	AMERICAN TYPE CULTURE (ATCC)
7594-91-5941	11507	VALLEY VIEW	DR	BRISTOW	20136	BRISTOW MANOR PARTNERSHIP	7594SE	832	Golf Course	2	BRISTOW MANOR PARTNERSHIP	Bristow Estates Manor House
8292-55-1036	13356	MINNIEVILLE	RD	WOODBRI	22192	FARM LLC	8292NE	311	Small Shopping Center	3	FARM LLC	SHOPS AT MADISON FARM
7892-55-2432	13550	DUMFRIES	RD	MANASSAS	20112	WOODBINE SHOPPING CENTER ASSOCS LLC	7892NE	313	Shopping Center	3	WOODBINE SHOPPING CENTER ASSOCS LLC	WOODBINE S C
8292-23-8176	13540	MINNIEVILLE	RD	WOODBRI	22192	DOMINION CENTER LLC	8292SW	312	Shopping Center	3	DOMINION CENTER TWO LLC	DOMINION CENTER
8188-64-1129	18638	TRIANGLE	ST	TRIANGLE	22172	CHOI SUNG KUL HAI SUN SURV	8188SE	216	Auto Parking	3	CHOI JASON SUNG KUL TR & HAI SUN	
7794-93-8087	8675	PLANT	PL	MANASSAS	20112	MEADOWS MERLIN GILVEN	7794SE	390	Retail	3	MEADOWS MERLIN W TR & STAN L TR	GIL MEADOWS NURSERIES INC
8090-48-6613	15701	CARRS BROOKE	WY	MANASSAS	20112	EXON MOBIL CORPORATION	8090NE	344	Convenience Store with Gas	4	MACS RETAIL LLC	CAR WASH
8190-34-9190	4370	KEVIN WALKER	DR	DUMFRIES	22025	MONTCLAIR PLAZA LLC	8190SW	312	Shopping Center	3	MONTCLAIR PLAZA LLC	MONTCLAIR PL I
8193-11-8551	12730	BLACK FOREST	LN	WOODBRI	22192	RENSCHLER ROLF MARGARETE K TRS	8193SW	351	Restaurant	3	RENSCHLER ROLF & MARGARETE K TRS	QUEEN'S GAMBIT
7397-18-6524	14670	GAP	WY	GAINESVILLE	20155	EXXONMOBIL OIL COPORATION	7397NW	311	Small Shopping Center	3	GAP WAY LLC	GREENHILL COMMERCIAL
8289-36-4320	17171	WAYSIDE	DR	DUMFRIES	22026	ATLANTIC INVESTMENT CORPORATION	8289NW	311	Small Shopping Center	3	PREMIER SOUTHBRIDGE LLC	SOUTHBRIDGE PLAZA
8393-12-2614	2201	OLD BRIDGE	RD	WOODBRI	22192	TACKETTS MILL CENTER LLC	8393SW	353	Restaurant	3	TACKETT'S MILL CENTER LLC	Dunkin Donuts
8190-85-7263	15823	LAZY DAY	LN	DUMFRIES	22025	U S GOLF PROPERTIES L P	8190NE	832	Golf Course	2	CJ EAGLE LLC	
8188-64-2402	18723	FULLER HEIGHTS	RD	TRIANGLE	22172	HEPBURN ANDREW PHILLIP	8188SE	390	Retail	3	HEPBURN ANDREW PHILLIP	
7493-86-1936	12026	ADEN	RD	NOKESVILLE	20181	COWNE FAMILY LP	7493NE	224	Sewage	2	PWC SERVICE AUTHORITY	
8190-87-4542	3802	DALEBROOK	DR	DUMFRIES	22025	U S GOLF PROPERTIES L P	8190NE	832	Golf Course	2	CJ EAGLE LLC	
7299-71-8268	5200	MERCHANTS VIEW	SQ	HAYMARKET	20169	DOMINION COUNTRY CLUB LP	7299SE	311	Small Shopping Center	3	DOMINION VALLEY OWNER LLC	BUILDING ""M""
7497-01-4392.01	7699	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	GATEWAY BUSINESS CENTER	BLDG C UNIT 140
7497-01-3294.01	7699	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	GATEWAY BUSINESS CENTER	BLDG C UNIT 125
8492-53-7716	401	BELMONT BAY	DR	WOODBRI	22191	BELMONT BAY LC	8492SE	831	Golf Course	2	BELMONT BAY LLC	BELMONT BAY GOLF CLUBHOUSE
7696-86-5847	8441	IRONGATE	WY	MANASSAS	20109	IRONGATE GROUP LLC	7696NE	351	Restaurant	3	IRON GATE GROUP LLC	GUNNI'S RESTAURANT & GRILL
7497-02-4315.01	7679	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	GATEWAY BUSINESS CENTER	BLDG B UNIT 110
8190-97-0062	3702	DALEBROOK	DR	DUMFRIES	22025	U S GOLF PROPERTIES L P	8190NE	832	Golf Course	2	CJ EAGLE LLC	
7497-12-4811	7805	PROGRESS	CT	GAINESVILLE	20155	PLEIN SCOTT AND INGRID SURV	7497SW	150	Wholesale Warehousing	4	PROSPECT COURT LLC	TOTAL DEVELOPMENT SOLUTIONS
8292-34-9675	13430	MINNIEVILLE	RD	WOODBRI	22192	SULLINS THURMAN D TR	8292SW	150	Wholesale Warehousing	4	FORECLOSURE DEVELOPMENT CO LLC	SULLINS FURNITURE
7595-57-4598	9401	CONTRACTORS	CT	MANASSAS	20109	CRONIN DANIEL SHARON CRONIN SURV	7595NE	190	Other Industrial	3	CRONIN DANIEL & SHARON CRONIN SURV	CRONIN FLOORS
8192-57-9857	13131	HILLENDALE	DR	WOODBRI	22193	TRAVERS ROBERT L TR	8192NE	343	Convenience Store	2	TRAVERS ROBERT L TR	7-ELEVEN
8292-82-0694	13798	TELEGRAPH	RD	WOODBRI	22192	SHURGARD FREMONT PARTNERS I	8292SE	151	Mini Warehousing	3	SHURGARD/FREMONT PARTNERS I	SHURGARD STORAGE
8292-82-2050	2600	PRINCE WILLIAM	PY	WOODBRI	22192	MOTIVA ENTERPRISES LLC	8292SE	344	Convenience Store with Gas	4	PMG NORTHERN VIRGINIA LLC	SHELL- PW PKWY & TELEGRAPH RD
8291-65-7904	14700	POTOMAC MILLS	RD	WOODBRI	22192	PWC	8291NE	213	Bus	4	PWC BOARD OF COUNTY SUPERVISORS	PRTC
8292-45-9012	13360	MINNIEVILLE	RD	WOODBRI	22192	PARCEL C2 LLC	8292NE	344	Convenience Store with Gas	4	PARCEL C-2 LLC	7-ELEVEN - MADISON FARM
7397-92-9807.01	7669	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	156	Wholesale Warehousing (Condo)	2	GATEWAY BUSINESS CENTER	BLDG A UNIT 115
7497-02-0122.01	7669	LIMESTONE	DR	GAINESVILLE	20155	GATEWAY BUSINESS CENTER LP	7497SW	354	Restaurant	3	S & J ENTERPRISE INC	BLDG A UNIT 110

7994-94-6606	5901 DAVIS FORD	RD	MANASSAS	20112 OCCOQUAN FOREST SANITARY DISTRICT	7994SE	190 Other Industrial	4 PWC SERVICE AUTHORITY	
7697-60-2801	10309 LOMOND	DR	MANASSAS	20109 NORTHERN VIRGINIA ELECTRIC COOP	7697SE	216 Auto Parking	3 NORTHERN VIRGINIA ELECTRIC COOP	
7895-71-8052	10404 MOORE	DR	MANASSAS	20111 MCGARRY ALLAN D & KIL S MCGARRY	7895SE	390 Retail	3 KONDOLOY ROSTAM	BUCKHALL GENERAL STORE
8292-23-6078	13550 MINNIEVILLE	RD	WOODBIDGE	22192 DOMINION CENTER LLC	8292SW	312 Shopping Center	3 DOMINION CENTER LLC	DOMINION CENTER - RETAIL
7694-24-6033	11713 BRISTOW	RD	BRISTOW	20136 JOHN RUFF AND PHILLIP WHEELER PTNSHP	7694SW	910 Agricultural Resources	3 BRISTOW BROADRUN LLC	
8492-43-8235	499 HARBOR SIDE	ST	WOODBIDGE	22191 HARBOR VIEW ASSOCIATES LLC	8492SW	841 Swimming Pool	3 UNIT OWNERS HARBOR VIEW CONDO AT	
8189-69-1607	4100 TALON	DR	DUMFRIES	22025 7 ELEVEN INC	8189NE	344 Convenience Store with Gas	4 SEI ASSET MANAGEMENT & INVESTMENT CO	7-ELEVEN
7896-18-7963	8104 CENTREVILLE	RD	MANASSAS	20111 RESTLESS WHEELS INC	7896NW	390 Retail	3 RESTLESS WHEELS INC	RESTLESS WHEELS CAMPER SALES
7497-02-2220.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 VG 145 LLC	BLDG B UNIT 145
7497-01-3993.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 135
7497-01-2895.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 120
7497-02-2818.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 FOUR CORNERS REAL ESTATE INVESTMENT GROUP	BLDG B UNIT 135
7496-07-8757	8217 LINTON HALL	RD	BRISTOW	20136 AMERICA ONLINE INC	7496NW	191 Technology Services	1 PORPOISE VENTURES LLC	AOL II
8092-54-6085	13698 MAPLEDALE	AV	WOODBIDGE	22193 HYLTON CECIL D ESTATE	8092SE	354 Restaurant	3 HYLTON CONRAD C TR & MALCOLM W COOK TR &	MCDONALD'S @ MAPLEDALE
7396-83-1971	13900 ESTATE MANOR	DR	GAINESVILLE	20155 TOWER GROUP LLC	7396SE	311 Small Shopping Center	3 GLENKIRK RETAIL CENTER LLC	FAMILY MART
7696-77-3723	8319 SUDLEY	RD	MANASSAS	20109 MANAPORT PLAZA LLC	7696NE	313 Shopping Center	3 MANAPORT PLAZA LLC	MANAPORT S C
8192-05-3469	4802 DALE	BL	WOODBIDGE	22193 DELANEY PLAZA LLC	8192NW	312 Shopping Center	3 WOODBRIDGE VILLAGE LLC	DELANEY PLAZA
7595-66-6386	9650 HAWKINS	DR	MANASSAS	20109 NEWBILL HOLDINGS LLC	7595NE	190 Other Industrial	4 ASHLAND INVESTMENTS LLC	NEWBILL HOLDINGS
8193-50-0347	4255 SEETON	SQ	WOODBIDGE	22192 EXXON CORP	8193SE	344 Convenience Store with Gas	4 SOUTHSIDE OIL LLC	EXXON - THE GLEN SHOP CTR
8292-72-9509	2651 PRINCE WILLIAM	PY	WOODBIDGE	22192 BRINKER VIRGINIA INC	8292SE	351 Restaurant	3 COLE OB WOODBRIDGE VA LLC	ON THE BORDER
8292-51-4135	13901 SMOKE TOWN	RD	WOODBIDGE	22192 MINI U STORAGE WOODBRIDGE LTD PTNSHP ET	8292SE	151 Mini Warehousing	3 MINI U STORAGE WOODBRIDGE LTD PTNSHP ET AL	MINI-U STORAGE - OFFICE/APT
8292-23-2492	3340 ELM FARM	RD	WOODBIDGE	22192 LORD FAIFAX COMMUNITY COLLEGE	8292SW	151 Mini Warehousing	3 POTOMAC MILLS LAND LLLP	EZ SELF STORAGE
8190-62-6732	4202 FORTUNA CENTER	PZ	DUMFRIES	22025 FORTUNA REGENCY LLC	8190SE	313 Shopping Center	3 BRE DDR CROCODILE FORTUNA CENTER LLC	FORTUNA CENTER - SHOPPERS, etc
8393-22-9054	2010 OLD BRIDGE	RD	WOODBIDGE	22192 BOROCZI SCOTT TR	8393SW	366 Service Station	5 RUBY & HARRY LLC	SUNOCO-OLD BRIDGE & CLIPPER
8292-55-3681	13606 FOWKE	LN	WOODBIDGE	22192 GARBER J MANLEY JEANETTE ESTATE	8292NE	361 Motor Vehicle Sales	3 GARBER DANIEL C	Lake Ridge Auto Sales
7298-37-4137	5942 INTERLACHEN	CT	HAYMARKET	20169 DOMINION COUNTRY CLUB LP	7298NW	831 Golf Course	2 DOMINION VALLEY COUNTRY CLUB I LLC	
7298-77-8242	15191 GOLF VIEW	DR	HAYMARKET	20169 DOMINION COUNTRY CLUB LP	7298NE	831 Golf Course	2 DOMINION VALLEY COUNTRY CLUB I LLC	
7298-79-3018	15201 ARNOLD PALMER	DR	HAYMARKET	20169 DOMINION COUNTRY CLUB LP	7298NE	831 Golf Course	2 DOMINION VALLEY COUNTRY CLUB I LLC	
7595-57-0682	9400 CONTRACTORS	CT	MANASSAS	20109 L F JENNINGS INC	7595NE	190 Other Industrial	4 L F JENNINGS INC	L F JENNINGS INC
7497-12-2047	7750 PROGRESS	CT	GAINESVILLE	20155 POTOMAC GAINESVILLE PROPERTY LLC	7497SW	160 Industrial Service Garage	4 POTOMAC GAINESVILLE PROPERTY LLC	POTOMAC MACK SALES/SERVICE
8190-66-1721	16500 EDGEWOOD	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NE	832 Golf Course	2 C J EAGLE LLC	MONTCLAIR COUNTY CLUB
8190-52-9272	4406 FORTUNA CENTER	PZ	DUMFRIES	22025 FORTUNA REGENCY LLC	8190SE	352 Restaurant	3 BRE DDR CROCODILE FORTUNA CENTER LLC	PANERA BREAD & STARBUCKS
8193-40-9299	4350 PRINCE WILLIAM	PY	WOODBIDGE	22192 LEOPOLD CHARLES W JAQUELINE M SURV	8193SE	190 Other Industrial	4 G & L ENTERPRISES LLC	MAINTENANCE BLDG @ THE GLEN
7696-84-7480	8621 SUNNYGATE	DR	MANASSAS	20109 SUNNYGATE DRIVE SELF STORAGE LLC	7696NE	151 Mini Warehousing	3 U-STORE-IT LP	CUBESMART
7497-24-9109	7201 RAIL LINE	CT	GAINESVILLE	20155 DALRYMPLE REALTY CORP	7497SW	121 Durable Manufacturing	4 DALRYMPLE REALTY CORPORATION	CHEMUNG ASPHALT PLANT
7397-20-9268	7754 VIRGINIA OAKS	DR	GAINESVILLE	20155 NGP REALTY SUB LP	7396SE	832 Golf Course	2 VIRGINIA OAKS LLC	
7595-57-1046	9430 CONTRACTORS	CT	MANASSAS	20109 9430 INC	7595NE	190 Other Industrial	4 9430 INC	A
8492-44-5722	530 HARBOR SIDE	ST	WOODBIDGE	22191 BELMONT TOWN CENTER ASSOCS LLC	8492NE	851 Marina	3 BELMONT TOWN CENTER ASSOCS LLC	BELMONT BAY CENTER MARINA
7595-67-6742	9489 HAWKINS	DR	MANASSAS	20109 TOUSHA NOBLE A ROBIN	7595NE	150 Wholesale Warehousing	4 TOUSHA NOBLE A & ROBIN	EQUIPMENT SPECIALISTS
8391-88-6685	14398 MELBOURNE	AV	WOODBIDGE	22191 PWC PARK AUTHORITY	8391NE	224 Sewage	2 PWC BOARD OF COUNTY SUPERVISORS	
7596-24-1508	12021 WILTON MEADOWS	CT	MANASSAS	20109 BENFIELD AND DRESSLER LLC	7596NW	150 Wholesale Warehousing	4 NAGETT RICHARD R V LLC	BENFIELD ELECTRIC
8391-59-8873	14211 JEFFERSON DAVIS	HY	WOODBIDGE	22191 JD HWY LLC	8391NE	361 Motor Vehicle Sales	3 JD HWY LLC	LUSTINE DODGE - JEEP
7396-59-3972	7689 VIRGINIA OAKS	DR	GAINESVILLE	20155 NGP REALTY SUB LP	7396SE	832 Golf Course	2 VIRGINIA OAKS LLC	
7595-56-9398	11331 INDUSTRIAL	RD	MANASSAS	20109 HUGHES EDDY W	7595NE	150 Wholesale Warehousing	4 DAVID RAMOS FAMILY LLC	MIKE & BRYAN CONTRACTORS
8192-41-7315	4326 DALE	BL	WOODBIDGE	22193 TRUSTEES OF THE IRENE V HYLTON CHARITABL	8192SW	312 Shopping Center	3 GLENDALE PLAZA LLC	GLENDALE PLAZA
7596-14-5500	8780 VIRGINIA MEADOWS	DR	MANASSAS	20109 PEREIRA ANTONIO AND MARIO RAMOS ETAL	7596NW	190 Other Industrial	4 PEREIRA ANTONIO & MARIO RAMOS ETAL	POTOMAC CONCRETE
7697-50-9508	10319 LOMOND	DR	MANASSAS	20109 NORTHERN VIRGINIA ELECTRIC COOP	7697SE	216 Auto Parking	3 NORTHERN VIRGINIA ELECTRIC COOP	
7595-67-8821	9651 HAWKINS	DR	MANASSAS	20109 HAMP WILLIAM A III TR	7595NE	190 Other Industrial	4 HAWKINS DRIVE LLC	CALVERT MASONRY
7496-50-4931	12912 HUNTING COVE	PL	BRISTOW	20136 BRIDLEWOOD AT BRIDLEWOOD MANOR ASSOC LLC	7496SE	841 Swimming Pool	3 BRIDLEWOOD MANOR COMMUNITY ASSN	
7993-01-0402	12805 DUSTY WILLOW	RD	MANASSAS	20112 OAK RIDGE SWIM CLUB INC	7993SW	841 Swimming Pool	3 OAK RIDGE SWIM CLUB INC	
8391-56-6917	1551 FEATHERSTONE	RD	WOODBIDGE	22191 HALL MICHAEL T TR	8391NE	343 Convenience Store	2 THE KENTLAND FOUNDATION INC	7 MARKET FOOD STORE
8193-37-0594	4600 ASDEE	LN	WOODBIDGE	22192 OLD HICKORY GOLF CLUB LLC	8193NW	832 Golf Course	2 OLD HICKORY GOLF CLUB LLC	OLD HICKORY GOLF CLUB STOR/BAT
7497-02-0329.01	7669 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 TEAMC PROPERTIES LLC	BLDG A UNIT 100
8293-04-3660	3310 OLD BRIDGE	RD	WOODBIDGE	22192 OLD BRIDGE RETAIL INVESTMENTS LLC	8293SW	313 Shopping Center	3 OLD BRIDGE RETAIL INVESTMENTS LLC	FESTIVAL-OLD BRIDGE
7497-01-6089.01	7689 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 DLE LLC	BLDG D UNIT 135
7497-01-3594.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 130
7497-01-1299.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 100
7497-02-3417.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG B UNIT 120
8391-58-3691	14335 JEFFERSON DAVIS	HY	WOODBIDGE	22191 LYNNWOOD SHOPPING CENTER LLC	8391NE	312 Shopping Center	3 LYNNWOOD SHOPPING CENTER LLC	LYNNWOOD SHOPPING CENTER
8193-93-5944	3514 OLD BRIDGE	RD	WOODBIDGE	22192 EXXON CORP	8193SE	344 Convenience Store with Gas	4 SOUTHSIDE OIL LLC	EXXON-OLD BRIDGE & SMOKE TOWN
8293-04-2352	3312 OLD BRIDGE	RD	WOODBIDGE	22192 OLD BRIDGE RETAIL INVESTMENTS LLC	8293SW	313 Shopping Center	3 OLD BRIDGE RETAIL INVESTMENTS LLC	FESTIVAL-OLD BRIDGE FOOD LION
8191-35-7187	14797 DARBYDALE	AV	WOODBIDGE	22193 TRIVERS ROBERT L TR	8191NW	343 Convenience Store	2 TRIVERS ROBERT L TR	7-ELEVEN
8293-03-0262	3318 OLD BRIDGE	RD	WOODBIDGE	22192 STORAGE SQUIREBAC 101 LTD PTNSHP	8293SW	151 Mini Warehousing	3 STORAGE SQUIREBAC 101 LTD PTNSHP	STORAGE USE - BLDG D
8292-88-9614	13059 MINNIEVILLE	RD	WOODBIDGE	22192 ARCHIE HENRY E SR & ANNIE WILLIAMS	8292NE	369 Other Automotive	4 ARCHIE HENRY ELVIN JR	Penny's Used Auto Parts
8193-93-0718	12576 GRAND TARGHEE	DR	WOODBIDGE	22192 AMOCO OIL CO	8193SE	344 Convenience Store with Gas	4 OLD BRIDGE 101 LLC	Car Wash
8293-05-8957	3500 COMMISSION	CT	WOODBIDGE	22192 COMMISSION COURT LLC	8293NW	151 Mini Warehousing	3 COMMISSION COURT LLC	ATLANTIC STORAGE
8193-92-0448	3705 OLD BRIDGE	RD	WOODBIDGE	22192 MICHAEL R VANDERPOOL ET ALL	8193SE	390 Retail	3 JVG LLC	LOW ROOFED GREENHOUSE
7595-68-5645	11141 INDUSTRIAL	RD	MANASSAS	20109 S S REAL ESTATE HOLDINGS L L C	7595NE	150 Wholesale Warehousing	4 11141 INDUSTRIAL ROAD LLC	S & S REAL ESTATE
8392-88-5002	13244 PUTNAM	CL	WOODBIDGE	22191 GREENWICH HILL HOMEOWNERS ASSOC	8392NE	841 Swimming Pool	3 GREENWICH HILL HOMEOWNERS ASSOC	
8292-80-9997	14103 TELEGRAPH	RD	WOODBIDGE	22192 HAMILTON C ISAAC TR & JUDITH TR	8292SE	131 NonDurable Manufacturing	4 TELEGRAPH MANAGEMENT GROUP LLC	HAMILTON IRON WORKS
8292-51-2288	13889 SMOKE TOWN	RD	WOODBIDGE	22192 PUBLIC STORAGE INC	8292SE	151 Mini Warehousing	3 PUBLIC STORAGE INC	PUBLIC STORAGE BLDG A
8391-82-5162	15060 FARM CREEK	DR	WOODBIDGE	22191 TRIDEX ASSOCIATES INC	8391SE	150 Wholesale Warehousing	4 TRIDEX ASSOCIATES INC	TRIDEX MACHINE SHOP/WAREHOUSE
8193-30-7146	4383 RIDGEWOOD CENTER	DR	WOODBIDGE	22192 PFITZNER G RICHARD TR	8193SW	216 Auto Parking	3 PFITZNER G RICHARD TR	
7595-58-6956	11250 INDUSTRIAL	RD	MANASSAS	20109 KALOS PETER VERON L KALOS	7595NE	190 Other Industrial	4 COSTA ENTERPRISES LLC	

8393-11-6795	12721 HARBOR	DR	WOODBIDGE	22192 TACO BELL OF AMERICA INC	8393SW	354 Restaurant	3 TACO BELL OF AMERICA INC	TACO BELL
7896-19-9330	8028 CENTREVILLE	RD	MANASSAS	20111 AKSOYLU AHMET	7896NW	150 Wholesale Warehousing	4 AKSOYLU AHMET	VAMAC PLUMBING SUPPLIES
8392-51-7103	1641 WIGGLESWORTH	WY	WOODBIDGE	22191 PEP BOYS MANNY MOE JACK	8392SE	369 Other Automotive	4 PEP BOYS MANNY MOE & JACK	Pep Boys
8292-83-0326	13790 TELEGRAPH	RD	WOODBIDGE	22192 PASCACAVE JOAN	8292SE	150 Wholesale Warehousing	4 PERRY FAMILY LIMITED PARTNERSHIP LLP	AIRECO, VAMAC, JACKSON TRANSP
8292-90-3172	14105 TELEGRAPH	RD	WOODBIDGE	22192 HARRISON KIMBERLY C STEVEN H	8292SE	369 Other Automotive	4 VROOM VROOM HOLDINGS LLC	COLEMAN POWERSPORT
8292-23-4763	13598 MINNIEVILLE	RD	WOODBIDGE	22192 DOMINION CENTER LLC	8292SW	312 Shopping Center	3 DOMINION CENTER TWO LLC	DOMINION CENTER - RETAIL
8292-72-9845	2630 PRINCE WILLIAM	PY	WOODBIDGE	22192 EKW ENTERPRISES LLC	8292SE	351 Restaurant	3 HO AMY Y & JAMES HO ETAL T-C	HOOTERS
8292-82-6528	2631 PRINCE WILLIAM	PY	WOODBIDGE	22192 JBAC L L C	8292SE	344 Convenience Store with Gas	4 JBAC L L C	7-ELEVEN
7497-01-2097.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 110
7497-01-1698.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 105
7497-02-4714.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG B UNIT 105
7497-02-4016.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG B UNIT 115
7497-02-3118.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG B UNIT 130
7497-01-5983.01	7689 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG D UNIT 140
8191-94-0237	14820 CLOVERDALE	RD	WOODBIDGE	22193 TRAVERS ROBERT L TR	8191SE	343 Convenience Store	2 TRAVERS ROBERT L TR	7-ELEVEN
7595-67-5757	9479 HAWKINS	DR	MANASSAS	20109 HAWKINS ROAD ASSOCIATES LLC	7595NE	150 Wholesale Warehousing	4 DOBYNS PROPERTIES LLC	DOBYN'S CONSTRUCTION
7596-14-7467	8713 VIRGINIA MEADOWS	DR	MANASSAS	20109 GRC LLC	7596NW	150 Wholesale Warehousing	4 GRC LLC	COASTAL ELECTRIC
7497-02-0225.01	7669 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	
7596-13-8198	8760 VIRGINIA MEADOWS	DR	MANASSAS	20109 AMERICAN MANAGEMENT ENTERPRISES	7596SW	150 Wholesale Warehousing	4 8760 LLC	Helpcomm, Inc.
8392-29-7921	13065 LUPINE	TN	WOODBIDGE	22192 PWC BOARD OF COUNTY SUPERVISORS	8392NW	224 Sewage	2 PWC BOARD OF COUNTY SUPERVISORS	SEWAGE PUMPING STATION
7991-05-2666	14823 DUMFRIES	RD	MANASSAS	20112 VENABLE JEAN S	7991NW	369 Other Automotive	4 KELLY SCOTT D	ASAP AUTO RECYCLING CENTER
8393-11-6935	2211 TACKETTS MILL	DR	WOODBIDGE	22192 DOMINION FOODS LTD	8393SW	354 Restaurant	3 BRC TACKETTS MILL LAND LLC	BURGER KING
8289-36-2339	17165 WAYSIDE	DR	DUMFRIES	22026 ATLANTIC INVESTMENT CORPORATION	8289NW	311 Small Shopping Center	3 PREMIER SOUTHBRIDGE LLC	AUTO ZONE
8292-82-5976	13851 TELEGRAPH	RD	WOODBIDGE	22192 PARKWAY CROSSING LLC	8292SE	150 Wholesale Warehousing	4 PARKWAY CROSSING LLC	P.W. COUNTY ARCHIVES
8190-45-6117	4413 ASHGROVE	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NW	832 Golf Course	2 CJ EAGLE LLC	
8193-50-7773	13211 TOUCHSTONE	CL	WOODBIDGE	22192 SAUL HOLDINGS LIMITED PARTNERSHIP	8193SE	311 Small Shopping Center	3 SAUL HOLDINGS LIMITED PARTNERSHIP	THE GLEN
7497-02-1720.01	7679 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG B UNIT 150
8190-66-9015	16066 DEER PARK	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NE	832 Golf Course	2 CJ EAGLE LLC	
8293-25-1320	12241 HEDGES RUN	DR	WOODBIDGE	22192 LAKE RIDGE E AND A LLC	8293NW	311 Small Shopping Center	3 LAKE RIDGE (E&A) LLC	GIANT'S HEDGES RUN/LAKE RIDGE
8190-39-3819	15516 GOLF CLUB	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NW	832 Golf Course	2 CJ EAGLE LLC	
8190-35-4496	4412 ASHGROVE	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NW	832 Golf Course	2 CJ EAGLE LLC	
8190-54-0778	16225 EDGEWOOD	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190SE	832 Golf Course	2 CJ EAGLE LLC	
8190-77-2247	15870 NORTHGATE	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NE	832 Golf Course	2 CJ EAGLE LLC	
7595-56-7123	9515 CONTRACTORS	CT	MANASSAS	20109 BROAD RUN DEVELOPMENT LLC	7595NE	190 Other Industrial	4 EURO GROUP LLC	
8193-50-3541	13261 TOUCHSTONE	CL	WOODBIDGE	22192 MCDONALDS CORPORATION	8193SE	354 Restaurant	3 MCDONALDS CORPORATION	MCDONALD'S
7497-01-2496.01	7699 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG C UNIT 115
7497-02-6408.01	7689 LIMESTONE	DR	GAINESVILLE	20155 GATEWAY BUSINESS CENTER LP	7497SW	156 Wholesale Warehousing (Condo)	2 GATEWAY BUSINESS CENTER	BLDG D UNIT 110
7299-40-8683	15251 WEISKOPF	CT	HAYMARKET	20169 DOMINION VALLEY COUNTRY CLUB LP	7299SW	831 Golf Course	2 THE REGENCY GOLF CLUB I LLC	
8190-46-3671	15915 DOLPHIN	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NW	832 Golf Course	2 CJ EAGLE LLC	
8090-96-0386	5055 WATERWAY	DR	DUMFRIES	22025 E&A ACQUISITION LTD PTPSH	8090NE	313 Shopping Center	3 LAKE MONTCLAIR-DUMFRIES VA LLC	LAKE MONTCLAIR SHOPPING CENTER
8190-48-2675	15601 RHAME	DR	DUMFRIES	22025 U S GOLF PROPERTIES L P	8190NW	832 Golf Course	2 CJ EAGLE LLC	
8292-60-8719	2850 POTOMAC MILLS	CL	WOODBIDGE	22192 BURLINGTON COAT REALTY POTOMAC INC	8292SE	314 Large Mail	3 BURLINGTON COAT REALTY POTOMAC INC	POTOMAC MILLS-BURLINGTON COAT
7696-76-6475	8375 SUDLEY	RD	MANASSAS	20109 PADILLA LOUIS A CHARLOTTE M	7696NE	344 Convenience Store with Gas	4 PADILLA LOUIS A & CHARLOTTE M	7-ELEVEN
7794-18-3364	10501 CEDAR CREEK	DR	MANASSAS	20112 COUNTRY ROADS HOMEOWNERS ASSOC	7794NW	841 Swimming Pool	3 COUNTRY ROADS HOMEOWNERS ASSOC	
7992-89-0253	7001 DALE	BL	WOODBIDGE	22193 7 ELEVEN INC	7992NE	344 Convenience Store with Gas	4 SEI ASSET MANAGEMENT & INVESTMENT CO	7-ELEVEN
7797-53-8297	7420 BEN LOMOND PARK	DR	MANASSAS	20109 UPPER OCCOQUAN SEWAGE AUTHORITY	7797SE	224 Sewage	2 UPPER OCCOQUAN SEWAGE AUTHORITY	SEWAGE TREATMENT/NOVEC
8292-82-1711	2641 PRINCE WILLIAM	PY	WOODBIDGE	22192 BRINKER VIRGINIA INC	8292SE	351 Restaurant	3 BARBERS LLC	MACARONI GRILL
7596-24-0125	8740 VIRGINIA MEADOWS	DR	MANASSAS	20109 BENFIELD AND DRESSLER LLC	7596NW	190 Other Industrial	4 BENFIELD & DRESSLER LLC	PERMIT SEAL, BENEFIELD ELECTRC
7497-13-3145	5579 WELLINGTON	RD	GAINESVILLE	20155 PRESIDENTIAL PROPERTIES USA LLC	7497SW	151 Mini Warehousing	3 PRESIDENTIAL PROPERTIES USA LLC	PRESIDENTIAL STORAGE
7196-84-1142	8230 BUCKLAND MILL	RD	GAINESVILLE	20155 BUCKLAND FARM LLC	7196SE	911 Agricultural Resources	3 BUCKLAND FARM LLC	
7896-18-5692	8100 CENTREVILLE	RD	MANASSAS	20111 SCHICK RORY LEE	7896NW	361 Motor Vehicle Sales	3 SCHICK RORY LEE	MANASSAS CHRYSLER
7497-02-1157	7645 LIMESTONE	DR	GAINESVILLE	20155 PROSPERITY INVESTORS LLC	7497SW	150 Wholesale Warehousing	4 PROSPERITY INVESTORS LLC	UNITED STATES POSTAL SERVICE
8393-10-4281	12831 HARBOR	DR	WOODBIDGE	22192 KIM HAK K OK J	8393SW	369 Other Automotive	4 SHAD HOLDING LLC	TACKETTS MILL CAR WASH
7296-19-8769	15694 LEE	HY	GAINESVILLE	20155 STRINGER RODNEY B AND CORA R A SURV	7296NW	351 Restaurant	3 STRINGER INVESTMENT GROUP LLP	BLUE RIDGE SEA FOOD RESTAURANT
7397-43-5429	7500 ALEXANDER SOPHIA	CT	GAINESVILLE	20155 GAINESVILLE 29 LLC	7397SW	150 Wholesale Warehousing	4 CRAIG ENTERPRISES LLC	
7696-49-6563	8001 SUDLEY	RD	MANASSAS	20109 EXXON CORP	7696SW	344 Convenience Store with Gas	4 MACS RETAIL LLC	EXXON
7595-68-8696	11128 INDUSTRIAL	RD	MANASSAS	20109 WISE GUYS CONTRACTING INC	7595NE	121 Durable Manufacturing	4 INDUSTRIAL ROAD REALTY LLC	WISE GUYS CONSTRUCTION
8390-30-3120	16656 RADCLIFFE	LN	WOODBIDGE	22191 PWC SERVICE AUTHORITY	8390SW	224 Sewage	2 PWC SERVICE AUTHORITY	SEWAGE PUMP STATION
8289-49-8567	16555 RIVER RIDGE	BL	WOODBIDGE	22191 LSB WHEATON LLC KODIAK RIVER OAKS LLC	8289NE	311 Small Shopping Center	3 LSB WHEATON LLC & KODIAK RIVER OAKS LLC	RIVER OAKS SC
7599-33-0540	5003 SUDLEY	RD	CATHARPIN	20143 POAGUE JOHN R	7599SW	390 Retail	3 POAGUE JOHN R & JEAN C SURV	SUDLEY GARDEN CENTER
7595-78-1595	11120 INDUSTRIAL	RD	MANASSAS	20109 PAVONE VINCENT F CHARLOTTE C	7595NE	150 Wholesale Warehousing	4 11120 LLC	V.F. PAVONE
7991-25-7431	7044 COLCHESTER PARK	DR	MANASSAS	20112 RIDGE LONG LTD CO	7991NW	150 Wholesale Warehousing	4 L & R REAL ESTATE LLC	RIDGE AND LONG LIMITED LLC
8191-22-5293	3541 WATERWAY	DR	WOODBIDGE	22193 KEENE MILL CORP	8191SW	312 Shopping Center	3 AHNS REAL ESTATE INC & HEI SIL AHN	MONTCLAIR
7396-59-8754	7950 VIRGINIA OAKS	DR	GAINESVILLE	20155 NGP REALTY SUB LP	7396NE	832 Golf Course	2 VIRGINIA OAKS LLC	VIRGINIA OAKS CLUBHOUSE
8190-44-1875	16160 COUNTRY CLUB	DR	DUMFRIES	22025 SOUTHLAND CORP	8190NE	312 Shopping Center	3 SOUTHLAND CORP	MONTCLAIR 7-11
8193-50-0968	4245 SEETON	SQ	WOODBIDGE	22192 BNE LLC	8193SE	369 Other Automotive	4 BNE LLC	Lakeridge Auto Care
7298-71-0059	6450 TRADING	SQ	HAYMARKET	20169 HAYMARKET E A LLC	7298SE	313 Shopping Center	3 HAYMARKET (E&A) LLC	BUILDING 4
7298-56-1368	5943 INTERLACHEN	CT	HAYMARKET	20169 DOMINION COUNTRY CLUB LP	7298NE	831 Golf Course	2 DOMINION VALLEY COUNTRY CLUB I LLC	
8192-67-9463	13295 TROWBRIDGE	DR	WOODBIDGE	22192 PW PETROLEUM INC	8192NE	344 Convenience Store with Gas	4 PW PETROLEUM INC	VALERO PW PARKWAY
7594-17-9564	12108 NOKESVILLE	RD	BRISTOW	20136 NOKESVILLE LIVESTOCK AUCTION INC	7594NW	390 Retail	3 NOKESVILLE LIVESTOCK AUCTION INC	
7595-31-6547	10500 BRISTOW CENTER	DR	BRISTOW	20136 BLUV	7595SW	311 Small Shopping Center	3 BLUV LLC	BLDG C 10410-10418 BRISTOW CTR
7296-49-9598	7900 STONEWALL SHOPS	SQ	GAINESVILLE	20155 STONEWALL REGENCY LLC	7297SW	313 Shopping Center	3 STONEWALL REGENCY LLC	
7296-68-0445	15601 TURTLE POINT	DR	GAINESVILLE	20155 LAKE MANASSAS LIMITED LIABILITY CO	7296NE	832 Golf Course	2 STONEWALL GOLF CLUB AT LAKE MANASSAS INC	STONEWALL GOLF/CLUBHOUSE
8292-60-5581	14050 WORTH	AV	WOODBIDGE	22192 SAM'S REAL ESTATE BUSINESS TRUST	8292SE	390 Retail	3 SAM'S REAL ESTATE BUSINESS TRUST	SAM'S CLUB GAS

7896-17-1798	8501 MAPLEWOOD	DR	MANASSAS	20111 BEATTY FAMILY LP	7896NW	216 Auto Parking	3 BEATTY FAMILY L P	
8393-01-9573	2219 OLD BRIDGE	RD	WOODBIDGE	22192 TACKETTS MILL CENTER LLC	8393SW	311 Small Shopping Center	3 TACKETT'S MILL CENTER LLC	TACKETTS MILL
7697-14-7746	7651 STREAM WALK	LN	MANASSAS	20109 E A SOUTHEAST LTD PTNSHP	7697NW	313 Shopping Center	3 AMCB MANASSAS PROMENADE LLC	MANASSAS PROMENADE
8291-58-4206	14142 SMOKETOWN	RD	WOODBIDGE	22192 PRINCE WILLIAM SQUARE INVESTORS LLC	8291NE	313 Shopping Center	3 PRINCE WILLIAM SQUARE INVESTORS LLC	PW SQUARE
8392-05-3846	13455 TELEGRAPH	RD	WOODBIDGE	22192 PWC BOARD OF COUNTY SUPERVISORS	8392NW	216 Auto Parking	3 PWC BOARD OF COUNTY SUPERVISORS	
8392-87-7647	13249 OCCOQUAN	RD	WOODBIDGE	22191 AMETHYST COMPANY LLC	8392NE	311 Small Shopping Center	3 AMETHYST COMPANY LLC	WOODBIDGE SQUARE
7300-54-9159	14050 SHELTER	LN	HAYMARKET	20169 LATHAM CARROLL H AND MARY ANNE L	7300SE	911 Agricultural Resources	3 LATHAM FAMILY LAND LLC	
8192-40-8479	4300 DALE	BL	WOODBIDGE	22193 TRUSTEES OF THE IRENE V HYLTON CHARITABL	8192SW	351 Restaurant	3 GLENDALE PLAZA LLC	PIZZA HUT
8393-11-8693	12700 MINNIEVILLE	RD	WOODBIDGE	22192 EXXON CORPORATION	8393SW	344 Convenience Store with Gas	4 SOUTHSIDE OIL LLC	CAR WASH
7595-83-2458	10040 SOWDER VILLAGE	SQ	MANASSAS	20109 INNOVATION E AND A LLC	7595SE	313 Shopping Center	3 INNOVATION (E&A) LLC	RED ROBIN
7595-46-9946	9480 CONTRACTORS	CT	MANASSAS	20109 BROAD RUN DEVELOPMENT LLC	7595NE	190 Other Industrial	4 TRANSATLANTIC REALTY LLC	INDUSTRIAL SHELL
7595-56-3112	9520 CONTRACTORS	CT	MANASSAS	20109 BROAD RUN DEVELOPMENT LLC	7595NE	190 Other Industrial	4 FMJS COMMERCIAL PROPERTIES LLC	BROAD RUN BUSINESS
8191-59-7049	4176 DALE	BL	WOODBIDGE	22193 TRUSTEES OF THE IRENE V HYLTON CHARITABL	8191NE	312 Shopping Center	3 FORESTDALE PLAZA LLC	FORESTDALE PLAZA
8092-43-9145	5301 DALE	BL	WOODBIDGE	22193 PWC PARK AUTHORITY	8092SW	841 Swimming Pool	3 PWC BOARD OF COUNTY SUPERVISORS	DALE CITY
8292-70-7645	2860 POTOMAC MILLS	CL	WOODBIDGE	22192 POTOMAC MILLS OPERATING CO LLC	8292SE	315 Large Mall	3 MALL AT POTOMAC MILLS LLC	POTOMAC MILLS PHASE 3
8292-70-0588	14070 WORTH	AV	WOODBIDGE	22192 RED ROBIN INTERNATIONAL INC	8292SE	351 Restaurant	3 RED ROBIN INTERNATIONAL INC	RED ROBIN
8291-79-1954	2700 POTOMAC MILLS	CL	WOODBIDGE	22192 POTOMAC MILLS OPERATING CO LLC	8291NE	315 Large Mall	3 MALL AT POTOMAC MILLS LLC	POTOMAC MILLS I&II
8091-45-7860	14640 MINNIEVILLE	RD	WOODBIDGE	22193 ZP NO 44 LLC	8091NW	311 Small Shopping Center	3 ZP NO. 44 LLC	STAPLES MILL SC
7896-16-8253	8391 CENTREVILLE	RD	MANASSAS	20111 ABDI PARVIZ AND MAHBOUBEH SAEEDI	7896NW	390 Retail	3 8391 CENTERVILLE ROAD LLC	CARPET GALLERY
7495-77-7361	12691 BRAEMAR VILLAGE	PZ	BRISTOW	20136 BRAEMAR SHOPPING CENTER LLC	7495NE	311 Small Shopping Center	3 CAR BRAEMAR VILLAGE LLC	BRAEMAR SHOPPING CTR
8293-04-2120	3314 OLD BRIDGE	RD	WOODBIDGE	22192 OLD BRIDGE RETAIL INVESTMENTS LLC	8293SW	313 Shopping Center	3 OLD BRIDGE RETAIL INVESTMENTS LLC	FESTIVAL AT OLD BRIDGE
7696-30-1623	10850 PYRAMID	PL	MANASSAS	20110 ARE VIRGINIA NO 2 LLC	7696SW	140 Research and Testing	2 COMMONWEALTH OF VA DEPT OF FORENSIC SCIENCE	VIRGINIA FORENSICS LAB
7496-60-1866	9100 DEVLIN	RD	BRISTOW	20136 BRISTOW COMMONS LLC	7496SE	313 Shopping Center	3 BC PLAZA LLC	Building 3
7497-12-0220	7800 PROGRESS	CT	GAINESVILLE	20155 WMB LC	7497SW	190 Other Industrial	4 WMB LC	BERGER BUILDING
8093-72-2873	12601 GALVESTON	CT	MANASSAS	20112 HOADLY REGENCY LLC	8093SE	311 Small Shopping Center	3 HOADLY REGENCY LLC	HARRIS TEETER
7296-19-0372	7900 CRESCENT PARK	DR	GAINESVILLE	20155 MADISON CRESCENT RETAIL LLC	7296NW	313 Shopping Center	3 MADISON CRESCENT RETAIL LLC	MADISON CRESCENT BUILDING B
7595-58-7311	11301 INDUSTRIAL	RD	MANASSAS	20109 TECHNOLOGY LEASING CONSULTANTS INC	7595NE	190 Other Industrial	4 TECHNOLOGY & LEASING CONSULTANTS INC	ACUTY AUDIO VISUAL
8291-94-2928	2401 OPITZ	BL	WOODBIDGE	22191 DIAMOND POTOMAC TOWN CENTER LLC	8291SE	314 Large Mall	3 DIAMOND POTOMAC TOWN CENTER LLC	BLDG 1 - EYE DOCTOR
8393-23-6788	12500 CLIPPER	DR	WOODBIDGE	22192 THOUSAND OAKS TOWNHOUSE ASSOC	8393SW	841 Swimming Pool	3 THOUSAND OAKS TOWNHOUSE ASSOC	COMMUNITY POOL
7696-85-6632	8500 SUDLEY	RD	MANASSAS	20109 ABEL FAMILY LTD PARTNERSHIP LLP	7696NE	361 Motor Vehicle Sales	3 ABEL FAMILY LIMITED PARTNERSHIP LLP	MILLER TOYOTA
7497-12-6630	7755 PROGRESS	CT	GAINESVILLE	20155 BILLYS LLC	7497SW	190 Other Industrial	4 PROGRESS COURT LLC	FANNON OIL
8391-51-7302	1851 RIPPON	BL	WOODBIDGE	22191 PWC SERVICE AUTHORITY	8391SE	224 Sewage	2 PWC SERVICE AUTHORITY	H.L. MOONEY
8292-34-8341	13470 MINNIEVILLE	RD	WOODBIDGE	22192 SOLANO NELIDA & ITALO F TRS	8292SW	352 Restaurant	3 SOLANO NELIDA J & ITALO F SOLANO TRS	EL POLLO RICO
8191-06-5175	14410 MINNIEVILLE	RD	WOODBIDGE	22193 TRAVERS GUY CHRISTOPHER	8191NW	343 Convenience Store	2 TRAVERS GUY CHRISTOPHER	7-ELEVEN
8093-73-7672	5019 DAVIS FORD	RD	WOODBIDGE	22192 CREST LIMITED PARTNERSHIP	8093SE	150 Wholesale Warehousing	4 CREST LIMITED PARTNERSHIP	PALM POOLS

FID	STRUC_ID	OUTFALL
41	21270	24
158	21517	15
534	20186	30
536	20188	24
652	19942	36
655	19950	24
818	20789	15
827	17878	0
852	30228	15
1059	18570	21
1065	18576	12
1070	18588	36
1075	18593	27
1630	16261	30
1886	15542	0
1944	14926	0
2176	15305	15
2570	32176	18
2756	11631	0
2764	12308	0
2798	12353	21
2800	12355	15
3013	60379	36
3301	11361	18
3304	11366	8
3382	11707	15
3561	27032	0
3682	4722	15
3683	4724	18
3947	9761	15
3969	9843	15
3972	10321	36
3973	10322	0
3974	10323	36
3975	10324	0
3976	10325	12
3978	10327	30
4101	10033	48
4186	9482	42
4789	2279	228
5004	36226	18
5007	34453	24
5662	36869	24
5671	36828	15
6267	37801	0
6291	37374	24

6426	27777	0
6543	36874	15
6545	37690	27
6565	37660	15
6848	8399	15
7291	32345	15
7369	61713	0
7378	61717	0
7426	61707	0
7430	61711	0
8067	956	0
8457	4429	36
8932	35986	42
8937	36087	24
8939	36069	18
8966	35934	0
8974	35905	21
9532	2295	15
9533	2311	24
9620	30650	66
9696	37976	15
9740	37973	0
9741	18854	0
9807	30709	0
9818	30720	60
9890	25177	15
9899	25199	36
10012	38703	0
10047	37974	15
10056	37986	15
10145	40728	0
10146	40729	15
10267	31940	0
10268	31942	0
10372	39737	18
10376	39743	15
10381	40742	36
10412	14975	36
10476	25755	0
10538	26012	0
10539	26014	0
10540	26017	0
10593	33082	48
10623	39748	15
10632	39699	18
10637	39753	15
10639	39705	15

10648	39714	24
10653	39719	15
10876	34159	41
10877	34163	42
10970	39722	15
11006	39413	15
11164	26774	42
11165	26776	36
11439	26876	0
11555	41239	48
11811	36824	42
12124	36793	15
12413	28284	60
12445	39375	24
12457	37980	12
12786	37964	15
12794	19553	0
12805	34733	0
12811	37975	0
12970	23443	36
13366	39287	36
13611	24019	36
13731	38247	21
13894	2394	18
14069	19554	15
14268	30155	42
14565	51105	30
14799	7558	18
14805	7574	0
15254	51141	30
15363	19919	36
15379	19946	18
15397	11488	0
15413	4263	18
15420	4368	0
15429	4437	18
15434	4457	0
15855	19316	15
15874	13639	48
15888	13580	15
15933	26655	135
16198	13811	24
16199	13813	15
16225	30625	0
16226	30626	80
16594	9759	21
16618	9795	33

16619	9797	15
16650	9871	42
16658	9882	21
16668	9874	15
16800	27474	23
17106	41551	0
17526	9465	21
17845	8397	15
18366	21282	36
18513	16264	0
18517	16270	36
18518	16272	30
19626	11009	0
19847	34739	27
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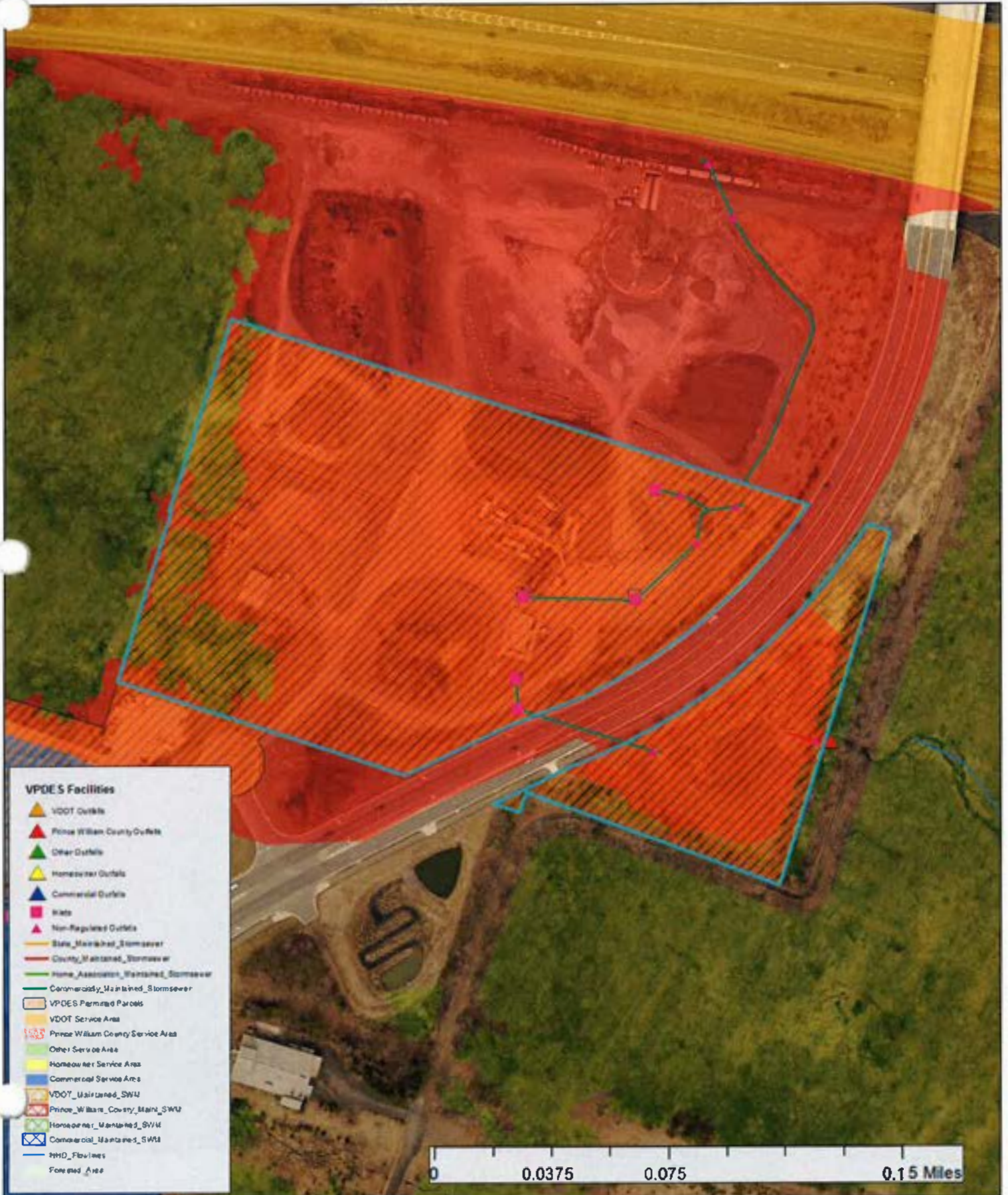
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VPDES Permitted Facilities

Chemung Contracting Corporation - Gainesville
Permit No: VAR051949



VPDES Permitted Facilities

First Transit Incorporated
Permit No: VAR051477



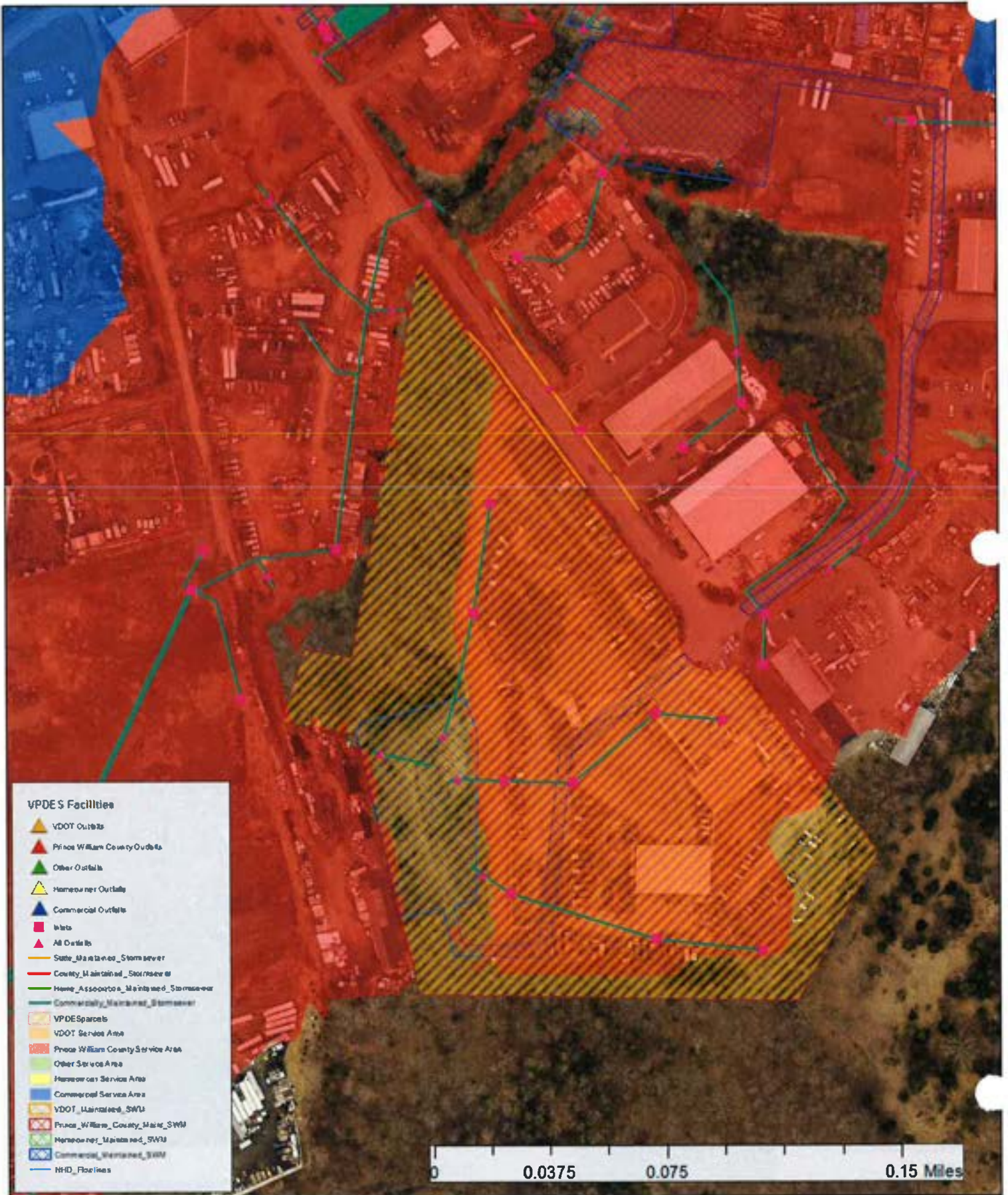
VPDES Permitted Facilities

Penny's Used Auto Parts
Permit No: VAR052115



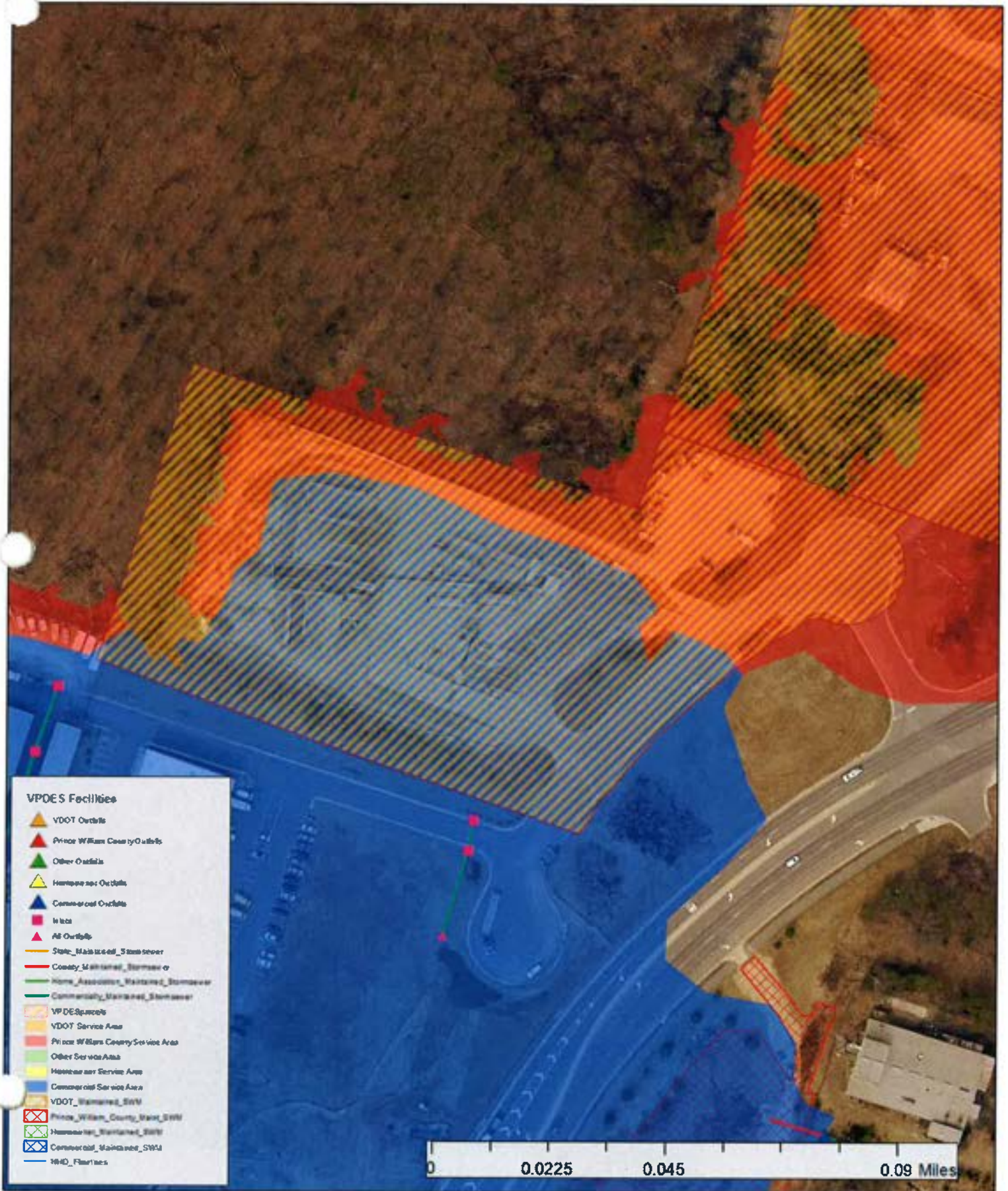
VPDES Permitted Facilities

Potomac Disposal Services of Virginia, LLC
Permit No: VAR051639



VPDES Permitted Facilities

Virginia Concrete Company Inc - Gainesville
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




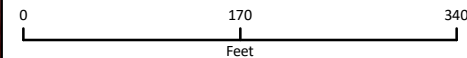
Prince William County, Virginia

VPDES Permitted Facilities

SUPERIOR PROPERTIES INC
Address: 5547 Wellington Rd, GAINESVILLE,
Permit No: VAG110368



-  VPDES Permitted Parcel
-  Commercial Service
-  Prince William County Service
-  VDOT Service



Any determination of topography or contours or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design modification or construction of improvements to real property or for floodplain determination.

Prepared by:

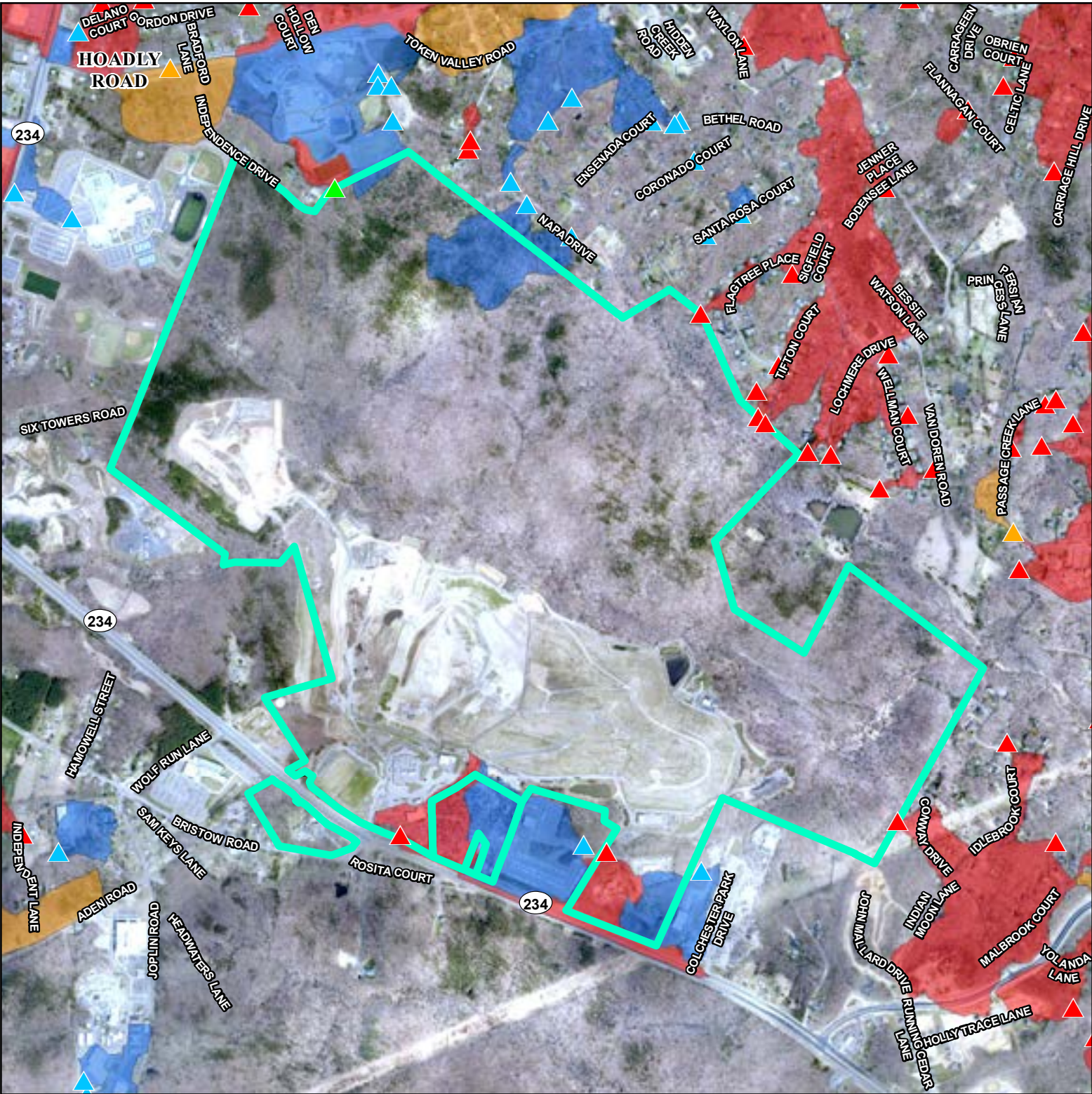
Department of Public Works
Environmental Services Division
Watershed Management Branch
5 County Complex Court Suite 170
Prince William, VA 22192



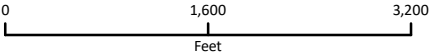
Prince William County, Virginia

VPDES Permitted Facilities

PWC BOARD OF COUNTY SUPERVISORS
Address: 14811 Dumfries Rd, WOODBRIDGE,
Permit No: VAR052463



- VPDES Permitted Parcel
- Commercial Outfall
- Others Outfall
- Prince William County Outfall
- VDOT Outfall
- Commercial Service
- Prince William County Service
- VDOT Service Area



Any determination of topography or contours or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design modification or construction of improvements to real property or for floodplain determination.

Prepared by:
Department of Public Works
Environmental Services Division
Watershed Management Branch
5 County Complex Court Suite 170
Prince William, VA 22192

Outfall Id	ADC Grid	Watershed HUC	Size	Within PW	Main Landuse	Last Inspection Date
56832	5990-D9	POWELLS C PL51	36	No	Other	3/26/2019
53535	5872-E2	BROAD RUI PL34	54	Yes	Shopping Center	1/4/2019
12724	5991-C5	NEABSCO C PL49	18	No	Other Industrial	12/18/2017
5872-001	5872-C1	BROAD RUI PL34	48	No	Other	9/23/2019
28912	5756-K3	BULL RUN PL44	15	No	Planned Industrial Park	3/6/2018
62841	5992-E10	NEABSCO C PL49	24	Yes	Shopping Center	4/16/2019
9718	5991-J10	NEABSCO C PL49	15	Yes	Residential	1/24/2018
32345	5755-F4	BROAD RUI PL34	15	No	Vehicle Sale/Repair/Misc	12/20/2018
65473	5638-H9	BULL RUN PL43	30	No	Hospital	7/21/2020
59747	5991-C5	NEABSCO C PL49	30	No	Gas Station	
5523	5873-B4	BROAD RUI PL34	24	No	Other	1/3/2019
30267	5992-E5	MARUMSC PL50	30	No	Other	4/16/2019
24419	5872-B1	BROAD RUI PL34	15	Yes	Other	8/7/2018
46030	5754-H2	BROAD RUI PL32	15	No	Other	
46711	5756-D9	BROAD RUI PL34	60	No	Planned Industrial Park	8/10/2020
62984	5992-E10	NEABSCO C PL49	54	No	Shopping Center	4/16/2019
61907	5872-C3	BROAD RUI PL34	30	No	Gas Station	5/21/2018
30265	5992-E5	MARUMSC PL50	48	No	Other	4/18/2019
25533	5873-G7	OCCOQUAI PL41	56	No	Other	1/3/2019
21724	5992-C5	NEABSCO C PL49	42	No	Gas Station	3/29/2019
34912	6110-G6	POWELLS C PL51	15	Yes	Residential	7/1/2019
36147	5756-D9	BROAD RUI PL34	18	No	Planned Industrial Park	8/10/2020
62110	5756-K3	BULL RUN PL44	30	No	Planned Industrial Park	3/6/2018
62172	5992-E8	NEABSCO C PL49	15	No	Hospital	4/19/2019
39498	5756-K2	BULL RUN PL44	18	No	Planned Industrial Park	6/12/2018
2677	5989-K5	OCCOQUAI PL41	15	No	Shopping Center	1/4/2019
61362	5992-E10	NEABSCO C PL49	789	Yes	Residential	4/16/2019
51058	5756-D5	BROAD RUI PL34	30	No	Other Industrial	8/4/2017
20188	5992-E7	NEABSCO C PL49	24	No	Other	4/30/2019
11619	5992-D6	NEABSCO C PL49	48	No	Shopping Center	3/13/2018
21931	5992-D3	OCCOQUAI PL47	15	No	Residential	7/16/2020
49960	5990-H3	NEABSCO C PL49	18	No	Vehicle Sale/Repair/Misc	1/19/2018
49965	5990-H3	NEABSCO C PL49	789	No	Vehicle Sale/Repair/Misc	1/19/2018
29077	5992-E5	MARUMSC PL50	18	No	Other	4/16/2019
33693	5754-K4	BROAD RUI PL32	15	No	Gas Station	10/9/2018
27775	5992-D7	NEABSCO C PL49	66	No	Shopping Center	3/15/2018
10033	5992-D7	NEABSCO C PL49	48	No	Shopping Center	3/13/2018
62906	5992-E10	NEABSCO C PL49	54	Yes	Shopping Center	4/16/2019
40991	5991-A9	POWELLS C PL51	42	Yes	Shopping Center	5/8/2018
25528	5873-G7	OCCOQUAI PL41	54	Yes	Other	1/3/2019
25177	5755-F6	BROAD RUI PL34	15	No	Other	12/20/2018
34879	5756-K3	BULL RUN PL44	15	No	Planned Industrial Park	3/6/2018
28930	5756-K2	BULL RUN PL44	60	No	Planned Industrial Park	6/12/2018
61447	5992-E10	NEABSCO C PL49	24	Yes	Residential	4/16/2019
42834	5990-H4	NEABSCO C PL49	30	Yes	Residential	1/19/2018
1306	5989-K5	OCCOQUAI PL41	36	No	Residential	1/4/2019

Outfall Id	ADC Grid	Watershed HUC	Size	Within PW	Main Landuse	Last Inspection Date
30269	5992-E5	MARUMSC PL50	15	No	Residential	4/16/2019
2673	5989-K5	OCCOQUAI PL41	32	No	Shopping Center	1/4/2019
30334	5992-B7	NEABSCO C PL49	24	No	Institutional (schools/chu	4/12/2019
18898	5991-G4	NEABSCO C PL49	27	Yes	Gas Station	5/1/2018
58310	5757-A7	BULL RUN PL44	15	Yes	Vehicle Sale/Repair/Misc	12/11/2018
46720	5756-D9	BROAD RUI PL34	30	No	Planned Industrial Park	8/10/2020
25676	5992-F9	NEABSCO C PL49	36	No	Regional Mall	11/22/2017
16272	5757-A7	BULL RUN PL44	30	No	Other	12/11/2018
42107	5754-K2	BROAD RUI PL32	30	No	Regional Mall	7/24/2019
7558	5757-A7	BULL RUN PL44	18	No	Vehicle Sale/Repair/Misc	12/11/2018
36061	5875-E8	OCCOQUAI PL47	24	Yes	Residential	3/28/2019
40621	5756-C5	BROAD RUI PL34	54	No	Planned Industrial Park	1/19/2018
42751	5754-E5	BROAD RUI PL32	54	Yes	Shopping Center	12/26/2018
30226	5757-A7	BULL RUN PL44	15	Yes	Vehicle Sale/Repair/Misc	12/11/2018
30254	5992-E5	MARUMSC PL50	21	No	Other	4/16/2019
27751	5639-A9	BULL RUN PL43	48	Yes	Residential	7/2/2018
40175	5755-F4	BROAD RUI PL34	0	Yes	Vehicle Sale/Repair/Misc	12/20/2018
64149	5756-A5	BROAD RUI PL34	24	No	Open Space	1/31/2018
33077	6110-A8	QUANTICO PL52	48	Yes	Shopping Center	8/3/2017
29151	5990-B9	POWELLS C PL51	24	No	Vehicle Sale/Repair/Misc	7/22/2019
30250	5992-E5	MARUMSC PL50	48	No	Other	4/16/2019
11547	5992-A7	NEABSCO C PL49	15	No	Shopping Center	1/25/2018
62108	5756-K3	BULL RUN PL44	30	No	Planned Industrial Park	3/6/2018
21180	5992-F9	NEABSCO C PL49	54	No	Shopping Center	11/21/2017
27847	5756-D3	BULL RUN PL44	6	No	Other Industrial	7/17/2019
59349	5992-J3	OCCOQUAI PL48	15	No	Restaurant	7/15/2020
22746	5989-K5	OCCOQUAI PL41	15	No	Gas Station	1/4/2019
30228	5757-A7	BULL RUN PL44	15	Yes	Vehicle Sale/Repair/Misc	12/11/2018
16557	5757-E3	BULL RUN PL44	15	Yes	Residential	12/13/2018
56536	5872-C3	BROAD RUI PL34	54	No	Shopping Center	5/21/2018
20683	5756-E2	BULL RUN PL44	42	No	Other	9/10/2018
49967	5990-H3	NEABSCO C PL49	789	No	Other	1/19/2018
64151	5756-A5	BROAD RUI PL34	24	No	Open Space	1/31/2018
25332	5992-G2	OCCOQUAI PL48	15	No	Other	6/14/2018
45691	5756-F3	BULL RUN PL44	18	No	Wholesale Warehousing	6/12/2018
41817	5992-D7	NEABSCO C PL49	72	No	Hotel w/ Restaurant	3/13/2018
22592	5757-B7	BULL RUN PL44	36	No	Hospital	10/2/2019
49694	5992-D9	NEABSCO C PL49	54	No	Hospital	4/16/2019
40174	5756-D9	BROAD RUI PL34	15	No	Planned Industrial Park	8/10/2020
47513	5992-C5	NEABSCO C PL49	18	No	Other	3/29/2019
11574	5992-A7	NEABSCO C PL49	54	Yes	Shopping Center	1/25/2018
13030	5991-H4	OCCOQUAI PL47	36	No	Residential	4/8/2019
12312	5992-D7	NEABSCO C PL49			Hotel w/ Restaurant	
64173	5756-D4	BROAD RUI PL34	54	No	Planned Industrial Park	7/20/2020
56829	5990-D9	POWELLS C PL51	42	No	Other Industrial	3/26/2019
63043	5992-D9	NEABSCO C PL49	54	No	Shopping Center	4/16/2019

Outfall Id	ADC Grid	Watershed HUC	Size	Within PW	Main Landuse	Last Inspection Date
30230	5757-A7	BULL RUN PL44	15	Yes	Vehicle Sale/Repair/Misc	12/11/2018
29576	5992-C5	OCCOQUAI PL47	27	No	Vehicle Sale/Repair/Misc	3/29/2019
43448	5754-D5	BROAD RUI PL32	30	Yes	Shopping Center	7/13/2018
59544	5991-C2	NEABSCO C PL49	15	No	Other	4/1/2019
10236	5992-D7	NEABSCO C PL49	48	No	Shopping Center	3/15/2018
64648	6109-H5	QUANTICO PL52	18	Yes	Other	5/9/2018
14745	5992-H4	MARUMSC PL50	18	No	Residential	4/6/2020
62177	5992-E8	NEABSCO C PL49	15	No	Hospital	4/19/2019
60653	5991-J1	OCCOQUAI PL47	18	No	Gas Station	7/10/2018
27851	5992-E7	NEABSCO C PL49	33	No	Vehicle Sale/Repair/Misc	4/19/2019
60935	5991-H4	OCCOQUAI PL47	24	Yes	Gas Station	4/8/2019
5371	5992-D7	NEABSCO C PL49	30	No	Shopping Center	3/15/2018
29072	5992-E5	MARUMSC PL50	48	No	Other	4/16/2019
13707	5992-F3	OCCOQUAI PL47	21	Yes	Other	10/30/2018
43163	5992-A6	NEABSCO C PL49	54	No	Shopping Center	7/13/2017
34882	5756-K3	BULL RUN PL44	24	No	Planned Industrial Park	3/6/2018
34027	5992-J3	OCCOQUAI PL48	15	No	Residential	7/15/2020
25951	5757-E4	BULL RUN PL44	15	Yes	Other	12/13/2018
64171	5756-D4	BROAD RUI PL34	30	No	Planned Industrial Park	7/20/2020
4952	5875-K10	OCCOQUAI PL47	15	No	Residential	3/26/2019
66515	5992-C5	OCCOQUAI PL47	18	No	Vehicle Sale/Repair/Misc	3/29/2019
29578	5992-C5	OCCOQUAI PL49	15	No	Vehicle Sale/Repair/Misc	3/29/2019
18904	5991-G4	NEABSCO C PL49	21	Yes	Gas Station	5/1/2018
46351	5754-K1	BROAD RUI PL32	18	Yes	Planned Industrial Park	12/21/2018
28329	5756-H8	BROAD RUI PL34	36	No	Other Industrial	
25531	5873-G7	OCCOQUAI PL41	54	Yes	Other	1/3/2019
36025	5875-E8	OCCOQUAI PL47	15	Yes	Residential	3/28/2019
29074	5992-E5	MARUMSC PL50	15	Yes	Open Space	4/16/2019
30238	5992-E5	MARUMSC PL50	18	No	Other	4/16/2019
43434	5754-D5	BROAD RUI PL32	48	Yes	Shopping Center	7/13/2018
24949	5992-G2	OCCOQUAI PL48	15	No	Regional Mall	6/14/2018
13034	5756-K3	BULL RUN PL44	15	No	Planned Industrial Park	3/6/2018
53843	6110-F3	NEABSCO C PL49	48	Yes	Residential	2/6/2018
62109	5756-K3	BULL RUN PL44	24	No	Planned Industrial Park	3/6/2018
64160	5756-D4	BROAD RUI PL34	48	No	Planned Industrial Park	7/20/2020
34902	5991-J5	OCCOQUAI PL47	24	No	Residential	4/11/2019
45679	5756-F3	BULL RUN PL44	30	No	Wholesale Warehousing	6/12/2018
16580	5757-E4	BULL RUN PL44	18	Yes	Residential	12/13/2018
21502	5756-C9	BROAD RUI PL34	27	No	Other	9/19/2019
7564	5757-A7	BULL RUN PL44	24	No	Vehicle Sale/Repair/Misc	12/11/2018
16270	5757-A7	BULL RUN PL44	36	No	Other	12/11/2018
4091	5990-J4	NEABSCO C PL49	42	Yes	Residential	1/7/2019
5756-001	5756-C10	BROAD RUI PL34	42	No	Planned Industrial Park	9/18/2019
6196	5992-A5	OCCOQUAI PL47	42	Yes	Residential	1/25/2018
30257	5992-E5	MARUMSC PL50	21	No	Other	4/16/2019
16564	5757-E3	BULL RUN PL44	42	Yes	Residential	12/19/2018

Outfall Id	ADC Grid	Watershed HUC	Size	Within PW	Main Landuse	Last Inspection Date
3281	5991-C5	NEABSCO C PL49	36	No	Gas Station	12/18/2017
17038	5757-C4	BULL RUN PL44	60	Yes	Residential	5/23/2018
9710	5991-J10	NEABSCO C PL49	15	No	Residential	1/24/2018







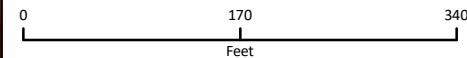
Prince William County, Virginia

VPDES Permitted Facilities

SUPERIOR PROPERTIES INC
Address: 5547 Wellington Rd, GAINESVILLE,
Permit No: VAG110368



-  VPDES Permitted Parcel
-  Commercial Service
-  Prince William County Service
-  VDOT Service



Any determination of topography or contours or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design modification or construction of improvements to real property or for floodplain determination.

Prepared by:

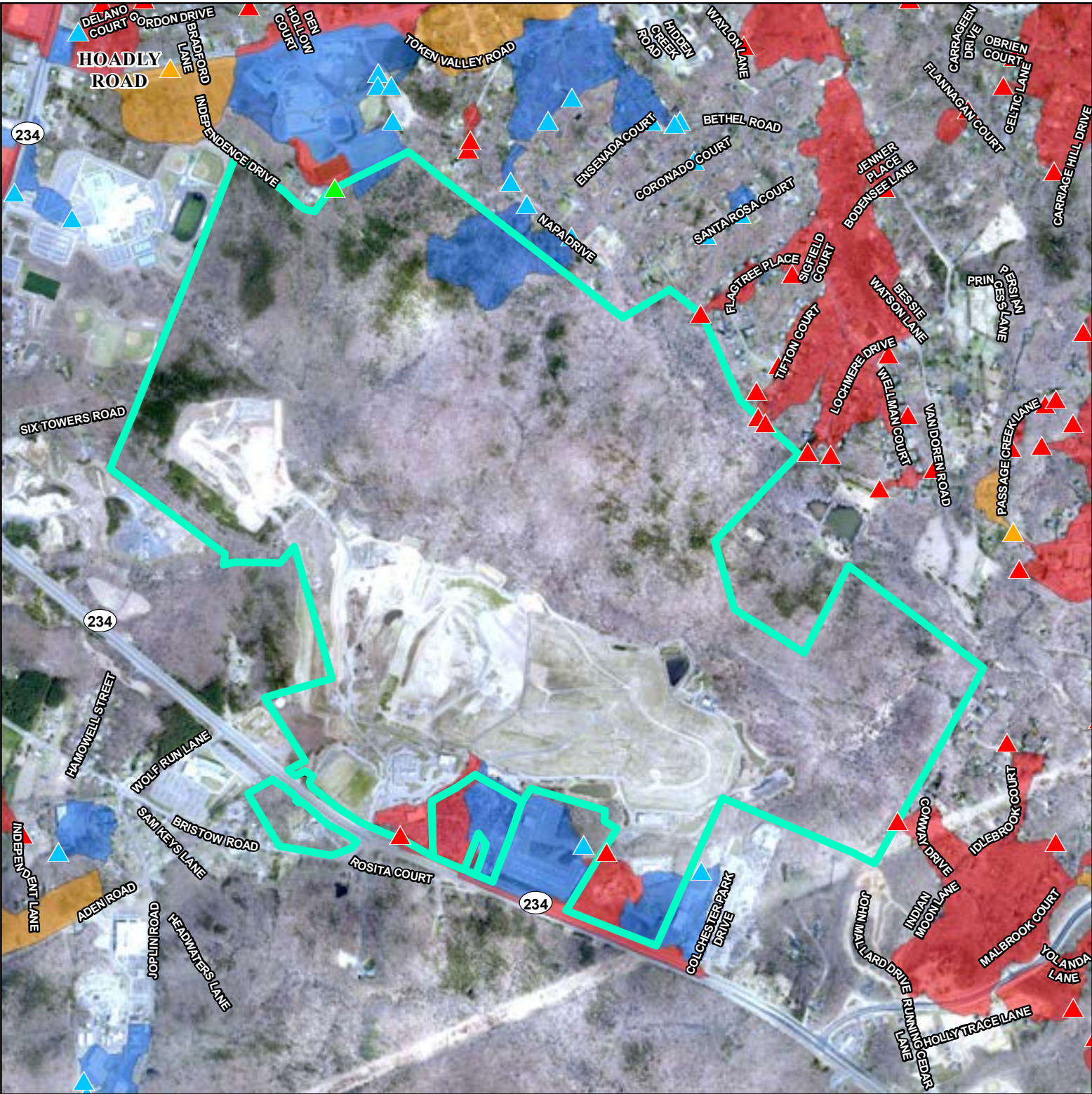
Department of Public Works
Environmental Services Division
Watershed Management Branch
5 County Complex Court Suite 170
Prince William, VA 22192



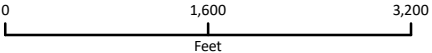
Prince William County, Virginia

VPDES Permitted Facilities

PWC BOARD OF COUNTY SUPERVISORS
Address: 14811 Dumfries Rd, WOODBRIDGE,
Permit No: VAR052463



- VPDES Permitted Parcel
- Commercial Outfall
- Others Outfall
- Prince William County Outfall
- VDOT Outfall
- Commercial Service
- Prince William County Service
- VDOT Service Area



Any determination of topography or contours or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design modification or construction of improvements to real property or for floodplain determination.

Prepared by:
Department of Public Works
Environmental Services Division
Watershed Management Branch
5 County Complex Court Suite 170
Prince William, VA 22192

Appendix H – Stormsewer Infrastructure Management

SWM/BMP - Private Facility Compliance Report

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
1	6108	7/9/2019	Other	D - Dry Detention Facility	No	Meeting	No		
2	5948	7/11/2019	Other	W - Wet Detention Facility	No	Meeting	No		
3	5949	7/11/2019	Other	W - Wet Detention Facility	No	Meeting	No		
4	5878	7/12/2019	Other	U - Underground Facility	Yes	Meeting	No		
5	5725	7/16/2019	Other	W - Wet Detention Facility	No	Meeting	No		
6	5873	7/19/2019	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		
7	5908	8/7/2019	Other	U - Underground Facility	No	Meeting	No		
8	6108	8/9/2019	Other	D - Dry Detention Facility	No	Maintenance needed.	Yes		
9	5160	7/12/2019	60-day reinspection	D - Dry Detention Facility	No	No maintenance needed.	Yes		
10	5378	7/19/2019	60-day reinspection	D - Dry Detention Facility	No	Meeting	No		
11	5323	7/31/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
12	5338	8/8/2019	60-day reinspection	D - Dry Detention Facility	No	Maintenance needed.	Yes		
13	5339	8/8/2019	60-day reinspection	D - Dry Detention Facility	No	No maintenance needed.	Yes		
14	5235	8/9/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
15	5239	7/1/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
16	5428	7/1/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
17	5632	7/1/2019	Routine	D - Dry Detention Facility	No	No maintenance needed.	Yes		
18	5892	7/1/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
19	5467	8/15/2019	60-day reinspection	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		
20	5280	7/9/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
21	5144	8/19/2019	60-day reinspection	D - Dry Detention Facility	No	No maintenance needed.	Yes		
22	5495	8/19/2019	60-day reinspection	W - Wet Detention Facility	Yes	No maintenance needed.	Yes		
23	5873	9/23/2019	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		
24	5086	7/18/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
25	5216	7/18/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
26	5892	8/27/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
27	6108	10/1/2019	Other	D - Dry Detention Facility	No	Meeting	No		
28	5216	10/2/2019	Other	D - Dry Detention Facility	No	No maintenance needed.	Yes		
29	5421	7/29/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
30	6122	8/12/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
31	6123	8/12/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
32	5072	9/12/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
33	6121	8/9/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
34	5639	9/20/2019	60-day reinspection	U - Underground Facility	No	No maintenance needed.	Yes		
35	5328	9/30/2019	60-day reinspection	D - Dry Detention Facility	No	No maintenance needed.	Yes		
36	5533	10/1/2019	60-day reinspection	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
37	6130	8/26/2019	Routine	D - Dry Detention Facility	No	No maintenance needed.	Yes		
38	5000	8/28/2019	Routine	D - Dry Detention Facility	In Progress	Maintenance needed.	Yes		
39	5528	10/8/2019	60-day reinspection	U - Underground Facility	No	Maintenance needed.	Yes		
40	6130	9/4/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
41	5483	9/5/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
42	5484	9/5/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
43	5770	9/11/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
44	5396	10/25/2019	60-day reinspection	W - Wet Detention Facility	No	No maintenance needed.	Yes		
45	5107	9/19/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
46	5005	9/20/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
47	5273	9/20/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
48	5565	9/30/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
49	5567	9/30/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
50	5568	9/30/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
51	5571	9/30/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
52	5765	9/20/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
53	5564	10/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
54	5566	10/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
55	5086	9/25/2019	Routine	D - Dry Detention Facility	No	Meeting	No		
56	6130	11/4/2019	60-day reinspection	D - Dry Detention Facility	No	Maintenance needed.	Yes		
57	5709	10/9/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
58	6130	12/10/2019	Other	D - Dry Detention Facility	No	Meeting	No		
59	5285	10/3/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
60	5058	10/4/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
61	5117	10/4/2019	Routine	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
62	5118	10/4/2019	Routine	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
63	5868	12/13/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
64	5217	10/9/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
65	5708	10/9/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
66	5125	10/18/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
67	5809	11/4/2019	Routine	B - Bioretention Facility	No	Maintenance needed.	Yes		
68	5685	11/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
69	5706	11/8/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
70	5327	10/30/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
71	5548	10/31/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
72	5574	10/31/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
73	5834	11/1/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
74	5006	11/14/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
75	5609	11/14/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
76	5610	11/13/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
77	5487	11/5/2019	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
78	5771	11/15/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
79	5772	11/15/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
80	5107	1/16/2020	Other	D - Dry Detention Facility	No	Maintenance needed.	Yes		
81	5387	12/17/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
82	5731	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
83	5732	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
84	5733	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
85	5734	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
86	5735	11/19/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
87	5858	11/19/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
88	5859	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
89	5860	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
90	5861	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
91	5862	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
92	5863	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
93	5864	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
94	5865	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
95	5866	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
96	5867	11/19/2019	Routine	O - Other	No	Maintenance needed.	Yes		
97	5035	11/12/2019	Routine	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
98	5050	11/12/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
99	5492	11/12/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
100	5589	11/12/2019	Routine	W - Wet Detention Facility	No	No maintenance needed.	Yes		
101	5222	11/13/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
102	5224	11/13/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
103	5107	1/24/2020	Other	D - Dry Detention Facility	No	Maintenance needed.	Yes		
104	5107	1/28/2020	Other	D - Dry Detention Facility	No	Meeting	No		
105	6004	11/19/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
106	5465	11/26/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
107	5736	12/11/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
108	5737	12/11/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
109	5738	12/11/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
110	5778	12/11/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
111	5300	12/12/2019	Routine	B - Bioretention Facility	No	Maintenance needed.	Yes		
112	5395	12/12/2019	Routine	T - Trench (Usually Rip Rap)	No	Maintenance needed.	Yes		
113	5830	12/2/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
114	5885	12/12/2019	Routine	T - Trench (Usually Rip Rap)	No	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
115	5773	12/13/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
116	5774	12/13/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
117	5775	12/13/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
118	5776	12/13/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
119	5779	12/13/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
120	5739	12/11/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
121	5395	2/21/2020	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		
122	5198	12/17/2019	Routine	W - Wet Detention Facility	No	No maintenance needed.	Yes		
123	5281	12/17/2019	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
124	6120	1/29/2020	60-day reinspection	W - Wet Detention Facility	No	Maintenance needed.	Yes		
125	5908	3/11/2020	Other	U - Underground Facility	No	Maintenance needed.	Yes		
126	5908	3/11/2020	Other	U - Underground Facility	No	Maintenance needed.	Yes		
127	5883	3/13/2020	Other	U - Underground Facility	No	Maintenance needed.	Yes		
128	5504	2/13/2020	60-day reinspection	D - Dry Detention Facility	No	Maintenance needed.	Yes		
129	5186	2/18/2020	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
130	5360	3/19/2020	Other	D - Dry Detention Facility	No	Maintenance needed.	Yes		
131	5908	3/2/2020	60-day reinspection	U - Underground Facility	No	Meeting	No		
132	5360	1/29/2020	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
133	5125	3/10/2020	60-day reinspection	D - Dry Detention Facility	No	No maintenance needed.	Yes		
134	5325	1/30/2020	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
135	5395	3/12/2020	60-day reinspection	T - Trench (Usually Rip Rap)	No	Maintenance needed.	Yes		
136	6137	2/14/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
137	5421	3/19/2020	60-day reinspection	D - Dry Detention Facility	No	No maintenance needed.	Yes		
138	5880	2/19/2020	Routine	T - Trench (Usually Rip Rap)	No	No maintenance needed.	Yes		
139	6139	2/21/2020	Routine	D - Dry Detention Facility	No	No maintenance needed.	Yes		
140	5228	3/3/2020	Routine	U - Underground Facility	No	No maintenance needed.	Yes		
141	5555	3/4/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
142	5227	3/5/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
143	5557	3/5/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
144	5558	3/5/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
145	5559	3/5/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
146	5942	3/5/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
147	5943	3/5/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
148	5620	2/26/2020	Routine	W - Wet Detention Facility	No	Maintenance needed.	Yes		
149	5086	4/7/2020	60-day reinspection	D - Dry Detention Facility	No	Maintenance needed.	Yes		
150	5086	4/7/2020	60-day reinspection	D - Dry Detention Facility	No	Maintenance needed.	Yes		
151	5664	3/13/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
152	6138	3/13/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
153	5976	5/14/2020	Other	W - Wet Detention Facility	No	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
154	5941	3/16/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
155	5944	3/16/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
156	5945	3/16/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
157	6031	3/16/2020	Routine	U - Underground Facility	No	No maintenance needed.	Yes		
158	6032	3/16/2020	Routine	O - Other	No	Maintenance needed.	Yes		
159	6033	3/16/2020	Routine	O - Other	No	Maintenance needed.	Yes		
160	6034	3/16/2020	Routine	O - Other	No	Maintenance needed.	Yes		
161	6036	3/16/2020	Routine	O - Other	No	Maintenance needed.	Yes		
162	6037	3/16/2020	Routine	O - Other	No	Maintenance needed.	Yes		
163	5885	4/23/2020	60-day reinspection	T - Trench (Usually Rip Rap)	No	Meeting	No		
164	5665	3/20/2020	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
165	5653	4/20/2020	Routine	O - Other	No	Maintenance needed.	Yes		
166	5842	4/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
167	5843	4/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
168	5844	4/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
169	5845	4/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
170	5846	4/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
171	5674	5/18/2020	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
172	5932	5/29/2020	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
173	5367	6/1/2020	Routine	D - Dry Detention Facility	No	Maintenance needed.	Yes		
174	5838	11/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
175	5079	7/3/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
176	5812	7/3/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
177	5725	7/9/2019	60-day reinspection	W - Wet Detention Facility	Yes	Meeting	No		
178	5725	7/9/2019	60-day reinspection	W - Wet Detention Facility	Yes	Meeting	No		
179	6119	7/9/2019	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
180	5358	7/10/2019	60-day reinspection	D - Dry Detention Facility	Yes	Meeting	No		
181	5781	7/10/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
182	5120	7/16/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
183	5145	7/19/2019	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
184	5239	7/29/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
185	5726	7/30/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
186	5983	7/31/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
187	5827	8/1/2019	60-day reinspection	B - Bioretention Facility	Yes	Maintenance needed.	Yes		
188	5750	8/7/2019	60-day reinspection	W - Wet Detention Facility	Yes	No maintenance needed.	Yes		
189	5043	8/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
190	5416	8/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
191	5417	8/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
192	5669	8/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
193	5752	8/8/2019	60-day reinspection	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
194	5687	8/21/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
195	6124	8/22/2019	Routine	O - Other	Yes	No maintenance needed.	Yes		
196	6125	8/22/2019	Routine	O - Other	Yes	No maintenance needed.	Yes		
197	6128	8/26/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
198	6129	8/26/2019	Routine	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
199	5290	9/4/2019	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
200	5978	9/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
201	5979	9/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
202	5476	9/5/2019	60-day reinspection	U - Underground Facility	No	Maintenance needed.	Yes		
203	5767	9/5/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
204	5768	9/5/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
205	5893	9/5/2019	60-day reinspection	O - Other	No	Maintenance needed.	Yes		
206	5894	9/5/2019	Routine	O - Other	No	Maintenance needed.	Yes		
207	5895	9/5/2019	60-day reinspection	O - Other	No	Maintenance needed.	Yes		
208	6121	9/5/2019	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
209	5590	9/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
210	5766	9/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
211	5523	9/20/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
212	5634	9/20/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
213	5635	9/20/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
214	5636	9/20/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
215	5637	9/20/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
216	5766	9/20/2019	30-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
217	5767	9/20/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
218	5768	9/20/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
219	5287	9/30/2019	Routine	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
220	5562	9/30/2019	15-day reinspection	U - Underground Facility	No	Maintenance needed.	Yes		
221	5570	9/30/2019	15-day reinspection	U - Underground Facility	No	Maintenance needed.	Yes		
222	5563	10/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
223	5978	10/2/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
224	5979	10/2/2019	30-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
225	5225	10/4/2019	Routine	U - Underground Facility	No	No maintenance needed.	Yes		
226	5535	10/4/2019	60-day reinspection	U - Underground Facility	No	Maintenance needed.	Yes		
227	5536	10/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
228	5537	10/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
229	5538	10/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
230	5539	10/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
231	5540	10/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
232	5541	10/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
233	5160	10/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
234	5529	10/8/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
235	5532	10/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
236	5532	10/8/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
237	5748	10/11/2019	60-day reinspection	W - Wet Detention Facility	Yes	No maintenance needed.	Yes		
238	5933	10/17/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
239	5763	10/22/2019	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
240	5711	10/24/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
241	5897	10/25/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
242	5690	10/30/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
243	5053	10/31/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
244	5597	10/31/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
245	5598	10/31/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
246	5599	10/31/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
247	5600	10/31/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
248	5601	10/31/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
249	5835	11/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
250	5836	11/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
251	5837	11/1/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
252	5794	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
253	5795	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
254	5796	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
255	5797	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
256	5798	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
257	5799	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
258	5800	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
259	5801	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
260	5804	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
261	5805	11/4/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
262	5807	11/4/2019	Routine	B - Bioretention Facility	No	Maintenance needed.	Yes		
263	5808	11/4/2019	Routine	B - Bioretention Facility	No	Maintenance needed.	Yes		
264	6108	11/4/2019	60-day reinspection	D - Dry Detention Facility	Yes	Meeting	No		
265	5267	11/5/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
266	5662	11/5/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
267	5682	11/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
268	5684	11/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
269	5802	11/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
270	5803	11/6/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
271	5806	11/6/2019	Routine	B - Bioretention Facility	No	Maintenance needed.	Yes		
272	5140	11/8/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
273	5680	11/8/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
274	5686	11/8/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
275	5702	11/8/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
276	5703	11/8/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
277	5704	11/8/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
278	5705	11/8/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
279	5681	11/12/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
280	5683	11/12/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
281	5955	11/15/2019	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
282	5507	11/18/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
283	5525	11/27/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
284	5506	12/2/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
285	5828	12/5/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
286	5829	12/5/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
287	5623	12/11/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
288	5780	12/11/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
289	5777	12/13/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
290	5872	12/13/2019	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
291	5511	12/16/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
292	5591	12/16/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
293	5640	12/17/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
294	5641	12/17/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
295	5642	12/17/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
296	5643	12/17/2019	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
297	6130	12/17/2019	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
298	5517	12/18/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
299	5360	1/24/2020	Other	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
300	6135	1/27/2020	Other	O - Other	Yes	Maintenance needed.	Yes		
301	6136	1/27/2020	Other	B - Bioretention Facility	Yes	Maintenance needed.	Yes		
302	6137	1/27/2020	Other	U - Underground Facility	Yes	Maintenance needed.	Yes		
303	5512	2/18/2020	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
304	5727	2/18/2020	60-day reinspection	W - Wet Detention Facility	Yes	No maintenance needed.	Yes		
305	5740	2/18/2020	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
306	5949	2/18/2020	60-day reinspection	W - Wet Detention Facility	Yes	No maintenance needed.	Yes		
307	5949	2/18/2020	60-day reinspection	W - Wet Detention Facility	Yes	No maintenance needed.	Yes		
308	5882	2/19/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
309	5883	2/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
310	5394	2/26/2020	Routine	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
311	5082	3/3/2020	60-day reinspection	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
312	5087	3/3/2020	60-day reinspection	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
313	5504	3/3/2020	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
314	5556	3/3/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
315	5763	3/3/2020	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
316	5764	3/3/2020	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
317	5224	3/4/2020	60-day reinspection	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
318	5663	3/13/2020	Routine	O - Other	No	Maintenance needed.	Yes		
319	5946	3/16/2020	Routine	D - Dry Detention Facility	Yes	No maintenance needed.	Yes		
320	6035	3/16/2020	Routine	O - Other	Yes	Maintenance needed.	Yes		
321	5360	3/31/2020	Other	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
322	5360	3/31/2020	Other	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
323	5727	4/9/2020	Other	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		
324	5949	4/9/2020	Other	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		
325	5949	4/9/2020	Other	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		
326	6137	4/13/2020	60-day reinspection	U - Underground Facility	Yes	Maintenance needed.	Yes		
327	6140	4/16/2020	Routine	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
328	6142	4/16/2020	Routine	U - Underground Facility	Yes	No maintenance needed.	Yes		
329	6143	4/17/2020	Routine	U - Underground Facility	Yes	Maintenance needed.	Yes		
330	5493	4/20/2020	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
331	5651	4/20/2020	Routine	O - Other	No	Maintenance needed.	Yes		
332	5652	4/20/2020	Routine	O - Other	No	Maintenance needed.	Yes		
333	5654	4/20/2020	Routine	O - Other	No	Maintenance needed.	Yes		
334	5700	4/21/2020	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
335	5701	4/21/2020	60-day reinspection	U - Underground Facility	Yes	No maintenance needed.	Yes		
336	5727	5/13/2020	Other	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		
337	5949	5/13/2020	Other	W - Wet Detention Facility	Yes	Maintenance needed.	Yes		
338	5217	11/14/2019	60-day reinspection	D - Dry Detention Facility	Yes	Maintenance needed.	Yes		
339	5389	8/1/2019	60-day reinspection	T - Trench (Usually Rip Rap)	Yes	No maintenance needed.	Yes		
340	5395	3/12/2020	60-day reinspection	T - Trench (Usually Rip Rap)	No	Maintenance needed.	Yes		
341	5825	8/1/2019	60-day reinspection	B - Bioretention Facility	No	No maintenance needed.	Yes		
342	5826	8/1/2019	60-day reinspection	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
343	5827	8/9/2019	60-day reinspection	B - Bioretention Facility	Yes	Meeting	No		
344	5873	10/8/2019	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		
345	5873	11/4/2019	60-day reinspection	T - Trench (Usually Rip Rap)	Yes	Meeting	No		
346	5873	10/4/2019	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		
347	5873	8/5/2019	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		
348	5885	2/14/2020	Other	T - Trench (Usually Rip Rap)	No	Meeting	No		

	Facility Id	Inspection Date	Inspection Type	Facility Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (Y/N)	CAO 30 Day Ltr	CAO 15 Day Ltr
349	5988	4/27/2020	Complaint Based	D - Dry Detention Facility	No	Maintenance needed.	Yes		
350	5989	4/27/2020	Complaint Based	D - Dry Detention Facility	No	Maintenance needed.	Yes		
351	6126	8/22/2019	Routine	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
352	6127	8/22/2019	Routine	B - Bioretention Facility	Yes	No maintenance needed.	Yes		
353	6131	11/7/2019	Routine	U - Underground Facility	No	Maintenance needed.	Yes		
354	6132	11/21/2019	Routine	O - Other	No	Maintenance needed.	Yes		
355	6133	11/21/2019	Routine	O - Other	No	Maintenance needed.	Yes		
356	6134	11/21/2019	Routine	O - Other	Yes	Maintenance needed.	Yes		
357	6135	2/12/2020	Routine	O - Other	Yes	No maintenance needed.	Yes		
358	6136	2/12/2020	Routine	B - Bioretention Facility	Yes	Maintenance needed.	Yes		
359	6141	4/16/2020	Routine	O - Other	Yes	No maintenance needed.	Yes		

Facility type not available

SWM/BMP - Public Facility Compliance Report

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
1	2	6/25/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
2	3	6/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
3	4	6/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
4	5	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
5	6	3/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
6	7	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
7	8	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
8	9	6/17/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
9	10	10/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
10	11	3/18/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
11	12	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	No
12	13	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
13	14	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
14	15	10/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
15	16	12/11/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
16	17	10/25/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
17	18	8/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
18	19	1/22/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
19	20	6/18/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
20	21	6/24/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
21	22	3/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
22	23	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
23	24	11/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
24	25	11/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
25	26	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
26	27	3/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
27	28	7/22/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
28	29	1/22/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
29	30	8/19/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
30	30	1/14/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
31	30	1/14/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
32	30	1/14/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
33	31	3/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
34	32	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
35	33	10/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
36	34	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
37	35	3/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
38	36	3/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
39	37	3/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
40	38	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
41	39	6/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
42	40	3/16/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
43	41	8/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
44	42	4/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
45	43	10/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
46	44	9/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
47	45	2/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
48	46	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
49	47	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
50	48	10/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
51	49	5/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
52	50	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
53	51	7/22/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
54	52	10/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
55	53	8/19/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
56	54	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
57	55	8/19/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
58	56	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
59	57	10/17/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
60	58	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
61	59	11/8/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
62	60	5/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
63	61	8/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
64	62	6/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
65	63	8/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
66	64	10/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
67	65	3/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
68	67	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
69	68	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
70	69	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
71	69	12/2/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
72	70	8/20/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
73	71	5/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
74	72	2/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
75	73	4/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
76	74	11/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
77	75	10/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
83	75	1/28/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
84	76	7/1/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
85	77	7/22/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
86	78	4/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
87	79	3/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
88	80	9/13/2019	U - Underground Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
89	80	10/2/2019	U - Underground Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
90	81	9/13/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
91	82	1/21/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
92	83	1/21/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
93	84	10/2/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
94	85	10/2/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
95	86	9/19/2019	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
96	87	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
97	88	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
98	89	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
99	90	8/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
100	91	8/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
101	92	1/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
102	93	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
103	94	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
104	95	5/7/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
105	96	5/7/2020	U - Underground Facility	Routine	No	Maintenance is needed.	No	Yes
106	97	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
107	98	7/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
108	98	2/3/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
109	99	7/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
110	99	8/7/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
111	100	4/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
112	101	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
113	102	8/14/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
114	103	5/21/2020	T - Trench (Usually Rip Rap)	Routine	No	No maintenance is needed at this time.	No	No
115	104	6/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
116	105	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
117	105	12/2/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
118	106	3/13/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
119	106	6/23/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
120	107	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
121	108	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
122	109	7/17/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
123	110	3/13/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
124	111	4/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
125	112	5/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
126	113	9/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
127	114	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
128	115	2/21/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
129	116	2/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
130	117	2/17/2020	U - Underground Facility	Routine	No	Maintenance is needed.	No	Yes
131	118	2/24/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	Yes
132	119	2/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
133	120	5/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	No
134	121	4/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
135	123	1/16/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
136	124	1/16/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
137	125	10/3/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
138	126	10/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
139	127	5/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
140	128	10/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
141	129	9/4/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
142	130	9/4/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
143	131	9/4/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
144	132	4/28/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
145	133	9/4/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
146	134	3/19/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	Yes
147	135	2/25/2020	U - Underground Facility	Routine	No	Maintenance is needed.	No	Yes
148	136	2/25/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
149	137	2/24/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
150	138	2/24/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
151	139	2/24/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
152	140	2/25/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
153	141	2/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
154	142	8/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
155	143	8/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
156	144	8/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
157	145	3/2/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
158	146	2/14/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
159	146	5/21/2020	W - Wet Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
160	147	7/22/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
161	148	9/13/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
162	149	9/13/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
163	150	9/13/2019	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	Yes
164	150	4/13/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
165	151	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
166	153	6/1/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
167	154	7/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
168	154	6/1/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
169	155	8/5/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
170	156	12/20/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
171	157	7/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
172	157	5/15/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
173	158	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
174	159	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
175	160	6/18/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
176	161	3/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
177	161	3/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
179	163	1/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
180	164	5/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
181	165	4/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
182	166	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
183	167	2/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
184	168	6/22/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
185	169	3/2/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
186	170	6/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
187	171	6/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
188	172	2/28/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
189	173	4/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
190	174	4/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
191	175	4/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
192	176	10/22/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
193	177	6/8/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
194	178	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	No
195	179	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
196	180	3/24/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
197	182	6/2/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
198	183	6/2/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
199	184	4/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
200	185	8/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
201	186	8/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
202	187	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
203	189	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
204	190	10/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
205	191	10/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
206	192	8/19/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
207	193	8/14/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
208	194	8/14/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
209	195	10/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
210	196	7/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
211	197	11/13/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
212	198	5/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
213	199	5/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
214	200	1/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
215	200	4/9/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
216	201	1/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
217	201	4/9/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
218	202	3/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
219	203	3/24/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
220	204	4/15/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
221	205	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
222	206	3/12/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
223	207	8/20/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
224	208	8/20/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
225	209	8/7/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
226	210	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
227	211	3/13/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
228	212	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
229	213	4/15/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
230	214	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
231	214	6/23/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
232	215	4/15/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
233	216	9/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
234	217	9/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
235	218	9/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
236	219	3/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
237	220	8/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
238	221	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
239	222	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
240	223	3/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
241	224	3/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
242	225	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
243	225	4/9/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
244	226	2/14/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	Yes
245	227	2/14/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
246	228	2/17/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
247	229	6/25/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
248	230	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
249	231	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
250	232	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
251	232	1/15/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
252	233	9/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
253	234	9/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
254	234	3/19/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
255	234	3/19/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
257	235	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
258	235	1/15/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
259	236	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
260	237	8/5/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
261	238	9/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
262	239	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
263	240	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
264	241	4/15/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
265	242	3/3/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
266	243	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
267	244	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
268	245	3/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
269	246	3/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
270	247	3/3/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
271	248	3/3/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
272	249	3/3/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
273	250	3/3/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
274	251	8/20/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
275	252	8/30/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
276	253	8/30/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
277	254	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
278	255	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
280	256	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
281	257	7/17/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
282	257	3/16/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
283	257	5/26/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
284	258	11/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
285	259	5/26/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	Yes
286	260	5/21/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	
287	261	5/21/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
288	262	5/26/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
289	263	5/26/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
290	264	5/26/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
291	265	5/21/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
292	266	5/26/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	
293	267	5/21/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
294	268	5/26/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
295	269	10/8/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
296	270	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
297	271	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
298	271	3/24/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
299	272	7/16/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
300	273	5/20/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
301	274	6/1/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
302	275	5/20/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
303	276	6/1/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
304	277	3/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
305	278	12/17/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
306	279	5/21/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
307	280	5/21/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
308	281	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
309	282	6/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
310	283	6/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
311	284	8/16/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
312	284	2/7/2020	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
313	285	6/10/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
314	286	1/2/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
315	287	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
316	288	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
317	289	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
318	290	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
319	291	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
320	292	2/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
321	293	6/10/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
322	294	6/10/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
323	295	6/12/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	Yes
324	296	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
325	297	10/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
326	297	12/19/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
333	298	6/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
334	299	10/16/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
335	300	6/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
336	301	6/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
337	302	4/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
338	303	3/25/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
339	304	4/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
340	304	6/18/2020	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
341	305	4/28/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
342	306	4/28/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
343	307	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
344	308	12/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
345	309	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
346	310	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
347	311	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
348	312	10/3/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
349	312	12/19/2019	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
354	313	8/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
355	315	9/6/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
356	316	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
357	317	12/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
358	318	7/10/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
359	319	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
360	319	4/7/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
361	320	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
362	321	10/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
363	322	10/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
364	322	4/29/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
365	323	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
366	324	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
367	325	3/23/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
368	326	3/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
369	327	5/22/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
370	328	9/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
371	329	9/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
372	330	5/8/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
373	331	6/24/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
374	332	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
375	333	8/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
376	334	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
377	335	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
378	335	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
379	336	10/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
380	337	12/10/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
381	337	2/25/2020	W - Wet Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
382	338	10/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
383	338	12/19/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
389	339	7/15/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
390	339	8/15/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
391	340	8/15/2019	D - Dry Detention Facility	30-day reinspection	Yes	No maintenance is needed at this time.	No	No
392	341	6/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
393	342	6/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
394	343	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
395	344	3/17/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
397	345	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
398	345	12/26/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
399	346	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
400	346	12/26/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
401	347	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
402	348	6/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
403	349	6/25/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
404	350	3/13/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
405	351	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
406	352	7/11/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
407	353	7/11/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
408	354	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
409	355	4/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
410	356	4/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
411	357	4/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
412	358	4/8/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
413	359	4/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
414	360	4/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
415	361	4/27/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
416	362	4/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
417	363	7/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
418	364	9/3/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
419	365	9/3/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
420	366	7/29/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
421	367	9/3/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
422	369	9/30/2019	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
423	370	9/30/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
424	371	10/21/2019	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	Yes
425	372	9/30/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
426	373	10/1/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
427	374	10/1/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
428	375	9/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
429	376	10/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
430	377	9/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
431	378	7/29/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
432	379	1/10/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
433	379	4/15/2020	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
434	380	11/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
435	381	11/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
436	382	8/30/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
437	383	12/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
438	383	3/5/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
439	384	12/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
440	384	3/5/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
441	385	12/10/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
442	385	2/25/2020	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
443	386	11/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
444	387	9/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
445	388	9/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
446	389	9/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
447	390	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
448	390	1/15/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
450	391	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
451	392	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
452	393	5/29/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
453	394	10/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
454	394	4/10/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
455	395	9/3/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
456	395	4/17/2020	W - Wet Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
457	396	10/7/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
458	397	10/7/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
459	398	9/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
460	399	10/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
461	400	7/29/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
462	401	3/24/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
463	402	7/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
464	403	4/15/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
465	404	6/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
466	405	8/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
467	406	10/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
468	406	11/22/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
469	407	6/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
470	408	6/18/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
471	409	6/17/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
472	410	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
473	411	10/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
474	412	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
475	412	8/7/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
476	413	11/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
477	414	10/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
478	415	10/9/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
479	416	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
480	417	11/5/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
481	418	11/5/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
482	419	6/1/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
483	420	6/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
484	421	3/20/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
485	422	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
486	423	8/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
487	424	9/11/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
488	425	3/18/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
489	426	6/8/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
490	427	9/4/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
491	428	3/24/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
492	429	3/24/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
493	430	7/8/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
494	431	9/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
495	431	10/22/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
496	432	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
497	433	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
498	434	7/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
499	435	7/1/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
500	436	8/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
501	437	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
502	438	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
503	439	3/9/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
504	439	3/9/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
505	440	5/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
506	440	6/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
507	441	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
508	442	7/15/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
509	443	5/8/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
510	445	8/12/2019	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
511	446	8/12/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
512	447	5/22/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
513	448	5/22/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	Yes
514	449	5/22/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	Yes
515	450	5/22/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
516	451	3/17/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
517	452	10/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
518	453	11/8/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
519	454	1/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
520	455	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
521	455	1/22/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
522	456	11/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
523	457	7/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
524	458	5/15/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
525	458	10/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
526	459	5/15/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
527	459	10/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
528	460	3/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
529	461	4/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
530	462	6/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
531	463	3/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
532	463	4/29/2020	W - Wet Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
533	464	3/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
534	464	4/29/2020	W - Wet Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
535	466	2/14/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
536	466	4/29/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
537	467	3/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
538	468	3/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
539	469	3/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
540	471	4/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
541	472	3/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
542	474	10/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
543	475	10/30/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
544	476	10/10/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
545	477	9/19/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
546	478	12/27/2019	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
547	479	9/12/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
548	480	10/25/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
549	481	5/7/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
550	482	7/10/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
551	483	10/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
552	484	5/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
553	485	6/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
554	486	6/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
555	487	8/14/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
556	488	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
557	488	2/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	
558	489	7/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
559	490	8/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
560	491	9/12/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
561	492	7/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
562	493	3/19/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
563	494	7/19/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
564	494	10/18/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
565	495	2/25/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
566	496	2/25/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	
567	497	2/25/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
568	498	2/27/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
569	499	2/27/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
570	500	2/27/2020	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
571	501	2/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
572	501	2/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
573	502	3/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
574	503	10/2/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
575	505	7/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
576	506	6/1/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
577	507	6/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
578	508	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
579	509	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
580	510	6/1/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
581	511	5/29/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
582	512	5/29/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
583	513	6/1/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
584	514	7/11/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
585	515	7/11/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
586	516	7/11/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
587	517	10/24/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
588	518	10/7/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
589	519	11/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
590	519	3/11/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
591	520	8/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
592	521	3/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
593	522	4/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
594	523	4/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
595	524	8/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
596	525	10/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
597	526	10/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
598	527	8/19/2019	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
599	528	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
600	528	10/8/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
601	529	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
602	530	8/5/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
603	531	11/8/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
604	532	3/24/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
605	532	9/23/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
606	533	6/1/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
607	533	9/23/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
608	534	11/25/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
609	534	2/4/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
610	534	3/20/2020	D - Dry Detention Facility	Complaint Based	No	Maintenance is needed.	No	Yes
611	535	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
612	536	10/24/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
613	537	3/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
614	537	4/29/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
615	538	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
616	539	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
617	540	5/22/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
618	542	6/17/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
619	543	9/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
620	544	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
621	545	10/23/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
622	546	8/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
623	546	2/20/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
624	547	3/11/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
625	548	3/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
626	549	10/7/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
627	550	10/7/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
628	551	10/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
629	551	4/21/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
630	552	10/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
631	552	4/20/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
632	553	10/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
633	553	4/20/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
635	554	10/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
636	555	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
637	556	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
638	557	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
639	558	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
640	558	3/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
641	559	10/4/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
642	560	5/7/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
643	561	8/6/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
644	562	8/16/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
645	563	7/15/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
646	564	7/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
647	564	4/20/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
648	565	9/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
649	566	9/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
650	567	10/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
651	568	6/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
652	569	4/22/2020	D - Dry Detention Facility	Complaint Based	No	Maintenance is needed.	No	No
653	569	5/7/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
654	570	7/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
655	571	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
656	572	2/26/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
657	573	2/26/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
658	574	2/26/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
659	575	10/22/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
660	576	8/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
661	577	8/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
662	577	3/17/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
663	578	8/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
664	579	8/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
665	580	10/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
666	581	9/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
667	581	3/17/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
668	582	8/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
669	583	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
670	584	1/31/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
671	585	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
672	586	8/22/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
673	587	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
674	588	9/6/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
675	589	9/6/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
676	589	6/4/2020	D - Dry Detention Facility	Complaint Based	No	Maintenance is needed.	No	Yes
677	590	10/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
678	590	4/21/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
680	591	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
681	592	5/14/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
682	593	11/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
683	594	3/23/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
684	595	3/23/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
685	596	8/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
686	597	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
687	598	11/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
688	599	11/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
689	600	2/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
690	600	8/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
691	601	8/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
692	602	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
693	603	3/27/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
694	604	5/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
695	605	10/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
696	606	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
697	607	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
698	608	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
699	608	3/26/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
700	609	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
701	609	3/26/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
702	610	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
703	611	7/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
704	612	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
705	613	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
706	616	10/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
707	616	6/4/2020	W - Wet Detention Facility	Complaint Based	No	Maintenance is needed.	No	Yes
708	617	4/28/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
709	618	7/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
710	618	2/17/2020	W - Wet Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
711	619	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
712	621	4/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
713	622	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
714	622	2/13/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
715	623	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
716	624	8/6/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
717	626	11/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
718	627	9/26/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
719	628	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
720	629	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
721	630	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
722	631	8/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
723	632	8/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
724	633	8/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
725	634	3/27/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
726	635	9/4/2019	D - Dry Detention Facility	Complaint Based	No	Maintenance is needed.	No	No
727	636	3/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
728	637	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
729	638	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
730	638	2/13/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
731	639	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
732	640	8/5/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
733	641	10/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
734	642	4/9/2020	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	Yes	No
735	643	4/7/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
736	644	3/26/2020	D - Dry Detention Facility	Complaint Based	No	Maintenance is needed.	No	Yes
737	645	2/26/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
738	646	6/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
739	647	3/26/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
740	648	2/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
741	648	3/26/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
742	649	7/2/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
743	650	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
744	651	8/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
745	652	8/28/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
746	653	12/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
747	653	2/25/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
748	654	1/31/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
749	655	3/3/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
750	656	9/20/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
751	657	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
752	657	9/5/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
753	658	3/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
754	659	3/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
755	660	3/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
756	661	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
757	662	3/9/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
758	663	3/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
759	663	4/29/2020	W - Wet Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
760	664	3/23/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
761	665	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
762	666	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
763	667	3/18/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
764	668	8/19/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
765	669	8/28/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
766	670	6/2/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
767	671	6/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
768	682	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
769	682	7/23/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
770	683	6/17/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
771	684	8/6/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
772	684	11/18/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
773	685	3/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
774	686	7/16/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
775	687	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
776	687	2/17/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
777	688	11/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
778	688	1/30/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
779	689	11/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
780	689	1/30/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
781	690	9/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
782	691	5/7/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
783	692	9/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
784	692	4/9/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
785	694	1/16/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
786	695	11/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
787	696	3/18/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
788	697	2/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
789	698	3/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
790	699	5/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
791	700	5/27/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
792	701	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
793	702	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
794	703	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
795	704	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
796	705	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
797	706	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
798	707	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
799	708	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
800	709	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
801	710	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
802	711	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
803	712	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
804	713	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
805	714	6/10/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
806	715	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
807	716	6/1/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
808	717	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
809	718	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
810	719	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
811	720	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
812	721	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
813	722	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
814	723	6/8/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
815	724	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
816	725	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
817	726	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
818	726	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
819	727	6/10/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
820	728	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
821	729	6/2/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
822	730	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
823	731	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
824	732	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
825	733	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
826	734	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
827	735	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
828	736	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
829	737	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
830	738	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
831	739	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
832	740	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
833	741	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
834	742	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
835	743	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
836	744	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
837	745	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
838	746	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	No	Yes
839	747	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
840	748	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
841	749	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
842	750	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
843	751	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
844	752	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
845	753	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
846	754	6/5/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
847	755	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
848	756	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
849	757	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
850	758	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
851	759	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
852	760	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
853	760	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
854	761	5/27/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
855	762	5/27/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
856	763	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
857	764	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
858	764	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
859	765	5/27/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
860	766	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
861	767	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
862	768	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
863	769	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
864	770	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
865	771	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
866	772	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
867	773	6/2/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
868	774	5/27/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
869	775	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
870	776	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
871	777	5/28/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
872	778	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
873	779	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
874	780	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
875	781	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
876	782	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
877	783	6/5/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
878	784	5/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
879	785	5/27/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
880	786	3/3/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
881	787	5/6/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
882	788	10/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
883	788	7/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
884	789	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
885	789	9/11/2019	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
886	790	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
887	791	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
888	793	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
889	794	6/18/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
890	795	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
891	796	4/29/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
892	797	6/18/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
893	798	6/1/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
895	799	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
896	799	5/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
897	800	10/18/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
898	801	10/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
899	802	10/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
900	803	8/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
901	804	7/11/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
902	805	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
903	805	1/22/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
904	806	10/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
905	806	2/14/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
906	806	3/19/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
907	807	10/24/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
908	807	3/19/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
909	808	9/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
910	809	6/11/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
911	810	11/15/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
912	811	8/19/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
913	812	5/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
914	813	10/2/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
915	814	10/2/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
916	815	10/2/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
917	816	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
918	817	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
919	818	2/17/2020	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
920	818	9/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
921	819	8/5/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
922	820	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
923	821	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
924	822	8/9/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
925	823	9/3/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
926	824	6/12/2020	O - Other	Routine	Yes	No maintenance is needed at this time.	No	No
927	825	6/12/2020	O - Other	Routine	No	Maintenance is needed.	Yes	Yes
928	826	6/12/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
929	827	6/12/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
930	828	6/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
931	829	6/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
932	830	6/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
933	831	6/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
934	832	6/29/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	Yes
935	833	6/17/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
936	834	6/12/2020	O - Other	Routine	No	Maintenance is needed.	Yes	No
937	835	6/12/2020	U - Underground Facility	Routine	No	Maintenance is needed.	No	Yes
938	836	8/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
939	837	7/10/2019	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
940	838	7/8/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
941	839	9/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
942	840	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
943	840	5/6/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
944	841	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
945	842	10/23/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
946	842	10/22/2019	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
947	843	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
948	843	11/12/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
949	844	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
950	844	11/12/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
951	845	6/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
952	846	5/4/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
953	847	4/22/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
954	848	10/15/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
955	848	12/2/2019	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
956	849	7/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
957	850	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
958	851	7/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
959	852	7/9/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
960	853	10/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
961	854	10/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
962	855	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
963	856	7/1/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
964	857	7/1/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
965	858	9/3/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
966	859	8/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
967	860	12/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
968	861	12/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
969	862	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
970	862	9/20/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
971	863	8/27/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
972	864	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
973	864	8/29/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
974	865	8/13/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
975	866	10/21/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
976	867	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
977	867	4/20/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
978	868	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
979	868	4/20/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
980	868	4/20/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
981	869	3/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
982	870	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
983	870	11/18/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
984	871	3/31/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
986	872	4/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
987	873	3/31/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
988	874	9/12/2019	D - Dry Detention Facility	Complaint Based	No	Maintenance is needed.	No	No
989	874	7/17/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
990	874	1/22/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
991	875	6/10/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
992	876	6/10/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
993	877	8/28/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
994	877	10/17/2019	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
995	878	8/28/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
996	878	10/17/2019	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
997	879	3/5/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
999	880	8/27/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1000	881	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1001	882	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1002	882	1/22/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1003	883	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
1005	884	7/11/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1006	885	8/9/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1007	886	6/10/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1008	887	9/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1009	888	7/16/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1010	889	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1011	890	7/2/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1012	891	7/2/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1013	892	10/21/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1014	893	5/29/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1015	894	7/10/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1016	895	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1017	896	10/29/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1018	897	10/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1019	898	8/16/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
1020	898	12/19/2019	B - Bioretention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1021	899	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1022	900	7/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1023	901	3/5/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1025	902	3/5/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1026	903	3/5/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1027	904	11/6/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1028	904	12/18/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
1029	905	9/4/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
1030	905	11/6/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
1031	906	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1032	906	5/5/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1033	907	9/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1034	907	5/5/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1035	908	10/30/2019	W - Wet Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
1036	908	9/4/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1037	909	9/4/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1038	909	10/30/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1039	910	9/3/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1040	911	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1041	911	10/15/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1042	912	9/3/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1043	912	10/15/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1044	913	7/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
1045	913	6/17/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
1046	914	9/12/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1047	915	9/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1048	916	8/12/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1049	917	8/27/2019	T - Trench (Usually Rip Rap)	Routine	No	Maintenance is needed.	No	Yes
1050	918	8/27/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1051	919	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1052	920	7/15/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1053	921	10/29/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1054	922	8/19/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1055	923	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1056	924	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1057	925	8/27/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
1058	926	8/27/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
1059	927	8/27/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1060	928	4/9/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1061	929	8/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1062	930	4/7/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1063	930	6/23/2020	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1064	931	3/20/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1065	932	10/11/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1066	933	9/5/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1067	934	1/22/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1068	935	1/29/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1069	935	7/25/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	Yes
1070	935	8/19/2019	D - Dry Detention Facility	30-day reinspection	Yes	No maintenance is needed at this time.	No	No
1071	936	8/27/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
1072	937	10/15/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1073	937	3/26/2020	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1074	938	7/15/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1075	939	10/21/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1076	940	5/18/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
1077	941	5/18/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1078	942	5/18/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
1079	943	5/18/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
1080	944	5/18/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
1081	945	5/18/2020	U - Underground Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1082	946	5/18/2020	O - Other	Routine	No	Maintenance is needed.	Yes	No
1083	946	6/2/2020	O - Other	Routine	Yes	No maintenance is needed at this time.	No	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
1084	947	5/18/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
1085	948	5/18/2020	O - Other	Routine	Yes	No maintenance is needed at this time.	No	No
1086	949	5/18/2020	U - Underground Facility	Routine	No	Maintenance is needed.	Yes	No
1087	950	3/23/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1088	951	8/15/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1089	952	8/15/2019	D - Dry Detention Facility	60-day reinspection	No	Maintenance is needed.	Yes	No
1090	953	10/18/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1091	953	12/19/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1092	954	9/26/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1093	954	1/14/2020	W - Wet Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1094	955	7/12/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1095	956	4/23/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1096	957	9/26/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1097	958	8/14/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1098	959	8/14/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1099	960	10/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1100	960	11/22/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1101	961	8/28/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1102	962	3/9/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1103	962	5/27/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1104	963	8/19/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1105	964	8/27/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
1106	965	8/27/2019	T - Trench (Usually Rip Rap)	Routine	Yes	No maintenance is needed at this time.	No	No
1107	966	8/27/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1108	966	11/20/2019	D - Dry Detention Facility	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
1109	967	7/9/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1110	968	7/9/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1111	969	6/12/2020	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	No
1114	970	7/10/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1115	971	7/15/2019	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1116	972	5/14/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1117	972	10/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1118	973	7/16/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1119	974	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1120	975	7/30/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1122	977	3/3/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1123	978	5/22/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	No	Yes
1124	978	3/3/2020	W - Wet Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1125	979	6/2/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No

Count	Facility Id	Inspection Date	Facility Type	Inspection Type	Facility In Compliance?	Comments	Maintenance Required	
							Minor	Major
1126	979	3/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1127	980	6/12/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1128	980	6/23/2020	D - Dry Detention Facility	Complaint Based	Yes	No maintenance is needed at this time.	No	No
1129	981	2/26/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1130	982	2/26/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1131	983	3/5/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1132	984	3/5/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1133	985	2/26/2020	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1134	986	5/6/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1135	987	8/29/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1137	988	10/17/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1138	989	10/17/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1139	990	10/18/2019	B - Bioretention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1140	991	10/17/2019	B - Bioretention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1141	993	11/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1142	994	11/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1143	995	11/20/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1144	996	12/6/2019	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1145	997	11/7/2019	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	Yes
1146	998	2/19/2020	D - Dry Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1147	999	2/13/2020	W - Wet Detention Facility	Routine	No	Maintenance is needed.	Yes	No
1148	1001	3/24/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1149	1002	3/24/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No
1150	1003	3/24/2020	D - Dry Detention Facility	Routine	Yes	No maintenance is needed at this time.	No	No

Not found

Inspection Schedule

Schedule	Facility #	Plan Year	Inspection Type
9/4/2019	5140	1995	15-day reinspection
9/4/2019	5217	1998	15-day reinspection
9/4/2019	5267	2000	30-day reinspection
9/5/2019	5290	1986	30-day reinspection
9/5/2019	5360	1980	60-day reinspection
9/5/2019	5360	1976	60-day reinspection
9/5/2019	5395	1961	60-day reinspection
9/5/2019	5476	2003	60-day reinspection
9/5/2019	5493	2002	60-day reinspection
9/6/2019	5507	1988	60-day reinspection
9/6/2019	5517	1988	60-day reinspection
9/20/2019	5523	2007	60-day reinspection
9/30/2019	5525	2008	60-day reinspection
9/30/2019	5535	2007	60-day reinspection
10/1/2019	5536	2007	60-day reinspection
10/4/2019	5537	2007	60-day reinspection
10/4/2019	5538	2007	60-day reinspection
10/4/2019	5539	2007	60-day reinspection
10/4/2019	5540	2007	60-day reinspection
10/4/2019	5541	2007	60-day reinspection
10/4/2019	5556	1998	60-day reinspection
10/4/2019	5562	2008	60-day reinspection
10/24/2019	5563	2008	60-day reinspection
10/25/2019	5570	2008	60-day reinspection
10/30/2019	5590	2009	60-day reinspection
10/31/2019	5597	2008	60-day reinspection
10/31/2019	5598	2008	60-day reinspection
11/4/2019	5651	2008	Routine
11/5/2019	5652	2008	Routine
11/5/2019	5654	2008	Routine
11/6/2019	5662	2009	Routine
11/6/2019	5663	2009	Routine
11/6/2019	5682	2007	Routine
11/6/2019	5684	2006	Routine
11/6/2019	5686	2007	Routine
11/8/2019	5690	2010	Routine
11/8/2019	5702	2011	Routine
11/8/2019	5703	2011	Routine
11/8/2019	5704	2011	Routine
11/8/2019	5705	2011	Routine
11/8/2019	5711	2005	Routine
11/15/2019	5727	2012	Routine
11/27/2019	5766	2012	Routine

Technical Manual

MS4 Delineation & Stormwater Tool

Prepared for:



Prince William County Department of Public Works
Prince William, Virginia

Prepared by:

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April 21, 2016

Project No. 151270001

1	INTRODUCTION.....	3
2	PURPOSE AND OBJECTIVES	3
3	STORMWATER TOOL STRUCTURE	4
4	GEODATABASE SETUP.....	4
5	STORMWATER TOOL COMPONENTS.....	8
5.1	DEM RECONDITIONING	8
5.2	UPDATE OUTFALLS	9
5.3	DELINEATE DRAINAGE AREAS	11
5.4	DATA MAINTENANCE & UPDATES	12
5.5	DEMONSTRATION: EXPANDING THE INFRASTRUCTURE NETWORK.....	13
5.5.1	LOADING NEW INFRASTRUCTURE INTO THE STORMWATER TOOL'S GEODATABASE	13
5.5.1	RECOMMENDATIONS FOR SETTING DEM SYMBOLOGY PRIOR TO EDITING	17
5.5.2	ASSIGN JURISDICTIONAL OUTFALLS	19
5.5.3	ADD HYDROLOGIC CONNECTION.....	23
5.6	DEMONSTRATION: RUNNING THE STORMWATER TOOL.....	25
5.6.1	RECONDITION DEM	25
5.6.2	UPDATE OUTFALLS	27
5.6.3	DELINEATE DRAINAGE AREAS.....	28
6	APPENDIX A: SOURCE CODE.....	33
7	APPENDIX B: FORESTED LANDS DELINEATION PROCESS	48
7.0.1	IMAGE PRE-PROCESSING	48
7.0.2	IMAGE PROCESSING	51
7.0.3	IMAGE POST-PROCESSING	52
7.0.4	FINAL DATA SET DESCRIPTION AND ACCURACY STATEMENT.....	53

1 Introduction

Prince William County (the County) hired Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) to analyze geospatial data depicting the County's stormwater network in order to delineate the total area drained by their Municipal Separate Stormsewer System (MS4). This process involved the identification of regulated MS4 outfalls – that is, stormwater outfalls owned or operated by Prince William County that discharge to waters of the United States. Amec Foster Wheeler assigned one of five ownership classes to each outfall: County, Homeowners, Commercial entities, Virginia Department of Transportation (VDOT), and Other owners. Typically, regulated MS4 outfalls were placed at the terminus of infrastructure (e.g. stormsewers, BMPs) and ownership was assigned using classification codes stored within the attribute tables of the spatial data provided by the County. Stormsewer ownership was determined using the coded values within the "SYM" field, while BMP ownership was determined using the "MAINT" field values. Regulated MS4 outfalls were placed before the terminus of the infrastructure if terminal placement would result in drainage area delineations that erroneously captured jurisdictional waters and their riparian areas (rather than solely MS4 service area). Secondly, parcel ownership and easement records were used to determine ownership if existing infrastructure data was not available.

Over 4,800 outfalls were identified, 3,495 of which were assigned County ownership. Based on this regulated MS4 outfall determination, the County's MS4 service area totals 23,156 acres. These regulated MS4 outfalls serve as a crucial input for the Stormwater Tool to function. The Stormwater Tool delineates the pervious and impervious drainage area to each outfall, creating a dataset that can be analyzed by the user to determine the County's MS4 service area as infrastructure is added to the County's database. Specifically, the Stormwater Tool provides the necessary information to meet *Part I.B.2.h) 3-4* of the County's MS4 Permit (Permit No: VA0088595).

2 Purpose and Objectives

This manual provides a guide for using the Stormwater Tool to delineate Prince William County's MS4 service area. The following sections of the report explain:

- 1) The structure of the Stormwater Tool and pertinent spatial data;
- 2) The three scripts composing the Stormwater Tool;
- 3) Maintaining the data utilized by the Stormwater Tool allowing for future integration in stormwater planning activities as the County's network expands;
- 4) An example exercise for a small region of the County's stormwater network.

The objective of this document is to provide any potential user with basic GIS experience the ability to use the Stormwater Tool and receive an output of the MS4 drainage area for selected outfalls. Users with a stronger background in GIS and geospatial processing will be able to further

customize the Stormwater Tool, if desired, by modifying the source code provided to the County. Amec Foster Wheeler has provided a functional, efficient tool that automates a laborious, yet critical step in ensuring the County meets its regulatory requirements and ultimately improves water quality within the Chesapeake Bay.

3 Stormwater Tool Structure

Amec Foster Wheeler provided the finished tool to the County on a flashdrive. A folder titled “MS4” houses the complete Stormwater Tool. The ArcGIS processing component of the Stormwater Tool consists of three scripts stored in the “Stormwater Tool” toolbox. The folder also contains the primary geodatabase, “MS4.gdb”, and a scratch geodatabase, “scratch.gdb”.

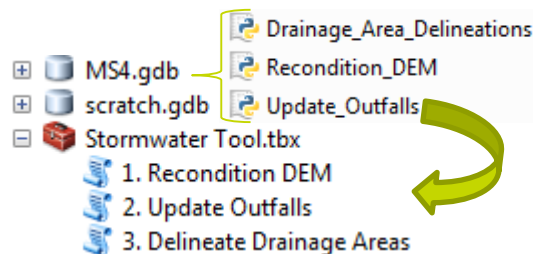


Figure 1 Python Script Storage Location

Note that scratch.gdb is created upon running any of the three scripts in the Stormwater Tool. Three source code python scripts are stored within MS4.gdb and are utilized by scripts in the toolbox. The location of the source code scripts is paramount because the scripts rely on relative pathname connections to interact with relevant data stored in the MS4 geodatabase. Moving the scripts to a new location without further modification to the source code will cause the Stormwater Tool to fail.

Users can interact with the three scripts in the Stormwater Tool toolbox directly in ArcMap. The scripts open like native ArcGIS tools and should be run in sequential order:

1. Recondition DEM
2. Update Outfalls
3. Delineate Drainage Areas

NOTE: This document will refer to the Stormwater Tool, which is the suite of ArcGIS tools developed by Amec Foster Wheeler for the County to delineate their MS4 Service Area. The three scripts within this suite will be referred to as “components”. Also, one should not confuse the Stormwater Tool or its components with the native ArcGIS tools alluded to further on in this manual.

4 Geodatabase Setup

There are two geodatabases contained within the Stormwater Tool folder:

- **MS4.gdb** contains the necessary inputs (both native and user-specified) as well as the final outputs of the Stormwater Tool. Contained within MS4.gdb are several feature datasets and feature classes the user should familiarize themselves with before using the Stormwater Tool:

- **Interconnected** contains areas that should not be included in the County's MS4 area because they are either excluded per the DEQ Guidance Memo No 15-2005 or regulated under a separate MS4 permit.
 - *VPDES* – Parcels that are regulated under General or individual VPDES permits.
 - *VDOT* – Right-of-way that VDOT claimed as their MS4 area within the County.
 - *GMU* – George Mason University parcel which is regulated by a separate MS4 permit.
 - *Schools* – Parcels owned by Prince William County Public Schools, which are regulated by a separate MS4 permit.
 - *NOVA* – Northern Virginia Community College parcel which is regulated by a separate MS4 permit.
 - *Forested* - Forested lands excluded from the MS4 regulated area. These were delineated from 4-band multispectral imagery at 1 meter spatial resolution. See Appendix B for further information.

NOTE: There are other interconnected MS4s (City of Manassas, Marine Corps Base Quantico, et al.) whose MS4 service area was not available. These can be incorporated into the tool at a later date. Amec Foster Wheeler determined that the County MS4 Service Area did not capture any significant area that would be “double counted”.

- **LandUse** contains the impervious surface area for the County. These areas are used to calculate the percent of delineated MS4 drainage areas that are impervious.
 - *Impervious2009* – Impervious surface feature class for Prince William County as of June 30th, 2009. This feature class should be used to meet Phase 1 of the Chesapeake Bay TMDL.
 - *Impervious2012* – Current impervious surface feature class available for Prince William County. This feature class could be used in MS4 service area delineations for future TMDL action plans, as needed.
- **Network** contains two polyline files: the County stormwater network and customized NHD Flowlines. Both of these polylines are used to recondition the DEM and form a unified drainage network.
 - *Amec_Single_Network* – Modified County stormsewer feature class that establishes hydrologic connectivity between the County stormsewer

system and the stream network. It includes both the County stormsewer system and hydrologic connections to the stream network, both of which were edited by Amec Foster Wheeler under direction from the County. MS4 and BMP outfalls are snapped to this feature class.

- *NHD_flowlines* – Modified version of the NHD high-resolution (24K) flowlines. This feature class serves as the unidirectional stream network for Prince William County. Each segment of the NHD contains a unique identifier, or “REACHCODE” as it is stored within the attribute table, which is identified as the downstream receiving waterbody in the “2. Update Outfalls” script. Modification of the original NHD flowlines involved deleting specific segments that were either buried or heavily modified with BMPs during development. The position of NHD flowlines were occasionally adjusted to reflect more accurate flow patterns apparent within the LiDAR DEM.
- **Outfalls** contains feature classes that can be used as drainage delineation points for delineating drainage areas. The Stormwater Tool will update the attribute data for each outfall to include a unique ID, its latitude and longitude in decimal degrees, the local watershed (WTRSHD_ID), the 5th and 6th order VA HUC, the HUC12, and the waterbody receiving outflow (listed as a REACHCODE). Outfalls also contain ownership and maintenance responsibility information.
 - *ms4_outfalls* – Feature class consisting of points demarcating where MS4 discharges to waters of the United States. Outfall ownership and “origin” (referring to the infrastructure or data that characterized the point as an MS4 outfall, ex. rip-rap ditch) are assigned upon creation by the user according to preset domains.
 - *BMPs* – Feature class containing the outfalls for the County’s legacy BMPs. While the Stormwater Tool was designed for determining the MS4 Service Area, it can also be used for determining drainage areas for each historic BMP. Care should be taken when using the Stormwater Tool for the BMPs to ensure proper drainage area delineation.
- **Polygons** contains several feature classes including MS4 drainage areas and watersheds. Important outputs can be stored in this feature dataset.
 - *Subwatersheds* – Input for the “2. Update Outfalls” script that provides the local watershed draining each outfall (WTRSHD_ID).
 - *HUC12* – Input for the “2. Update Outfalls” script that provides the HUC 12 from the NHD draining each outfall.

- *BMP_da* – Pervious and impervious drainage area for each BMP. Note that several BMPs capture entire stream valleys which would not be considered regulated MS4 service area.
- *MS4_Service_Area* – Total MS4 service area in the County attributed to the five ownership & maintenance classes. Each delineated MS4 area includes: ownership, origin, corresponding outfall ID, HUC12, local watershed (WTRSHD_ID), total drainage area (acres), pervious drainage area (acres), and impervious drainage area (acres).
- **Raster data** contains inputs and outputs (in raster format) utilized for delineating drainage areas.
 - *burned* – Hydrologically conditioned 3-meter resolution DEM. NHD_flowlines and Amec_Single_Network are “burned” into this DEM to enforce proper hydrologic routing of the stormsewer network. This process is explained in Section 5.1.
 - *Dem_3 meter* – 3-meter resolution digital elevation model for the County obtained from the National Elevation Dataset (NED). The NED is a seamless mosaic of best-available elevation data that is maintained by the USGS. This high-resolution elevation data provides a realistic depiction of the County’s topography and serves as the basis for hydrologic routing in the Stormwater Tool.
 - *Flow_acc* – Flow accumulation raster based on the burned, hydrologically reconditioned DEM created during the “1. Recondition DEM” script. Information stored within each cell provides the accumulated flow upstream of that point.
 - *Flow_dir* - Flow direction raster based on the burned, hydrologically reconditioned DEM created during the “1. Recondition DEM” script. The D8 flow algorithm is used to assign flow direction to each cell. The resulting flow direction grid is used to assign drainage areas to each outfall.
- **Scratch.gdb** contains intermediate outputs of the Stormwater Tool, and can be cleared out after each run if desired. This serves as a “background” where these intermediate outputs can be accessed by the Stormwater Tool without creating clutter within MS4.gdb.

5 Stormwater Tool Components

5.1 DEM Reconditioning

A digital elevation model (DEM) is a 3-D representation of the Earth's surface. DEMs have been used for a number of geospatial applications, including modeling surface water hydrology. Surface water hydrology is relatively easy to model in natural environments; however, urban environments present additional challenges. Namely, manmade infrastructure (i.e. stormwater pipes, curb inlets, and drainage ditches) substantially alters the natural drainage network and can transfer water between subwatersheds.

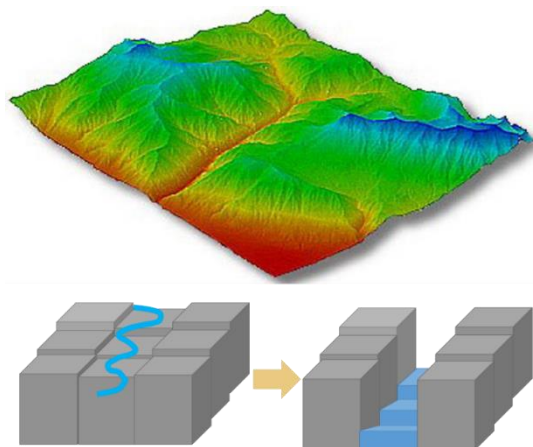


Figure 2 Burning in Hydrologic Network

Since a DEM depicts the Earth's surface using a rectangular grid of cells, it struggles to depict the below ground stormwater network and small hydrologic features that often drain urban environments. Consequently, it's necessary to lower the elevation of cells in the DEM containing urban hydrologic features to ensure accurate flowpaths are reflected across the County. This elevation modification is often referred to as "burning".

This DEM reconditioning process can be achieved using the "1. Recondition DEM" component in the Stormwater Tool toolbox. It merges the vector NHD flowlines and Amec Single Network to create a rasterized version of this contiguous hydrologic network. The rasterized hydrologic network serves as a mask, and each hydrologic network grid cell is lowered (-3000 feet for stream cells and -2000 feet for Amec Single Network cells) in the DEM relative to neighboring cells that are not within the hydrologic network (i.e. land not within a streamchannel). Essentially, this process cuts a network of canyons into the DEM surface along cells coincident with the merged hydrologic network, which then serves to redirect local drainage into these digitally carved hydrologic network channels.

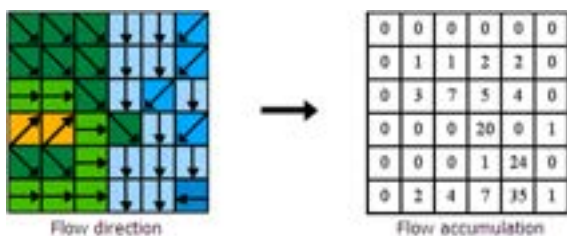


Figure 3 Source: ArcGIS Resources

Depressions and flat areas are then removed using a depression filling technique to create a hydrologically corrected DEM. The corrected DEM reflects a continuously, monotonically descending flowpath connecting each grid cell to the data edge, with burned-in canyons coincident with the mapped hydrologic network. The hydrologically corrected

DEM is then used to determine local drainage direction and flow accumulation (upslope drainage area). The local drainage direction, or flow direction, is calculated using an algorithm, which

directs flow from each cell to its steepest downslope neighboring cell. This flow algorithm uses information about local surface gradient and orientation, calculated from the DEM, to model spatial patterns of flow direction. Flow accumulation is then calculated for each cell by summing the number of cells that flow into each downslope cell. This component creates three outputs: a flow direction raster, a flow accumulation raster, and a hydrologically corrected DEM. These outputs are all stored in MS4.gdb and are used by subsequent components in the Stormwater Tool toolbox.

5.2 Update Outfalls

The County is responsible for mapping the MS4 service area and each MS4 outfall in accordance with *Part I.B.2.h*) of MS4 Permit No. VA0088595. Specifically, the County must track the information contained in Figure 4 for each MS4 outfall and its corresponding drainage area. The “2. Update Outfalls” component in the Stormwater Tool toolbox updates this information for each outfall and stores the data in the attribute table as shown below.

Figure 4 Outfall Attribution

Reporting Requirement	Field Name in Attribute Table
Individual Identification Number	“Outfall_ID”
Local Watershed	“WTRSHD_ID”
Sixth Order HUC	“VAHU6”
Receiving Water	“REACHCODE”
Latitude in Decimal Degrees	“Lat_DD”
Longitude in Decimal Degrees	“Long_DD”



Figure 5 MS4 Outfall Drainage Area Delineation

5.3 Delineate Drainage Areas

Drainage areas for each MS4 outfall can be delineated once the DEM is hydrologically corrected and the outfall information is updated. Each outfall point location is adjusted using the Snap Pour Point tool to be coincident with the neighboring cell with the largest flow accumulation value. Snap distance is set according to DEM resolution, so outfalls can only be moved to a cell in the surrounding 3 meter x 3 meter cell window. Once the adjacent cell with the largest flow accumulation value is identified, the outfall point feature is converted to a raster and given a value based on the outfall's Individual Identification Number. The Watershed tool then calculates the upslope drainage area contributing flow to a common outlet as concentrated drainage (in the case of the Stormwater Tool, each MS4 outfall). Flow is routed from the upslope area to each outfall using the flow direction grid created in the "1. Recondition DEM" component. Unique raster drainage areas are then delineated for each outfall and converted to vector polygons.

Polygon drainage areas are dissolved based on their outfall identification number ("Outfall_ID"), to eliminate tiny, illegitimate watersheds that are a relic of the raster-vector conversion process. The Calculate Field Management tool then calculates the total drainage area, in acres, via field geometry. Next, impervious surface data (represented by *Impervious2009*) is removed from the dissolved polygon drainage areas with the Erase tool, which produces pervious surface polygons. Interconnected MS4s can then optionally be erased from the drainage areas, as well, if the user chooses. The interconnected MS4s are first merged and then erased from the pervious surface area. Then the pervious surface area is calculated in acres with the Calculate Field Management tool. The pervious acres field is then joined back to the dissolved drainage area polygons with the Add Join Management tool. Fields with each drainage area's local watershed and sixth order HUC are also added. Impervious surface area is then determined for each drainage area by subtracting attribute data for pervious acreage from total acreage. The resulting polygon feature class contains the impervious, pervious, and total acreage for each MS4 drainage area stored within attribute data. Additionally, the feature class contains pertinent information for *Part I.B.2.h) 4)* of the County's MS4 permit as of June 30th, 2009, displayed below.

Figure 6 Drainage Area Attribution

Reporting Requirement	Field Name in Attribute Table
Total MS4 Acres Served	"TotAcres"
Pervious MS4 Acres Served	"PervAcres"
Impervious MS4 Acres Served	"ImpAcres"
Individual Identification Number	"Outfall_ID"
Local Watershed	"WTRSHD_ID"
Sixth Order HUC	"VAHU6"
Receiving Water	"REACHCODE"
Individual Identification Number	"Outfall_ID"

5.4 Data Maintenance & Updates

Data can be updated to incorporate area added from new development within the County. The County's existing procedures for cataloging stormwater infrastructure are thorough; however, they will need to be supplemented to accommodate the Stormwater Tool. Specifically, three feature classes will require updates, which should be conducted as follows:

1. *Amec_Single_Network*¹ – New County stormsewer lines should be loaded into the Amec_Single_Network feature class in ArcCatalog. Users should then connect the new features to the existing NHD_flowlines using a DEM to determine the downslope flowpath to the stream. Additionally, there are several considerations to make when adding segments to the Amec Single Network:
 - a. Avoid hydrologic loops (i.e. flow should travel downstream in a single path and avoid braiding).
 - b. Do not create Amec_Single_Network segments that are closer to each other than the DEM resolution you plan to use in the Stormwater Tool. For instance if you plan to use a 10 foot resolution DEM (~3 meter), segments should be at least 10.1 feet away from one another.
 - c. Check that all Amec_Single_Network segments are connected and snapped to the NHD-flowlines, otherwise they will be filled during the “1. Recondition DEM” component run. This can be verified using the Topology toolset within ArcGIS.
2. *ms4_outfalls*² - MS4 outfalls should be added when new manmade infrastructure is integrated into the County's stormsewer lines data. The outfalls should be placed at the end of manmade infrastructure (i.e. new stormsewer lines), but far enough away (3.5 times the DEM resolution) from the NHD_flowlines to avoid being snapped to the stream network during the processing for the “3. Delineate Drainage Areas” component. The “Ownership” and “Origin” fields need to be input as well. “Ownership” is assigned based on the “MAINT” code for each terminal segment of new infrastructure (i.e. the last stormsewer segment) and “Origin” is determined by the terminal segment's “SYM” code.

1 This is a modified County stormsewer feature class that establishes hydrologic connectivity between the County stormsewer system and the stream network. It includes both the County modified stormsewer system and user-created hydrologic connections to the stream network.

2 A feature class containing points demarcating where the municipal separate stormsewer (MS4) discharges to waters of the United States. Outfall ownership and origin (origin refers to the infrastructure or data that identified the point as an MS4 outfall, ex. rip-rap ditch) are assigned upon creation by the user according to preset domains.

3. *BMPs*³ - BMP outfalls need to be added when new stormwater management facilities are added to the existing inventory. Outfalls should be placed at the terminus of the BMP and snapped to either Amec Single Network or the NHD flowlines.

5.5 Demonstration: Expanding the Infrastructure Network

The Stormwater Tool operates using its own geodatabase, which was based on the County's existing stormwater data, as its data source. As development occurs in the County, new stormwater infrastructure will continue to be integrated into the County's data through the existing data entry tool. **This new data still needs to be incorporated into the Stormwater Tool's geodatabase.** This section provides a step-by-step illustration of how to: 1) load new stormwater infrastructure into the Stormwater Tool's geodatabase, 2) add and assign MS4 outfalls, and 3) run the Stormwater Tool. This process will compliment the County's robust data entry tool and also allow the County to produce an updated MS4 service area throughout permit phases.

5.5.1 Loading New Infrastructure into the Stormwater Tool's Geodatabase

Amec Foster Wheeler received stormwater infrastructure data from the County in October of 2015. Existing stormsewer data from this time served as the basis for the creation of the Amec Single Network⁴. Since the County's existing stormsewer system lacked hydrologic connections to the stream network, Amec Foster Wheeler edited the stormsewer system to create hydrologic connections between the stream network and stormwater infrastructure.



Figure 7 New Urban Development

Additional data editing - such as eliminating hydrologic loops, clarifying flowpaths, etc. - further modified the County's existing stormsewer network. The result of these efforts was the creation of the Amec Single Network, which represents a contiguous, hydrologically connected stormsewer system.

New areas of stormwater infrastructure should be added to the Amec Single Network by replicating this process. The first step in replicating this process is to load newly entered stormwater infrastructure data into the Stormwater Tool's geodatabase. Note that this data was first entered into the County's system using the data entry tool. Figures below demonstrate how to complete the loading process in ArcCatalog.

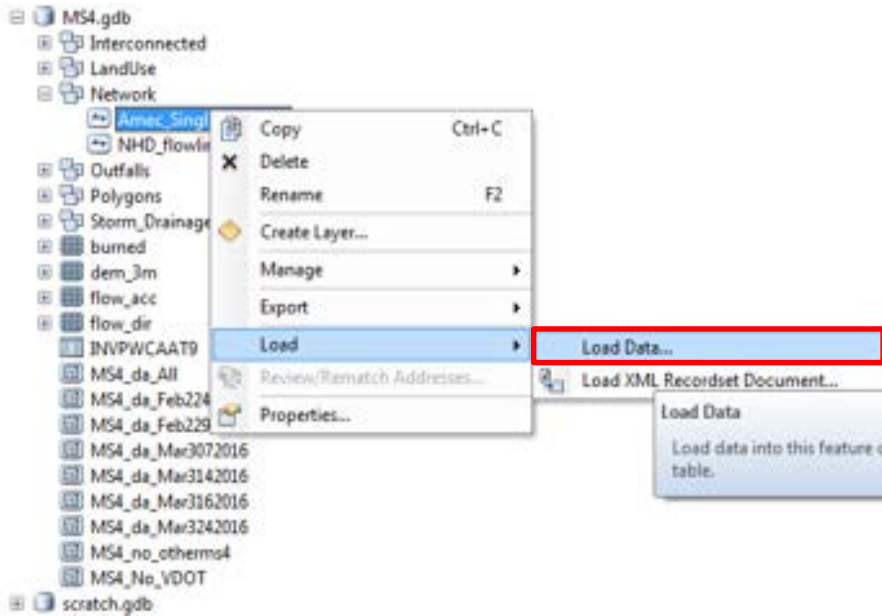
3 A feature class containing the outfalls for the historic best management practices (BMPs) in Prince William County.

4 Modified County stormsewer feature class that establishes hydrologic connectivity between the County stormsewer system and the stream network. It includes both the County stormsewer system and hydrologic connections to the stream network, both of which were edited by Amec Foster Wheeler under direction from the County. MS4 and BMP outfalls are snapped to this feature class.

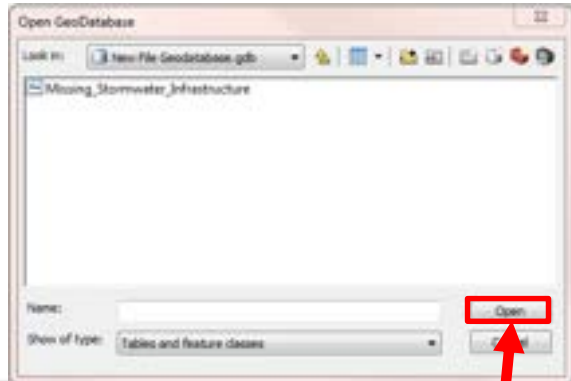
Beginning: Open ArcCatalog and navigate to MS4.gdb



1



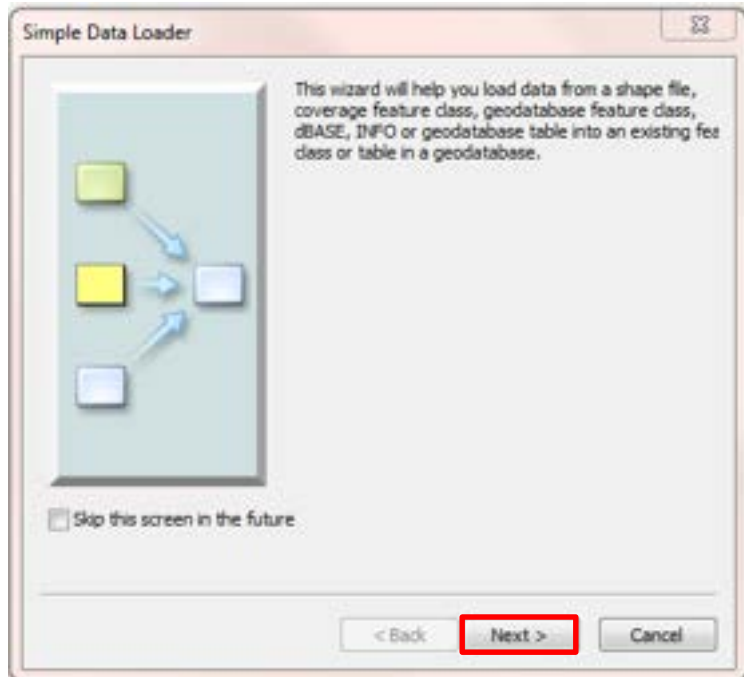
4



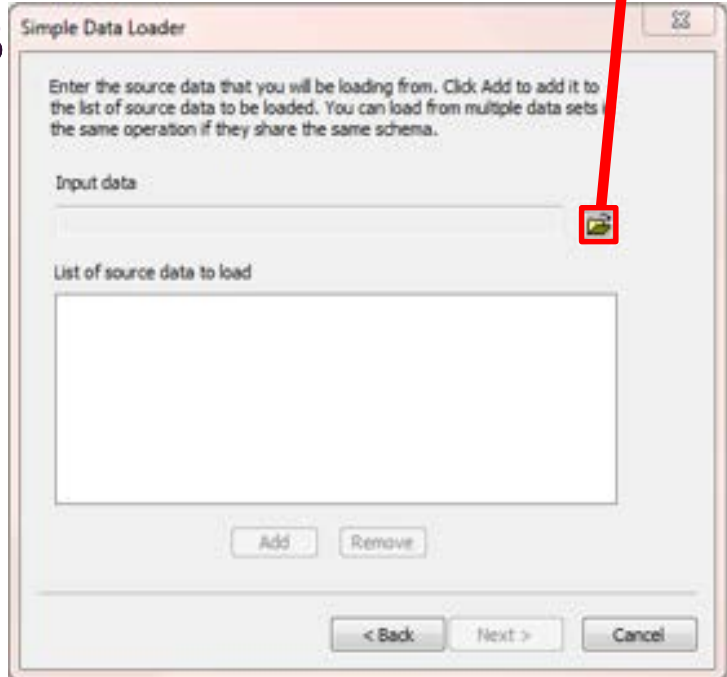
Navigate to the file pathname of the new or missing data you would like to load into the existing feature class. Select the data and then click 'Open'.

Load the new stormwater infrastructure data into the appropriate feature class in ArcCatalog. For instance for new stormsewer lines data, right click on Amec_Single_Network, then select "Load" and then follow the navigation arrow to "Load Data..."

2

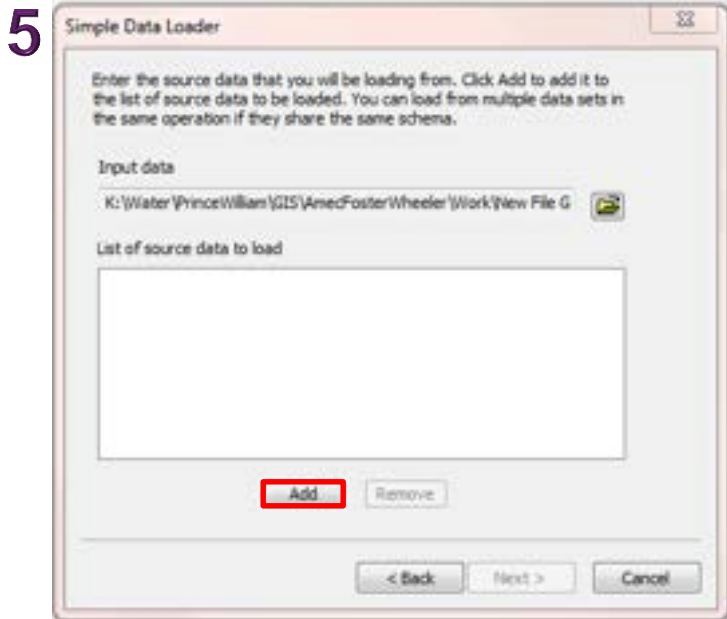


3

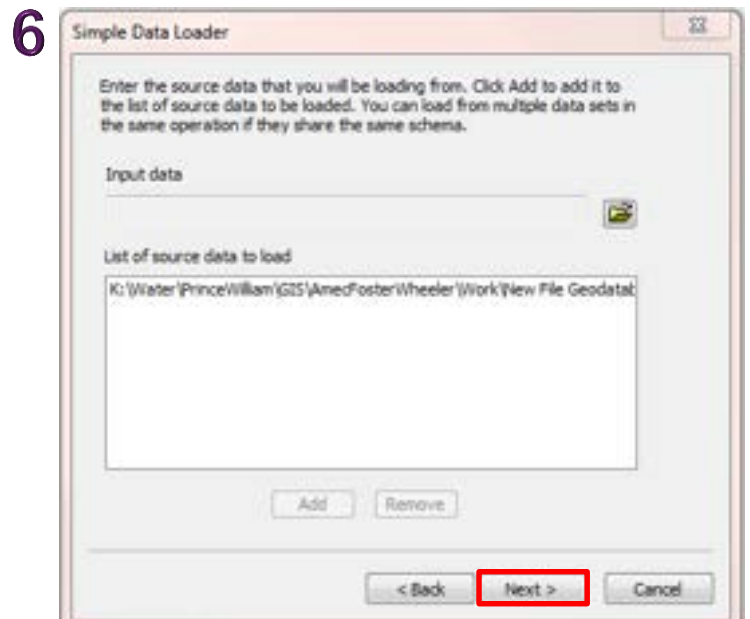


Simple Data Loader wizard opens, click 'Next >'.

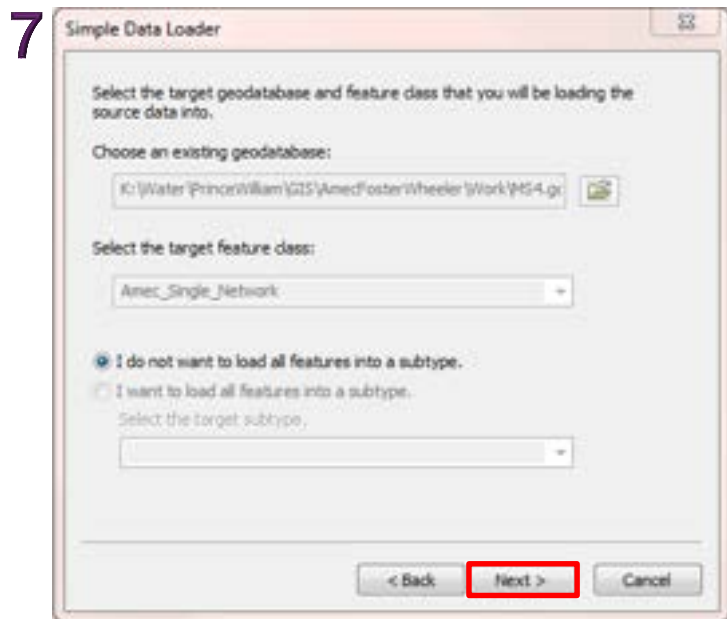
Under 'Input Data' click the open folder button.



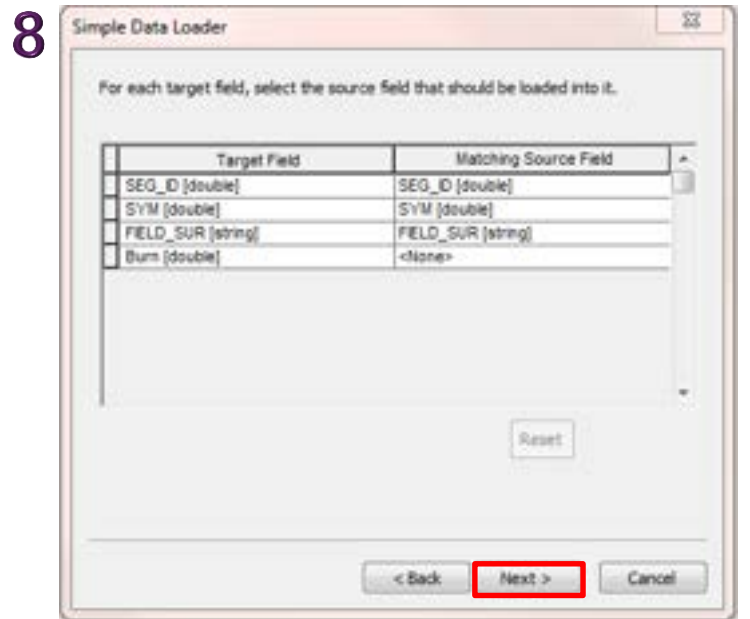
If the "Input Data" file pathname is correct, click the "Add" button.



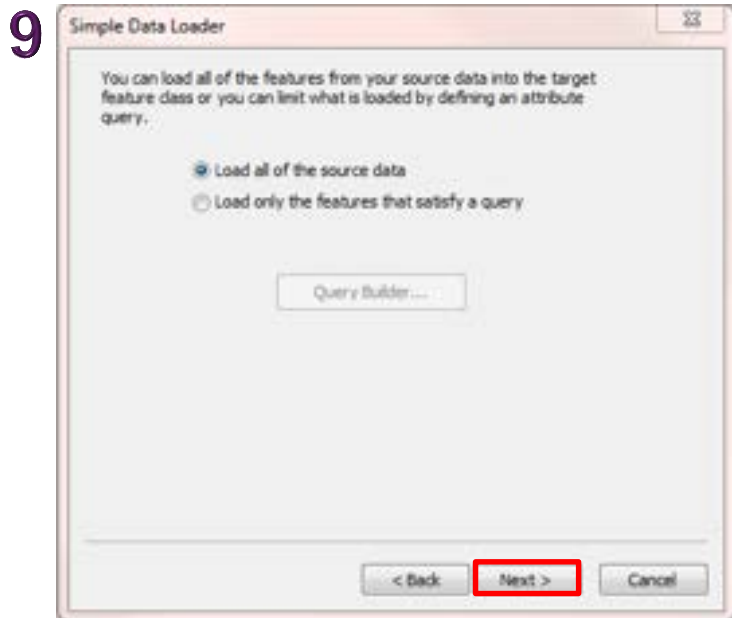
The pathname to the new or missing data should now be listed under 'List of source data to load'. More than one data class source can be loaded into an existing feature class by repeating steps 3 - 5.



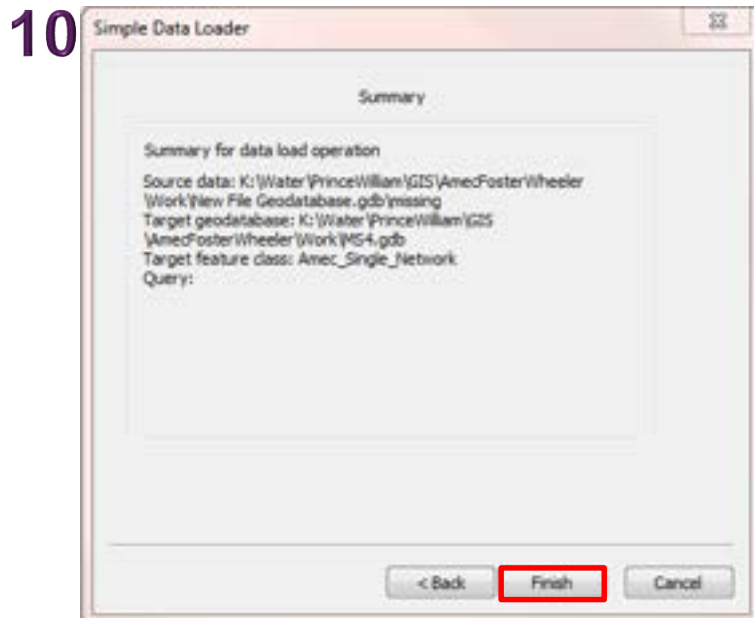
Select 'Next'.



Make sure that the relevant fields from the new or missing data ('Matching Source Field') match the existing feature class ('Target Field').



Click the 'Load all of the source data' radio button. Then select 'Next >'.

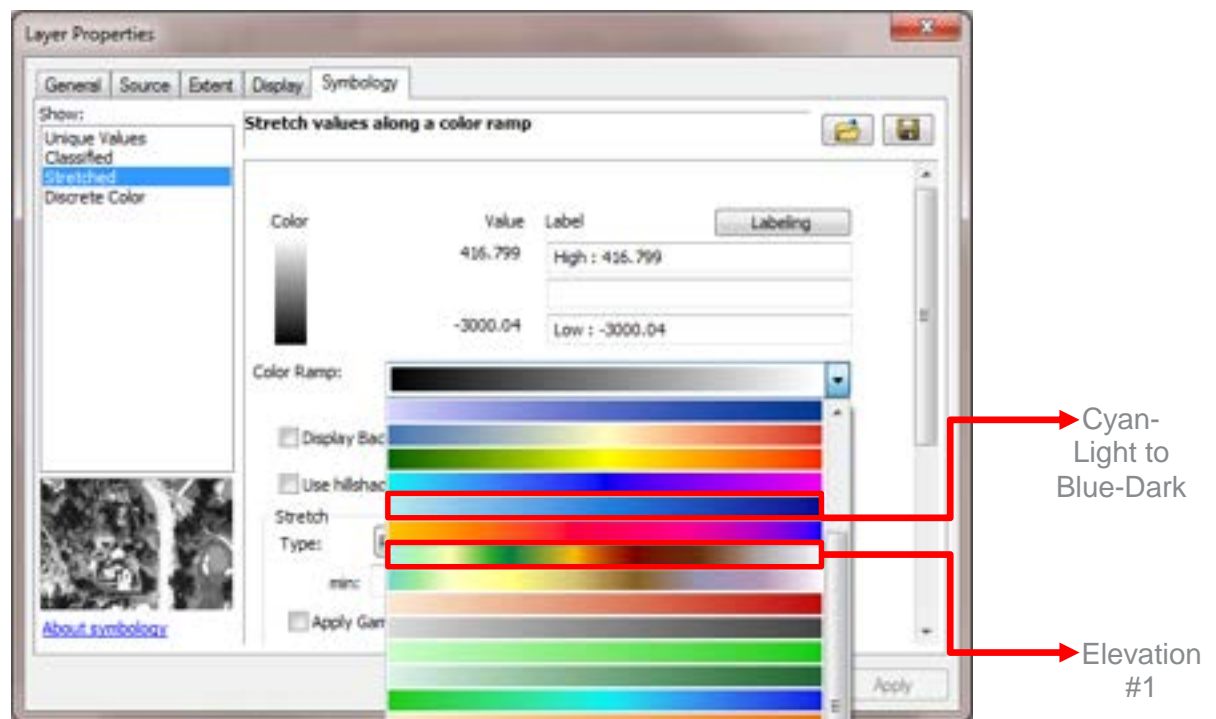


Select 'Finish'.

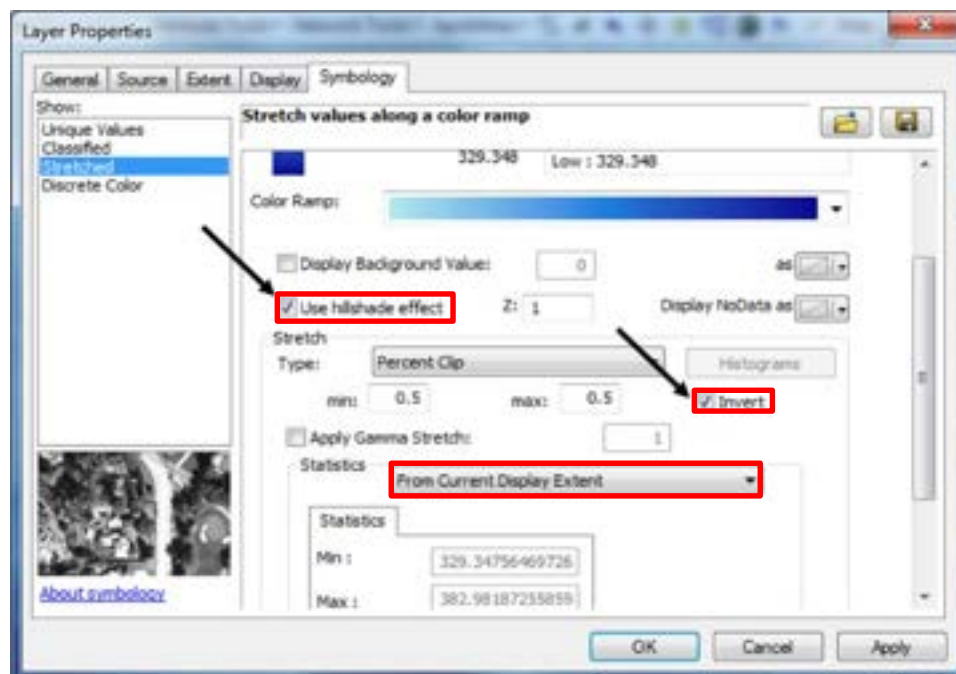


Figure 8. Depicts post-2009 development along Highway 15 and I-66 in Haymarket, VA. The image on the left shows the location in 2009, while the image on the right shows the area in 2015 after loading the new data into the Amec Single Network. Newly added segments still require editing to create a hydrologic connection. Editing procedures for creating this hydrologic connection are described below.

5.5.1 Recommendations for Setting DEM Symbology Prior to Editing

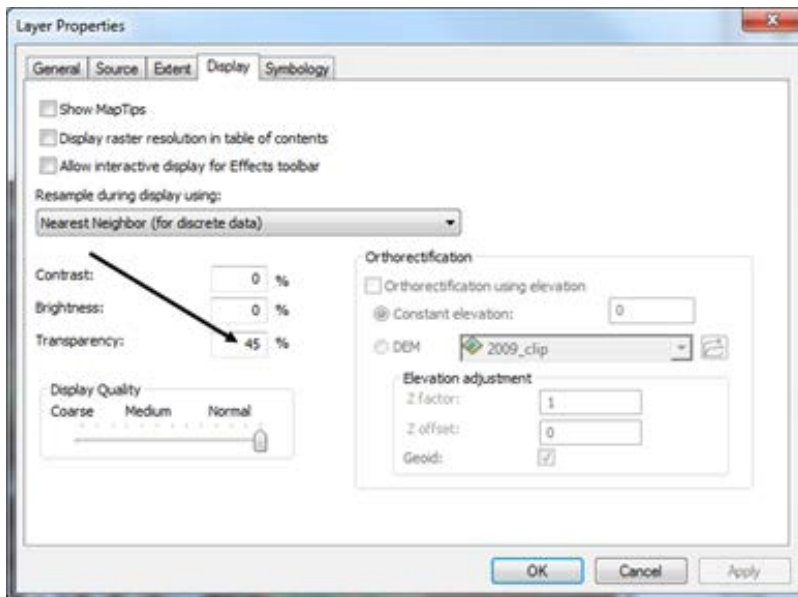


Under the Symbology tab, select the Elevation #1 color ramp. Alternatively, using the Cyan-Light to Blue-Dark color ramp is helpful when visualizing river valleys.

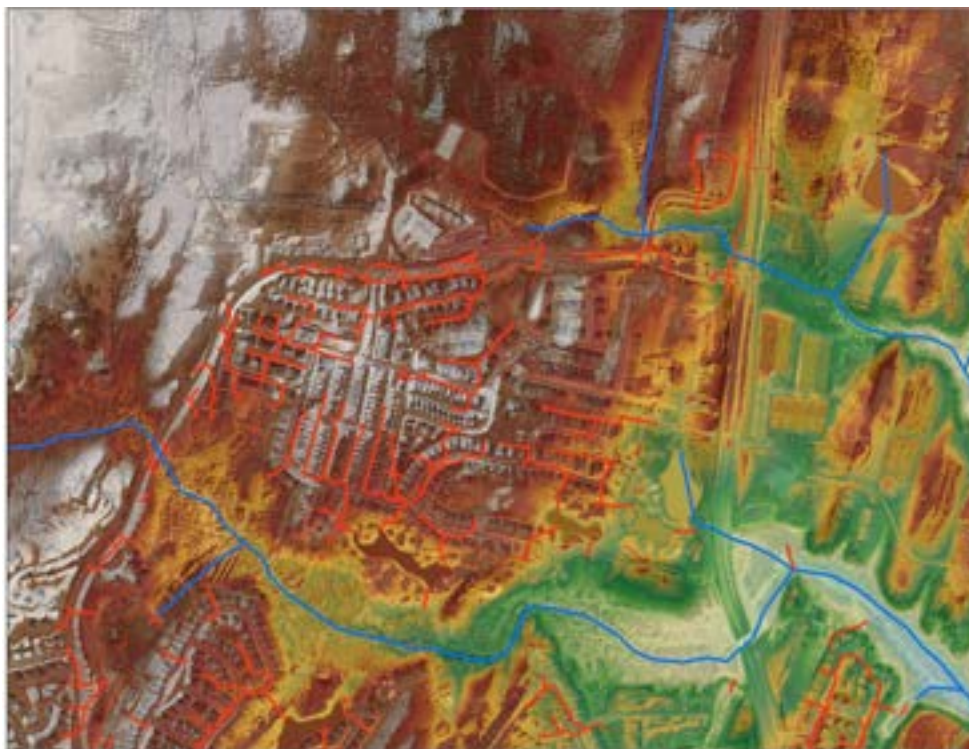


Scrolling down within the window of the Symbology tab will bring up the 'Stretch' menu. Under 'Statistics', select 'From Current Display Extent'. This will create a dynamic DEM display within

the map document, allowing for easier visualization of local flow patterns. Additionally, select the check boxes for “Use hillshade effect”. If using the blue color ramp, select “Invert”.



Adjusting the transparency of the DEM makes the layer a useful overlay to get a sense of the topography in relation to what’s displayed in the aerial imagery. Within the Display tab, set the Transparency level to a value that allows for the aerial imagery to be clearly visible through the DEM surface (45% is recommended, see above). The resulting DEM symbology should be similar to what is shown below.



5.5.2 Assign Jurisdictional Outfalls



Figure 9. This view shows what the user would see after loading in a new set of stormwater infrastructure into the geodatabase. MS4 outfalls and hydrologic connections still need to be added by the user. Note the stormwater infrastructure is a discontinuous network within itself, but also lacks continuity with the NHD Flowlines.

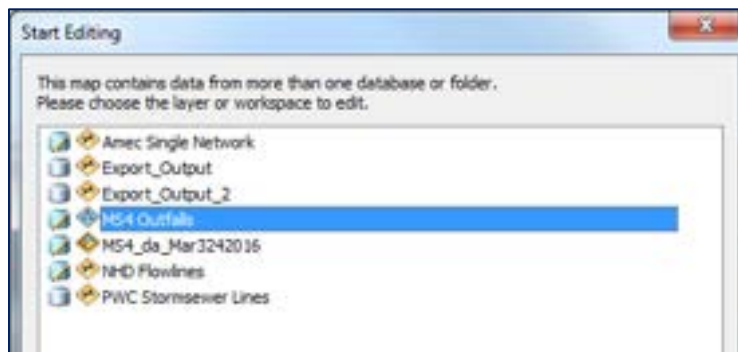
The first step in preparing the newly loaded infrastructure for analysis within the Stormwater Tool is identifying jurisdictional outfalls and assigning proper ownership. The following examples illustrate two common situations a user may encounter where a jurisdictional outfall must be assigned: BMPs (Figure 10) and grass swales or ditches extending from subsurface pipes (Figure 11). Before we add outfalls, we must begin an editing session that will allow us to add to the infrastructure network.

Starting an editing session

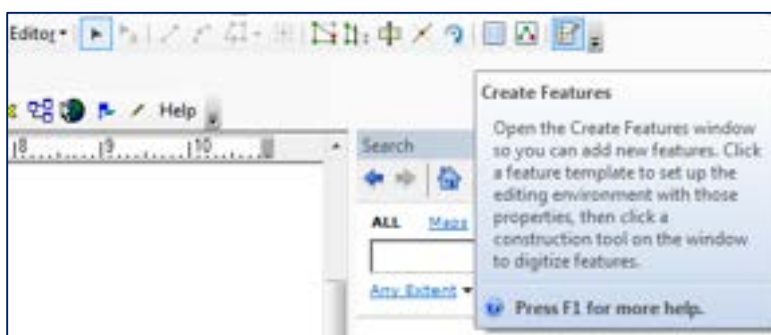
From the top ribbon within ArcMap, select Customize → Toolbars → Editor. The Editor Toolbar will appear. Click on the Editor drop down menu and select “Start Editing”.



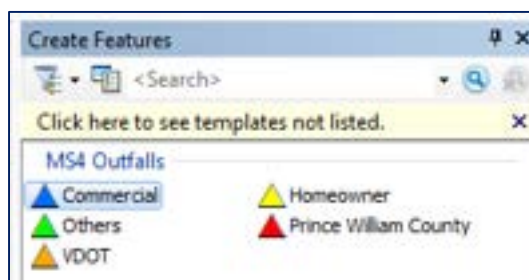
Within the Start Editing window, select the layer you will be editing. For the next session, you will be adding outfalls, so select MS4 Outfalls (or the name of the layer as it appears in the ArcMap window). You will be adding new outfalls to the layer of outfalls that have been already mapped by Amec Foster Wheeler.



Returning to the Editor drop down menu, select Editing Windows → Create Features. The Create Features window can also be accessed from the Editor Toolbar.



Within the Create Features window, you can select which type of outfall you would like to add, by Ownership. This is explained in greater detail previously in this document. The first outfall we will be assigning is for a commercial BMP, so select “Commercial”.



It is important to check that the points are snapping to stormwater infrastructure segments. You can access Snapping Options from the Editor drop down menu (Editor → Snapping → Snapping Options). Verify that “Snap to feature service layers” is selected.



You can now assign the commercial outfall for the BMP of interest.

Outfall Addition Example 1: BMPs

Consider the position of the BMP within the stormwater drainage network. There are two stormwater pipes draining to the pond, with flow direction heading south. This infrastructure will be connected at a later step, but for now we are concerned with assigning the outfall at the terminus of this system. Examining the NHD confirms that flow is draining south of the BMP, and an outfall is added (Figure 9).

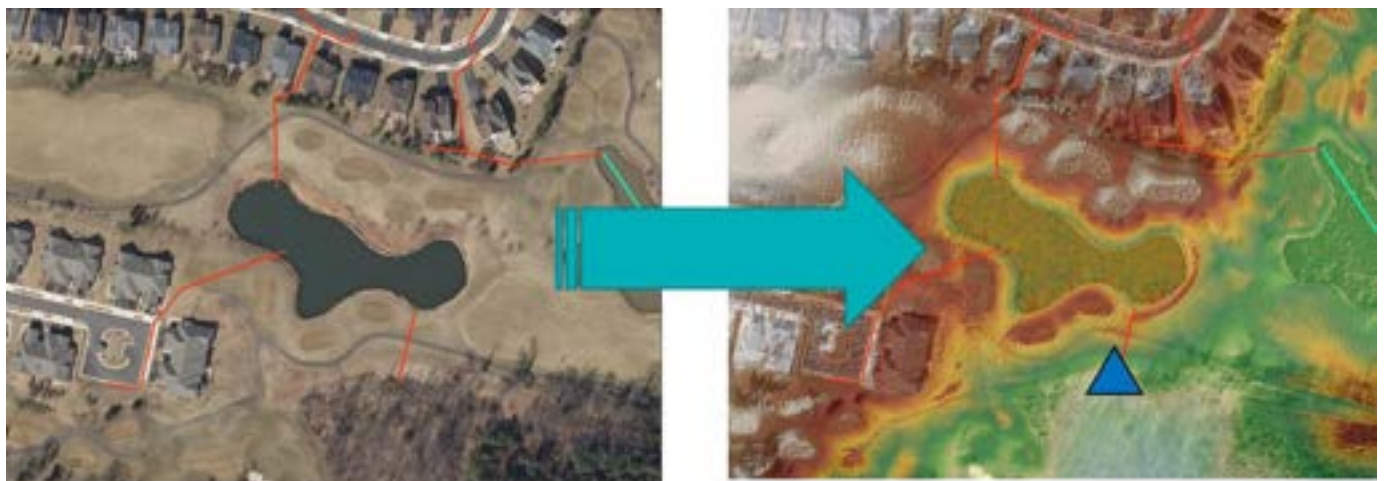


Figure 10. BMP outfall assignment. Note that the two upstream segments are not assigned outfalls, as they do not lie at the terminus of the stormsewer system.

Outfall Addition Example 2: Ditches

While the rationale behind this assignment is straightforward (the outfall is placed at the end of the line segment), it is important to note that line segments within the Stormsewer Lines or Amec

Single Network layers are not all representative of 'solid' infrastructure, such as pipes, grates, and culverts, but can represent the drainage ditches that were excavated out of the sides of hillslopes for facilitating storm drainage to river valleys. Further aerial imagery analysis can assist in clarifying any uncertain areas.

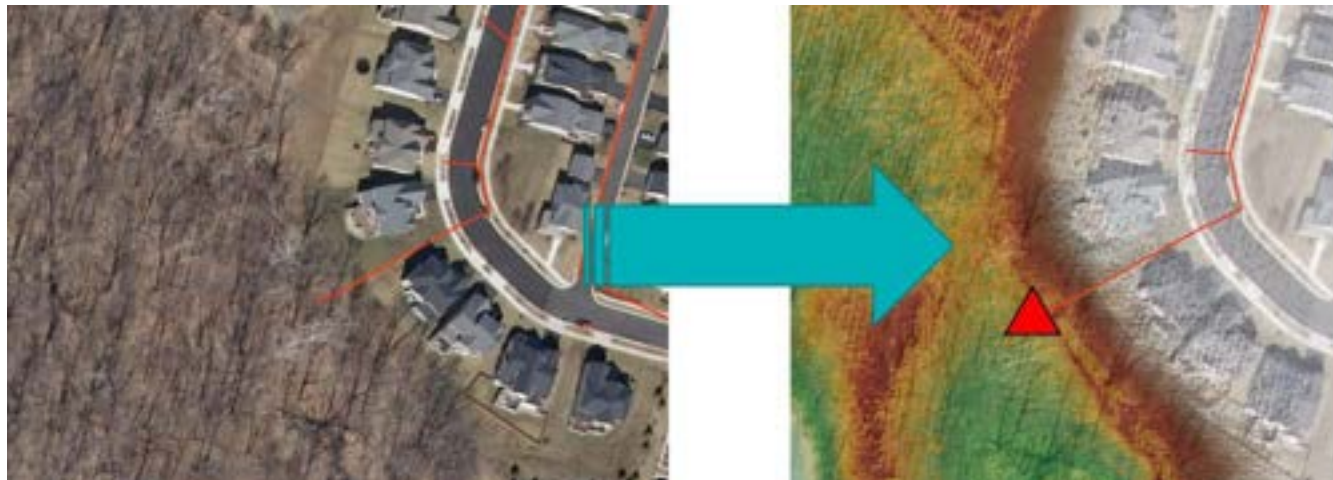


Figure 11 Rip rap ditch outfall assignment. Note that the outfall has been placed at the end of the line segment. Outfall location can be verified using other aerial imagery services, such as Bing or Google Maps.

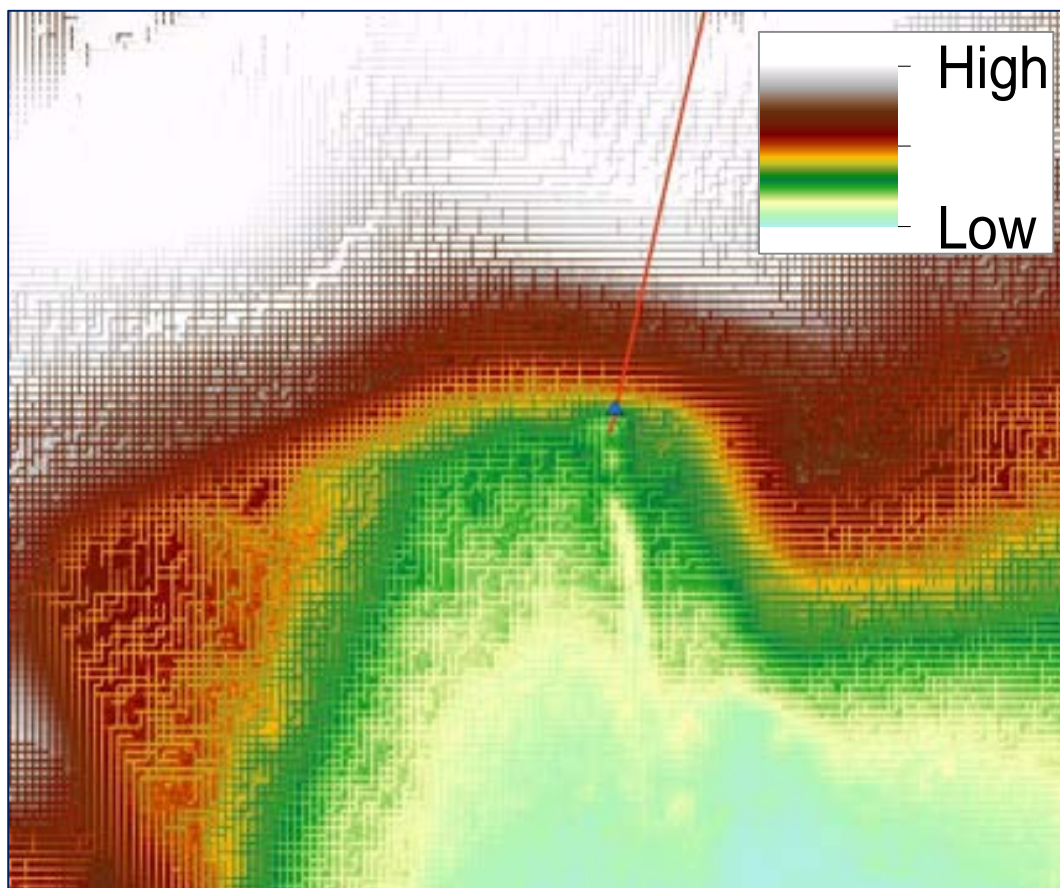


Figure 12 Enhanced view of Figure 10. It is critical to understand the rationale behind outfall placement.

Figure 12 illustrates an important point in placing outfalls. The user must not place an outfall where it will capture upstream flow that does not originate from the MS4 (i.e. river valleys). Figure 12 is an enlarged image from Example 1 from this exercise: at the terminal point of the commercial BMP drainage system. Careful outfall placement will provide the most precise results.

5.5.3 Add Hydrologic Connection

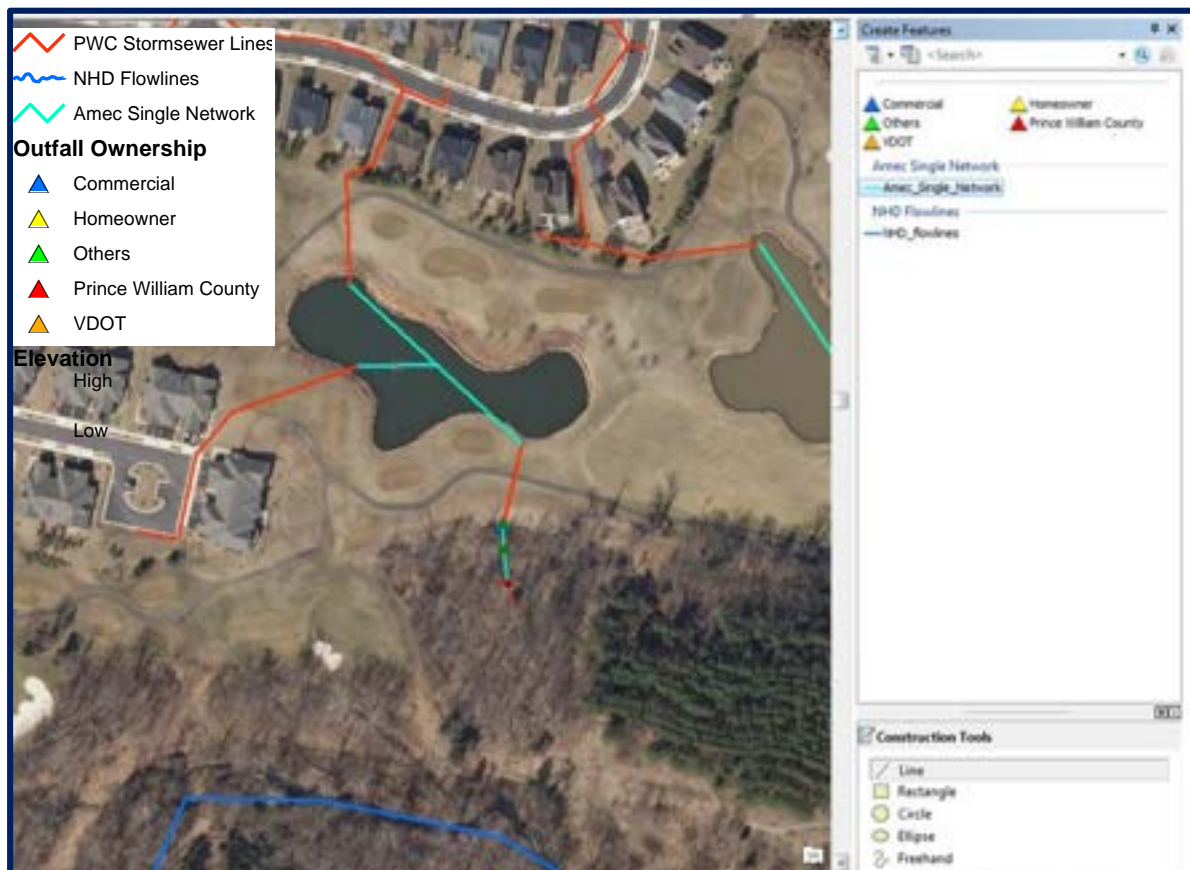


Figure 13 Opening the Create Features Toolbar will allow the user to draw segments connecting the infrastructure to NHD flowlines.

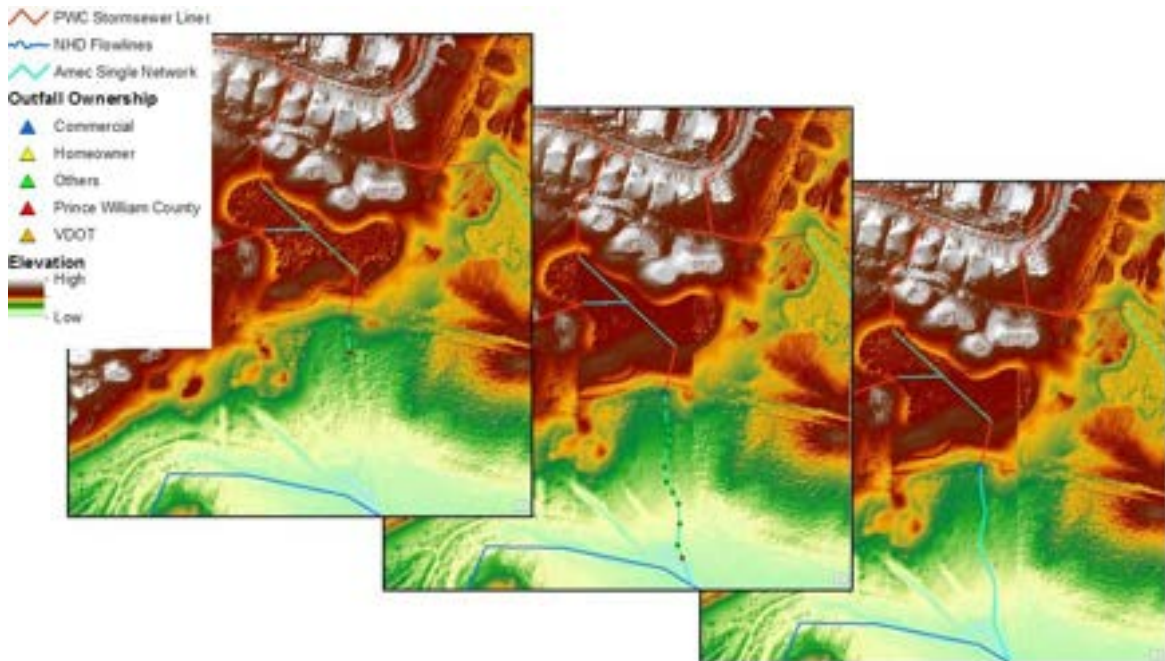


Figure 14 Addition of hydrologic connection segment originating from a BMP.

Maintaining a contiguous network of stormwater flow patterns is necessary for reconditioning the DEM in a later processing step. These concepts are further explained in Sections 5.1 and 5.3. Check that the Spatial Analyst extension for your ArcMap license is enabled (Customize → Extensions → Spatial Analyst) and the Editor Toolbar is open (Customize → Toolbars → Editor). Start editing Amec_Single_Network by adding new segments connecting stormwater infrastructure to the NHD Flowlines. Use the 1 meter DEM as a reference to check that the new network is reflecting local hydrologic flow patterns. Results can be seen in Figures 14 and 15.

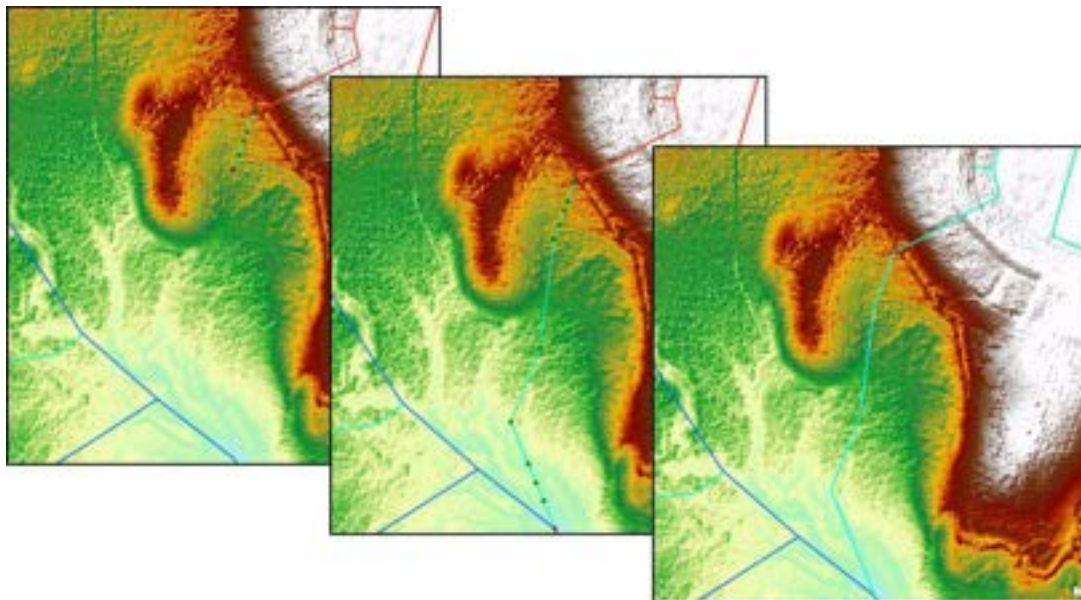


Figure 15 Addition of hydrologic connection segment originating from a drainage ditch.

5.6 Demonstration: Running the Stormwater Tool

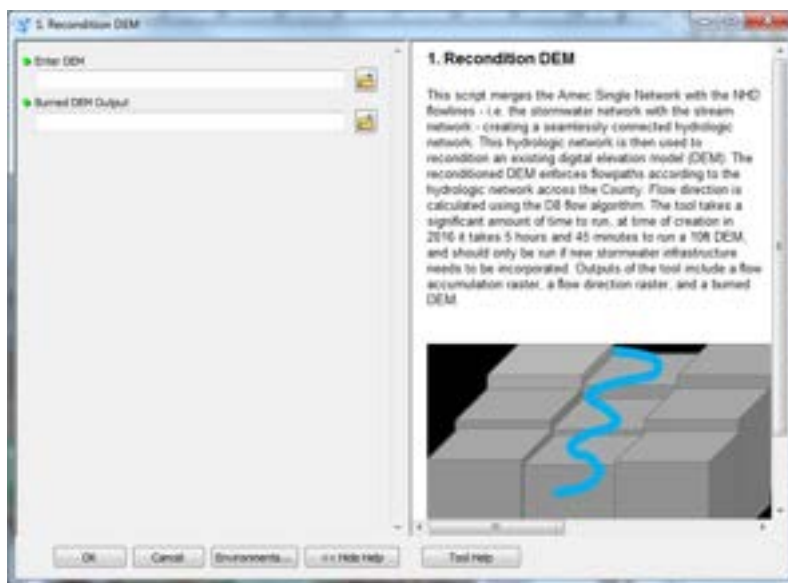
Open a new map document without loading in any layers. Any layers that are in use during the time of the Stormwater Tool run will create a schema lock and prevent it from functioning. Navigate to “Stormwater Tool.tbx” within the catalog, and open up the first component script, “1. Recondition DEM”.

5.6.1 Recondition DEM

This component merges the stormwater network with the NHD flowlines, creating a contiguous network in order to accurately capture localized flow patterns in the reconditioned DEM. This allows for the Stormwater Tool to effectively model stormwater flow at a county-wide scale using simple surface flow hydrology principles.

Enter DEM: Specifies the DEM to be reconditioned. Any DEM can be used; however, the resolution should be at least 10 feet (or 3 meters). Increases in resolution will result in longer processing time. A suitable 3 meter DEM of the County is included in the MS4.gdb.

Burned DEM Output: Specifies the output location for the reconditioned DEM. Select “scratch.gdb” and name the output “burned”. Alternatively, it can be stored wherever the user desires. After the desired input and output locations are specified, click ‘OK’ to begin processing. The reconditioned DEM should display a network of cells that overlaps with the NHD and



Stormwater Network polylines. Overlaying the 'burned' DEM with the demonstration area will show a similar visual as seen below:

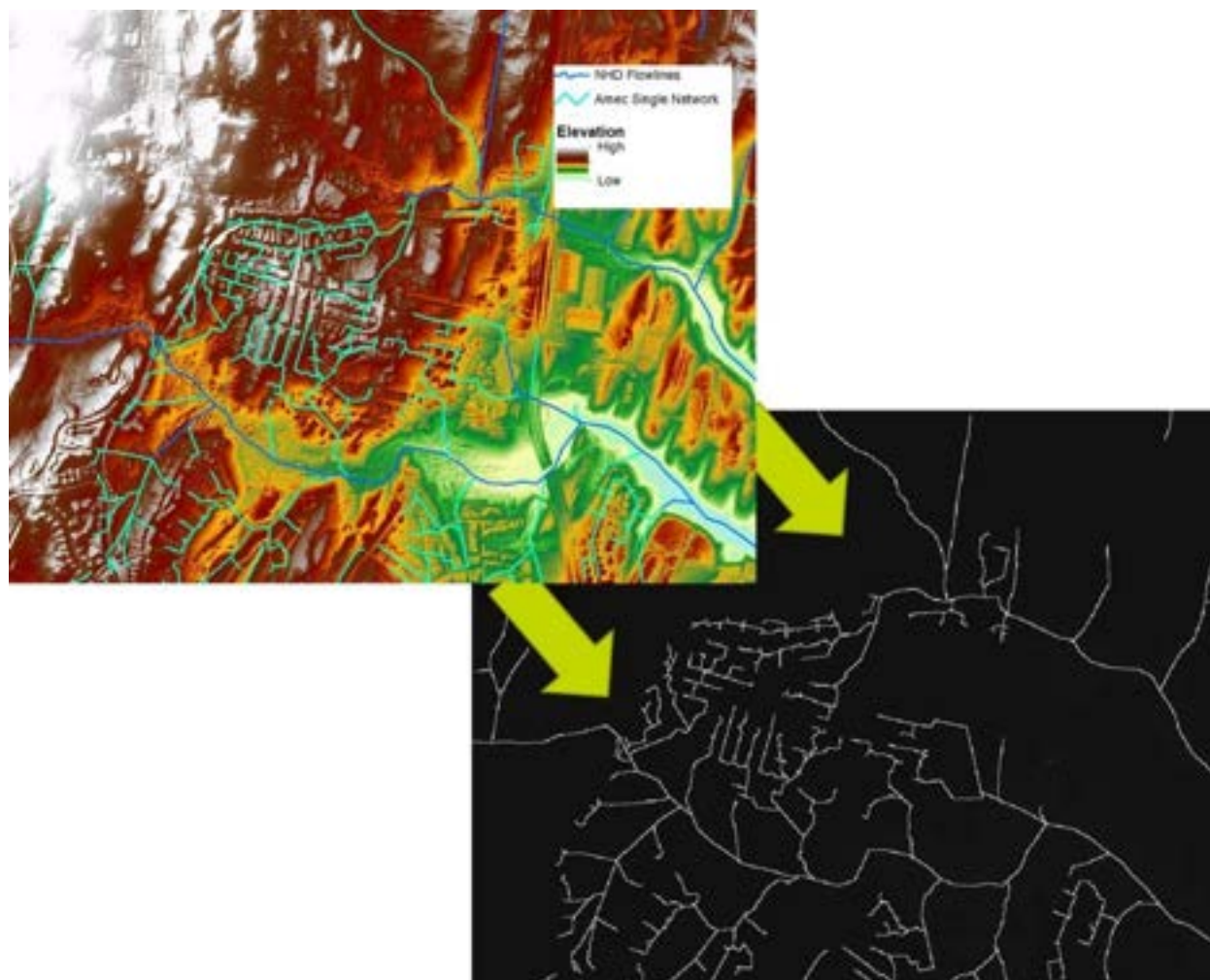


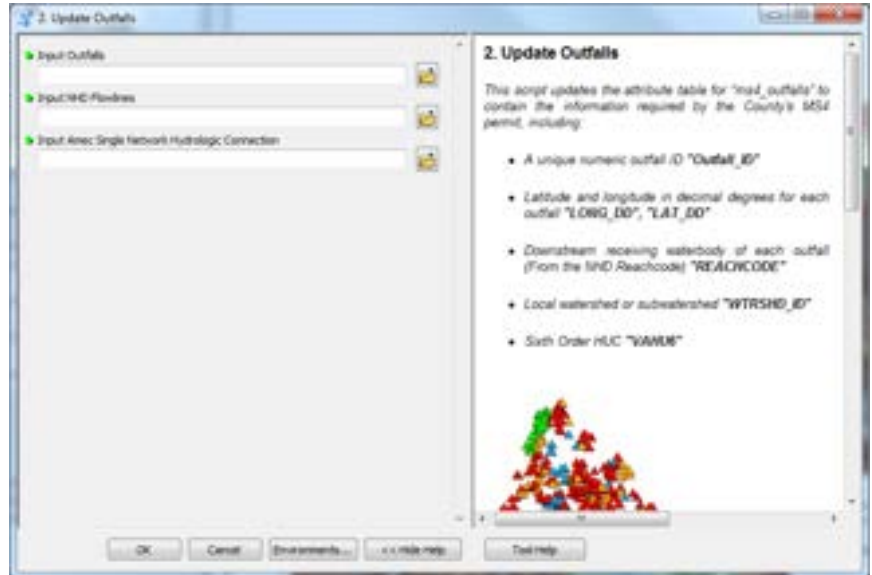
Figure 16 The DEM displays the merged stormwater infrastructure and hydrologic connection networks and NHD Flowlines (collectively known as the Amec Single Network) that were burned into the DEM raster surface. The stark contrast in elevation shows the 'canyons' created by the DEM reconditioning. Using this reconditioned DEM ensures the calculated flow accumulation captures accurate storm flow overland into stormwater conveyances.

5.6.2 Update Outfalls

This component does not produce any new layers that can be observed. Outfall attribute data are being updated to serve in the County's record keeping as required by *Part I.B.2.h) 4)* of their VSMP Permit.

This component uses "joins" to update the attribute table for "ms4_outfalls" so that the Stormwater Tool outputs contain information required by the County's MS4 permit.

- It assigns a unique outfall ID to each point for use in later tool functions
- It finds the points of intersection between the County's stormwater network and NHD flowlines to identify receiving waterbodies for each outfall, performs a watershed delineation to these points, and then spatially joins the Reach Code for each relevant branch with its outfall.
- It identifies the lat/long for each outfall
- It identifies the HUC12 and Local Watershed (fifth and sixth order) that each outfall discharges stormwater



Input Outfalls: Input the outfall point feature class to assign information. To input the County's MS4 outfalls, navigate to the "Outfalls" feature dataset in the MS4.gdb and select "ms4_outfalls"

Input NHD Flowlines: Specifies the NHD flowlines used to assign receiving waterbody information. Navigate to the "Network" feature dataset and select "NHD_flowlines".

Input Amec Single Network Hydrologic Connection: Specifies the stormwater network to be used. Navigate to the "Network" feature dataset and select "Amec_Single_Network".

The following information has been added to the attribute data for "ms4_outfalls": receiving waterbody, local watershed (Virginia Sixth Order), HUC12, and latitude/longitude coordinates. You can verify this by opening the attribute table (Figure 17).

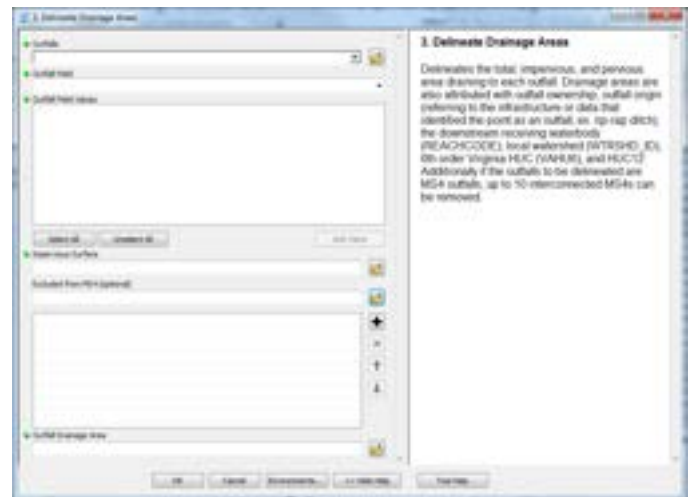
OBJECTID *	SHAPE *	Ownership	Origin	Outfall_ID	REACHCODE	VAHU5	VAHU6	HUC_12
1	Point	Prince William County	BMP	1	02070010003058	PL-O	PL41	020700100801
2	Point	Commercial	RRD	2	02070010001992	PL-N	PL42	020700100701
3	Point	Prince William County	GD	3	02070010001981	PL-N	PL42	020700100701
4	Point	Prince William County	GD	4	02070010001977	PL-N	PL42	020700100701
5	Point	Prince William County	GD	5	02070010002023	PL-N	PL42	020700100701
6	Point	Prince William County	GD	6	02070010000835	PL-N	PL42	020700100701
7	Point	Commercial	BMP	7	02070010000835	PL-N	PL42	020700100701
8	Point	Others	STP	8	02070010000849	PL-N	PL42	020700100701
9	Point	VDOT	STP	9	02070010002060	PL-N	PL42	020700100701
10	Point	Commercial	BMP	10	02070010000848	PL-N	PL42	020700100701
11	Point	Commercial	BMP	11	02070010000848	PL-N	PL42	020700100701

Figure 17 Attribute table for resulting updated outfall information.

5.6.3 Delineate Drainage Areas

This component delineates the drainage area to each outfall, and then assigns the relevant data mentioned in 'Update Outfalls' tool from the corresponding outfalls.

- After performing the watershed delineation for each outfall in ms4_outfalls, it converts the resulting rasters to polygons
- It calculates the total pervious area contributing runoff within each drainage area by erasing the impervious area from the total drainage area
- It calculates the total impervious area contributing runoff by subtracting the pervious area from the total area for each drainage area polygon
- It spatially joins the attribute information from “ms4_outfalls” to the drainage area polygons by identifying each polygons’ corresponding outfall that lies “within” the polygon.



Note that use of this component will cause the Frequency tool to concurrently run as the user makes a selection of Field categories to select outfall ownership types. This is due to validation Python code that interacts with ArcMap and updates field values to be selectable for the user.

Input Outfall Points: Requires the drainage delineation point input file. Attribute information for “ms4_outfalls” has now been updated. Navigate to the “Outfalls” feature dataset and select it.

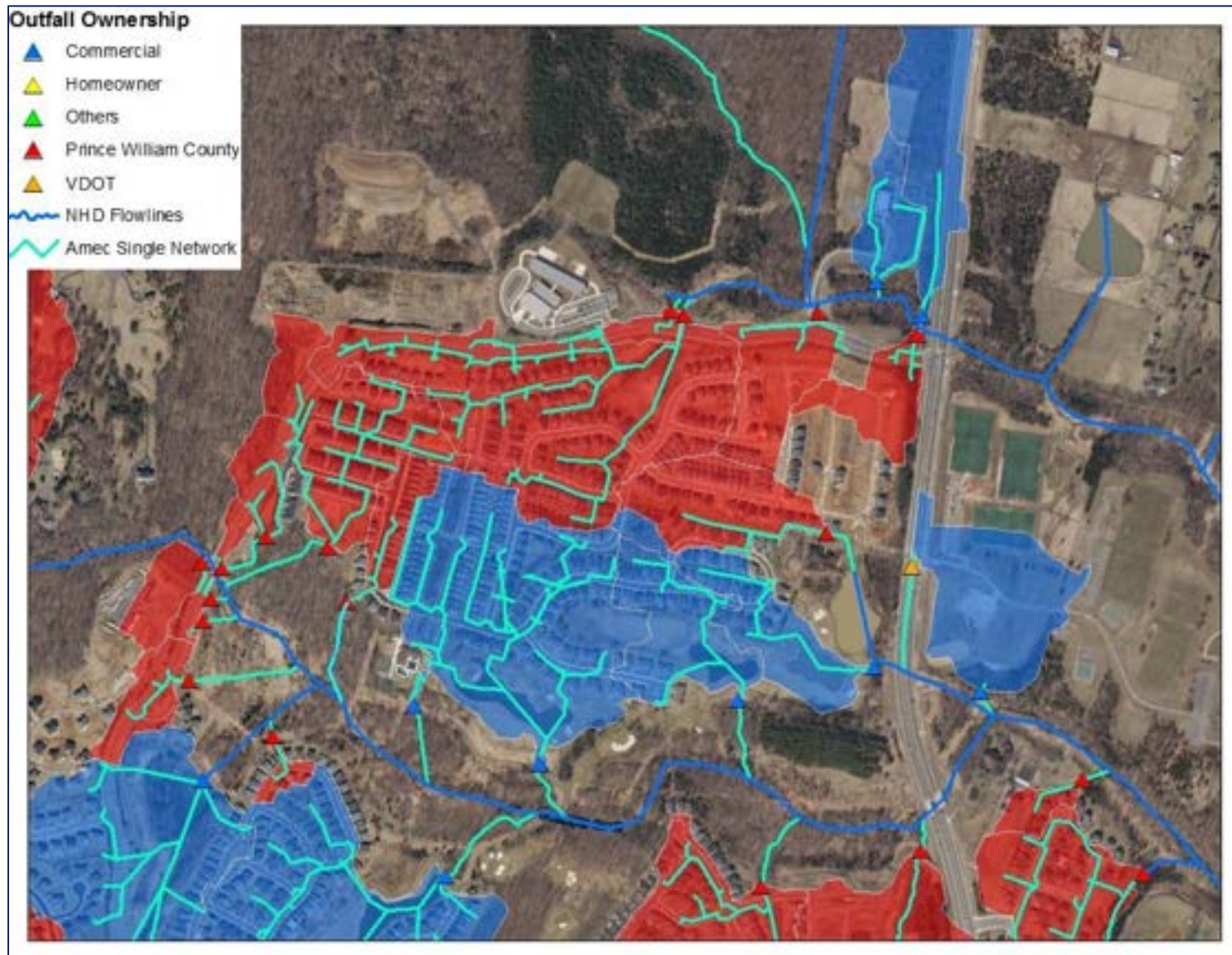
Outfall Field: Specifies the field from the attribute table that the MS4 drainage area selection will use. Choose “Ownership” from the drop-down menu.

Outfall Field Values: Allows the user to select which values to select from the specified field in the “ms4_outfalls” attribute table. The subarea for this exercise only contains outfalls owned and maintained by the County and Other entities. Select “County” and “Other”.

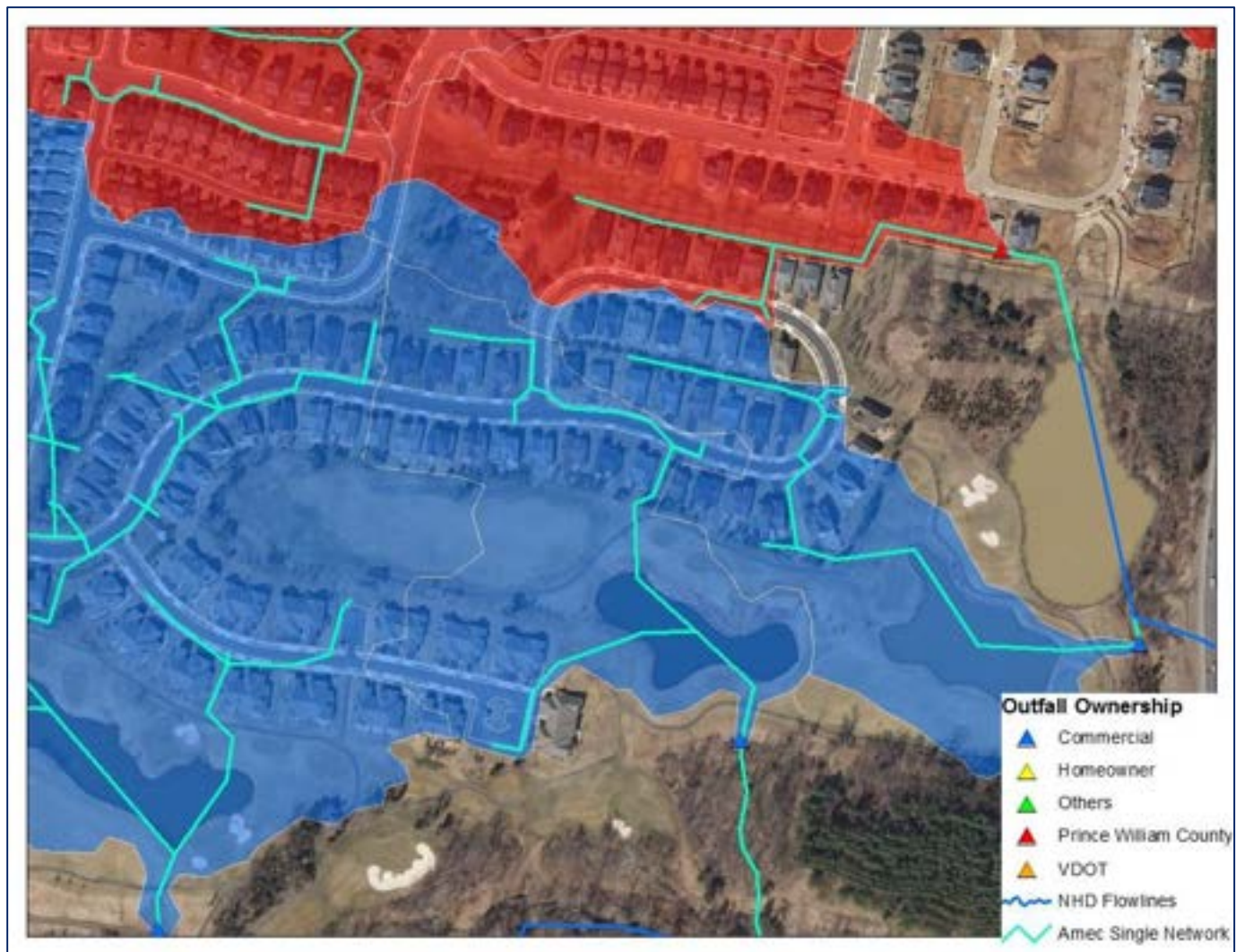
Impervious Surface: Lets the user specify which impervious surface data to use to determine the impervious area for each drainage area. This allows the County to update their drainage areas with each permit cycle (impervious data from 2009 will be used in phase 1 of the cycle).

Excluded from MS4: Permits the user to remove areas that should be excluded from the MS4 drainage area calculations. This includes interconnected MS4s (e.g. VDOT) and areas specifically excluded from regulated urban impervious and pervious cover, such as forested lands. These are all contained in the feature dataset “Interconnected”.

Outfall Drainage Area: Specifies the file name and location for the output of the component. Once a filename is specified, the ‘Delineate Drainage Areas’ tool may be run.



Focusing in on a familiar area can reveal more about the particular details of the contributing stormsewer system. Notice that the area drained by the Amec Single Network and the NHD flowlines are flowing to the outfalls, which serve as accumulation nodes for those upstream networks of pipes, streams, and BMPs.



Finally, users attempting to determine the MS4 service area should remove all excluded lands contained in the 'Interconnected' feature dataset. This can be achieved in the 'Delineate Drainage Areas' component in the 'Excluded from MS4' parameter. The result of removing these areas from the MS4 service area (undeveloped forested land, interconnected MS4s, and VPDES permitted entities) is depicted below.

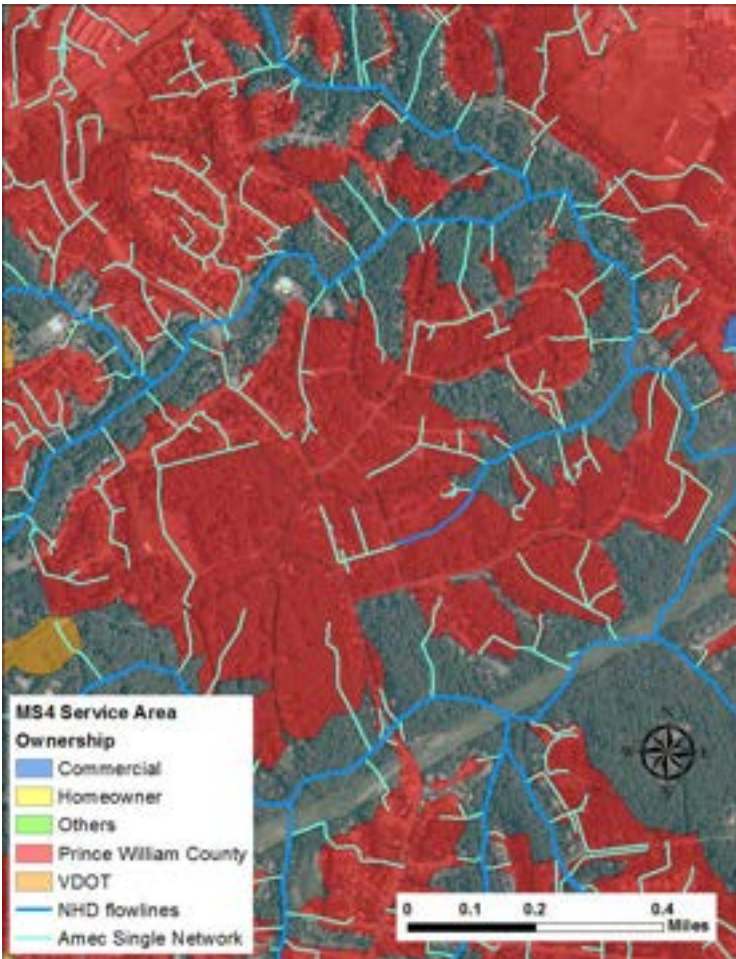


Figure 18 MS4 Service Area Before Removing Excluded Areas



Figure 19 MS4 Service Area After Removing Excluded Areas

6 Appendix A: Source Code

```
# -----  
# Name: Recondition_DEM.py  
# Purpose: This tool reconditions a digital elevation model (DEM) to include new  
           segments of the stormwater network.  
# Author: John P. Miller  
# Copyright:(c) Amec Foster Wheeler | Prince William County, Virginia  
# ArcGIS Version: 10.2  
# Python Version: 2.7.3  
# -----  
  
# Import the Modules  
import arcpy, sys, os  
from arcpy import env  
from arcpy.sa import *  
  
# Checkout Spatial License (Required!)  
arcpy.CheckOutExtension("spatial")  
  
# Overwrite Existing Files!  
arcpy.env.overwriteOutput = True  
  
# Get Relative Paths  
rootWS = os.path.dirname(sys.path[0])  
MS4 = os.path.join(rootWS,'MS4.gdb')  
  
# Set Env Variables  
arcpy.env.workspace = MS4  
arcpy.env.scratchWorkspace = rootWS  
  
# Prompt User for DEM Pathname  
DEM = arcpy.GetParameterAsText(0)  
if (not DEM):  
    arcpy.AddMessage("Select your DEM")  
    DEM = raw_input("Enter the DEM File Pathway")  
  
# Project DEM to "NAD_1983_StatePlane_Virginia_North_FIPS_4501_Feet"  
DEM_proj = os.path.join(arcpy.env.scratchGDB,"DEM_proj")  
spatialRef =  
"PROJCS['NAD_1983_StatePlane_Virginia_North_FIPS_4501_Feet',GEOGCS['GCS_North_America  
n_1983',DATUM['D_North_American_1983',SPHEROID['GRS_1980',6378137.0,298.257222101]],PRI  
MEM['Greenwich',0.0],UNIT['Degree',0.0174532925199433]],PROJECTION['Lambert_Conformal_Co  
nic'],PARAMETER['False_Easting',11482916.666666666],PARAMETER['False_Northing',6561666.666  
666666],PARAMETER['Central_Meridian',-  
78.5],PARAMETER['Standard_Parallel_1',38.03333333333333],PARAMETER['Standard_Parallel_2',
```

```
39.2],PARAMETER['Latitude_Of_Origin',37.66666666666666],UNIT['Foot_US',0.3048006096012192]"]
```

```
arcpy.ProjectRaster_management(DEM, DEM_proj, spatialRef, "BILINEAR")
```

```
# Set Raster Environment Settings
```

```
arcpy.env.snapRaster = DEM_proj
```

```
arcpy.env.cellSize = DEM_proj
```

```
arcpy.env.mask = DEM_proj
```

```
# Local Variables:
```

```
Network = os.path.join(MS4,'Network')
```

```
NHD_flowlines = os.path.join(Network,"NHD_flowlines")
```

```
Amec_Single_Network = os.path.join(Network,"Amec_Single_Network")
```

```
merged_network = os.path.join(arcpy.env.scratchGDB, "merged_network")
```

```
merged_stormwater_raster = os.path.join(arcpy.env.scratchGDB, "merge_storm")
```

```
assignmentType = "Maximum_Combined_Length"
```

```
priorityField = "Shape_Length"
```

```
DEM_resolution = arcpy.Describe(DEM_proj).meanCellHeight
```

```
# Geoprocessing
```

```
# Add "Burn" Field and Calculate Burn Depth for Amec_Single_Network
```

```
arcpy.AddField_management(Amec_Single_Network, 'Burn', 'Double') # Add 'Burn' field to
```

```
Amec_Single_Network
```

```
arcpy.CalculateField_management(Amec_Single_Network, "Burn", -2000) # Calculate 'Burn' value of -2000 feet for stormsewer infrastructure and hydrologic connections
```

```
# Add "Burn" Field and Calculate Burn Depth for NHD_flowlines
```

```
arcpy.AddField_management(NHD_flowlines, 'Burn', 'Double') # Add 'Burn' field to
```

```
NHD_flowlines
```

```
arcpy.CalculateField_management(NHD_flowlines, "Burn", -3000) # Calculate 'Burn' value of -2000 feet for streams
```

```
# Merge Amec_Single_Network with the Modified NHD_flowlines
```

```
arcpy.Merge_management([Amec_Single_Network, NHD_flowlines], merged_network)
```

```
# Convert Merged Network to Raster with Burn Depth as the Value and the Cellsize Based on the DEM
```

```
arcpy.PolylineToRaster_conversion(merged_network, "Burn", merged_stormwater_raster,
```

```
assignmentType, priorityField, DEM_resolution)
```

```
# Reclassify NoData Cells to Zero
```

```
reclass_dem = Reclassify(merged_stormwater_raster, "Value",
```

```
RemapValue([[-3000,-3000],[-2000,-
```

```
2000],[ "NODATA", 0])) # NHD Flowlines at -3000, Amec_Single_Network at -2000 and Everything Else (land cells) at 0
```

```
reclass_dem.save(os.path.join(arcpy.env.scratchGDB,"reclass_dem"))
```

```
# Save reclassified DEM as "reclass_dem" in scratchGDB
```


Technical Manual

MS4 Delineation & Stormwater Tool

Prince William County, Virginia

Burn the Streams into the Original DEM by Dropping the Stream and Stormsewer Network

Burned_DEM = arcpy.GetParameterAsText(1) # Set the

hydrologically reconditioned DEM as the second parameter

if (not Burned_DEM): # If

statement to prompt for file pathway to save the hydrologically reconditioned DEM

arcpy.AddMessage("Enter Output Location for Burned DEM") # Python message to appear when
running as standalone script

Burned_DEM = raw_input("Enter Burned DEM Output") # Prompts second parameter

outPlus = Plus(DEM_proj, reclass_dem) # Use raster math

to add the burned DEM with the original DEM. Results in a hydrologically reconditioned DEM

outPlus.save(Burned_DEM) # Save the

hydrologically reconditioned DEM

Fill DEM

Fill_DEM = Fill(outPlus) # Fill pits

and depressions

Fill_DEM.save(os.path.join(arcpy.env.scratchGDB,"fill")) # Save filled DEM as "fill" in scratchGDB

Flow Direction

Flow_Dir = FlowDirection(Fill_DEM,"NORMAL") # Calculate the flow direction of each cell using the
D8 algorithm from O'Callaghan & Mark, 1984

Flow_Dir.save(os.path.join(MS4,"flow_dir")) # Save flow direction as "flow_dir" in MS4.gdb

Flow Accumulation

Flow_Acc = FlowAccumulation(Flow_Dir) # Calculate the number of upstream cells that flow
into each cell using the flow accumulation tool

Flow_Acc.save(os.path.join(MS4,"flow_acc")) # Save flow accumulation as "flow_acc" in

MS4.gdb

Name: Update_Outfalls.py

Purpose: This tool updates the latitude, longitude, unique ID, receiving waterbody,
local watershed, and 6th order HUC

for each outfall.

Author: John P. Miller

Copyright:(c) Amec Foster Wheeler | Prince William County, Virginia

ArcGIS Version: 10.2

Python Version: 2.7.3

Import the Modules

import arcpy, sys, os

from arcpy import env

from arcpy.sa import *

Checkout Spatial License (Required!)

arcpy.CheckOutExtension("spatial")

Overwrite Existing Files!

Technical Manual
MS4 Delineation & Stormwater Tool
Prince William County, Virginia
arcpy.env.overwriteOutput = True

Get Relative Paths

rootWS = os.path.dirname(sys.path[0])
MS4 = os.path.join(rootWS,'MS4.gdb')

Set Environment Variables

arcpy.env.workspace = MS4
arcpy.env.scratchWorkspace = rootWS

Set Globals Variables

inFlowDirection = os.path.join(MS4,"flow_dir")
inFlowAccum = os.path.join(MS4,"flow_acc")
Outfalls = os.path.join(MS4,"Outfalls")
DEM_proj = os.path.join(arcpy.env.scratchGDB,"DEM_proj")
DEM_resolution = arcpy.Describe(DEM_proj).meanCellHeight
InputFeatureClass_copy = os.path.join(arcpy.env.scratchGDB, "InputFeatureClass_copy")
outfall_WB = os.path.join(arcpy.env.scratchGDB, "outfall_WB")
outfall_ReceivingWB = os.path.join(arcpy.env.scratchGDB, "Outfall_ReceivingWB")
ReceivingWB_Pts = os.path.join(arcpy.env.scratchGDB, "ReceivingWB_Pts")
WB_pourpoints = os.path.join(arcpy.env.scratchGDB,"WB_pourpoints")
WB_outfall_poly = os.path.join(arcpy.env.scratchGDB, "WB_outfall_poly")
WB_outfall_da_ras = os.path.join(arcpy.env.scratchGDB,"WB_outfall_da_ras")
WB_sheds = os.path.join(arcpy.env.scratchGDB, "WB_sheds")
WB_da = os.path.join(arcpy.env.scratchGDB, "WB_da")
Polygons = os.path.join(MS4,"Polygons")
HUC12 = os.path.join(Polygons,"HUC12")
outfall_HUC = os.path.join(arcpy.env.scratchGDB,"outfall_HUC")
Subwatersheds = os.path.join(Polygons,"Subwatersheds")
outfall_sheds = os.path.join(arcpy.env.scratchGDB,"outfall_sheds")
outfall_layer = os.path.join(arcpy.env.scratchGDB,"outfall_layer")

Prompt User for Outfalls Pathname

InputFeatureClass = arcpy.GetParameterAsText(0)

Set outfalls as first parameter

if (not InputFeatureClass):

If statement to prompt for outfall feature class

arcpy.AddMessage("Select the points you want to delineate")

Python message to appear when running as standalone script

InputFeatureClass = raw_input("Enter the File Pathway for Your Delineation Points") # Prompts first parameter

Prompt User for NHD Flowline Pathname

nhdInput = arcpy.GetParameterAsText(1)

Set NHD_flowlines as second parameter

if (not nhdInput):

If statement to prompt for

polyline feature class

arcpy.AddMessage("Select NHD Flowlines")

Python message to appear when running as

standalone script

```
nhdInput = raw_input("Enter NHD Flowlines") # Prompts second parameter

# Prompt User for Stormwater Network Pathname
networkInput = arcpy.GetParameterAsText(2) # Set
Amec_Single_Network as third parameter
if (not networkInput): # If
statement to prompt for polyline feature class
    arcpy.AddMessage("Select Stormwater Network") # Python message to
appear when running as standalone script
    networkInput = raw_input("Enter Amec Single Network") # Prompts third parameter

# Add Unique IDs to Drainage Points Using "Outfall_ID" Field Name, Sequentially Created
existingFields = [] # Empty list
for field in arcpy.ListFields(InputFeatureClass): # Iterate over fields
    existingFields.append(field.name) # Add the attribute name to list for each
field

# Create String to Use as Field Name
Outfall_ID = "Outfall_ID"
if Outfall_ID not in existingFields: #
Verify if field "Outfall_ID" exists
    arcpy.AddField_management(InputFeatureClass, 'Outfall_ID', 'LONG') # If field "Outfall_ID" doesn't
exists, create it
else:
    # If above statement is false, then
    print "Outfall_ID field already exists, no need to add" # If field "Outfall_ID" does
exist, do nothing

# Calculate a Unique Identifier for Each Outfall Missing an ID in the 'Outfall_ID' Field (1, 2, 3, etc.)
with arcpy.da.UpdateCursor(InputFeatureClass, Outfall_ID) as rows: # Create an update cursor
to go through each row in the Outfall_ID field
    for i, row in enumerate(rows, start=1): # For each value in row, a tuple is produced
with (counter, row); the for loop binds that to variable 'i' and row respectively
        if row[0] is None: # If an outfall ID has not been assigned (in attribute
table as <NULL>)
            row[0] = i # Substitute the index counter value (1, 2, 3, etc.) for
Outfall_ID value in each row
        elif row[0] is not None: # If an outfall ID has already been assigned (i.e. not
<NULL>)
            print "No IDs to add" # Do nothing
            rows.updateRow(row) # Update this row in the table

# Create Points at the Intersection of the Stormwater and Stream Network
arcpy.Intersect_analysis([nhdInput, networkInput], ReceivingWB_Pts, "No_FID", DEM_resolution,
"point")

# Add Unique IDs to the Intersection Points Using "WB_Pt_ID" Field Name
WB_Fields = [] # Empty list
```

```
for field in arcpy.ListFields(ReceivingWB_Pts):      # Iterate over fields
    WB_Fields.append(field.name)                    # Add the attribute name to list for each
field

WB_Pt_ID = "WB_Pt_ID"
    # Create field name as string
if WB_Pt_ID not in WB_Fields:
    # Check if an ID number for the intersection points exists
    arcpy.AddField_management(ReceivingWB_Pts, 'WB_Pt_ID', 'LONG') # If ID number does not
exist already, create field in attribute table
else:
    # Otherwise
    print "WB_Pt_ID exists"
    # If field already exists skip

# Calculate a Unique Value for Each Receiving Waterbody Point (ReceivingWB_Pts) Starting with 1
(1, 2, 3, etc.)
with arcpy.da.UpdateCursor(ReceivingWB_Pts, WB_Pt_ID) as rows:      # Create an update
cursor to go through each row in the Outfall_ID field
    for i, row in enumerate(rows,1):                                # For each
value in row, a tuple is produced with (counter, row); the for loop binds that to variable 'i' and row
respectively
        row[0] = i
        # Substitute the index counter value (1, 2, 3, etc.) for Outfall_ID value in each row
        rows.updateRow(row)
        # Update this row in the table

# Snap Intersecting Points to Flow Accumulation Pathway to Ensure Proper Delineation
if arcpy.Exists(WB_pourpoints):                                # Check if this snap pour points raster already
exists
    arcpy.Delete_management(WB_pourpoints)                    # If it already exists, delete it
else:                                                            # Otherwise
    print "Snap pour points"                                    # Do nothing

# Snap the points created from intersecting the Amec_Single_Network and NHD_flowlines to the
adjacent cell in the 3 x 3 cell window with the highest flow accumulation value
WB_outSnapPour = SnapPourPoint(ReceivingWB_Pts, inFlowAccum, DEM_resolution, "WB_Pt_ID")
WB_outSnapPour.save(WB_pourpoints) # Save output as WB_pourpoints

# Delineate Drainage Area to WB Points
if arcpy.Exists(WB_outfall_da_ras):                                # Check if the
drainage area raster for the intersecting points exists
    arcpy.Delete_management(WB_outfall_da_ras)                # If it already exists, delete
it
else:
    # Otherwise
    print "Delineate Receiving Water Body Drainage Areas" # Do nothing
```

Technical Manual

MS4 Delineation & Stormwater Tool

Prince William County, Virginia

Delineate the upstream watersheds for each downstream receiving waterbody

```
WB_outfall_da_ras = Watershed(inFlowDirection, WB_outSnapPour, "VALUE")
```

```
WB_outfall_da_ras.save(os.path.join(arcpy.env.scratchGDB,"WB_outfall_da_ras")) # Save output as  
WB_outfall_da_ras
```

Convert Raster Drainage Areas to Polygons

```
arcpy.RasterToPolygon_conversion(WB_outfall_da_ras, WB_outfall_poly, "SIMPLIFY", "VALUE")
```

Dissolve Watersheds by Gridcode to Eliminate Tiny Watersheds

```
arcpy.Dissolve_management(WB_outfall_poly, WB_da, ["gridcode"], "", "MULTI_PART",  
"DISSOLVE_LINES")
```

Add Receiving Waterbody information to the Waterbody Drainage Area

```
arcpy.MakeFeatureLayer_management(WB_da, "Waterbody_area") # Create feature
```

layer for dissolved polygon upstream watersheds for receiving waterbodies

```
arcpy.MakeFeatureLayer_management(ReceivingWB_Pts, "WB_points") # Create feature layer for  
receiving waterbody points
```

```
arcpy.JoinField_management("Waterbody_area", "gridcode", "WB_points", "WB_Pt_ID") # Join  
receiving waterbody point IDs to receiving waterbody drainage areas based on "gridcode"
```

```
arcpy.CopyFeatures_management("Waterbody_area", WB_sheds)
```

```
# Save a copy of the feature layer as a feature class named "WB_sheds"
```

Create a Copy MS4 Outfalls to Facilitate Join

```
arcpy.CopyFeatures_management(InputFeatureClass, InputFeatureClass_copy) # Create a copy of  
the outfalls
```

```
arcpy.MakeFeatureLayer_management(InputFeatureClass_copy, "CopyLayer") # Make  
feature layer from copy of outfalls
```

```
arcpy.DeleteField_management(InputFeatureClass_copy, ["REACHCODE"]) # In  
feature class that is a copy of the outfalls
```

#Use Spatial Join to Add Waterbody Drainage Area to User Selected Outfall Points

```
arcpy.SpatialJoin_analysis(InputFeatureClass_copy, WB_sheds, outfall_WB, "", "", "",
```

```
"COMPLETELY_WITHIN") # Join attribute table from receiving waterbody drainage areas to the  
copy of the outfalls
```

```
arcpy.JoinField_management(outfall_WB, "WB_Pt_ID", "CopyLayer", "Outfall_ID")
```

```
# Join Outfall ID field from feature layer of outfalls
```

#Delete Unnecessary Fields

```
fields = arcpy.ListFields(outfall_WB)
```

```
# Create a list with all of the fields in new outfalls feature class that  
contains the receiving waterbody "REACHCODE"
```

```
WBkeepFields = ["SHAPE", "OBJECTID", "Ownership", "Origin", "Outfall_ID", "REACHCODE"] #
```

Create list with these relevant field names. "Shape" and "OBJECTID" required!

```
WBdropFields = [x.name for x in fields if x.name not in WBkeepFields]
```

```
# Identify fields in outfall_WB that are not in the WBkeepFields list created above.
```

```
arcpy.DeleteField_management(outfall_WB, WBdropFields)
```

```
# Delete fields in outfall_WB not listed in WBkeepFields
```

```
# Use Spatial Join to Add 6th Order HUC Data
arcpy.SpatialJoin_analysis(outfall_WB, HUC12, outfall_HUC, "", "", "", "WITHIN")

# Remove Unnecessary Fields
arcpy.DeleteField_management(HUC12, ["Join_Count", "TARGET_FID"])

# Use Spatial Join to Add Local Watershed
arcpy.SpatialJoin_analysis(outfall_HUC, Subwatersheds, outfall_sheds, "", "", "", "WITHIN")

# Remove Unnecessary Fields
arcpy.DeleteField_management(outfall_sheds, ["Join_Count", "TARGET_FID", "Join_Count_1",
"TARGET_FID_1", "OBJECTID_1", "AREA", "PERIMETER", "SUBAREA", "SUBAREA_",
"SUBAREA_ID", "SYMBOL", "WMPLAN", "ACRES", "MAJSHED", "SHAPE_LENG", "SHD_NAME" ])

# Overwrite Initial Outfalls Feature Class (First Parameter)
arcpy.CopyFeatures_management(outfall_sheds, InputFeatureClass)

# Add Latitude and Longitude Fields to Outfalls
LONG_DD = "LONG_DD"

if LONG_DD in existingFields:
    # If LONG_DD field exists
    arcpy.DeleteField_management(InputFeatureClass, ["LONG_DD", "LAT_DD"]) # Delete Lat/Long
    Fields
else:
    # Otherwise
    print "Need to add Lat/Long"
    # Do nothing

# Add Outfall Location in Decimal Degrees
arcpy.AddField_management(InputFeatureClass, 'LONG_DD', 'FLOAT', 7, 5) # Add field for
longitude in decimal degrees
LAT_DD = "LAT_DD"
# Create string for field
arcpy.AddField_management(InputFeatureClass, 'LAT_DD', 'FLOAT', 7, 5) # Add field for
latitude in decimal degrees

# Calculate Latitude and Longitude Decimal Degree Coordinates for the Outfall Points
dsc = arcpy.Describe(InputFeatureClass)
# Use "Describe" function to determine the shape type
prjFile = os.path.join(arcpy.GetInstallInfo()["InstallDir"],
r"Coordinate Systems\Geographic Coordinate Systems\World\WGS 1984.prj") # Datum of
data for spatial reference
spatialRef = arcpy.SpatialReference(prjFile)
# Coordinate system that defines what map projection options are used to
define horizontal coordinates
```

Technical Manual

MS4 Delineation & Stormwater Tool

Prince William County, Virginia

```
updCursor = arcpy.UpdateCursor(InputFeatureClass,"", spatialRef)      # Establish read-write
access for outfalls
for row in updCursor:
    # Loop through each row in the outfall feature class
    shape = row.getValue(dsc.shapeFieldName)                          # Create
geometry object 'shape'
    geom = shape.getPart(0)
    # Read geometry of each point
    x = geom.X
    # Store x from spatial reference
    y = geom.Y
    # Store y from spatial reference
    row.setValue('LONG_DD', x)
    # Add x value from spatial reference to the point in the field LONG_DD
    row.setValue('LAT_DD', y)                                         # Add
y value from spatial reference to the point in the field LAT_DD
    updCursor.updateRow(row)
    # Updates the current row in the outfalls table

del updCursor, row # Close loop and delete cursor
```

```
# -----
# Name:          Drainage_Area_Delineations.py
# Purpose:       This tool delineates the upstream area to a set of user defined points
                 and determines the percent of the
                 drainage area that is pervious and impervious
# Author:        John P. Miller
# Copyright:(c)  Amec Foster Wheeler | Prince William County, Virginia
# ArcGIS Version: 10.2
# Python Version: 2.7.3
# -----
```

```
# Import the Modules
import arcpy, sys, os
from arcpy import env
from arcpy.sa import *
```

```
# Checkout Spatial License (Required!)
arcpy.CheckOutExtension("spatial")
```

```
# Overwrite Existing Files!
arcpy.env.overwriteOutput = True
```

```
# Get Relative Paths
rootWS = os.path.dirname(sys.path[0])
MS4 = os.path.join(rootWS,'MS4.gdb')
```

```
# Set Environment Variables
```

Technical Manual

MS4 Delineation & Stormwater Tool

Prince William County, Virginia

arcpy.env.workspace = MS4

arcpy.env.scratchWorkspace = rootWS

Set Globals Variables

inFlowDirection = os.path.join(MS4, "flow_dir")

inFlowAccum = os.path.join(MS4, "flow_acc")

Polygons = os.path.join(MS4, "Polygons")

Outfalls = os.path.join(MS4, "Outfalls")

Interconnected = os.path.join(MS4, "Interconnected")

DEM_proj = os.path.join(arcpy.env.scratchGDB, "DEM_proj")

DEM_resolution = arcpy.Describe(DEM_proj).meanCellHeight

outfall_poly = os.path.join(arcpy.env.scratchGDB, "outfall_poly")

dis_outfall_da = os.path.join(arcpy.env.scratchGDB, "dis_outfall_da")

LandUse = os.path.join(MS4, "LandUse")

GMU = os.path.join(Interconnected, "GMU")

NOVA = os.path.join(Interconnected, "NOVA")

Schools = os.path.join(Interconnected, "Schools")

VDOT = os.path.join(Interconnected, "VDOT")

VPDES = os.path.join(Interconnected, "VPDES")

interconnected_ms4 = os.path.join(arcpy.env.scratchGDB, "interconnected_ms4")

Phase1_MS4 = os.path.join(arcpy.env.scratchGDB, "Phase1_MS4")

pervious_da = os.path.join(arcpy.env.scratchGDB, "pervious_da")

pervious_layer = os.path.join(arcpy.env.scratchGDB, "pervious_layer")

drainage_area = os.path.join(arcpy.env.scratchGDB, "drainage_area")

drainage_area_layer = os.path.join(arcpy.env.scratchGDB, "da_layer")

join_da = os.path.join(arcpy.env.scratchGDB, "join_da")

outfall_layer = os.path.join(arcpy.env.scratchGDB, "outfall_layer")

area_layer = os.path.join(arcpy.env.scratchGDB, "area_lyr")

all_areas = os.path.join(arcpy.env.scratchGDB, "all_areas")

drainage_area_selection = os.path.join(arcpy.env.scratchGDB, "drainage_area_selection")

Set Raster Environment Settings

arcpy.env.snapRaster = DEM_proj

arcpy.env.cellSize = DEM_proj

arcpy.env.extent = DEM_proj

Prompt User for Outfalls Pathname

InputFeatureClass = arcpy.GetParameterAsText(0) # Set outfalls as first parameter

if (not InputFeatureClass): # If statement to prompt for outfall feature class

 arcpy.AddMessage("Select your the points you want to delineate") # Python message to appear when running as standalone script

 InputFeatureClass = raw_input("Enter the File Pathway for Your Delineation Points") # Prompts first parameter

Prompt User for Attribute Field

InputField = arcpy.GetParameterAsText(1) # Set 'user' selected field name as second parameter

if (not InputField): # If statement to prompt users to decide which field they would like to select outfalls by


```
arcpy.AddMessage("Select Input Field") # Python message to appear when running as  
standalone script
```

```
InputField = raw_input("Enter Input Field") # Prompts second parameter
```

```
# This Choice List is Populated Dynamically from Unique Values in the Input Field Defined in the  
Second Parameter (InputField)
```

```
InputValue = arcpy.GetParameterAsText(2) # Select field values for the third parameter
```

```
if (not InputValue): # If statement to prompt for values
```

```
arcpy.AddMessage("Select Areas to Delineate") # Python message to appear when running  
as standalone script
```

```
InputValue = raw_input("Enter Subset") # Prompts third parameter
```

```
# The Selected Value of Parameter 2 is Passed to Set Parameter 3 Output
```

```
arcpy.SetParameter(3, InputValue)
```

```
# Prompt User for Representative Impervious Cover (i.e. 2009 for Phase 1)
```

```
impervious_area = arcpy.GetParameterAsText(4) # Select impervious cover dataset for the fifth  
parameter
```

```
if (not impervious_area): # If statement to prompt for feature class
```

```
arcpy.AddMessage("Select the impervious cover") # Python message to appear when running as  
standalone script
```

```
impervious_area = raw_input("Enter the File Pathway for Your Impervious Area") # Prompts fifth  
parameter
```

```
# Prompt User for Interconnected MS4s
```

```
other_ms4s = arcpy.GetParameterAsText(5) # Select impervious cover dataset for the fifth parameter
```

```
if (not other_ms4s): # If statement to prompt for feature class
```

```
arcpy.AddMessage("Select all other MS4s from 'Interconnected' folder") # Python message to  
appear when running as standalone script
```

```
other_ms4s = raw_input("Enter interconnected MS4s") # Prompts sixth parameter
```

```
# Prompt User for Delineated Areas Output Location
```

```
outfall_area = arcpy.GetParameterAsText(6) # Select output location for the fifth parameter
```

```
if (not outfall_area): # If statement to prompt for pathname
```

```
arcpy.AddMessage("Add Delineated Areas Output Location") # Python message to appear when  
running as standalone script
```

```
outfall_area = raw_input("Enter Output Location") # Prompts seventh parameter
```

```
# Snap Drainage Delineation Points to Flow Accumulation Pathway to Ensure Proper Delineation
```

```
Outfall_ID = "Outfall_ID" # Create Outfall_ID string for field name
```

```
outSnapPour = SnapPourPoint(InputFeatureClass, inFlowAccum, DEM_resolution, Outfall_ID) # Snap  
outfalls to the adjacent cell in the 3 x 3 cell window with the highest flow accumulation value
```

```
outSnapPour.save(os.path.join(arcpy.env.scratchGDB, "pourpoints")) # Save snap pour points output  
as "pourpoints"
```

```
# Delineate Drainage Area to MS4 Outfalls
```

```
outfall_da_ras = Watershed(inFlowDirection, outSnapPour, "VALUE") # Delineate upstream  
contributing area to each snapped outfall
```

```
outfall_da_ras.save(os.path.join(arcpy.env.scratchGDB,"outfall_da")) # Save drainage areas
```

```
# Convert Raster Drainage Areas to Polygons
```

```
arcpy.RasterToPolygon_conversion(outfall_da_ras, outfall_poly, "SIMPLIFY", "VALUE")
```

```
# Dissolve Watersheds by Gridcode to Eliminate Tiny Watersheds
```

```
arcpy.Dissolve_management(outfall_poly, drainage_area, ["gridcode"], "", "MULTI_PART",  
"DISSOLVE_LINES")
```

```
# Merge Interconnected MS4s.
```

```
splitMS4s = other_ms4s.split(";")
```

```
if splitMS4s ==[""]:
```

```
    z = 0
```

```
else :
```

```
    z = len(splitMS4s)
```

```
if z == 0 : # If no interconnected MS4s are selected
```

```
    Phase1_MS4 = drainage_area # Skip merging interconnected MS4 polygons
```

```
elif z == 1: # If there is 1 other MS4
```

```
    arcpy.Merge_management([splitMS4s[0]], interconnected_ms4)
```

```
elif z == 2: # If there are 2 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1]], interconnected_ms4)
```

```
elif z == 3: # If there are 3 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2]], interconnected_ms4)
```

```
elif z == 4: # If there are 4 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2], splitMS4s[3]],  
interconnected_ms4)
```

```
elif z == 5: # If there are 5 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2], splitMS4s[3], splitMS4s[4]],  
interconnected_ms4)
```

```
elif z == 6: # If there are 6 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2], splitMS4s[3], splitMS4s[4],  
splitMS4s[5]], interconnected_ms4)
```

```
elif z == 7: # If there are 7 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2], splitMS4s[3], splitMS4s[4],  
splitMS4s[5], splitMS4s[6]], interconnected_ms4)
```

```
elif z == 8: # If there are 8 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2], splitMS4s[3], splitMS4s[4],  
splitMS4s[5], splitMS4s[6], splitMS4s[7]], interconnected_ms4)
```

```
elif z == 9: # If there are 9 other MS4s
```

```
    arcpy.Merge_management([splitMS4s[0], splitMS4s[1], splitMS4s[2], splitMS4s[3], splitMS4s[4],  
splitMS4s[5], splitMS4s[6], splitMS4s[7], splitMS4s[8]], interconnected_ms4)
```

```
else:
```

```
    print "Other MS4s not selected"
```

```
    arcpy.AddError("No other MS4s selected, output will not reflect interconnected MS4s")
```

```
# Erase Interconnected MS4's from MS4 Area
```

```
if z > 0: # If there are interconnected ms4s
```

```
arcpy.Erase_analysis(drainage_area, interconnected_ms4, Phase1_MS4) # Erase them from the
outfall drainage area
else: # If there are not interconnected ms4s
    print "No interconnected MS4s" # Skip this step
    arcpy.AddError("No other MS4s selected, output will not reflect interconnected MS4s")

# Calculate Total Acres in Each Drainage Area
arcpy.AddField_management(Phase1_MS4, 'TotAcres', 'DOUBLE') # Add field for total acres in each
drainage area
arcpy.CalculateField_management(Phase1_MS4, 'TotAcres', '!shape.area@acres!', 'PYTHON') #
Calculate total drainage area in acres and store in 'TotAcres' field

# Erase Impervious Area from Drainage Area
arcpy.Erase_analysis(Phase1_MS4, impervious_area, pervious_da)

# Add Pervious Acres Field and Calculate Geometry
arcpy.AddField_management(pervious_da, 'PervAcres', 'DOUBLE') # Add field for pervious acres in
each drainage area (i.e. area remaining after erasing impervious area from each drainage area)
arcpy.CalculateField_management(pervious_da, 'PervAcres', '!shape.area@acres!', 'PYTHON') #
Calculate pervious drainage area in acres and store in 'PervAcres' field

# Create Feature Layers for Join
arcpy.MakeFeatureLayer_management(Phase1_MS4, drainage_area_layer) # Create feature layer of
total drainage areas for each outfall
arcpy.MakeFeatureLayer_management(pervious_da, pervious_layer) # Create feature layer of
pervious drainage areas for each outfall

# Join Pervious Area to the Dissolved MS4 Drainage Areas
arcpy.AddJoin_management(drainage_area_layer, "gridcode", pervious_layer, "gridcode") # Join
pervious area feature layer to total drainage area layer based on gridcode
arcpy.CopyFeatures_management(drainage_area_layer, join_da) # save joined pervious/total
drainage feature layer as feature class named 'join_da'

# Remove Attribute Table Fields That Are Not Necessary
arcpy.DeleteField_management(join_da, ["pervious_da_OBJECTID", "pervious_da_gridcode",
"pervious_da_TotAcres"])

# Remove Any <Null> Values and Replace with 0
codeblock = """def calc(pervious_da_PervAcres):
    if pervious_da_PervAcres is None:
        return 0
    else:
        return pervious_da_PervAcres"""
arcpy.CalculateField_management(join_da, 'pervious_da_PervAcres',
"calc(!pervious_da_PervAcres!)", 'PYTHON', codeblock) # Inserts codeblock SQL statement to
change any Null pervious area value to 0 to facilitate impervious area calculation

# Calculate Impervious Area
```

Technical Manual

MS4 Delineation & Stormwater Tool

Prince William County, Virginia

```
arcpy.AddField_management(join_da, 'ImpAcres', 'DOUBLE') # Add field for impervious acres named 'ImpAcres'
```

```
arcpy.CalculateField_management(join_da, 'ImpAcres', '!Phase1_MS4_TotAcres!-!pervious_da_PervAcres!', 'PYTHON') # Calculate impervious area by subtracting pervious drainage area from the total drainage area for each outfall
```

```
# Create Feature Layers for Join
```

```
arcpy.MakeFeatureLayer_management(InputFeatureClass, outfall_layer) # Create feature layer from outfall feature class
```

```
arcpy.MakeFeatureLayer_management(join_da, area_layer) # Create feature layer from drainage area polygon feature class containing total, impervious, and pervious for each outfall
```

```
# Join Outfall Ownership and Origin Information
```

```
arcpy.JoinField_management(area_layer, "Phase1_MS4_gridcode", outfall_layer, Outfall_ID, InputField + ";Origin;Outfall_ID;VAHU6;HUC_12;WTRSHD_ID;REACHCODE") # Join outfall information to the drainage area feature class and keep relevant field for the permit
```

```
arcpy.CopyFeatures_management(area_layer, all_areas) # Create a feature class for drainage area feature class containing all relevant information for outfalls and drainage areas
```

```
arcpy.DeleteField_management(all_areas, "Phase1_MS4_gridcode") # Delete unnecessary field that resulted from join
```

```
# Split User Input Into List
```

```
InputString = str(InputValue) # Create string from the third parameter to be parsed through statement below
```

```
SaveSplit = InputString.split(";") # Split string from the third parameter, so that each value in the field is it's own string
```

```
# Create Variable to be Used in Logical Statement to Build SQL statement
```

```
x = len(SaveSplit) # Calculate how many unique values are in the field from parameter 3 (e.g. if Ownership is the field and it has County, Homeowner, & Commercial as possible values the length would be 3)
```

```
exp1 = str(InputField) + " = " + str(SaveSplit[0]) + "" # SQL statement that selects the first value (SaveSplit[0]) from the field selected in parameter 3
```

```
# Logical Sequence Building SQL Expression, Based upon Number of User Inputs for the Third Parameter (GetParameterAsText(2)) (x)
```

```
if x < 2 : # if the number of unique values selected by the user is 1
```

```
    sql_exp = exp1 # SQL selection statement takes the selected field (second parameter) and selects the first field value (third parameter)
```

```
elif 3 > x > 1: # if the number of unique values selected by the user is 2
```

```
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" # SQL selection statement takes the selected field (second parameter) and selects the first and second field value (third parameter)
```

```
elif 4 > x > 2: # if the number of unique values selected by the user is 3
```

```
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[2]) + "" # SQL selection statement takes the selected field (second parameter) and selects the first, second, & third field value (third parameter)
```

```
elif 5 > x > 3: # if the number of unique values selected by the user is 4
```

```
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" # SQL selection  
statement takes the selected field (second parameter) and selects the first, second, third, & fourth  
field value (third parameter)  
elif 6> x >4: # if the number of unique values selected by the user is 5  
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" + " OR " +  
str(InputField) + " = " + str(SaveSplit[4]) + "" # SQL selection statement takes the selected field  
(second parameter) and selects the first, second, third, fourth, & fifth field value (third parameter)  
elif 7> x >5: # if the number of unique values selected by the user is 6  
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" + " OR " +  
str(InputField) + " = " + str(SaveSplit[4]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[5]) + ""  
elif 8> x >6: # if the number of unique values selected by the user is 7  
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" + " OR " +  
str(InputField) + " = " + str(SaveSplit[4]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[5]) + ""  
+ " OR " + str(InputField) + " = " + str(SaveSplit[6]) + ""  
elif 9> x >7: # if the number of unique values selected by the user is 8  
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" + " OR " +  
str(InputField) + " = " + str(SaveSplit[4]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[5]) + ""  
+ " OR " + str(InputField) + " = " + str(SaveSplit[6]) + "" + " OR " + str(InputField) + " = " +  
str(SaveSplit[7]) + ""  
elif 10> x >8: # if the number of unique values selected by the user is 9  
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" + " OR " +  
str(InputField) + " = " + str(SaveSplit[4]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[5]) + ""  
+ " OR " + str(InputField) + " = " + str(SaveSplit[6]) + "" + " OR " + str(InputField) + " = " +  
str(SaveSplit[7]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[8]) + ""  
elif 10> x >8: # if the number of unique values selected by the user is 10  
    sql_exp = exp1 + " OR " + str(InputField) + " = " + str(SaveSplit[1]) + "" + " OR " + str(InputField) +  
" = " + str(SaveSplit[2]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[3]) + "" + " OR " +  
str(InputField) + " = " + str(SaveSplit[4]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[5]) + ""  
+ " OR " + str(InputField) + " = " + str(SaveSplit[6]) + "" + " OR " + str(InputField) + " = " +  
str(SaveSplit[7]) + "" + " OR " + str(InputField) + " = " + str(SaveSplit[8]) + "" + " OR " + str(InputField)  
+ " = " + str(SaveSplit[9]) + ""  
elif x > 10: # if the number of unique values is more than 10, all values will be selected.  
    sql_exp = InputField  
else:  
    print "Too many unique values to select"  
    arcpy.AddError("No outfalls selected, output will be empty")
```

```
# Select Choice List Selections from the Input Feature Class  
arcpy.Select_analysis(all_areas, drainage_area_selection, sql_exp)
```

```
arcpy.CopyFeatures_management(drainage_area_selection, outfall_area) # Save output of drainage  
areas with user selected field values (e.g. County owned outfalls)
```

7 Appendix B: Forested Lands Delineation Process

PURPOSE

In order to support service area delineation and the land use change BMP, forested areas were quickly delineated from 4-band multispectral imagery at 1 meter spatial resolution. Existing available land cover information for Prince William County is available from the Multi-Resolution Land Characteristics Consortium (MRLC), National Land Cover Database (NLCD). However, the NLCD products were derived at 30m spatial resolution, limiting detail and potentially including a very large amount of estimation error when considering BMP's at a local scale. For example, when considering 900m² contiguous forested area, 2 pixel results at 30m resolution would be identified as a forested area from the NLCD dataset. Unfortunately, most remote sensing processes may take effort in reducing such small classification results as anomalous, and therefore remove small, but in this case, significant contiguous pixel results. By utilizing 1 meter resolution imagery products tree canopy detection was rapidly delineated, and higher resolution allowed multiple pixel clusters to be identified meeting the 900m² minimum mapping unit with higher confidence. Image processing was conducted using ERDAS Imagine, ArcGIS, and Feature Analyst software packages.

IMAGERY

The United States Department of Agriculture (USDA), National Agricultural Inventory Program (NAIP) provides ortho-corrected multispectral imagery with 1 meter spatial resolution at no cost over most of the United States. The multispectral imagery consists of typical blue, green, and red imagery bands for natural color representation, along with 4th band that covers the near infrared part of the electromagnetic spectrum. The near infrared band allows rapid vegetation detection through indices and classification techniques due to its sensitive response to chlorophyll from plant material. Healthy plants absorb red, green, and blue light, and reflects higher levels of infrared energy. Additionally, the near infrared bands allows the ability to segregate healthy from stressed vegetation by detecting different levels of near infrared reflection after identifying the presence of chlorophyll initially.

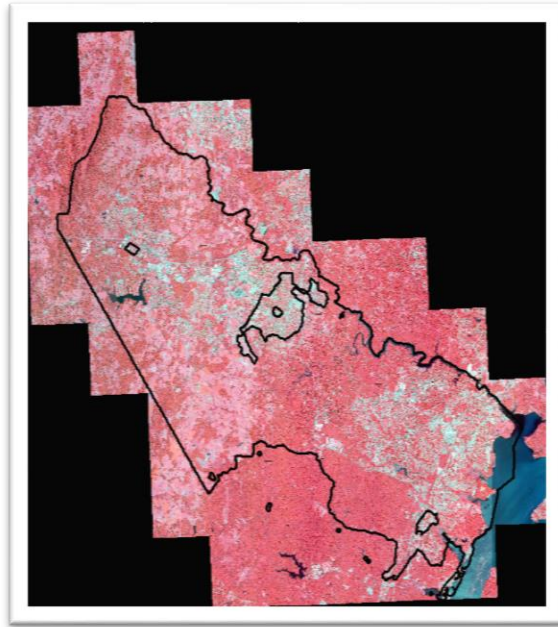
PROCESSING

The image processing used for this delineation consisted of three primary steps: 1) Image Pre-Processing, 2) Image Processing, and 3) Image Post-Processing. The area of interest (AOI) utilized consisted of areas within the Prince William County service area alone. No other MS4 areas were included in this delineation.

7.0.1 Image Pre-Processing

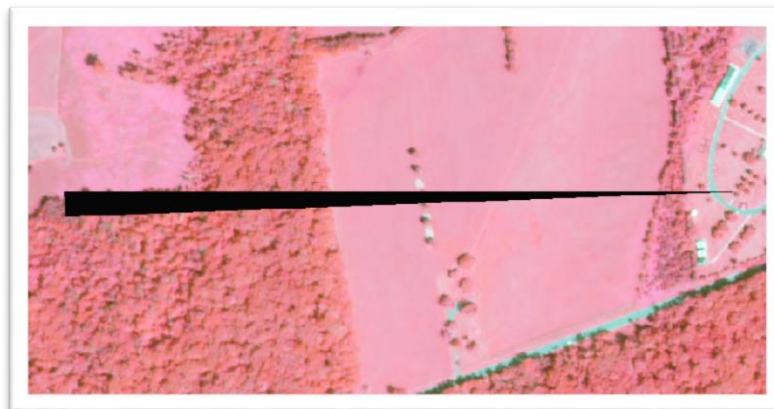
Pre-Processing tasks include AOI delineation, image collection, imagery quality review, and initial vegetation extraction. A buffer of 500ft around the study AOI prior to image processing in order to account for edge detection anomalies that typically occur with automated image extraction. Once complete, NAIP imagery was collected at the extent of the buffer to ensure complete coverage as

available. NAIP imagery at 4-band resolution is provided at DOQQ extents and readily available from the USGS EarthExplorer website (<http://earthexplorer.usgs.gov/>). A total of 43 NAIP tiles were downloaded and produced into a seamless mosaic product covering the AOI, and were collected in August, 2014:



(Mosaic NAIP imagery with Color Infrared Representation)

The mosaic product was reviewed for seamlines and raw data anomalies such as band striping or dropped pixels. No band striping or seamlines were found in the mosaic dataset, and only minor areas of dropped pixels were identified. However, the areas with dropped pixels were not covering vast areas and did not require additional image datasets to rectify; dropped pixels were accounted for in the post processing phase due to limited impact on initial classification:



The final step of the pre-processing phase utilized the Normalized Difference Vegetation Index (NDVI) to segregate the image between vegetation and non-vegetation features. This is rapidly done due to

the way chlorophyll reflects energy in the near infrared band by using band math which results in a new raster data set with pixels containing values ranging from -1 to 1. Pixels with values closer to 1 represent vegetation, while those closer to -1 are non-vegetation.



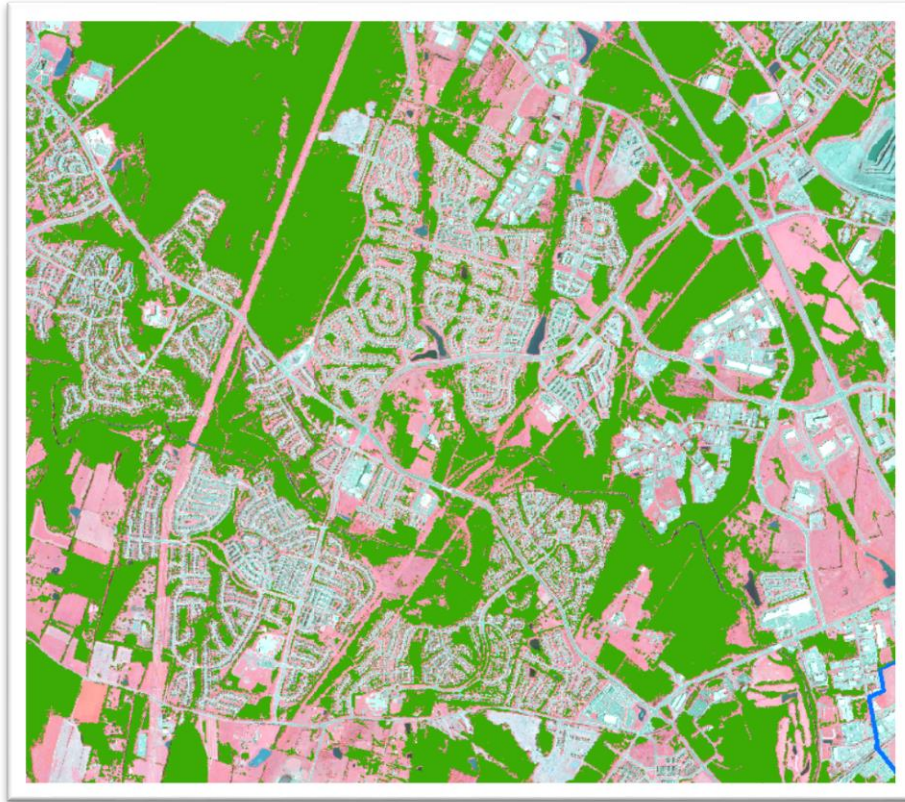
(NDVI Result showing vegetation and non-vegetation)

The NDVI result was then reviewed to locate the correct threshold where a representative split between vegetation and non-vegetation could be identified. Once determine, the NDVI dataset was rendered to a 2-class result, where vegetation pixels were utilized as an analysis mask where tree canopy could be identified. The threshold was set a bit higher for this study since trees tend to reflect much higher values (i.e. much closer to 1) given their height and foliage. This result also reduces false detections within open fields, dry grasslands, and shorter shrub areas:



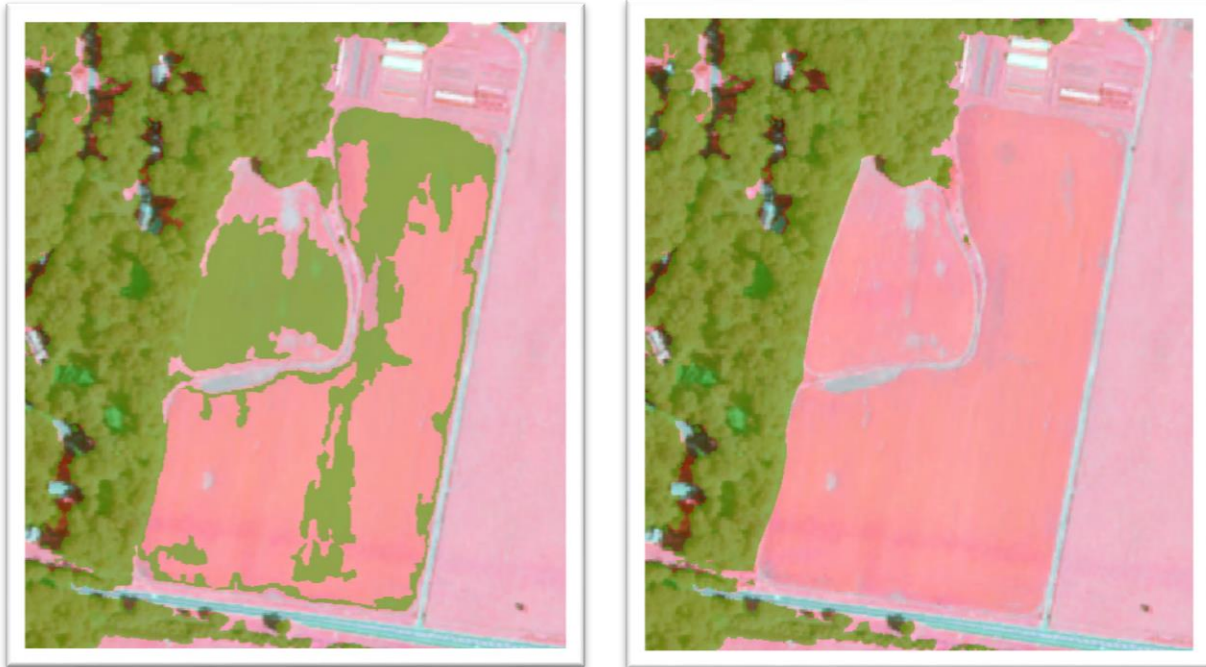
7.0.2 Image Processing

In order to identify tree canopy in Prince William County, multiple processing techniques and software packages were used to gain the best possible results. Initially, unsupervised image classification was performed, segregating the raw image into 50 different classes of statistically similar pixels. The 50 class clusters were reviewed and identified as belonging to tree canopy, water, grass, impervious surfaces, and unclassified (shadow) areas. The tree canopy clusters were then saved as new AOI's within ERDAS Imagine, and augmented with digitized samples in all locations of the study area. These samples were then supplied in the Maximum Likelihood Supervised Classification algorithm, with 2 – class fuzzy results and distance layers being produced. “Fuzzy” pixel results showed similarity between 2 possible land cover classes, and the distance result was utilized to effectively place the fuzzy pixels in the more statistically correct class. Feature Analyst is a separate classification algorithm that focuses more on feature shape along with spectral variability. Training samples were then applied to Feature Analyst, where iterations of results were performed to obtain the cleanest results. By utilizing shape as a detection method, similar patterns can be segregated in the image, also allowing for the reduction in misclassification from shadows. Once complete, all results were then merged into a single layer and clipped to the NDVI vegetation results and non-buffered MS4 AOI.



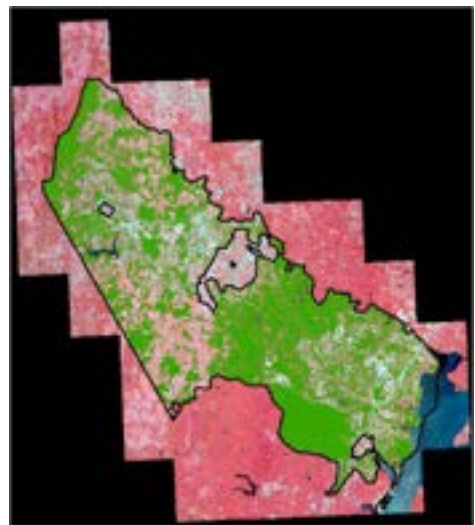
7.0.3 Image Post-Processing

Post processing tasks included image result aggregation and manual QA/QC procedures. Image processing result aggregation is a procedure used to fill small holes in otherwise continuous features and remove salt-and-pepper results by defining an arbitrary minimum mapping unit. The results from this process further clean extracted features of interest which can substantially improve estimations and metrics performed across the dataset. The manual QA/QC period performed looked for final anomalies in the resulting dataset that should not exist. Such anomalies include misclassification of commission and omission. In these cases, either polygons were added to fill in a missing area or polygons were trimmed to remove unnecessary features. Typical errors of omission exist in the middle of large forests, where trees cast shadows amongst each other. Typical errors of commission tend to exist in agricultural areas and golf courses where grasses and fields are very lush and mowed with varying patterns.



7.0.4 FINAL DATA SET DESCRIPTION AND ACCURACY STATEMENT

The final data set was produced using remote sensing techniques, which represent target features with a reasonable estimation or approximation. This is due to the possibility of remaining errors of omission and commission, spatial resolution limitations, and temporal capabilities. The estimations and representation of these results is based on the surface conditions at the time of imagery collection (8/2014). Polygon features are dissolved and exploded to ensure continuous feature representation, while maintaining topology with non-multipart feature representation. Estimated accuracy of the forest area delineation is approximately 80-85%. This is reasonable for the purposes of the service area delineation and land use BMP study. It is recommended that additional manual QA/QC be performed if this dataset is needed for official UTC classification, along with a minimum of 5-Class land cover computation



Appendix I – County Facilities



DEPARTMENT OF FINANCE

Prince William County, Virginia

Page 1 of 13

Effective Date:
09/13/2017

**Subject: ILLICIT DISCHARGE
ELIMINATION AND MS4
PERMIT COMPLIANCE**

No:
25-RSK-400-030

Supersedes:
N/A

Table of Contents

100 INTRODUCTION3

 100.1 PURPOSE.....3

 100.2 SCOPE.....3

 100.3 AUTHORIZATION.....3

 100.4 APPLICABILITY3

 100.5 RESPONSIBILITY3

 100.6 EXCEPTIONS5

 100.7 DEFINITIONS.....5

 100.8 KEY RISK FACTORS7

200 POLICY.....7

 200.1 PROHIBITED DISCHARGES.....7

 200.2 ALLOWABLE DISCHARGES7

 200.3 ILLICIT CONNECTIONS7

 200.4 GOOD HOUSEKEEPING REQUIREMENTS.....8

 200.4.1 VEHICLE AND EQUIPMENT WASHING AND MAINTAINANCE.....8

 200.4.2 VEHICLE AND EQUIPMENT FUELING.....8

 200.4.3 OUTDOOR STORAGE OF EQUIPMENT AND MATERIALS (SAND, DIRT, GRAVEL)8

 200.4.4 OUTDOOR STORAGE OF CHEMICALS (CHLORINE, SALT, PAINT).....9

 200.4.5 ROAD, STREET, AND PARKING LOT DEICING/MAINTAINANCE.....9

 200.4.6 PESTICIDE, HERBICIDE, FERTILIZER APPLICATION, STORAGE, TRANSPORT AND
DISPOSAL.....10

 200.4.7 FIRE-FIGHTING TRAINING10

 200.4.8 FUEL TANKS, GENERATORS AND OTHER OIL/FUEL STORAGE.....11

 200.4.9 SWIMMING POOL DE-CHOLORINATION11

 200.5 TRAINING12

 200.5.1 GENERAL TRAINING12

 200.5.2 PESTICIDE AND HERBICIDE APPLICATION TRAINING12

 200.5.3 EROSION AND SEDIMENT CONTROL TRAINING.....12

 200.5.4 SPILL RESPONSE TRAINING.....12



DEPARTMENT OF FINANCE

Prince William County, Virginia

Page 2 of 13


Effective Date:
09/13/2017

**Subject: ILLICIT DISCHARGE
ELIMINATION AND MS4
PERMIT COMPLIANCE**

No:
25-RSK-400-030

Supersedes:
N/A

200.6	NOTIFICATION OF SPILLS AND/OR ILLICIT DISCHARGES.....	13
200.7	RECORD KEEPING/ ANNUAL REPORTING.....	13
200.8	SWPPP	13
200.9	OVERSIGHT	13

	DEPARTMENT OF FINANCE Prince William County, Virginia		Page 3 of 13
			Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

100 INTRODUCTION

Pursuant to the federal Clean Water Act, 33 U.S.C. § 1251, *et seq.*, the Virginia Stormwater Management Act, Va. Code § 62.1-44.15:24, *et seq.*, and Prince William County Code of Ordinances Chapter 23.2 and regulations adopted pursuant thereto, Prince William County is authorized to discharge in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in state permit No. VA0088595.

100.1 PURPOSE

This policy establishes methods for controlling the discharge of pollutants from the municipal separate storm sewer system (MS4) into state waters, in compliance with requirements of Virginia Stormwater Management Program permit issued to Prince William County government (PWC).

100.2 SCOPE

The following written illicit discharge policy has been established for all County locations and applies to any potential discharge or pollutant which could be generated during the normal course of business.

100.3 AUTHORIZATION

This policy is authorized by the County Executive.


100.4 APPLICABILITY

This policy applies to all County agencies/departments including those with Independent Boards, with the exception of the Prince William County Schools and Prince William County Service Authority.

100.5 RESPONSIBILITY

Agency/Department Directors or designees shall:

- Ensure department specific standard operating procedures (SOPs) are developed, implemented and maintained for activities impacted by this policy.
- Ensure all MS4 SOPs are internally approved by the Department of Public Works, Environmental Services Division.
- Ensure all applicable policies, procedures and internal SOPs are available to impacted agencies and personnel responsible for monitoring and ensuring compliance.

	DEPARTMENT OF FINANCE		Page 4 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

- Assign roles and responsibilities as applicable, for all policies, procedures and SOPs under the “control” or “ownership” of his/her individual agency/department,
- Ensure all training requirements are met.
- Report any noncompliance issues including any spill or discharge.

Department of Public Works, Environmental Services Division shall:


- Provide support to departments and agencies in the implementation of this policy.
- Submit annual reports and any other formal communications that reference MS4 activities to regulatory bodies.
- Disseminate information, updates, and responsibilities to departments and agencies concerning compliance with permit requirements.
- Approve department specific SOPs pertaining to MS4 compliance.
- In conjunction with Risk Management periodically inspect high-risk facilities.
- Respond to specific departmental compliance inquiries and provide technical knowledge.
- Notify impacted departments of annual reporting requirements

Risk Management shall:

- Ensure that all departments are aware of and comply with this policy through inspection and program audits.
- Provide technical assistance to departments and agencies for all aspects of this policy when requested.
- Assist agencies and departments in facilitating pertinent training.
- Notify Environmental Services of any reported noncompliance issues at County facilities including fuel spills and illicit discharges, along with any follow up actions taken.

Employees shall:

- Comply with this policy and SOPs set forth by department management.
- Attend all required training.
- Inform supervisor of spills and discharges.

	DEPARTMENT OF FINANCE Prince William County, Virginia		Page 5 of 13
			Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

100.6 EXCEPTIONS

Exceptions to this policy must be approved in writing by the County Executive or designee.

100.7 DEFINITIONS

Allowable Discharge - any direct or indirect discharge that is authorized by the MS4 permit.

Contractor - an individual or company, including a subcontractor, hired by PWC government to perform services within PWC.

Clean Water Act (CWA)- the federal Clean Water Act (33 U.S.C. §1251 et seq.) and any subsequent amendments thereto

Discharge - allowable liquid, gas, or other substances that enter a storm drainage system.


Hazardous Material Personnel- County personnel responsible for responding to incidents related to hazardous materials.

Illicit Discharge- any direct or indirect non-stormwater discharge into the storm drain system not authorized by the MS4 permit.

Illicit Connections- either of the following: (1) any drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drain system including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process waste water, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains to sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved, by the County or, (2) any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the County.

MS4 (Municipal Separate Storm Sewer System) - a conveyance or system of conveyances, otherwise known as a municipal separate storm sewer system or "MS4" including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains, designed or used for collecting and conveying stormwater.

MS4 Permit- a permit issued to Prince William County that authorizes the discharge of stormwater from all existing and new municipal separate stormsewer point source discharges to surface waters of the State and includes a comprehensive planning process involving public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA and regulations, and this article and its

	DEPARTMENT OF FINANCE Prince William County, Virginia		Page 6 of 13
			Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

attendant regulations, using management practices, control techniques, and system, design, and engineering methods, and such other provisions that are appropriate.

Pollutant – anything which causes or contributes to pollution. This may include but is not limited to: paints, chemicals, soap, wash water, oil, automotive fluids, non-hazardous liquid and solid wastes, yard wastes, garbage, pesticides, herbicides, fertilizers, hazardous substances and wastes, animal wastes, dissolved and particulate metals, leaves and yard clippings, and particulates such as soil, sand and salt.

Potable Water- water that is deemed safe to drink or to use for food preparation, without risk of health problems.

Spill Prevention Control and Countermeasure (SPCC) Plan - a federally required and defined plan for facilities storing over 1,320 gallons of oil (fuel) cumulatively at a site including tanks, generators, and drums of oil (fuel).


Standard Operating Procedure (SOP) – SOPs are those policies/procedures related only to the internal operations of an agency/department, division or other sub-unit thereof. SOPs are not communicated or meant to provide direction to any external agency/department. Other names for SOPs include, but are not limited to: general orders, desk manuals, procedures, field guides, process flowcharts, and checklists, etc.

Storm Drainage System- facilities by which stormwater is collected and/or conveyed including but not limited to any roads with drainage systems, streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detentions basins, natural and human made or altered drainage channels, reservoirs, and other drainage structures.

Storm Water – precipitation that is discharged across the land surface of through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

Policy – Policies are directives for the conduct of County business affairs and are often in support of higher level of authority dictates such as County Code or Ordinance; Board of County Supervisor Resolutions, County Executive Order, the County’s Strategic Plan, compliance with federal laws and standards, the Code of Virginia or other regulatory agency as defined by law or contract.

Procedure – Procedures are the steps required to ensure policies are followed. Procedures are more detailed in nature and communicate operational requirements to internal and external staff for a specific transaction or a business cycle.

	DEPARTMENT OF FINANCE		Page 7 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

100.8 KEY RISK FACTORS

1. Policies, procedures and internal SOPs are inconsistent or not properly documented, approved and disseminated.
2. Policies, procedures and internal SOPs are not reviewed and updated on a systematic basis.
3. Departments and agencies may overlook responsibilities and fail to report permit violations or annual reporting requirements.

200 ILLICID DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE POLICY

200.1 ILLICIT DISCHARGES

No County employee, visitor, contractor, department, or agency shall cause or allow discharges into the PWC storm drainage system which are not composed entirely of stormwater, except for the allowed discharges listed below in Section 200.2. Prohibited discharges include, but are not limited to: paints, chemicals, soap, wash water, oil, automotive fluids, non-hazardous liquid and solid wastes, yard wastes, garbage, pesticides, herbicides, fertilizers, hazardous substances and wastes, animal wastes, dissolved and particulate metals, leaves and yard clippings, and particulates such as soil, sand and salt.


200.2 ALLOWABLE DISCHARGES

Allowable discharges are identified in the MS4 permit and include, but are not limited to the following:

- Landscape irrigation (sprinklers) and other potable water discharges
- Air conditioning condensation
- Fire-fighting emergency activities
- Other unforeseen activities that Environmental Services deems as allowable under the permit

200.3 ILLICIT CONNECTIONS

The construction, use, maintenance, or continued existence of illicit connections to the storm drain system is prohibited. This expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

	DEPARTMENT OF FINANCE		Page 8 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

200.4 GOOD HOUSEKEEPING REQUIREMENTS

200.4.1 VEHICLE AND EQUIPMENT WASHING AND MAINTAINANCE

County vehicles shall be washed at a commercial car wash facility whenever possible. For oversize or specialty equipment and vehicles that require specialty cleaning, washing must be done in a way that prevents runoff water from entering storm drains. This includes:

- Using waterless washing products or a phosphate-free, pH neutral soap, and
- Washing on a grassy area or gravel, where all runoff water infiltrates the ground, or
- Capturing all runoff so no discharge occurs

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.2 VEHICLE AND EQUIPMENT FUELING

All fuel tanks, generators, and fueling stations at Prince William County facilities must have a spill response kit that is labeled, visible to users, and stocked at all times.

County personnel must remain at the pump during vehicle and equipment fueling. Should a spill occur or be discovered, personnel must respond by:

- utilizing a clean-up kit,
- notifying the County's fuel vendor via self-dial phones posted at Garfield and Western District fueling stations, and/or
- dialing 911 for significant or hazardous spills


For spills of all sizes, a [spill report](#) form must be completed following protocol found in section 200.6.

All spent cleanup supplies must be properly disposed. Risk Management can assist departments in making arrangements.

200.4.3 OUTDOOR STORAGE OF EQUIPMENT AND MATERIALS

Outdoor storage of equipment and materials not in regular use should be temporary and kept to a minimum. When storing equipment and materials outdoors, the following conditions must be met:

- Store materials and equipment as far away from storm drains and water bodies as feasible
- Cover and protect materials stored outside from rainfall and wind dispersal
- Keep outdoor storage containers in good condition
- Conduct regular inspections of storage areas

	DEPARTMENT OF FINANCE		Page 9 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.4 OUTDOOR STORAGE OF CHEMICALS

Outdoor storage of chemicals should be temporary and kept to a minimum. When storing chemicals outside, the following conditions must be met:


- Store chemicals as far away from storm drains and water bodies as feasible
- Seal storage containers and ensure they are impervious to rainfall
- Keep outdoor storage containers properly labeled and in good condition
- Store containers so they are not in direct contact with the ground
- Store containers in a way that prevents damage from vehicle and equipment impacts, wind damage, or any other external force
- Conduct regular inspections of storage areas

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.5 ROAD, STREET, AND PARKING LOT DEICING/MAINTAINANCE

Deicing and other maintenance activities performed in roads, streets, and parking lots must be done in a way to minimize discharge. When performing these activities, the following conditions must be met:

- Deicing
 - Store and transfer de/anti-icing materials on an impervious containment pad or an equivalent containment area and/or under cover
 - Do not use deicing agents containing urea, or other forms of nitrogen or phosphorus
 - Avoid applying chemical deicing agents when the temperature is less than 15°F
 - Use the lowest application rate of deicing chemicals possible to loosen snow and ice for further removal by shovel or plow
- Maintenance
 - Use an approved vendor for parking lot sweeping services and, per the contract requirements, confirm the collected debris is:
 - removed from the property within 4 hours of collection (no stockpiling),
 - kept out of storm drains, and

	DEPARTMENT OF FINANCE		Page 10 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

- properly disposed of at an approved site

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.6 PESTICIDE, HERBICIDE, FERTILIZER APPLICATION, STORAGE, TRANSPORT AND DISPOSAL

Application, storage, transport, and disposal of any pesticide, herbicide, and fertilizer products must be done in a manner that minimizes the impact to the environment to the greatest extent practicable. When performing these activities, the following conditions must be met:

Application

- Apply materials on an as needed basis only
- Do not exceed application rates defined on packaging
- Utilize only properly trained or certified personnel to perform applications of these chemicals

Storage

- Store all pesticide, herbicides and fertilizer indoors or under covered areas, with proper labeling on both the containers and the storage structure
- Conduct regular inspections of storage areas

Transport

- Secure materials during transport to prevent spills and/or utilize secondary containment
- Equip vehicles that transport liquid products with a spill kit


Disposal

- Dispose of expired and unwanted materials through a qualified, contracted County vendor
- Maintain records of material disposal indefinitely

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.7 FIRE-FIGHTING TRAINING

Fire-fighting training activities must be performed in a manner that minimizes the impact to the environment to the greatest extent practicable. When performing these activities, the following conditions must be met:

	DEPARTMENT OF FINANCE		Page 11 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

- Direct water flows to grass or gravel areas or contain the water onsite and allow it to evaporate and infiltrate
- Block off all potentially affected storm drain inlets and direct or pump water to sanitary sewer or grass or gravel infiltration area

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.8 FUEL TANKS, GENERATORS AND OTHER OIL/FUEL STORAGE


All oil (including cooking oil) and fuel containers must be maintained and utilized in a manner that prevents leaks, spills and discharges. All drums, tanks, generators or other outdoor oil/fuel storage containers must comply with the following:

- With the exception of cooking oil storage, ensure secondary containment is utilized, either through container design or added structure
- Properly label equipment and containers and ensure they are free of drips, leaks, and film, and that the ground/pavement around it is, too
- Ensure filling and dispensing by vendors is done in accordance with County policy and that any spill is reported in accordance with 200.6 of this policy
- Inspect equipment and containers regularly and ensure any needed repairs are made in a timely manner
- Place a spill response kit near the equipment or container and ensure it is labeled, stocked, and visible to others at all times

200.4.9 SWIMMING POOL DE-CHLORINATION

During daily back-washing operations and annual flushing, steps must be taken to minimize the level of chlorine in discharge water to the greatest extent practicable. This can be achieved by:

- Direct water flows to grass or gravel areas or contain the water onsite and allow it to evaporate and infiltrate
- For annual flushing, de-chlorinate the water either chemically with appropriate products, or naturally through a 10-day retention period with no chlorine addition prior to release
- Verify chlorine and pH levels prior to release during annual flushing, with pH levels falling between 6.0 and 8.0 and free chlorine levels of 0.01 mg/l or less
- Release discharge from annual flushing at a controlled rate, as slowly as reasonably feasible

	DEPARTMENT OF FINANCE		Page 12 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.5 TRAINING

200.5.1 GENERAL TRAINING

The following personnel must receive stormwater training biennially (every two years):

- Field personnel
- Personnel responsible for road, street, and parking lot maintenance
- Personnel working in and around recreation, public works, and maintenance facilities
- County plan reviewers, inspectors, emergency response employees, and construction site operators
- Any additional personnel deemed necessary by the permit

Training must include, at a minimum: MS4 requirements, recognition and reporting of illicit discharges, and good housekeeping and pollution prevention practices.

200.5.2 PESTICIDE AND HERBICIDE APPLICATION TRAINING

Employees and contractors who apply pesticides and herbicides must be properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia).

200.5.3 EROSION AND SEDIMENT CONTROL TRAINING


County plan reviewers, inspectors, program administrators, and construction site operators must be trained and obtain appropriate certifications as required under Virginia Erosion and Sediment Control Law and attendant regulations.

200.5.4 SPILL RESPONSE TRAINING

All County personnel with responsibilities for complying with a facility's Spill Prevention Control and Countermeasure Plan (SPCC) must receive annual spill response training.

All Department of Fire & Rescue uniformed personnel must be trained to the level of Hazardous Materials First Responder Operations as required by OSHA standards (29 CFR 1910.120(q)(6)(ii). Annual refresher training is required and must, at a minimum, meet requirements of OSHA Standards (29 CFR 1910.120(q)(8)(ii).

The Department of Fire and Rescue's Hazardous Materials Response Team must consist of at least 10% of the Uniform personnel that are trained to the Hazardous Materials Technician

	DEPARTMENT OF FINANCE		Page 13 of 13
	Prince William County, Virginia		Effective Date: 09/13/2017
	Subject: ILLICIT DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE	No: 25-RSK-400-030	Supersedes: N/A

Level (29 CFR 1910.120(q)(6)(iii)). Annual refresher training is required and must meet the requirements of OSHA Standards (29 CFR 1910.120(q)(8)(ii)).

200.6 NOTIFICATION OF SPILLS AND/OR ILLICIT DISCHARGES

If an illicit discharge is observed or created, departments are responsible for immediately reporting the incident to PWC Hazardous Material Personnel by calling 911 or non-emergency number at (703) 792-6700. Details such as location of the incident and description of the discharge should be conveyed. Secondary notification should be made to Environmental Services and Risk Management via the [Spill Report Form](#) located on the Risk Management intranet home page.

200.7 RECORD KEEPING/ ANNUAL REPORTING

Public Works Environmental Services will notify all impacted departments of annual reporting requirements in the first quarter of each fiscal year. Within the first 30 days following the close of that fiscal year, Departments will provide Environmental Services all required data, reports, and other deliverables assigned to them at the start of the year. Should a new or revised requirement be imposed, Environmental Services will notify impacted departments within 30 days.

200.8 SWPPP

Facilities that have been identified as high priority through the MS4 permitting process will be notified by Environmental Services and required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP). Departments are responsible for complying with all SWPPP requirements including good housekeeping, record keeping, training, and inspections.

200.9 OVERSIGHT

Risk Management and Environmental Services will audit records and inspect facilities for compliance with the MS4 permit on an annual basis. Results of audits and inspections will be reported to department management and executive management.

Appendix J – Public Education/Participation

Please help us protect and improve our waterways.

pwcgov.org/cleanwaters

Proper disposal of cooking oil and grease keeps it out of our storm drains and waterways, preventing pollution and violations of County ordinances.

BEST MANAGEMENT PRACTICES



**Locate containers away from storm drains.
If possible, locate them to an enclosed area.**



Do NOT place containers near storm drains.



**Keep the lid closed.
If the container is full, immediately
call the vendor for servicing.**



**Do NOT overfill.
Do NOT leave lid open**



Before a spill occurs:

Have a spill kit on site.
Train staff on how to use the kit.

After a spill has been cleaned:

Properly dispose absorbent materials after use.



Do NOT wash away the grease. Impervious surfaces lead to storm drains. This is prohibited per County Code Article II, Sec. 23.2- 4.1.



Additionally, used cooking oil smells, creates a slipping hazard, and attracts rats and insects. By implementing best management practices you can keep your establishment in compliance and safe for employee.



Anything that enters a storm drainage system that isn't storm water is NOT treated and flows directly into our waterways causing pollution.

Environmental Services Division

For more information, visit us at pwcgov.org/cleanwaters
Report violations to 703-792-7070 or illicitdischarge@pwcgov.org



PRINCE WILLIAM

Public Works

Don't Blow It!

- ◆ Prevent yard waste and debris of any kind from entering the storm drain.
- ◆ Keep all ditches and drainage ways clear of obstructions so stormwater can flow freely.
- ◆ Blow yard waste back onto a landscaped area, not the street, drain, ditch, pond, creek, etc.
- ◆ Collect and contain yard waste. Do not dispose in the regular trash.



REPORT VIOLATIONS

Prince William County
Watershed Management Branch
703-792-7070
illicitdischarge@pwcgov.org



FOR MORE INFORMATION

www.pwcgov.org/cleanwaters

¡No Soplen Basura al Drenaje!

- Prevengan que la basura y los recortes del jardín entren en los drenajes o alcantarillas.
- Mantengan todas las zanjas, cunetas y drenajes limpios de obstrucción, de manera que las aguas pluviales puedan fluir libremente.
- Soplen la basura del jardín hacia dentro del área del jardín, nunca hacia la calle, la cuneta, el drenaje, el estanque, el arroyo o riachuelo, etc.
- Recojan y contengan separadamente la basura del jardín; no la mezclen con la basura regular.



REPORTAR VIOLACIONES A:

Prince William County
Watershed Management Branch
703-792-7070
illicitdischarge@pwcgov.org



PARA OBTENER
MÁS INFORMACIÓN
www.pwcgov.org/cleanwaters

Please help us protect and improve our waterways.



PRINCE WILLIAM
— Public Works

Keeping YARD WASTE out of storm drains helps to protect water quality and ensure the storm drainage system functions properly. Here are several things you can do to help.

- **Prevent yard waste and debris of any kind from entering the storm drain.**
- **Keep all ditches and drainage ways clear of obstructions so storm-water can flow freely.**
- **Blow yard waste back onto a landscaped area, not the street, drain, ditch, pond, creek, etc.**
- **Collect and contain yard waste. Do not dispose in the regular trash.**

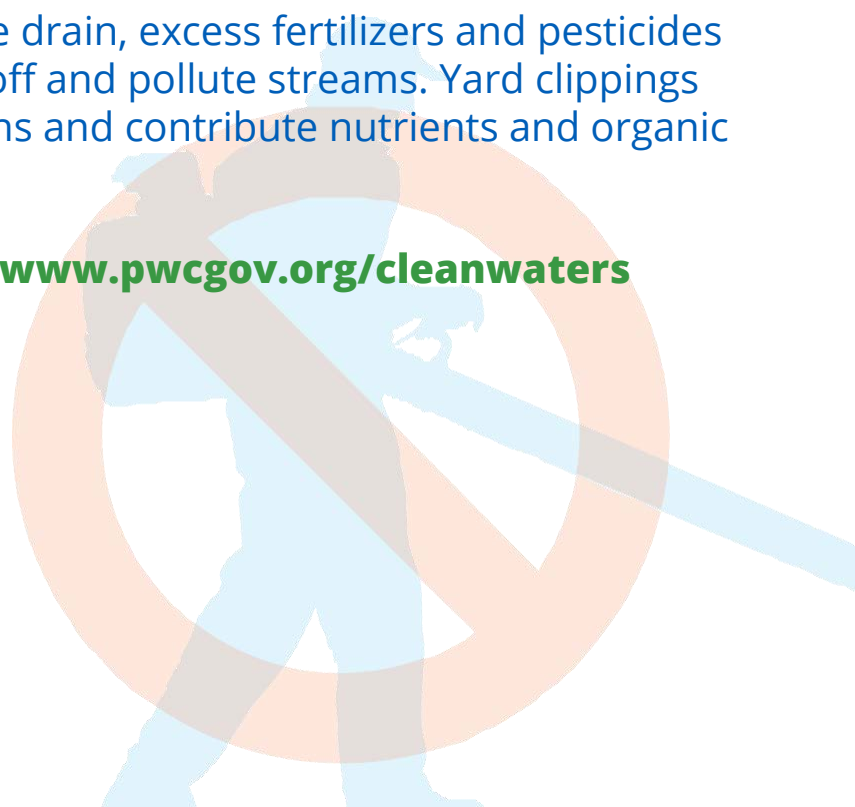


In addition to potentially clogging the drain, excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. Yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

For more information, visit us at www.pwcgov.org/cleanwaters

Prince William County
Environmental Services Division

Violations can be reported at
703-792-7070 or
illicitdischarge@pwcgov.org



Por favor ayúdenos a proteger y mejorar nuestras fuentes acuíferas.



**PRINCE
WILLIAM**
— Public Works

Mantener la BASURA DEL JARDÍN fuera de los drenajes ayuda a proteger la calidad del agua y asegura que el sistema de alcantarillado funcione apropiadamente. Aquí damos una lista de cosas que ustedes pueden hacer para ayudar.

- **Prevenzan que la basura y los recortes del jardín entren en los drenajes o alcantarillas.**
- **Mantengan todas las zanjas, cunetas y drenajes limpios de obstrucción, de manera que las aguas pluviales puedan fluir libremente.**
- **Soplen la basura del jardín hacia dentro del área del jardín, nunca hacia la calle, la cuneta, el drenaje, el estanque, el arroyo o riachuelo, etc.**
- **Recojan y contengan separadamente la basura del jardín; no la mezclen con la basura regular.**



Además de potencialmente tapar los drenajes, el exceso de fertilizantes y pesticidas aplicados a la grama y en jardines termina lavándose y contaminando arroyos y riachuelos. Los recortes del jardín y las hojas pueden lavarse hacia dentro de los drenajes y alcantarillas y depositar nutrientes y materia orgánica en los arroyos y riachuelos.

Para obtener más información, visítenos en www.pwcgov.org/cleanwaters

Prince William County
Environmental Services Division

Reportar violaciones al teléfono
703-792-7070 o al email
illicitdischarge@pwcgov.org



Annual Messages for Illicit Discharge, Watershed Management and Water Quality 2020

January Promote Native Plant Symposium

Join us for the second annual Native Plant Symposium for Beginners. Learn the benefits of planting native and how to get started. The symposium will be held on Saturday, February 8, 2020 at the Workforce Center of the Woodbridge campus of NVCC. For more details (with a link to the webpage with information on the event)

February Proper use of ice melt

During winter storms, deicing products can help reduce potential slips and falls on icy walkways and parking lots. But runoff of these products can harm plants, pets and local waterways. Be sure to sweep up excess deicing products when applying it and any remaining product once snow and ice are gone. Also, take steps to contain future use material to prevent runoff. Learn more at www.pwcgov.org/cleanwaters

March Tips for lawn care and reduced fertilizing

Remember to plant native plants and use organic materials like compost for landscaping and gardens. Please test your soil to see what amendments and fertilizer are needed to create a healthy lawn. If you use fertilizer, only use what is needed since the rest will be washed away into local streams – causing pollution and wasting money. It is best to fertilize in the fall! Learn more at <https://www.pwcgov.org/government/dept/vce/Pages/BEST-Lawns.aspx>

April Tips on plastic pollution prevention

Plastic litter is very light and can easily be blown into natural areas, storm drains and streams. It can harm wildlife and create significant pollution. Please limit your use of plastic items such as bags, straws and bottles. Learn more at www.pwcgov.org/cleanwaters

May Pick up after pets

Leaving pet waste on the ground increases public health risk. When it rains, harmful bacteria in pet waste can wash into the storm drain and pollute local water bodies. Learn more at www.pwcgov.org/cleanwaters

June Message 1: Don't let things wash down drain -- car fluids

Inspect your car to see if fluids such as oil and antifreeze are leaking from your car. The fluids spill onto pavement and are washed down the storm drain with the rain. Have your car serviced to repair any leaks. If you change your own oil and fluids, please be careful to catch any spills so it does not end up in

the storm drain and recycle fluids at the landfill. Please report spills and leaks washing into storm drains to illicitdischarge@pwcgov.org. Learn more at www.pwcgov.org/cleanwaters

June Message 2: Don't let things wash down drain – car washes

Use a commercial car wash when possible since they capture the wash water for proper treatment. If you wash your car at home, please use phosphate-free soap. Also wash your car on grass or gravel so the wash water seeps into the ground rather than flows into the storm drain. Please report spills and leaks washing into storm drains to illicitdischarge@pwcgov.org. Learn more at www.pwcgov.org/cleanwaters

July Don't let things wash down the drain – household hazard waste and chemicals

Look for safer and more environmentally friendly alternatives. Properly dispose of chemicals and products with warning labels at the [Household Hazardous Waste Collection](#) every Wednesday and Saturday at the landfill with no charge to residents. Never pour chemicals down the storm drain! Please report spills and leaks washing into storm drains to illicitdischarge@pwcgov.org. Learn more at www.pwcgov.org/cleanwaters

August Don't let things wash down the drain -- emptying pools

As summer ends, please remember the chlorine and other chemicals to keep pool water clean are harmful to aquatic life. Use removal agents or let untreated pool water sit for 10 days to allow chemicals to dissipate. Then slowly release the water into a vegetated area to slow water from rushing down the storm drain. Please report chlorinated pool water washing into storm drains to illicitdischarge@pwcgov.org. Learn more at www.pwcgov.org/cleanwaters

September Tips on composting leaves

Leaves can make their way to our waterways, reducing oxygen levels and harming aquatic life. Please do not blow leaves into ditches or storm drains. You can compost your leaves or drop the leaves at the county's landfill and compost facilities. Learn more at www.pwcgov.org/trashandrecycling

October Tips on fertilizing in the fall

Fall is the time to fertilize your lawn! Use fertilizers sparingly and only the recommended amounts when needed. Use organic mulch and slow release fertilizers. Test your soil first to see what is needed. Contact the Cooperative Extension for a soil test and learn more at <https://www.pwcgov.org/government/dept/vce/Pages/BEST-Lawns.aspx>

November Secure your trash and recycling

Secure trash and recycling so it does not blow out of its container. Trash and debris can blow down the storm drain and wash into local streams and rivers. To reduce trash, please recycle and look for ways to reuse items. Learn more at www.pwcgov.org/trashandrecycling.

December General illicit discharge

Only rain down the drain. We don't want any material, liquid or oil entering the storm drain system except pure rain water. All of us can play a role in preventing pollution and protecting our sources for drinking water from chemical spills, leaks and improper disposals. Please report spills and leaks washing into storm drains to illicitdischarge@pwcgov.org. Learn more at www.pwcgov.org/cleanwaters

More Best Management Practices ...

- **Pet Care**

Pet waste washes from yards and paved areas. It is a major source of bacteria and excessive nutrients in local waters. Pet wastes can contribute up to 50% of the total bacteria in a stream. **Please pick up and flush pet wastes down the toilet or place pet wastes in the trash**

- **Car maintenance**

Ensure your car is not leaking oil or fluids
Visit repair shops that properly dispose of oils and wastes

Properly dispose of used oil and batteries, learn more at:
www.pwcgov.org/trashandrecycling

- **Septic system maintenance**

A leaking septic system can release nutrients and pathogens into near by waters. Inspect and pump your septic system every five years

- **Household hazardous waste disposal**

Properly dispose of items in designated locations, and never flush HHW down the drain or toilet. For more information visit:
www.pwcgov.org/trashandrecycling

- **Manage your lawn and landscape**

Use fertilizers and pesticides sparingly and not within 15 to 20 feet of a stream). For more information on management plans:
<http://www.ext.vt.edu/>

Don't allow grass clippings and leaves to enter the storm drain since this can add nutrients and organic matter to streams
Sweep excess fertilizer and pesticides off of impervious surfaces and onto lawn
Landscape with low maintenance and native plants — and grow less turf

Leave grass height between 3" and no higher than 12"

Install practices such as rain barrels, permeable pavement, rain gardens and vegetated filter strips that have less impact



Resources and who to call

Solid Waste Division at 703-792-4670

- Recycle motor oil, anti-freeze and car batteries
- Household Hazardous Wastes
- Electronics Recycling
- Yard Waste Composting



Virginia Cooperative Extension at 703-792-6285

- Nutrient Management Planning

Environmental Health Department at 703-792-6310

- Well and Septic Maintenance

Fire & Rescue at 703-792-6360 or after hours public safety communications at 703-792-6500

- Hazardous Waste Spills

- Emergency situations — call **9-1-1!**

Keep Prince William Beautiful at 571-285-3772

- Litter Control, Prevention and Clean Ups
- Heavily littered areas in a specific spot

Prince William County

Department of Public Works

Watershed Management

5 County Complex Court, Suite 170

Prince William, VA 22192

703-792-7070

illicitdischarge@pwcgov.org

www.pwcgov.org/publicworks



Prince William County

Help Stop Pollutants from Entering Our Streams



Illicit Discharge

Detection and

Elimination Program

Protecting the health, safety and welfare of the public, environment, and infrastructure by controlling pollution entering our local waterways and the Chesapeake Bay.

About Storm Water Runoff

Storm water runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent storm water runoff from naturally soaking into the ground. Storm water can pick up debris, chemicals, dirt, and other pollutants then flow **untreated** directly into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. These liquids and contaminants can impact the water quality of local streams, creeks, rivers, the Chesapeake Bay and beyond!

Storm water pollution and runoff can:

- Destroy wildlife and kill fish and shellfish
- Cause human illness
- Limit recreational activities, swimming conditions, and even close beaches
- Erode and destroy stream channels



What is Illicit Discharge

Any fluid or material substance that is disposed, emptied or dumped into the storm water system that is not rain water. Prince William County

holds a permit to help monitor and control any **non-storm water** from entering the local municipal separate storm sewer system. This permit helps preserve local water quality.



What is not an Illicit Discharge

- Discharges from drinking water sources, springs, and groundwater
- Air conditioning condensation and foundation drains
- Watering lawns and landscaping
- Individual car washing at a residence
- Discharges from firefighting activities
- Swimming pool water that has had chlorine and other chemicals removed

Local efforts to control Illicit Discharge

Through a permit from the Virginia Department of Environmental Quality and the Environmental Protection Agency, the County has the legal responsibility to control discharges and impose fines on anyone who knowingly allows or causes pollutants to enter the storm sewer system. The program requires us to:

- Inventory and monitor storm water outfalls
- Eliminate illicit discharges and improper disposal
- Educate the public and raise awareness
- Inspect industrial and commercial storm water permits to ensure compliance



For your safety!

Please stay clear of any suspected illicit discharge or polluted flow of material. Do not come in contact with it or try to clean it up. Please call 703-792-7070 to report the problem. Trained personnel will respond, inspect, identify and then take steps to clean it up.

If you feel the situation is critical or poses a threat to the safety of people in the area, please call **9-1-1**.

What can you do to help?

Report Illicit Discharges

Report any suspicious dumping directly into storm drain inlets.

Signs of dumping are most readily observed during dry weather situations (more than 48 hours since a rain event):

- Oil sheen/grease entering or exiting storm drains
- Detergents (odd colors)
- Sediment (red/orange), cloudiness
- Chemicals and paint



What to report:

- Time and date, name, and phone number
- Description of spill (color, odor, amount, etc.), location, does it discharge into waterway
- Any information describing the source of the spill

How to report

- Call 703-792-7070
- Send an email: illicitdischarge@pwcgov.org

Use Best Management Practices

- Car washes

Wash your car at a commercial car wash since they must treat the wastewater

OR

Use phosphate free soaps/detergents and wash on a grassy area so that wash water is filtered through the soil

ARTICLE II. STORMWATER POLLUTION

ARTICLE II. STORMWATER POLLUTION

Sec. 23.2-4.1. Unlawful discharge to the stormwater system and waters of the county

- (a) It shall be a violation of this article for any person to discharge:
- (1) Any wastes, trash, garbage, or any matter causing or aiding pollution on any property in the County in any manner so as to allow such to be washed into any stormwater system by storm or floodwater.
 - (2) Any grass clippings, mulch, or yard waste, animal carcasses and other wastes into the stormwater system, or do any injury to the stormwater system or in any manner pollute the stormwater system.
 - (3) Any discharge of gasoline, oil waste, antifreeze, or other automotive, motor or equipment fluids into the stormwater system.
 - (4) Any commercial, industrial, or manufacturing entity to discharge process water, wash water, or unpermitted discharge into any stormwater system.
 - (5) Any person to throw, place, or deposit, or cause to be thrown, placed or deposited, in any gutter, ditch, storm drain or other drainage area in the county, anything that impedes or interferes with the free flow of stormwater therein.
 - (6) Chlorinated swimming pool water without dissipating chlorine.
- (b) Subject to the provisions of subsection (c) below, the following activities shall not be unlawful discharges:
- (1) Discharges pursuant to a VPDES or NPDES permit;
 - (2) Discharges resulting from fire fighting activities;
 - (3) Water line flushing;
 - (4) Landscape irrigation;
 - (5) Diverted stream flows or rising groundwater;
 - (6) Infiltration of uncontaminated groundwater;
 - (7) Pumping of uncontaminated groundwater;
 - (8) Discharges from potable water sources, foundation drains, irrigation water, springs, water from crawl spaces or footing drains;
 - (9) Air conditioning condensation;
 - (10) Lawn watering;
 - (11) Residential car washing;
 - (12) Dechlorinated swimming pool discharges; and
 - (13) Public street washing.
- (Ord. 03-87, 9-16-03)

Chapter 23.2 - STORMWATER MANAGEMENT

ARTICLE II. STORMWATER POLLUTION

Sec. 23.2-4.2. Inspecting and monitoring stormwater discharge.

The director shall have the authority to inspect and monitor discharges and sources of potential discharge to the storm sewer system to ensure compliance with this article, including the authority to enter upon private property to inspect or monitor such discharges or sources of potential discharge. The director shall also have the authority to initiate enforcement actions in accordance with section 23.2-4.3.

(Ord. 03-87, 9-16-03)

Sec. 23.2-4.3. Notice to correct violations.

If any activity listed in subsection 23.2-4.1(b) of this chapter is found by the director to be a source of pollutants to waters of the United States, the director shall serve a written notice on the party responsible for the activity which orders that the activity be ceased or conducted in a manner that will avoid the discharge of pollutants to the stormwater system. The notice shall state the date by which the activity shall cease or be conducted without pollution. Failure to comply with any such order within the time stated in the notice shall constitute a violation.

For any violations of this chapter, the owner must comply with the director's orders within the time specified in the notice. Failure to comply with such order shall constitute a violation of this chapter. In addition to any penalty imposed for each violation, a judge hearing the case may direct the person responsible to remediate or correct, and each day's default in such remediation or correction shall constitute a violation of and a separate offense under this section.

(Ord. 03-87, 9-16-03)

Sec. 23.2-4.4. Penalties for violations of article.

- (a) Any person who knowingly violates any provision of this article shall be guilty of a Class 1 misdemeanor. Each day that such violation is committed, and each day that such violation is permitted to remain uncorrected shall constitute a separate offense.
- (b) Any person who otherwise violates any provision of this article shall be subject to civil penalty between \$250.00 and \$1,000.00 for each day that the violation continues. The court assessing such civil penalty may order the penalty to be paid into the treasury of the county and designated for the purpose of minimizing, preventing, managing or mitigating pollution of the waters of the county.
- (c) Any person who violates any provision of this article shall be responsible for testing, containing, cleaning up, abating, removing and disposing of any substance unlawfully discharged into the storm sewer system or into waters of the county, or, if the director determines that correction of the violation can best be accomplished by the county, shall be liable to the county for all costs of testing, containment, cleanup, abatement, removal and disposal of any substance unlawfully discharged into the storm sewer system or into waters of the county.

(Ord. 03-87, 9-16-03)

The Local Environmental Education Partners (LEEP) is a network of local, state, and federal government agencies, non-profit organizations and individuals interested in providing events, learning opportunities and information to the community. It has been active since the early 1990s in one form or fashion.

Currently, LEEP members share support, ideas, materials and assistance with other members primarily through email blasts coordinated by the Public Works Communications Specialist II. Members further help each other by sharing information with their staff, collaborators and through their website, social media and in-person meetings.

Members meet in person twice a year in the summer and early December. This provides face time and opportunities to get to know each other. We also share current projects and upcoming event details, so we can help each other with ideas, materials, expertise or by volunteering.

LEEP members collaborate on a variety of initiatives including cleanups, symposiums and educational events and projects. Recent examples include the Plastic Free Cleanup at Veterans Park, Native Plant Symposium and the Buzz and Flutter pollinator garden at the Landfill.

Local Environmental Education Partners

Members:

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Allen, Michael	Michael.Allen@pwcgov.org
Audrey	aarnold@pwcsa.org
Autumn at NatureBridge	asaxtonross@naturebridge.org
Aveni, Marc	MAveni@pwcgov.org
Becky Super	hrsuper@gmail.com
Berlin, Nancy L.	NBerlin@pwcgov.org
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PRINCE WILLIAM COUNTY VIRGINIA

News

Home / PWC News

It's Time to Start Thinking About Planting Native

Wednesday, 5 February 2020

| [County News & Features](#) |

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|

[Tweet](#)

|

0 Comments

While it may still technically be winter, the weather has people thinking spring! With spring comes all sorts of ideas and plans for planting and gardening. The Prince William County Department of Public Works is sharing lots of ideas for using native plants at the Second-Annual Native Plants for Beginners Symposium on Saturday, Feb. 8, at the Northern Virginia Community College Workforce Center, located at 2675 College Drive in Woodbridge.



The symposium, which is scheduled to run between 9 a.m. and 2:30 p.m., will teach people about the native plant varieties that thrive in various settings, such shade, full sun or wet soil. Experts at the symposium will also outline the bloom schedule for some of the plants.

The cost for the symposium is \$20 per person and includes coffee and doughnuts, lunch and materials. Registration is required at <https://pwcnatives.eventbrite.com>.

The department is collaborating with the Virginia Cooperative Extension, the Prince William Conservation Alliance, Virginia Native Plant Society, Prince William Soil & Water Conservation District, Plant NoVa Natives, and the Northern Virginia Community College Sustainability Office to host the event.

Native plants like the soil and the climate in Virginia, so they tend to grow easily and stay healthy. They require less attention and save money over non-native plants. Since they are native to the area, they also provide natural habitat and food for native butterflies, birds and pollinators.

The following are several organizations in the area that can help people successfully plan, select, plant and care for native species:

- The Prince William Wildflower Society: www.vnps.org
- Plant NoVA Natives: www.plantnovanatives.org
- Audubon at Home: <http://audubonva.org/audubon-at-home-1>
- National Wildlife Federation: <http://www.nwf.org/Garden-For-Wildlife.aspx>
- Virginia Department of Game and Inland Fisheries:
<https://www.dgif.virginia.gov/wildlife/habitat/habitat-at-home/>

In addition, the Master Gardeners with the Prince William branch of the Virginia Cooperative Extension can also help people choose the right plant for the right place. All people have to do is contact the extension's horticulture help desk at 703-792-7747 or email master_gardener@pwcgov.org, and one of the Master Gardeners will assist in finding the right place for native trees, shrubs or plants. The extension also has a page dedicated to planting natives on their website at pwcgov.org/vce.

Appendix K - Training



Prince William County Government
Board of County Supervisors



Illicit Discharge Detection

*David Ungar – Environmental Engineer,
Watershed Management*

Definitions



- **Municipal Separate Storm Sewer System (MS4):**
Conveyance or system of conveyances that discharge into local water bodies.
 - ◆ These discharges are NOT treated!

- **Illicit Discharge:** Any discharge to the MS4 that is not composed entirely of storm water.
 - ◆ There are exceptions to this.



The difference between spills and illicit discharges



- Spills are typically accidental discharges, whereas illicit discharges are done on purpose or through negligence.
- Spill examples:
 - ◆ Hydraulic hose burst
 - ◆ Automotive fluids from car crash
- Report spills:
 - ◆ Fire Marshal's Office at 703-792-6360
 - ◆ Risk Management at 703-792-6741

Examples of Discharges



■ Allowed

- ◆ Residential car washing
- ◆ Lawn watering
- ◆ Air conditioning condensation
- ◆ Fire fighting activities
- ◆ Water line flushing
- ◆ Uncontaminated ground water

■ Prohibited

- ◆ Commercial car washing
- ◆ Chlorinated swimming pool water
- ◆ Motor vehicle fluids
- ◆ Cooking oil
- ◆ Paint
- ◆ Litter
- ◆ Salt stockpiles
- ◆ Yard waste
- ◆ Wash water



Negative impacts



- Can produce health risks to people coming into contact with the water and shutdown public recreational facilities.
- Increase cost to treat water before being used for drinking and irrigation.
- Organic matter provides nutrients that cause algal blooms. Algal blooms deplete oxygen and can kill aquatic organisms.
- Can contaminate fish, crabs, clams, and other potential food sources.



Enforcement: County Ordinance



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Sec. 23.2-4.1. Unlawful discharge to the stormwater system and waters of the county

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 - (2) Any grass clippings, mulch, or yard waste, animal carcasses and other wastes into the stormwater system, or do any injury to the stormwater system or in any manner pollute the stormwater system.
 - (3) Any discharge of gasoline, oil waste, antifreeze, or other automotive, motor or equipment fluids into the stormwater system.
 - (4) Any commercial, industrial, or manufacturing entity to discharge process water, wash water, or unpermitted discharge into any stormwater system.
 - (5) Any person to throw, place, or deposit, or cause to be thrown, placed or deposited, in any gutter, ditch, storm drain or other drainage area in the county, anything that impedes or interferes with the free flow of stormwater therein.
 - (6) Chlorinated swimming pool water without dissipating chlorine.
- (b) Subject to the provisions of subsection (c) below, the following activities shall not be unlawful discharges:
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 - (3) Water line flushing;
 - (4) Landscape irrigation;
 - (5) Diverted stream flows or rising groundwater;
 - (6) Infiltration of uncontaminated groundwater;
 - (7) Pumping of uncontaminated groundwater;
 - (8) Discharges from potable water sources, foundation drains, irrigation water, springs, water from crawl spaces or footing drains;
 - (9) Air conditioning condensation;
 - (10) Lawn watering;
 - (11) Residential car washing;
 - (12) Dechlorinated swimming pool discharges; and
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- (Ord. 03-87, 9-16-03)

Enforcement: County Ordinance



Sec. 23.2-4.4. Penalties for violations of article.

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- (b) Any person who otherwise violates any provision of this article shall be subject to civil penalty between \$250.00 and \$1,000.00 for each day that the violation continues. The court assessing such civil penalty may order the penalty to be paid into the treasury of the county and designated for the purpose of minimizing, preventing, managing or mitigating pollution of the waters of the county.
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(Ord. 03-87, 9-16-03)















HEARNS CREEK

SWMP: 5509

Outfall: 35409

Outfall: 24409

C

D

B

A

Cooking oil dumping inlet

MENDOZA LN

ROTTERDAM LOOP

STOCKHOLM WAY

LANSING COURT LOOP

CLASCO LN

Reporting



- If the discharge poses a direct threat to public health, call 911.
- Phone: 703-792-7104
- Email: illicitdischarge@pwcgov.org
- Learn more at www.pwcgov.org/cleanwaters



Appendix L – Water Quality Programs

Wet Weather Monitoring Report

Third Quarter 2019 (July 1 – September 30)

Event Date: October 16, 2019

Prepared for:



Prince William County Department of Public Works

5 County Complex Court, Suite 170

Prince William, Virginia 22192

Prepared by:

Wood Environment & Infrastructure Solutions, Inc.

4795 Meadow Wood Lane, Suite 310E

Chantilly, VA 20151

(703) 488-3700

November 15, 2019

Project No. 151270004

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) 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 event conducted on October 16-17, 2019, as well as the findings from the water quality analysis results of those sampling events. The sampling event was performed after the end of the quarter on September 30 due to a lack of suitable rain events during the quarter.

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 past years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site.

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 BMP for the Potomac Club residential development. Upstream drainage totaled 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, 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. On October 16, 2019, Wood staff deployed the samplers at both field sites and programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The samplers were programmed to collect 24 discrete 800 mL samples to be collected every 30 minutes over a twelve-hour duration. Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data were easily accessible online and provided hourly precipitation totals over the monitoring period. Gages were 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 Environmental 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:

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

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. Discrete samples collected over the duration of the storm event were then mixed based on their representative weight within the cumulative flow curve for each storm event. This flow weighted composite sample was provided to the laboratory for analysis. The resulting analysis is considered the event mean concentration (EMC) of the individual analyte.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 06:00 – 17:30 on October 16, 2019. Recently purchased marine batteries were used for this sampling event. A local weather station in Manassas (KVAMANAS91) recorded 3.1 inches of rain during the sample event. Temperatures ranged from 54-62 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.05 inches of rain on October 9. Samples were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on October 18, 2019.

SITE #4684; DALE CITY, VA

Sampling occurred from 10:45 to 19:45 on October 16, 2019. Upon initiation, the ISCO sampler did not collect a full sample, likely due to initially low flow conditions. Recently purchased marine batteries were used for this sampling event. A local weather station on the Occoquan River (KVAWOODB65) recorded 2.8 inches of rain during the sample event. Temperatures ranged from 43-59degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.28 inches of rain on October 1. Samples were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on October 18, 2019.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow ranged from 0.30-0.32 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.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects at the pond have rendered the current monitoring setup ineffective. This explains the inflated values listed for cumulative volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on October 16, 2019.

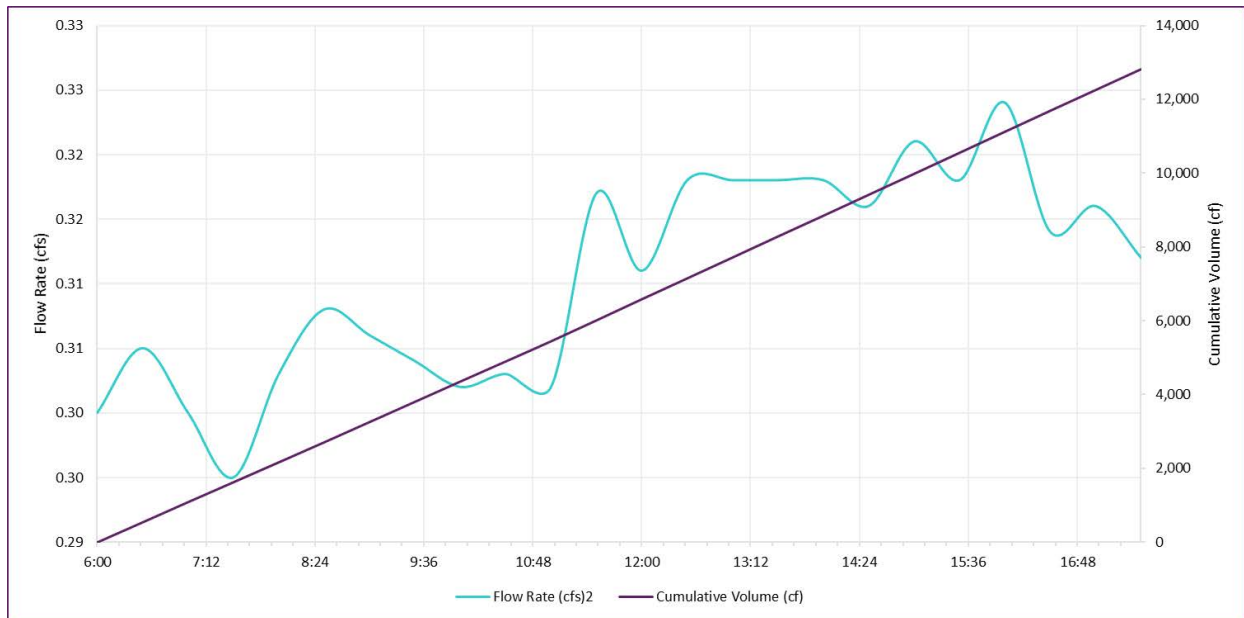


Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (L)*
1	6:00	268.6	4.0	0.20
2	6:30	273.2	4.1	0.20
3	7:00	272.7	4.1	0.20
4	7:30	267.7	4.0	0.20
5	8:00	271.8	4.1	0.20
6	8:30	272.2	4.1	0.20
7	9:00	274.5	4.1	0.21
8	9:30	273.6	4.1	0.20
9	10:00	274.0	4.1	0.21
10	10:30	272.2	4.1	0.20
11	11:00	273.2	4.1	0.20
12	11:30	286.6	4.3	0.21
13	12:00	284.8	4.3	0.21
14	12:30	284.4	4.3	0.21
15	13:00	283.0	4.2	0.21
16	13:30	284.4	4.3	0.21
17	14:00	280.8	4.2	0.21
18	14:30	283.5	4.2	0.21
19	15:00	285.3	4.3	0.21
20	15:30	283.5	4.2	0.21
21	16:00	287.1	4.3	0.21
22	16:30	281.7	4.2	0.21
23	17:00	281.7	4.2	0.21
24	17:30	279.9	4.2	0.21

*5.0 L Sample

SITE #4684; DALE CITY, VA

Flow ranged from 0.04 – 0.25 cfs. 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 1: Flow data over time for the storm event at Site #4684 on October 16, 2019.

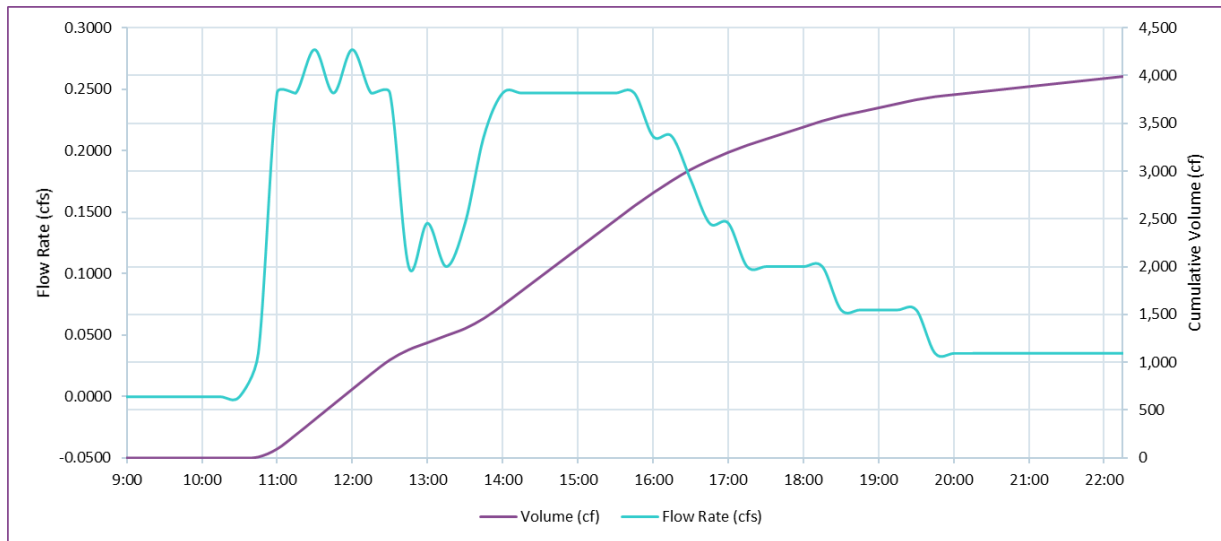


Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (L)*
1	10:45	10.6	0.56	0.03
2	11:15	148.3	7.82	0.39
3	11:45	158.9	8.38	0.42
4	12:15	158.9	8.38	0.42
5	12:45	105.9	5.59	0.28
6	13:15	74.2	3.91	0.20
7	13:45	105.9	5.59	0.28
8	14:15	148.3	7.82	0.39
9	14:45	148.3	7.82	0.39
10	15:15	148.3	7.82	0.39
11	15:45	148.3	7.82	0.39
12	16:15	127.1	6.70	0.34
13	16:45	95.3	5.03	0.25
14	17:15	74.2	3.91	0.20
15	17:45	63.6	3.35	0.17
16	18:15	63.6	3.35	0.17
17	18:45	42.4	2.23	0.11
18	19:15	42.4	2.23	0.11
19	19:45	31.8	1.68	0.08

*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	Detection Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	17.5	µg/L	5	13	a
	Lead	7.0	µg/L	5	120	a
	Nickel	ND	µg/L	5	180	a
	Zinc	41.4	µg/L	10	120	a
	Total Suspended Solids	27.3	mg/L	10	100	b
	Nitrogen, Ammonia	ND	mg/L	0.1		-
	Nitrogen, Kjeldahl, Total	0.7	mg/L	0.5		-
	Nitrogen, NO ² plus NO ³	1.0	mg/L	0.02		-
	Total Nitrogen	1.7	mg/L	-	2.2	c
	Phosphorus, Total	0.13	mg/L	0.05	2	b
	Chemical Oxygen Demand	32.2	mg/L	25	120	b
	pH	7.5	Std. Units	0.1	6.0-9.0	d
	Date City (#4684)	Copper	8.0	µg/L	5	13
Lead		ND	µg/L	5	120	a
Nickel		ND	µg/L	5	180	a
Zinc		39.2	µg/L	10	120	a
Total Suspended Solids		27.4	mg/L	10	100	b
Nitrogen, Ammonia		0.1	mg/L	0.1		-
Nitrogen, Kjeldahl, Total		0.5	mg/L	0.5		-
Nitrogen, NO ² plus NO ³		0.6	mg/L	0.02		-
Total Nitrogen		1.3	mg/L	-	2.2	c
Phosphorus, Total		0.14	mg/L	0.05	2	b
Chemical Oxygen Demand		25.2	mg/L	25	120	b
pH		6.8	Std. Units	0.1	6.0-9.0	d

^aState Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100mg/L.

^bBased on benchmark criteria for the VPDES Industrial Stormwater General Permit.

^cThe sum of Nitrogen as Ammonia, NO², NO³, and Total Kjeldahl Nitrogen.

^dBased 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.

4.0 SUMMARY

As indicated in **Table 4**, exceedances occurred for Copper at Site #941, measuring and 17.5 µg/L. Copper exceedances remains persistent at the Manassas site. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 2: Exceedance tracking for the Wet Weather Monitoring Program.

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

		2016		2017		2018								
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3
Dale City (#4684)	Copper	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		--					

* No sample collected at #4684 during Q2 2018.

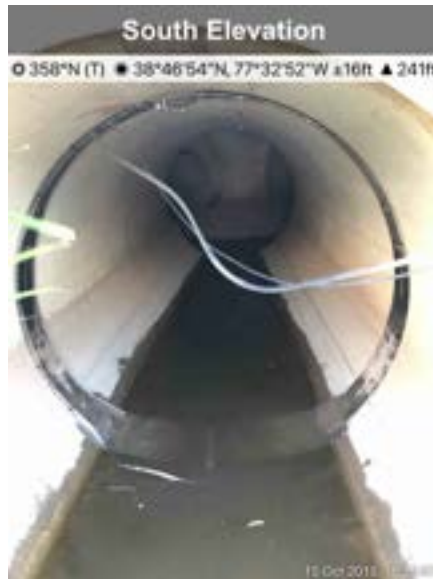
APPENDIX A
SITE CONDITIONS

Manassas (#941)

Site #941 is located within the Bull Run watershed. It receives drainage from an industrial use area and parking lots with frequent truck traffic. Water levels are persistently found to be above 6 – 10 inches in the monitoring outfall. There was a similar level of standing water prior to the storm event.



Following the storm, the spillway draining to the pond had a number of fish and turtles swimming around. A slight oily sheen was apparent when retrieving the sampling ring.



Dale City (#4684)

Site #4684 receives flow from Neabsco Mills Road and the Stonebridge at Potomac Town Center development. It is a 54" concrete pipe that drains to a deep scour pool before draining to a large BMP that collects drainage for the Potomac Club development. Erosion around the headwall and apron of the outfall at this site continues to pose a risk during sampler deployment and retrieval.



APPENDIX B
WATER QUALITY LABORATORY RESULTS

October 28, 2019

Jen Furey
WOOD E&I
14424 Albemarle Point Place
Suite 115
Chantilly, VA 20151

RE: Project: PWC Wet Weather Q4 2019
Pace Project No.: 92450366

Dear Jen Furey:

Enclosed are the analytical results for sample(s) received by the laboratory on October 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Benjamin Green, WOOD E&I



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92450366001	Manassas - Comp	Water	10/17/19 14:00	10/19/19 10:48
92450366002	Dale City - Comp	Water	10/17/19 12:30	10/19/19 10:48

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SAMPLE ANALYTE COUNT

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
92450366001	Manassas - Comp	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A		
		SM 2540D-2011	MDW	1	PASI-A		
		EPA 9040C	ECH	1	PASI-A		
		EPA 350.1 Rev 2.0 1993	DMN	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	GC	1	PASI-A		
		SM 5220D-2011	GC	1	PASI-A		
		92450366002	Dale City - Comp	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A
				SM 2540D-2011	MDW	1	PASI-A
EPA 9040C	ECH			1	PASI-A		
EPA 350.1 Rev 2.0 1993	DMN			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	GC			1	PASI-A		
SM 5220D-2011	GC			1	PASI-A		

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ANALYTICAL RESULTS

Project: PWC Wet Weather Q4 2019
 Pace Project No.: 92450366

Sample: Manassas - Comp		Lab ID: 92450366001	Collected: 10/17/19 14:00	Received: 10/19/19 10:48	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						
Copper	17.5	ug/L	5.0	1	10/23/19 23:38	10/25/19 23:39	7440-50-8	
Lead	7.0	ug/L	5.0	1	10/23/19 23:38	10/25/19 23:39	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/23/19 23:38	10/25/19 23:39	7440-02-0	
Zinc	41.4	ug/L	10.0	1	10/23/19 23:38	10/25/19 23:39	7440-66-6	
2540D TSS, Low-Level		Analytical Method: SM 2540D-2011						
Total Suspended Solids	27.3	mg/L	2.2	1		10/21/19 22:12		
9040 pH		Analytical Method: EPA 9040C						
pH at 25 Degrees C	7.5	Std. Units	0.10	1		10/21/19 09:26		H3
350.1 Ammonia		Analytical Method: EPA 350.1 Rev 2.0 1993						
Nitrogen, Ammonia	ND	mg/L	0.10	1		10/22/19 15:29	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						
Nitrogen, Kjeldahl, Total	0.74	mg/L	0.50	1	10/24/19 07:14	10/25/19 04:54	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.		Analytical Method: EPA 353.2 Rev 2.0 1993						
Nitrogen, NO2 plus NO3	0.99	mg/L	0.040	1		10/23/19 08:49		
365.1 Phosphorus, Total		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993						
Phosphorus	0.13	mg/L	0.050	1	10/21/19 22:10	10/22/19 22:47	7723-14-0	
5220D COD		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011						
Chemical Oxygen Demand	32.2	mg/L	25.0	1	10/24/19 16:13	10/24/19 22:14		

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ANALYTICAL RESULTS

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

Sample: Dale City - Comp		Lab ID: 92450366002	Collected: 10/17/19 12:30	Received: 10/19/19 10:48	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						
Copper	8.0	ug/L	5.0	1	10/23/19 23:38	10/25/19 23:54	7440-50-8	
Lead	ND	ug/L	5.0	1	10/23/19 23:38	10/25/19 23:54	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/23/19 23:38	10/25/19 23:54	7440-02-0	
Zinc	39.2	ug/L	10.0	1	10/23/19 23:38	10/25/19 23:54	7440-66-6	
2540D TSS, Low-Level		Analytical Method: SM 2540D-2011						
Total Suspended Solids	27.4	mg/L	2.9	1		10/21/19 22:12		
9040 pH		Analytical Method: EPA 9040C						
pH at 25 Degrees C	6.8	Std. Units	0.10	1		10/21/19 09:20		H3
350.1 Ammonia		Analytical Method: EPA 350.1 Rev 2.0 1993						
Nitrogen, Ammonia	0.14	mg/L	0.10	1		10/22/19 15:34	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						
Nitrogen, Kjeldahl, Total	0.51	mg/L	0.50	1	10/24/19 07:14	10/25/19 05:00	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.		Analytical Method: EPA 353.2 Rev 2.0 1993						
Nitrogen, NO2 plus NO3	0.63	mg/L	0.040	1		10/23/19 08:50		
365.1 Phosphorus, Total		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993						
Phosphorus	0.14	mg/L	0.050	1	10/21/19 22:10	10/22/19 22:49	7723-14-0	
5220D COD		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011						
Chemical Oxygen Demand	25.2	mg/L	25.0	1	10/24/19 16:13	10/24/19 22:14		

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

QC Batch: 505411 Analysis Method: EPA 200.7 Rev 4.4 1994
QC Batch Method: EPA 200.7 Rev 4.4 1994 Analysis Description: 200.7 MET
Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2715412 Matrix: Water

Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	10/25/19 23:32	
Lead	ug/L	ND	5.0	10/25/19 23:32	
Nickel	ug/L	ND	5.0	10/25/19 23:32	
Zinc	ug/L	ND	10.0	10/25/19 23:32	

LABORATORY CONTROL SAMPLE: 2715413

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	494	99	85-115	
Lead	ug/L	500	480	96	85-115	
Nickel	ug/L	500	482	96	85-115	
Zinc	ug/L	500	467	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2715414 2715415

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92450366001 Result	Spike Conc.	Spike Conc.	Conc.								
Copper	ug/L	17.5	500	500	530	534	102	103	70-130	1	20		
Lead	ug/L	7.0	500	500	481	491	95	97	70-130	2	20		
Nickel	ug/L	ND	500	500	482	489	96	97	70-130	1	20		
Zinc	ug/L	41.4	500	500	511	517	94	95	70-130	1	20		

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019
Pace Project No.: 92450366

QC Batch: 504865 Analysis Method: SM 2540D-2011
QC Batch Method: SM 2540D-2011 Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2712951 Matrix: Water
Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	10/21/19 22:12	

LABORATORY CONTROL SAMPLE: 2712952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	251	244	97	90-110	

SAMPLE DUPLICATE: 2712953

Parameter	Units	92450359001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1910	1970	3	5	

SAMPLE DUPLICATE: 2712954

Parameter	Units	92450366002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	27.4	27.7	1	5	

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

QC Batch: 504653 Analysis Method: EPA 9040C

QC Batch Method: EPA 9040C Analysis Description: 9040 pH

Associated Lab Samples: 92450366001, 92450366002

SAMPLE DUPLICATE: 2711979

Parameter	Units	92450171003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	6.5	7	9	D6,H3

SAMPLE DUPLICATE: 2711980

Parameter	Units	92449833003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.5	5.6	3	9	D6,H3

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

QC Batch: 504906 Analysis Method: EPA 350.1 Rev 2.0 1993
 QC Batch Method: EPA 350.1 Rev 2.0 1993 Analysis Description: 350.1 Ammonia
 Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2713083 Matrix: Water

Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	10/22/19 15:08	

LABORATORY CONTROL SAMPLE: 2713084

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: 2713085 2713086

Parameter	Units	92449912001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Ammonia	mg/L	0.18	5	5	5.2	5.2	100	101	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2713087 2713088

Parameter	Units	92449917005 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Ammonia	mg/L	ND	5	5	5.2	5.2	104	104	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

QC Batch: 505188

Analysis Method: EPA 351.2 Rev 2.0 1993

QC Batch Method: EPA 351.2 Rev 2.0 1993

Analysis Description: 351.2 TKN

Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2714205

Matrix: Water

Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	10/25/19 04:52	

LABORATORY CONTROL SAMPLE: 2714206

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: 2714207 2714208

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92450366001 Result	Spike Conc.	Spike Conc.	Conc.								
Nitrogen, Kjeldahl, Total	mg/L	0.74	10	10	10.6	10.6	10.1	98	94	90-110	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019
Pace Project No.: 92450366

QC Batch: 504958 Analysis Method: EPA 353.2 Rev 2.0 1993
QC Batch Method: EPA 353.2 Rev 2.0 1993 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2713292 Matrix: Water
Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	10/23/19 08:29	

LABORATORY CONTROL SAMPLE: 2713311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2713312 2713313

Parameter	Units	2713312		2713313		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92449927001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Nitrogen, NO2 plus NO3	mg/L	0.10	2.5	2.5	2.5	2.5	97	97	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2713314 2713315

Parameter	Units	2713314		2713315		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92449927002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Nitrogen, NO2 plus NO3	mg/L	0.33	2.5	2.5	2.5	2.5	88	88	90-110	0	10 M1	

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

QC Batch: 504839 Analysis Method: EPA 365.1 Rev 2.0 1993
 QC Batch Method: EPA 365.1 Rev 2.0 1993 Analysis Description: 365.1 Phosphorus, Total
 Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2712891 Matrix: Water

Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	10/22/19 22:29	

LABORATORY CONTROL SAMPLE: 2712892

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: 2712893 2712894

Parameter	Units	92449781002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	ND	2.5	2.5	2.6	2.7	103	105	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2712895 2712896

Parameter	Units	92449919003 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	1.9	2.5	2.5	4.5	4.5	104	104	90-110	0	10	

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QUALITY CONTROL DATA

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

QC Batch: 505620 Analysis Method: SM 5220D-2011
QC Batch Method: SM 5220D-2011 Analysis Description: 5220D COD
Associated Lab Samples: 92450366001, 92450366002

METHOD BLANK: 2716315 Matrix: Water

Associated Lab Samples: 92450366001, 92450366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	10/24/19 22:11	

LABORATORY CONTROL SAMPLE: 2716316

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	776	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2716317 2716318

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92449913001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chemical Oxygen Demand	mg/L	25.2	100	100	133	133	107	107	90-110	0	3		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2716319 2716320

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92450321001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chemical Oxygen Demand	mg/L	802	100	100	870	867	68	65	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

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QUALIFIERS

Project: PWC Wet Weather Q4 2019

Pace Project No.: 92450366

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PWC Wet Weather Q4 2019
 Pace Project No.: 92450366

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92450366001	Manassas - Comp	EPA 200.7 Rev 4.4 1994	505411	EPA 200.7 Rev 4.4 1994	505464
92450366002	Dale City - Comp	EPA 200.7 Rev 4.4 1994	505411	EPA 200.7 Rev 4.4 1994	505464
92450366001	Manassas - Comp	SM 2540D-2011	504865		
92450366002	Dale City - Comp	SM 2540D-2011	504865		
92450366001	Manassas - Comp	EPA 9040C	504653		
92450366002	Dale City - Comp	EPA 9040C	504653		
92450366001	Manassas - Comp	EPA 350.1 Rev 2.0 1993	504906		
92450366002	Dale City - Comp	EPA 350.1 Rev 2.0 1993	504906		
92450366001	Manassas - Comp	EPA 351.2 Rev 2.0 1993	505188	EPA 351.2 Rev 2.0 1993	505700
92450366002	Dale City - Comp	EPA 351.2 Rev 2.0 1993	505188	EPA 351.2 Rev 2.0 1993	505700
92450366001	Manassas - Comp	EPA 353.2 Rev 2.0 1993	504958		
92450366002	Dale City - Comp	EPA 353.2 Rev 2.0 1993	504958		
92450366001	Manassas - Comp	EPA 365.1 Rev 2.0 1993	504839	EPA 365.1 Rev 2.0 1993	505131
92450366002	Dale City - Comp	EPA 365.1 Rev 2.0 1993	504839	EPA 365.1 Rev 2.0 1993	505131
92450366001	Manassas - Comp	SM 5220D-2011	505620	SM 5220D-2011	505674
92450366002	Dale City - Comp	SM 5220D-2011	505620	SM 5220D-2011	505674

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt
 Client Name: Wood E+I Chantilly Project **WO# : 92450366**
 Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____
 Custody Seal Present? Yes No Seals Intact? Yes No
 Date/Initials Person Examining Contents: 10/17/17 OA



Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: IR Gun ID: 93-7061 Type of Ice: Wet Blue None
 Cooler Temp (°C): 2.9 Correction Factor: Add/Subtract (°C) 0 Temp should be above freezing to 6°C
 Cooler Temp Corrected (°C): 2.9 Samples out of temp criteria. Samples on ice, cooling process has begun

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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: IE
 Project Manager SRF Review: IE

Date: 10/22
 Date: 10/22



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TDC, Oil and Grease, DRO/8015 (water) DOC, LLHg

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

Proje **WO# : 92450366**
 PH: PTE Due Date: 10/28/19
 CLIENT: 92-Amec VA

Item#	Material	1	2	3	4	5	6	7	8	9	10	11	12
	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 2N Acetate & NaOH (>9)												
	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)												
	WG7U-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)												
	AG3A(DG3A)-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 Uracil (N/A)												
	DG9P-40 mL VOA H3PO4 (N/A)												
	VOAK (6 vials per kit)-5035 kit (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)												
	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)												
	AG0U-100 mL Amber Unpreserved vials (N/A)												
	VSGU-20 mL Scintillation vials (N/A)												
	DG9U-40 mL Amber Unpreserved vials (N/A)												

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.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B		Section C	
Requested Client Information:		Requested Project Information:		Invoice Information:	
Company	Wood Est. - Charilly	Report To	Birmingham	Attention	
Address	1422 Albenvale Park Place	City To	Birmingham	Company Name	
Charilly, VA 20151				Address	
Email	benjamin@peranalytical.com	Reference Order #		Phone Order	
Phone	(703)446-3795 Fax	Project Name	FWQ Wet Weather Q3 2019	Facility Project Manager	tyler.ecc@peranalytical.com
Requested Due Date		Project #		Facility #	8125-1
				Regulatory Agency	
				State / Location	
				VA	

ITEM #	SAMPLE ID ONE CHARACTER per box. (A-Z, 0-9, -) Sample IDs must be unique	MATRIX Drinking Water Waste Water Wastewater Industrial Air Soil Sludge	CODE DW WW WWT P SL AQ AS OT TL	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test					Residual Chlorine (Y/N)						
						DATE	TIME			DATE	TIME	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	pH	Metals		TSS	Ammonia/Phosphorus/COD	TKN + Nitrate+Nitrite			
1	Manassas - Comp					10/19/19	2:00pm	52.2	5																			
2	Dale City - Comp					10/19/19	12:30pm	52.2	1																			
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

SAMPLER NAME AND SIGNATURE		ACCEPTED BY / AFFILIATION		DATE		TIME		DATE		TIME		SAMPLE CONDITIONS	
PRINT Name of SAMPLER: Ben Green		A. Becker / PACE / PVC		10/19/19		1030		2.9		Y		N	
SIGNATURE OF SAMPLER: <i>Ben Green</i>												Y	
												Y	

Wet Weather Monitoring Report

Fourth Quarter 2019 (October 1 – December 31)

Event Date: December 9-10, 2019

Prepared for:



Prince William County Department of Public Works

5 County Complex Court, Suite 170

Prince William, Virginia 22192

Prepared by:

Wood Environment & Infrastructure Solutions, Inc.

4795 Meadow Wood Lane, Suite 310E

Chantilly, VA 20151

(703) 488-3700

February 19, 2020

Project No. 151270004

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) 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 Q4 sampling event conducted on December 10, 2019, as well as the findings from the water quality analysis results of those 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 past year. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site.

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 BMP for the Potomac Club residential development. Upstream drainage totaled 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, 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. On December 9, 2019, Wood staff deployed the samplers at both field sites and programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The samplers were programmed to collect 24 discrete 800 mL samples to be collected every 45 minutes over a seventeen -hour duration. This short sampling window accommodated the flashy nature of storms during Q4. Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data were easily accessible online and provided hourly precipitation totals over the monitoring period. Gages were 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 Environmental 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:

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}S^{\frac{1}{2}} \text{ [US]}$$

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. Discrete samples collected over the duration of the storm event were then mixed based on their representative weight within the cumulative flow curve for each storm event. This flow weighted composite sample was provided to the laboratory for analysis. The resulting analysis is considered the event mean concentration (EMC) of the individual analyte.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 07:00 December 9 – 00:15 December 10, 2019. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) did not record any precipitation for the 24-hour period from 12/7-12/8, and 0.52 inch of precipitation for the 24-hour period from 12/9-12/10. Temperatures ranged from 37-52 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.05 inches of rain on December 4.

SITE #4684; DALE CITY, VA

Sampling occurred from 10:20 December 9 - 01:20 December 10, 2019. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) did not record any precipitation for the 24-hour period from 12/7-12/8, and 0.54 inches of precipitation for the 24-hour period from 12/9-12/10. Temperatures ranged from 39-59 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.34 inches of rain on December 2.

Samples for both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on December 12, 2019.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow ranged from 21.54 – 24.23 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.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects at the pond have rendered the current monitoring setup ineffective. This explains the inflated values listed for cumulative volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on December 9-10, 2019.

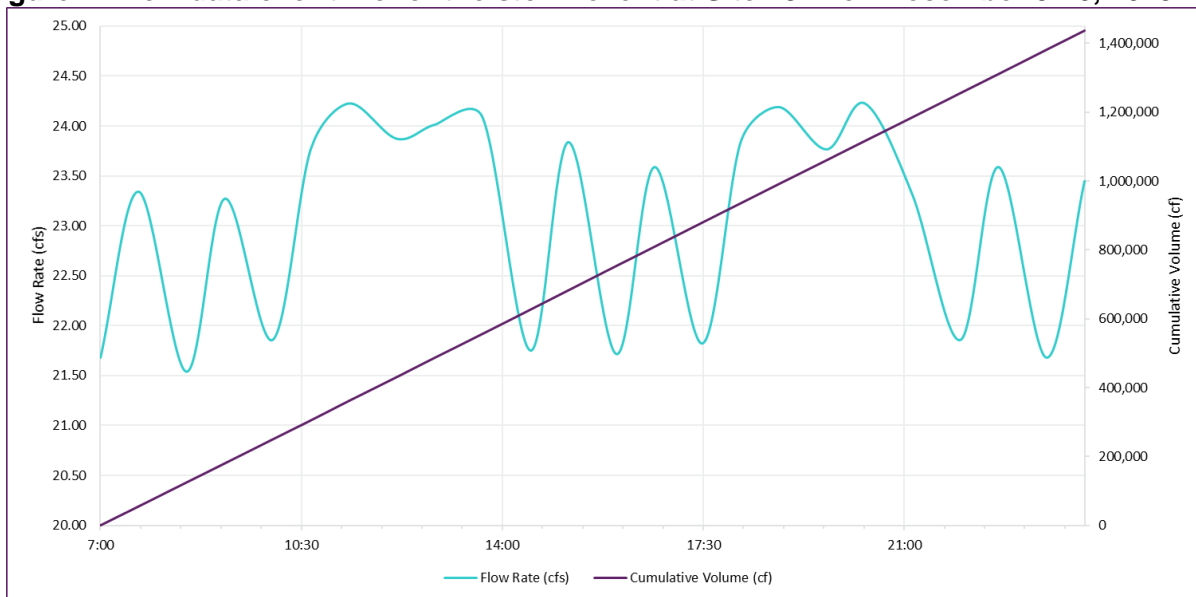


Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (L)*
1	12/9/2019 7:00	13603.2	4.1	0.21
2	7:40	13666.8	4.1	0.21
3	8:30	13740.9	4.1	0.21
4	9:10	13560.8	4.1	0.20
5	10:00	13815.1	4.2	0.21
6	10:40	13560.8	4.1	0.20
7	11:20	14429.6	4.4	0.22
8	12:10	13592.6	4.1	0.21
9	12:50	14408.4	4.3	0.22
10	13:40	13656.2	4.1	0.21
11	14:30	13815.1	4.2	0.21
12	15:10	13698.6	4.1	0.21
13	16:00	13889.3	4.2	0.21
14	16:40	13624.4	4.1	0.21
15	17:30	13815.1	4.2	0.21
16	18:10	13624.4	4.1	0.21
17	18:50	14260.1	4.3	0.22
18	19:40	13730.4	4.1	0.21
19	20:20	14281.3	4.3	0.22
20	21:10	13539.7	4.1	0.20
21	22:00	13846.9	4.2	0.21
22	22:40	13582.0	4.1	0.21
23	23:30	13942.2	4.2	0.21
24	12/10/2019 0:10	13560.8	4.1	0.20

*5.0 L Sample

SITE #4684; DALE CITY, VA

Flow ranged from 0.0353– 0.2119 cfs. 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 1: Flow data over time for the storm event at Site #4684 on December 9-10, 2019.

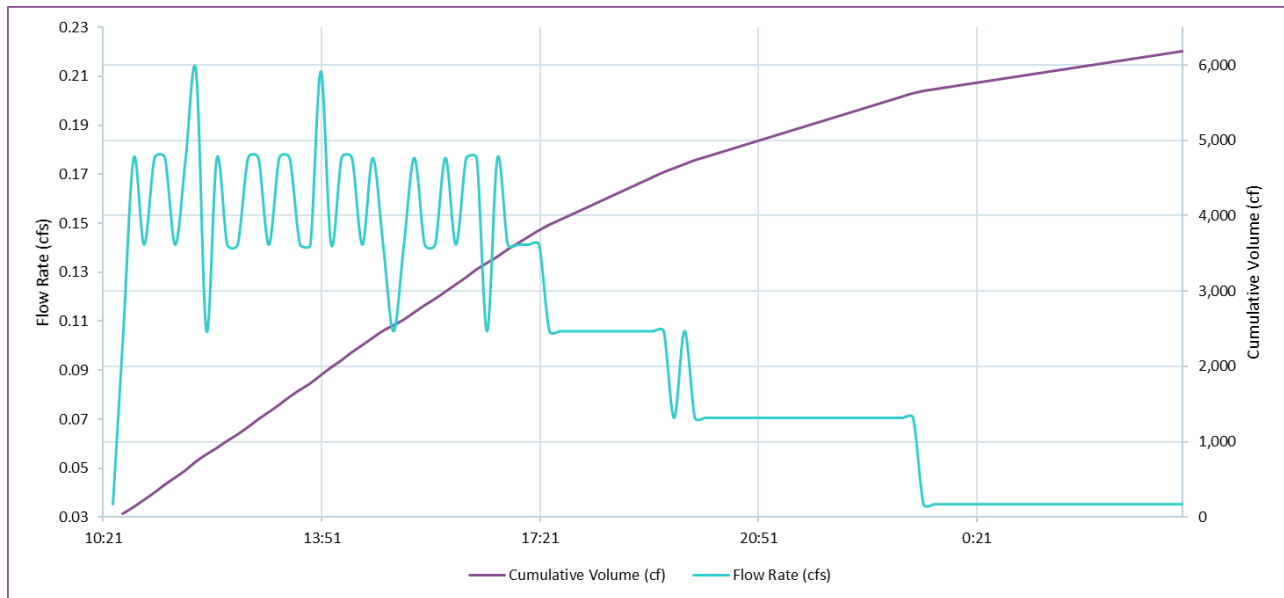


Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (L)*
1	12/9/2019 10:21	95.3	6.98	0.35
2	11:06	116.5	8.53	0.43
3	11:51	95.3	6.98	0.35
4	12:36	105.9	7.75	0.39
5	13:21	95.3	6.98	0.35
6	14:06	95.3	6.98	0.35
7	14:51	84.8	6.20	0.31
8	15:36	105.9	7.75	0.39
9	16:21	84.8	6.20	0.31
10	17:06	63.6	4.65	0.23
11	17:51	63.6	4.65	0.23
12	18:36	63.6	4.65	0.23
13	19:21	42.4	3.10	0.16
14	20:06	42.4	3.10	0.16
15	20:51	42.4	3.10	0.16
16	21:36	42.4	3.10	0.16
17	22:21	42.4	3.10	0.16
18	23:06	21.2	1.55	0.08
19	23:51	21.2	1.55	0.08

*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 ^e	Analyte Unit	Detection Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	32.8	µg/L	5	13	a
	Lead	8.3	µg/L	5	120	a
	Nickel	5.6	µg/L	5	180	a
	Zinc	97.5	µg/L	10	120	a
	Total Suspended Solids	51.7	mg/L	10	100	b
	Nitrogen, Ammonia	ND	mg/L	0.1		-
	Nitrogen, Kjeldahl, Total	0.9	mg/L	0.5		-
	Nitrogen, NO ² plus NO ³	0.6	mg/L	0.02		-
	Total Nitrogen	1.5	mg/L	-	2.2	c
	Phosphorus, Total	0.16	mg/L	0.05	2	b
	Chemical Oxygen Demand	79.1	mg/L	25	120	b
	pH	7.3	Std. Units	0.1	6.0-9.0	d
	Dale City (#4684)	Copper	7.1	µg/L	5	13
Lead		ND	µg/L	5	120	a
Nickel		ND	µg/L	5	180	a
Zinc		51.6	µg/L	10	120	a
Total Suspended Solids		7.0	mg/L	10	100	b
Nitrogen, Ammonia		0.1	mg/L	0.1		-
Nitrogen, Kjeldahl, Total		0.6	mg/L	0.5		-
Nitrogen, NO ² plus NO ³		0.7	mg/L	0.02		-
Total Nitrogen		1.4	mg/L	-	2.2	c
Phosphorus, Total		ND	mg/L	0.05	2	b
Chemical Oxygen Demand		30.5	mg/L	25	120	b
pH		6.8	Std. Units	0.1	6.0-9.0	d

^aState Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100mg/L.

^bBased on benchmark criteria for the VPDES Industrial Stormwater General Permit.

^cThe sum of Nitrogen as Ammonia, NO², NO³, and Total Kjeldahl Nitrogen.

^dBased 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.

4.0 SUMMARY

As indicated in **Table 4**, exceedances occurred for Copper at Site #941, measuring and 14.3 µg/L. Copper exceedances remains persistent at the Manassas site. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 2: Exceedance tracking for the Wet Weather Monitoring Program.

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

		2016		2017		2018		2018		2019		2019			
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4
Dale City (#4684)	Copper	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		--						

* No sample collected at #4684 during Q2 2018.

APPENDIX A
SITE CONDITIONS

Manassas (#941)

During the most recent monitoring event, the field team noticed maintenance conducted on trucks parked in the lot draining to the outfall. Water levels at Site #941 are persistently found to be above 6 – 10 inches in the monitoring outfall. Backwater effects have made it increasingly difficult to perform wet weather monitoring.



Dale City (#4684)

Site #4684 consists of a 54" concrete pipe that drains to a large retention pond draining the Potomac Club development. Erosion around the headwall and apron of the outfall at this site continues to pose a risk during sampler deployment and retrieval. Oily sheens and iron oxidizing bacteria are common occurrences in the scour pool.



APPENDIX B
WATER QUALITY LABORATORY RESULTS

December 23, 2019

Jen Furey
WOOD E&I
14424 Albemarle Point Place
Suite 115
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM CO Q4 2019
Pace Project No.: 92457467

Dear Jen Furey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Benjamin Green, WOOD E&I



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CERTIFICATIONS

Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92457467001	Man-1	Water	12/11/19 09:00	12/14/19 10:25
92457467002	Dal-1	Water	12/11/19 11:00	12/14/19 10:25

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SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
92457467001	Man-1	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A		
		SM 2540D-2011	CJL	1	PASI-A		
		EPA 9040C	ECH	1	PASI-A		
		EPA 350.1 Rev 2.0 1993	KDF1	1	PASI-A		
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A		
		EPA 353.2 Rev 2.0 1993	DMN	1	PASI-A		
		EPA 365.1 Rev 2.0 1993	MDW	1	PASI-A		
		SM 5220D-2011	NAL	1	PASI-A		
		92457467002	Dal-1	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A
				SM 2540D-2011	CJL	1	PASI-A
				EPA 9040C	ECH	1	PASI-A
				EPA 350.1 Rev 2.0 1993	KDF1	1	PASI-A
				EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
				EPA 353.2 Rev 2.0 1993	DMN	1	PASI-A
EPA 365.1 Rev 2.0 1993	MDW			1	PASI-A		
SM 5220D-2011	NAL	1	PASI-A				

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ANALYTICAL RESULTS

Project: PRINCE WILLIAM CO Q4 2019
 Pace Project No.: 92457467

Sample: Man-1	Lab ID: 92457467001	Collected: 12/11/19 09:00	Received: 12/14/19 10:25	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						
Copper	32.8	ug/L	5.0	1	12/18/19 01:18	12/19/19 05:52	7440-50-8	
Lead	8.3	ug/L	5.0	1	12/18/19 01:18	12/19/19 05:52	7439-92-1	
Nickel	5.6	ug/L	5.0	1	12/18/19 01:18	12/19/19 05:52	7440-02-0	
Zinc	97.5	ug/L	10.0	1	12/18/19 01:18	12/19/19 05:52	7440-66-6	
2540D TSS, Low-Level		Analytical Method: SM 2540D-2011						
Total Suspended Solids	51.7	mg/L	16.7	1		12/18/19 17:13		
9040 pH		Analytical Method: EPA 9040C						
pH at 25 Degrees C	7.3	Std. Units	0.10	1		12/22/19 17:32		H3
350.1 Ammonia		Analytical Method: EPA 350.1 Rev 2.0 1993						
Nitrogen, Ammonia	ND	mg/L	0.10	1		12/19/19 10:37	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						
Nitrogen, Kjeldahl, Total	0.90	mg/L	0.50	1	12/19/19 06:39	12/20/19 05:25	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.		Analytical Method: EPA 353.2 Rev 2.0 1993						
Nitrogen, NO2 plus NO3	0.60	mg/L	0.040	1		12/18/19 13:56		
365.1 Phosphorus, Total		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993						
Phosphorus	0.16	mg/L	0.050	1	12/17/19 21:50	12/18/19 00:23	7723-14-0	
5220D COD		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011						
Chemical Oxygen Demand	79.1	mg/L	25.0	1	12/19/19 14:47	12/19/19 18:38		

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ANALYTICAL RESULTS

Project: PRINCE WILLIAM CO Q4 2019
 Pace Project No.: 92457467

Sample: Dal-1	Lab ID: 92457467002	Collected: 12/11/19 11:00	Received: 12/14/19 10:25	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						
Copper	7.1	ug/L	5.0	1	12/18/19 01:18	12/19/19 06:07	7440-50-8	
Lead	ND	ug/L	5.0	1	12/18/19 01:18	12/19/19 06:07	7439-92-1	
Nickel	ND	ug/L	5.0	1	12/18/19 01:18	12/19/19 06:07	7440-02-0	
Zinc	51.6	ug/L	10.0	1	12/18/19 01:18	12/19/19 06:07	7440-66-6	
2540D TSS, Low-Level		Analytical Method: SM 2540D-2011						
Total Suspended Solids	7.0	mg/L	2.0	1		12/18/19 17:13		
9040 pH		Analytical Method: EPA 9040C						
pH at 25 Degrees C	6.8	Std. Units	0.10	1		12/22/19 17:43		H3
350.1 Ammonia		Analytical Method: EPA 350.1 Rev 2.0 1993						
Nitrogen, Ammonia	0.14	mg/L	0.10	1		12/19/19 10:38	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						
Nitrogen, Kjeldahl, Total	0.56	mg/L	0.50	1	12/19/19 06:39	12/20/19 05:26	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.		Analytical Method: EPA 353.2 Rev 2.0 1993						
Nitrogen, NO2 plus NO3	0.72	mg/L	0.040	1		12/18/19 14:00		
365.1 Phosphorus, Total		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993						
Phosphorus	ND	mg/L	0.050	1	12/17/19 21:50	12/18/19 00:23	7723-14-0	
5220D COD		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011						
Chemical Oxygen Demand	30.5	mg/L	25.0	1	12/19/19 14:47	12/19/19 18:39		

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

QC Batch: 515395 Analysis Method: EPA 200.7 Rev 4.4 1994
QC Batch Method: EPA 200.7 Rev 4.4 1994 Analysis Description: 200.7 MET
Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2761885 Matrix: Water

Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	12/19/19 05:39	
Lead	ug/L	ND	5.0	12/19/19 05:39	
Nickel	ug/L	ND	5.0	12/19/19 05:39	
Zinc	ug/L	ND	10.0	12/19/19 05:39	

LABORATORY CONTROL SAMPLE: 2761886

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	485	97	85-115	
Lead	ug/L	500	500	100	85-115	
Nickel	ug/L	500	490	98	85-115	
Zinc	ug/L	500	495	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2761887 2761888

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92457467001 Result	Spike Conc.	Spike Conc.	Result						
Copper	ug/L	32.8	500	500	541	548	102	103	70-130	1	20
Lead	ug/L	8.3	500	500	512	527	101	104	70-130	3	20
Nickel	ug/L	5.6	500	500	501	513	99	102	70-130	2	20
Zinc	ug/L	97.5	500	500	604	649	101	110	70-130	7	20

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019
 Pace Project No.: 92457467

QC Batch: 515452 Analysis Method: SM 2540D-2011
 QC Batch Method: SM 2540D-2011 Analysis Description: 2540D Total Suspended Solids
 Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2762004 Matrix: Water
 Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	12/18/19 17:12	

LABORATORY CONTROL SAMPLE: 2762005

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

SAMPLE DUPLICATE: 2762006

Parameter	Units	92457467001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	51.7	51.7	0	25	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019
Pace Project No.: 92457467

QC Batch: 516217 Analysis Method: EPA 9040C
QC Batch Method: EPA 9040C Analysis Description: 9040 pH
Associated Lab Samples: 92457467001, 92457467002

SAMPLE DUPLICATE: 2765961

Parameter	Units	92456487001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.1	1	9	H3

SAMPLE DUPLICATE: 2765962

Parameter	Units	92456515001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.1	5.8	5	9	D6,H3

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019
Pace Project No.: 92457467

QC Batch: 515566 Analysis Method: EPA 350.1 Rev 2.0 1993
QC Batch Method: EPA 350.1 Rev 2.0 1993 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2762549 Matrix: Water
Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/19/19 10:01	

LABORATORY CONTROL SAMPLE: 2762550

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: 2762551 2762552

Parameter	Units	2762551		2762552		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92456455002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Nitrogen, Ammonia	mg/L	5.6	5	5	10.3	10.5	95	99	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2762553 2762554

Parameter	Units	2762553		2762554		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92456589001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Nitrogen, Ammonia	mg/L	ND	5	5	4.8	4.8	96	96	90-110	0	10	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

QC Batch: 515683 Analysis Method: EPA 351.2 Rev 2.0 1993
QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN
Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2763263 Matrix: Water

Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	12/20/19 04:57	

LABORATORY CONTROL SAMPLE: 2763264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.6	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2763265 2763266

Parameter	Units	92457161001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, Kjeldahl, Total	mg/L	4.4	10	10	14.2	13.9	98	95	90-110	3	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2763267 2763268

Parameter	Units	92457330002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, Kjeldahl, Total	mg/L	0.69	10	10	9.1	9.7	84	91	90-110	7	10	M1	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019
Pace Project No.: 92457467

QC Batch: 515513 Analysis Method: EPA 353.2 Rev 2.0 1993
QC Batch Method: EPA 353.2 Rev 2.0 1993 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2762215 Matrix: Water
Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	12/18/19 13:52	

LABORATORY CONTROL SAMPLE: 2762216

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: 2762217 2762218

Parameter	Units	2762217		2762218		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92457467001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrogen, NO2 plus NO3	mg/L	0.60	2.5	2.5	3.0	3.1	96	98	90-110	2	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2762219 2762220

Parameter	Units	2762219		2762220		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92457467002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrogen, NO2 plus NO3	mg/L	0.72	2.5	2.5	3.1	3.1	96	96	90-110	0	10

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019
Pace Project No.: 92457467

QC Batch: 515391 Analysis Method: EPA 365.1 Rev 2.0 1993
QC Batch Method: EPA 365.1 Rev 2.0 1993 Analysis Description: 365.1 Phosphorus, Total
Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2761875 Matrix: Water
Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	12/18/19 00:11	

LABORATORY CONTROL SAMPLE: 2761876

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: 2761877 2761878

Parameter	Units	92454824001		MS		MSD		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Phosphorus	mg/L	0.13	2.5	2.5	2.5	2.7	2.7	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2761879 2761880

Parameter	Units	92454824002		MS		MSD		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Phosphorus	mg/L	0.070	2.5	2.5	2.5	2.6	2.6	100	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

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q4 2019
Pace Project No.: 92457467

QC Batch: 515646 Analysis Method: SM 5220D-2011
QC Batch Method: SM 5220D-2011 Analysis Description: 5220D COD
Associated Lab Samples: 92457467001, 92457467002

METHOD BLANK: 2763102 Matrix: Water
Associated Lab Samples: 92457467001, 92457467002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	12/19/19 18:35	

LABORATORY CONTROL SAMPLE: 2763103

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	741	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2763104 2763105

Parameter	Units	92457330007		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result				
Chemical Oxygen Demand	mg/L	35.1	100	100	142	146	107	111	90-110	3	3 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2763106 2763107

Parameter	Units	92456970001		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result				
Chemical Oxygen Demand	mg/L	130	100	100	232	239	102	109	90-110	3	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

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QUALIFIERS

Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

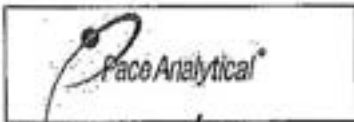
Project: PRINCE WILLIAM CO Q4 2019

Pace Project No.: 92457467

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92457467001	Man-1	EPA 200.7 Rev 4.4 1994	515395	EPA 200.7 Rev 4.4 1994	515423
92457467002	Dal-1	EPA 200.7 Rev 4.4 1994	515395	EPA 200.7 Rev 4.4 1994	515423
92457467001	Man-1	SM 2540D-2011	515452		
92457467002	Dal-1	SM 2540D-2011	515452		
92457467001	Man-1	EPA 9040C	516217		
92457467002	Dal-1	EPA 9040C	516217		
92457467001	Man-1	EPA 350.1 Rev 2.0 1993	515566		
92457467002	Dal-1	EPA 350.1 Rev 2.0 1993	515566		
92457467001	Man-1	EPA 351.2 Rev 2.0 1993	515683	EPA 351.2 Rev 2.0 1993	515929
92457467002	Dal-1	EPA 351.2 Rev 2.0 1993	515683	EPA 351.2 Rev 2.0 1993	515929
92457467001	Man-1	EPA 353.2 Rev 2.0 1993	515513		
92457467002	Dal-1	EPA 353.2 Rev 2.0 1993	515513		
92457467001	Man-1	EPA 365.1 Rev 2.0 1993	515391	EPA 365.1 Rev 2.0 1993	515399
92457467002	Dal-1	EPA 365.1 Rev 2.0 1993	515391	EPA 365.1 Rev 2.0 1993	515399
92457467001	Man-1	SM 5220D-2011	515646	SM 5220D-2011	515886
92457467002	Dal-1	SM 5220D-2011	515646	SM 5220D-2011	515886

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt (SCUR)
 Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:

Wood Ed I Charity

Project

WO#: **92457467**



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: NAC 12/16/19

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer: 937061 Type of Ice: Wet Blue None

Cooler Temp (°C): 1.5 Correction Factor: Add/Subtract (°C) 0-0

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 1.5

Samples out of temp criteria. Samples on ice, cooling process has begun

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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match CDC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VDA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: 12/13

Project Manager SRF Review: _____

Date: 12/13



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*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, DRD/8015 (water) DOC, LLHg

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

Project # **WO# : 92457467**
 PH: PTE Due Date: 12/23/19
 CLIENT: 92-Arec VA

Item#	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (C-)		X											
BP7U-250 mL Plastic Unpreserved (N/A)		X											
BP2U-500 mL Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)													
BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)		1	2										
BP3N-250 mL plastic HNO3 (pH < 2)		1	2										
BP4C-125 mL Plastic ZN Acetate & NaOH (>9)													
BP4C-125 mL Plastic NaOH (pH > 12) (C-)													
WG9U-Wide-mouthed Glass jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (C-)													
AG3H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (C-)													
AG1S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 mL Amber H2SO4 (pH < 2)													
AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)													
DG8H-40 mL VOA HCl (N/A)													
VG8T-40 mL VOA Na2S2O3 (N/A)													
VG9U-40 mL VOA Unp (N/A)													
DG3P-40 mL VOA H3PO4 (N/A)													
VOAK (6 vials per kit)-VPH/Gas kit (N/A)													
V/GK (3 vials per kit)-VPH/Gas kit (N/A)													
SPST-125 mL Sterile Plastic (N/A - lab)													
SPST-250 mL Sterile Plastic (N/A - lab)													
BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
AG08U-100 mL Amber Unpreserved vials (N/A)													
VSGU-20 mL Scintillation vials (N/A)													
DG9U-40 mL Amber Unpreserved vials (N/A)													

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

First Quarter 2020 (January 1 – March 31)

Event Date: January 24-25, 2020

Prepared for:



Prince William County Department of Public Works

5 County Complex Court, Suite 170

Prince William, Virginia 22192

Prepared by:

Wood Environment & Infrastructure Solutions, Inc.

4795 Meadow Wood Lane, Suite 310E

Chantilly, VA 20151

(703) 488-3700

February 19, 2020

Project No. 151270004

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) 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 Q1 sampling event conducted on January 25, 2020, as well as the findings from the water quality analysis results of those 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 since changing conditions were first noted in late summer 2018. Water levels in the channel and the monitoring outfall have risen to anywhere from four to six inches, which varies seasonally. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site.

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 BMP for the Potomac Club residential development. Upstream drainage totaled 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, 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. On January 24, 2020, Wood staff deployed the samplers at both field sites and programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The samplers were programmed to collect 24 discrete 800 mL samples to be collected every 30 minutes over a twelve-hour duration. Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data were easily accessible online and provided hourly precipitation totals over the monitoring period. Gages were 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 Environmental 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:

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

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. Discrete samples collected over the duration of the storm event were then mixed based on their representative weight within the cumulative flow curve for each storm event. This flow weighted composite sample was provided to the laboratory for analysis. The resulting analysis is considered the event mean concentration (EMC) of the individual analyte.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 23:30 January 24, 2020- 8:00 January 25, 2020. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) did not record any precipitation for the 24-hour period from 1/22-1/23, and 1.50 inch of precipitation for the 24-hour period from 1/24-1/25. Temperatures ranged from 47-50 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.29 inches of rain on January 19. Samples were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on January 27, 2020.

SITE #4684; DALE CITY, VA

Sampling occurred from 23:30 January 24, 2020- 11:00 January 25, 2020. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) did not record any precipitation for the 24-hour period from 1/22-1/23, and 1.47 inch of precipitation for the 24-hour period from 1/24-1/25. Temperatures ranged from 48-52 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.19 inches of rain on January 19. Samples were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on January 27, 2020.

3.1 FLOW DATA

SITE #941; MANASSAS, VA

Flow ranged from 393.6 – 431.4 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.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects at the pond have rendered the current monitoring setup ineffective. This explains the inflated values listed for cumulative volume and flow rate.

Figure 1: Flow data over time for the storm event at Site #941 on January 25, 2020.

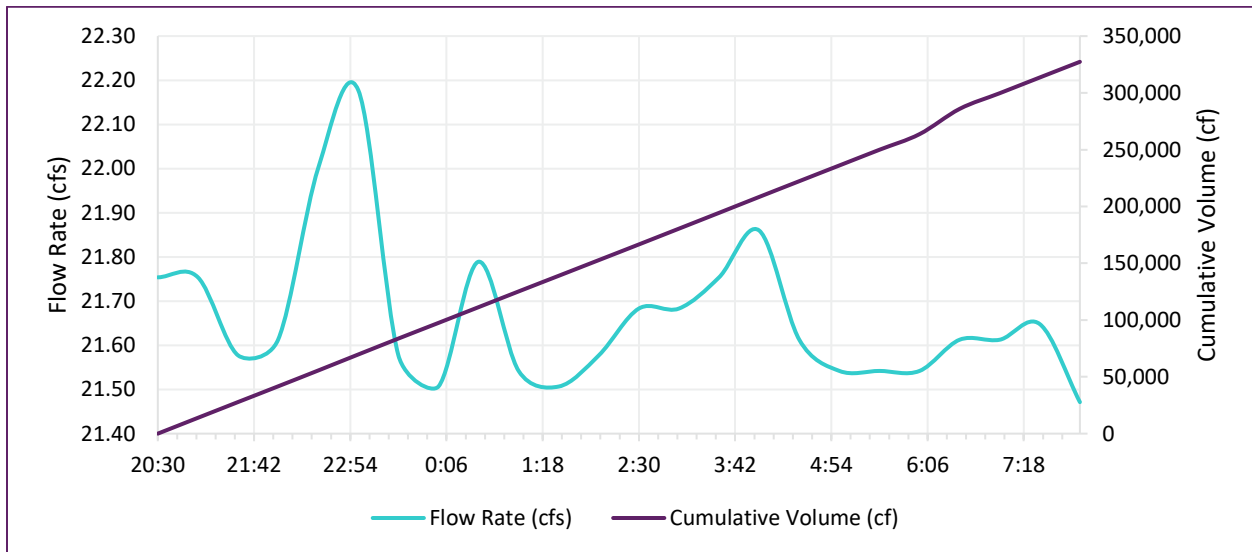


Table 1: Summary of Flow Weighted Composite – Site #941

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (L)*
1	1/24/20 20:30	412.8	4.17	0.21
2	1/24/20 21:00	415.5	4.19	0.21
3	1/24/20 21:30	414.0	4.18	0.21
4	1/24/20 22:00	413.7	4.18	0.21
5	1/24/20 22:30	417.0	4.21	0.21
6	1/24/20 23:00	416.1	4.20	0.21
7	1/24/20 23:30	412.8	4.17	0.21
8	1/25/20 0:00	413.7	4.18	0.21
9	1/25/20 0:30	415.8	4.20	0.21
10	1/25/20 1:00	416.1	4.20	0.21
11	1/25/20 1:30	393.6	3.97	0.20
12	1/25/20 2:00	418.5	4.22	0.21
13	1/25/20 2:30	395.1	3.99	0.20
14	1/25/20 3:00	425.1	4.29	0.21
15	1/25/20 3:30	426.6	4.31	0.22
16	1/25/20 4:00	431.4	4.35	0.22
17	1/25/20 4:30	395.4	3.99	0.20
18	1/25/20 5:00	424.2	4.28	0.21
19	1/25/20 5:30	422.4	4.26	0.21
20	1/25/20 6:00	393.6	3.97	0.20
21	1/25/20 6:30	420.0	4.24	0.21
22	1/25/20 7:00	394.5	3.98	0.20
23	1/25/20 7:30	423.3	4.27	0.21
24	1/25/20 8:00	395.1	3.99	0.20
		9906.3		5.0

*5.0 L Sample

SITE #4684; DALE CITY, VA

Flow ranged from 0.05 – 0.33 cfs. 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 1: Flow data over time for the storm event at Site #4684 on January 25, 2019.

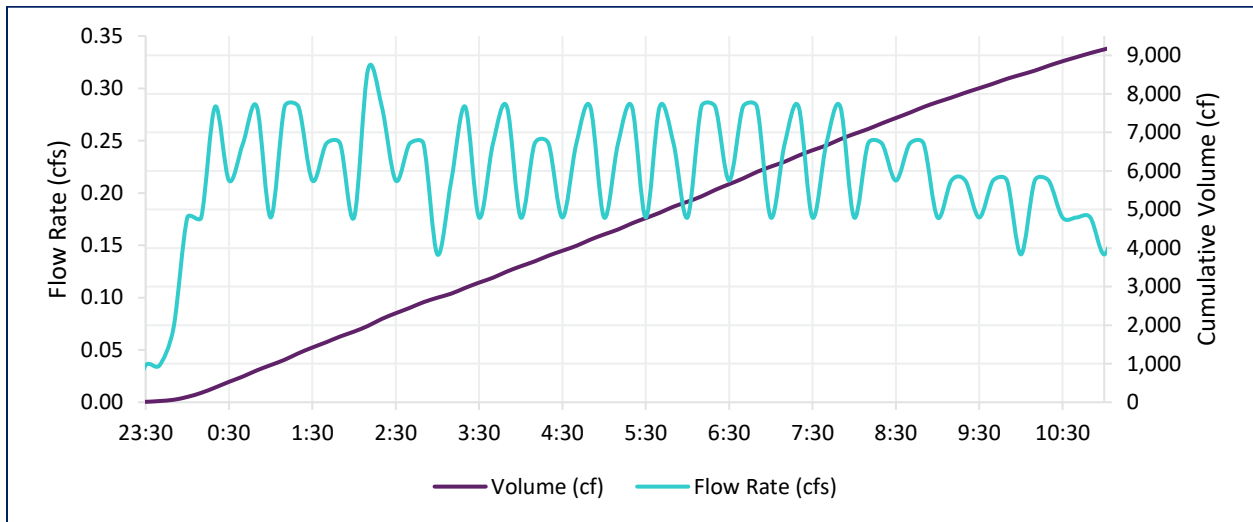


Table 2: Summary of Flow Weighted Composite – Site #4684

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (L)*
1	1/24/2020 23:30	10.6	0.36	0.02
2	1/25/2020 0:00	74.2	2.49	0.12
3	1/25/2020 0:30	148.3	4.98	0.25
4	1/25/2020 1:00	137.7	4.63	0.23
5	1/25/2020 1:30	148.3	4.98	0.25
6	1/25/2020 2:00	127.1	4.27	0.21
7	1/25/2020 2:30	148.3	4.98	0.25
8	1/25/2020 3:00	116.5	3.91	0.20
9	1/25/2020 3:30	137.7	4.63	0.23
10	1/25/2020 4:00	137.7	4.63	0.23
11	1/25/2020 4:30	127.1	4.27	0.21
12	1/25/2020 5:00	137.7	4.63	0.23
13	1/25/2020 5:30	137.7	4.63	0.23
14	1/25/2020 6:00	127.1	4.27	0.21
15	1/25/2020 6:30	148.3	4.98	0.25
16	1/25/2020 7:00	137.7	4.63	0.23
17	1/25/2020 7:30	137.7	4.63	0.23
18	1/25/2020 8:00	137.7	4.63	0.23
19	1/25/2020 8:30	137.7	4.63	0.23
20	1/25/2020 9:00	127.1	4.27	0.21
21	1/25/2020 9:30	116.5	3.91	0.20
22	1/25/2020 10:00	105.9	3.56	0.18
23	1/25/2020 10:30	116.5	3.91	0.20
24	1/25/2020 11:00	95.3	3.20	0.16
		2977.0		5.0

*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	Detection Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	131.0	µg/L	5	13	a
	Lead	23.0	µg/L	5	120	a
	Nickel	13.8	µg/L	5	180	a
	Zinc	245.0	µg/L	10	120	a
	Total Suspended Solids	194.0	mg/L	10	100	b
	Nitrogen, Ammonia	ND	mg/L	0.1		-
	Nitrogen, Kjeldahl, Total	1.0	mg/L	0.5		-
	Nitrogen, NO ² plus NO ³	0.4	mg/L	0.02		-
	Total Nitrogen	1.4	mg/L	-	2.2	c
	Phosphorus, Total	0.26	mg/L	0.05	2	b
	Chemical Oxygen Demand	123.0	mg/L	25	120	b
	pH	7.0	Std. Units	0.1	6.0-9.0	d
	Dale City (#4684)	Copper	8.7	µg/L	5	13
Lead		ND	µg/L	5	120	a
Nickel		ND	µg/L	5	180	a
Zinc		58.8	µg/L	10	120	a
Total Suspended Solids		20.9	mg/L	10	100	b
Nitrogen, Ammonia		ND	mg/L	0.1		-
Nitrogen, Kjeldahl, Total		0.6	mg/L	0.5		-
Nitrogen, NO ² plus NO ³		0.6	mg/L	0.02		-
Total Nitrogen		1.2	mg/L	-	2.2	c
Phosphorus, Total		0.08	mg/L	0.05	2	b
Chemical Oxygen Demand		30.1	mg/L	25	120	b
pH		6.6	Std. Units	0.1	6.0-9.0	d

^aState Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100mg/L.

^bBased on benchmark criteria for the VPDES Industrial Stormwater General Permit.

^cThe sum of Nitrogen as Ammonia, NO², NO³, and Total Kjeldahl Nitrogen.

^dBased 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.

4.0 SUMMARY

As indicated in **Table 4**, exceedances occurred for Copper at Site #941, measuring and 14.3 µg/L. Copper exceedances remains persistent at the Manassas site. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

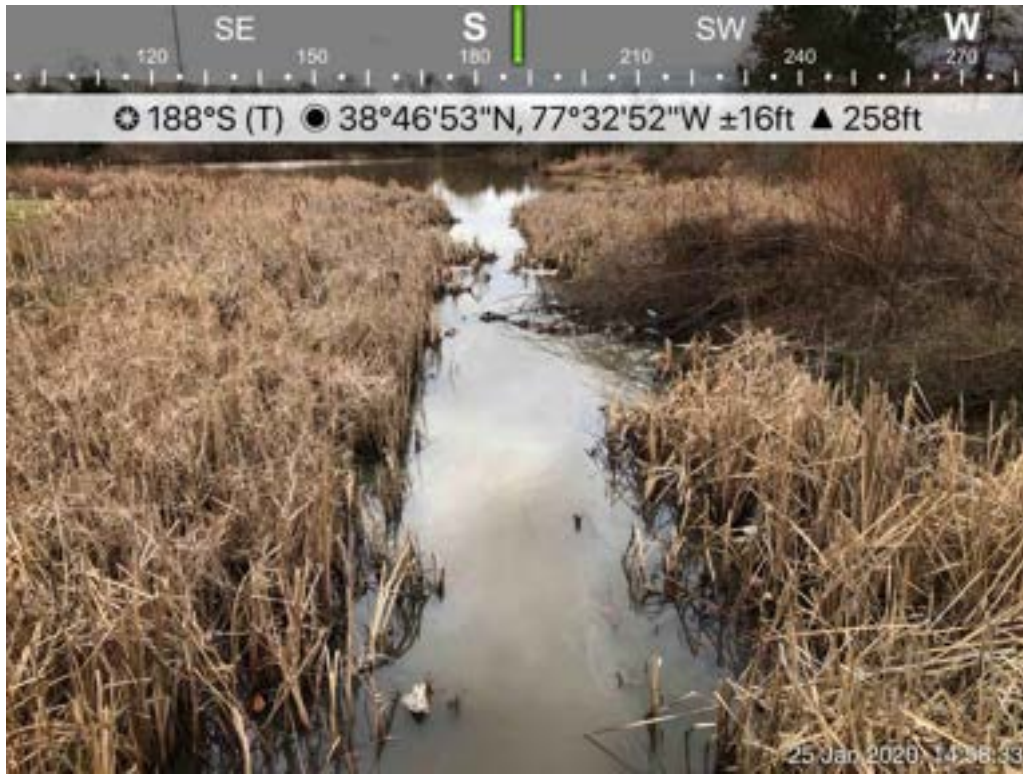
Figure 2: Exceedance tracking for the Wet Weather Monitoring Program.

		2016		2017				2018				2019				2020	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	
Manassas (#941)	Copper	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	
	Total Suspended Solids						x	x								x	
	Total Nitrogen					x	x	x				x					
	Phosphorus, Total																
	Chemical Oxygen Demand		x				x	x									x
	pH						x										
		2016		2017				2018				2019				2020	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4	Q1	
Dale City (#4684)	Copper	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		--								

APPENDIX A
SITE CONDITIONS

Manassas (#941)

Site #941 is located within the Bull Run watershed. It receives drainage from an industrial use area and parking lots with frequent truck traffic. Water levels are persistently found to be above 6 – 10 inches in the monitoring outfall.



Dale City (#4684)

Site #4684 receives flow from Neabsco Mills Road and the Stonebridge at Potomac Town Center development. It is a 54" concrete pipe that drains to a deep scour pool before draining to a large BMP that collects drainage for the Potomac Club development. Erosion around the headwall and apron of the outfall at this site continues to pose a risk during sampler deployment and retrieval.



APPENDIX B
WATER QUALITY LABORATORY RESULTS

February 04, 2020

Jen Furey
WOOD E&I
14424 Albemarle Point Place
Suite 115
Chantilly, VA 20151

RE: Project: PRINCE WILLIAM CO Q12020
Pace Project No.: 92462533

Dear Jen Furey:

Enclosed are the analytical results for sample(s) received by the laboratory on January 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Benjamin Green, WOOD E&I



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92462533001	MAN 012520	Water	01/25/20 08:00	01/28/20 08:55
92462533002	DAL 012520	Water	01/25/20 11:00	01/28/20 08:55

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SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
92462533001	MAN 012520	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A		
		SM 2540D-2011	MJP	1	PASI-A		
		EPA 9040C	SMK	1	PASI-A		
		EPA 350.1 Rev 2.0 1993	CJH1	1	PASI-A		
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A		
		EPA 353.2 Rev 2.0 1993	CJH1	1	PASI-A		
		EPA 365.1 Rev 2.0 1993	MDW	1	PASI-A		
		SM 5220D-2011	MDW	1	PASI-A		
		92462533002	DAL 012520	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A
				SM 2540D-2011	MJP	1	PASI-A
EPA 9040C	SMK			1	PASI-A		
EPA 350.1 Rev 2.0 1993	CJH1			1	PASI-A		
EPA 351.2 Rev 2.0 1993	MFO			1	PASI-A		
EPA 353.2 Rev 2.0 1993	CJH1			1	PASI-A		
EPA 365.1 Rev 2.0 1993	MDW			1	PASI-A		
SM 5220D-2011	MDW			1	PASI-A		

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ANALYTICAL RESULTS

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

Sample: MAN 012520	Lab ID: 92462533001	Collected: 01/25/20 08:00	Received: 01/28/20 08:55	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						
Copper	131	ug/L	5.0	1	01/31/20 01:35	02/01/20 11:01	7440-50-8	
Lead	23.0	ug/L	5.0	1	01/31/20 01:35	02/01/20 11:01	7439-92-1	
Nickel	13.8	ug/L	5.0	1	01/31/20 01:35	02/01/20 11:01	7440-02-0	
Zinc	245	ug/L	10.0	1	01/31/20 01:35	02/01/20 11:01	7440-66-6	
2540D TSS, Low-Level		Analytical Method: SM 2540D-2011						
Total Suspended Solids	194	mg/L	10.0	1		02/01/20 13:28		
9040 pH		Analytical Method: EPA 9040C						
pH at 25 Degrees C	7.0	Std. Units	0.10	1		02/04/20 12:12		H3
350.1 Ammonia		Analytical Method: EPA 350.1 Rev 2.0 1993						
Nitrogen, Ammonia	ND	mg/L	0.10	1		02/02/20 15:11	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						
Nitrogen, Kjeldahl, Total	1.0	mg/L	0.50	1	01/31/20 07:13	02/01/20 03:34	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.		Analytical Method: EPA 353.2 Rev 2.0 1993						
Nitrogen, NO2 plus NO3	0.38	mg/L	0.040	1		02/01/20 16:45		
365.1 Phosphorus, Total		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993						
Phosphorus	0.26	mg/L	0.050	1	01/29/20 22:01	01/30/20 19:14	7723-14-0	
5220D COD		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011						
Chemical Oxygen Demand	123	mg/L	25.0	1	01/30/20 16:20	01/30/20 23:39		

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ANALYTICAL RESULTS

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

Sample: DAL 012520	Lab ID: 92462533002	Collected: 01/25/20 11:00	Received: 01/28/20 08:55	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						
Copper	8.7	ug/L	5.0	1	01/31/20 01:35	02/01/20 11:16	7440-50-8	
Lead	ND	ug/L	5.0	1	01/31/20 01:35	02/01/20 11:16	7439-92-1	
Nickel	ND	ug/L	5.0	1	01/31/20 01:35	02/01/20 11:16	7440-02-0	
Zinc	58.8	ug/L	10.0	1	01/31/20 01:35	02/01/20 11:16	7440-66-6	
2540D TSS, Low-Level		Analytical Method: SM 2540D-2011						
Total Suspended Solids	20.9	mg/L	1.0	1		02/01/20 13:28		
9040 pH		Analytical Method: EPA 9040C						
pH at 25 Degrees C	6.6	Std. Units	0.10	1		02/04/20 11:53		H3
350.1 Ammonia		Analytical Method: EPA 350.1 Rev 2.0 1993						
Nitrogen, Ammonia	ND	mg/L	0.10	1		02/02/20 15:12	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						
Nitrogen, Kjeldahl, Total	0.56	mg/L	0.50	1	01/31/20 07:13	02/01/20 03:35	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.		Analytical Method: EPA 353.2 Rev 2.0 1993						
Nitrogen, NO2 plus NO3	0.60	mg/L	0.040	1		02/01/20 16:46		
365.1 Phosphorus, Total		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993						
Phosphorus	0.076	mg/L	0.050	1	01/29/20 22:01	01/30/20 19:17	7723-14-0	
5220D COD		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011						
Chemical Oxygen Demand	30.1	mg/L	25.0	1	01/30/20 16:20	01/30/20 23:39		

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

QC Batch: 522424 Analysis Method: EPA 200.7 Rev 4.4 1994
QC Batch Method: EPA 200.7 Rev 4.4 1994 Analysis Description: 200.7 MET
Associated Lab Samples: 92462533001, 92462533002

METHOD BLANK: 2794322 Matrix: Water

Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	02/01/20 10:49	
Lead	ug/L	ND	5.0	02/01/20 10:49	
Nickel	ug/L	ND	5.0	02/01/20 10:49	
Zinc	ug/L	ND	10.0	02/01/20 10:49	

LABORATORY CONTROL SAMPLE: 2794323

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	503	101	85-115	
Lead	ug/L	500	492	98	85-115	
Nickel	ug/L	500	494	99	85-115	
Zinc	ug/L	500	479	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2794324 2794325

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92462533001 Result	Spike Conc.	Spike Conc.	Result						
Copper	ug/L	131	500	500	671	665	108	107	70-130	1	20
Lead	ug/L	23.0	500	500	522	523	100	100	70-130	0	20
Nickel	ug/L	13.8	500	500	513	513	100	100	70-130	0	20
Zinc	ug/L	245	500	500	737	736	98	98	70-130	0	20

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

QC Batch:	522706	Analysis Method:	SM 2540D-2011
QC Batch Method:	SM 2540D-2011	Analysis Description:	2540D Total Suspended Solids
Associated Lab Samples:	92462533001, 92462533002		

METHOD BLANK: 2795646 Matrix: Water

Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	02/01/20 13:27	

LABORATORY CONTROL SAMPLE: 2795647

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

SAMPLE DUPLICATE: 2795648

Parameter	Units	92462533001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	194	199	3	25	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

QC Batch: 522697 Analysis Method: EPA 9040C

QC Batch Method: EPA 9040C Analysis Description: 9040 pH

Associated Lab Samples: 92462533001, 92462533002

SAMPLE DUPLICATE: 2795608

Parameter	Units	92462533002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.6	6.6	1	9	H3

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020
Pace Project No.: 92462533

QC Batch: 522692 Analysis Method: EPA 350.1 Rev 2.0 1993
QC Batch Method: EPA 350.1 Rev 2.0 1993 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 92462533001, 92462533002

METHOD BLANK: 2795582 Matrix: Water
Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	02/02/20 14:39	

LABORATORY CONTROL SAMPLE: 2795583

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: 2795584 2795585

Parameter	Units	92461677001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Nitrogen, Ammonia	mg/L	19.5	5	24.9	5	24.7	107	103	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795586 2795587

Parameter	Units	92462353001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Nitrogen, Ammonia	mg/L	ND	5	5.2	5	5.2	104	104	90-110	0	10	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

QC Batch: 522448 Analysis Method: EPA 351.2 Rev 2.0 1993
QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN
Associated Lab Samples: 92462533001, 92462533002

METHOD BLANK: 2794410 Matrix: Water

Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	02/01/20 03:19	

LABORATORY CONTROL SAMPLE: 2794411

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: 2794412 2794413

Parameter	Units	2628258003 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	0.72	10	10	11.3	10.5	106	98	90-110	7	10	

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020
Pace Project No.: 92462533

QC Batch: 522515 Analysis Method: EPA 353.2 Rev 2.0 1993
QC Batch Method: EPA 353.2 Rev 2.0 1993 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 92462533001, 92462533002

METHOD BLANK: 2794586 Matrix: Water
Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	02/01/20 16:30	

LABORATORY CONTROL SAMPLE: 2794587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2794588 2794589

Parameter	Units	92462054002		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Nitrogen, NO2 plus NO3	mg/L	63.9	2.5	2.5	64.2	65.4	14	61	90-110	2	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2794590 2794591

Parameter	Units	92462085001		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Nitrogen, NO2 plus NO3	mg/L	0.77	2.5	2.5	3.0	3.0	91	91	90-110	0	10		

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

QC Batch: 522178 Analysis Method: EPA 365.1 Rev 2.0 1993
QC Batch Method: EPA 365.1 Rev 2.0 1993 Analysis Description: 365.1 Phosphorus, Total
Associated Lab Samples: 92462533001, 92462533002

METHOD BLANK: 2793018 Matrix: Water

Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	01/30/20 19:11	

LABORATORY CONTROL SAMPLE: 2793019

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: 2793020 2793021

Parameter	Units	92462533001		2793020		2793021		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Phosphorus	mg/L	0.26	2.5	2.5	2.7	2.8	99	100	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2793022 2793023

Parameter	Units	92462533002		2793022		2793023		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Phosphorus	mg/L	0.076	2.5	2.5	2.6	2.6	100	100	90-110	0	10

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QUALITY CONTROL DATA

Project: PRINCE WILLIAM CO Q12020
Pace Project No.: 92462533

QC Batch: 522317 Analysis Method: SM 5220D-2011
QC Batch Method: SM 5220D-2011 Analysis Description: 5220D COD
Associated Lab Samples: 92462533001, 92462533002

METHOD BLANK: 2793602 Matrix: Water
Associated Lab Samples: 92462533001, 92462533002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	01/30/20 23:36	

LABORATORY CONTROL SAMPLE: 2793603

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	739	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2793604 2793605

Parameter	Units	2628276003 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	37.1	100	100	144	148	107	111	90-110	3	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2793606 2793607

Parameter	Units	2628276004 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	114	116	107	109	90-110	2	3	

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QUALIFIERS

Project: PRINCE WILLIAM CO Q12020

Pace Project No.: 92462533

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

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.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM CO Q12020
Pace Project No.: 92462533

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92462533001	MAN 012520	EPA 200.7 Rev 4.4 1994	522424	EPA 200.7 Rev 4.4 1994	522451
92462533002	DAL 012520	EPA 200.7 Rev 4.4 1994	522424	EPA 200.7 Rev 4.4 1994	522451
92462533001	MAN 012520	SM 2540D-2011	522706		
92462533002	DAL 012520	SM 2540D-2011	522706		
92462533001	MAN 012520	EPA 9040C	522697		
92462533002	DAL 012520	EPA 9040C	522697		
92462533001	MAN 012520	EPA 350.1 Rev 2.0 1993	522692		
92462533002	DAL 012520	EPA 350.1 Rev 2.0 1993	522692		
92462533001	MAN 012520	EPA 351.2 Rev 2.0 1993	522448	EPA 351.2 Rev 2.0 1993	522665
92462533002	DAL 012520	EPA 351.2 Rev 2.0 1993	522448	EPA 351.2 Rev 2.0 1993	522665
92462533001	MAN 012520	EPA 353.2 Rev 2.0 1993	522515		
92462533002	DAL 012520	EPA 353.2 Rev 2.0 1993	522515		
92462533001	MAN 012520	EPA 365.1 Rev 2.0 1993	522178	EPA 365.1 Rev 2.0 1993	522377
92462533002	DAL 012520	EPA 365.1 Rev 2.0 1993	522178	EPA 365.1 Rev 2.0 1993	522377
92462533001	MAN 012520	SM 5220D-2011	522317	SM 5220D-2011	522444
92462533002	DAL 012520	SM 5220D-2011	522317	SM 5220D-2011	522444

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:

Project

WO#: 92462533



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 1-28-20 AK

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer: IR Gun ID: 92T058 Type of Ice: Wet Blue None

Biological Tissue Frozen? Yes No N/A

Cooler Temp (°C): 1.2 Correction Factor: Add/Subtract (°C) 0.0°C

Cooler Temp Corrected (°C): 1.2

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

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

Date: 1/28

Project Manager SRF Review: TR

Date: 1/28



Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VDA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

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

Project # **W0# : 92462533**

PM: PTE

Due Date: 02/04/20

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)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFW-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)	AG3A(DG3A)-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 Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VDAX (6 vials per kit)-5035 kit (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)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AGDU-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

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 DEHR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers).

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name: Wood E&I Chantilly

Project **WO# : 92462533**



Courier: Commercial Fed Ex Pace UPS USPS Other: Client

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 1-28-20 AB

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: 92T058 Type of Ice: Wet Blue None

Cooler Temp (°C): 1.2 Correction Factor: Add/Subtract (°C) 0.0°C

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

Cooler Temp Corrected (°C): 1.2

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

COMMENTS/SAMPLE DISCREPANCY

Field Date Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: TR

Date: 1/28

Project Manager SRF Review: TR

Date: 1/28

*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 bottle

Project # **WO# : 92462533**

PH: PTE

Due Date: 02/04/20

CLIENT: 92-Amec VA

Item #	Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (C-)													
BP3U-250 mL Plastic Unpreserved (N/A)													
BP2U-500 mL Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)													
BP45-125 mL Plastic H2SO4 (pH < 2) (C-)													
BP3N-250 mL plastic HNO3 (pH < 2)													
BP42-125 mL Plastic Zn Acetate & NaOH (>9)													
BP4C-125 mL Plastic NaOH (pH > 12) (C-)													
WGJU-Wide-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (C-)													
AG1H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (C-)													
AG15-1 liter Amber H2SO4 (pH < 2)													
AG35-250 mL Amber H2SO4 (pH < 2)													
AG3A[DG3A]-250 mL Amber NH4Cl (N/A)(C-)													
DG9H-40 mL VOA HCl (N/A)													
VG9T-40 mL VOA Na2S2O3 (N/A)													
VG9U-40 mL VOA Unp (N/A)													
DG99-40 mL VOA H3PO4 (N/A)													
VOAK (6 vials per kit)-S035 kit (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)													
BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
AG6U-100 mL Amber Unpreserved vials (N/A)													
V5GU-20 mL Scintillation vials (N/A)													
DG9U-40 mL Amber Unpreserved vials (N/A)													

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
Second Quarter 2020 (April 1 – June 30)
Event Date: April 12, 2020

Prepared for:



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

Prepared by:

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

August 7, 2020
Project No. 151270004

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) 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 Q2 sampling event conducted on April 12, 2020, as well as the findings from the water quality analysis results of those 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 past year. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site.

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 BMP for the Potomac Club residential development. Upstream drainage totaled 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, 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. On April 12, 2020, Wood staff deployed the samplers at both field sites and programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe. The samplers were programmed to collect 24 discrete 800 mL samples to be collected every 15 minutes over a six-hour duration. This short sampling window accommodated the flashy nature of storms during Q2. Rain gage data were compiled for monitoring stations in the Weather Underground monitoring network. The data were easily accessible online and provided hourly precipitation totals over the monitoring period. Gages were 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 Environmental for water quality analysis. Upon retrieval, staff noticed that the bubbler tube had become dislodged during the storm.

Under normal conditions, flow data collected by the bubbler module would be used to create a flow-weighted composite sample from the samples collected throughout the storm. Since this flow data was not available, staff prepared an equally-weighted composite sample. The resulting analysis is considered the event mean concentration (EMC) of the individual analytes for this storm.

3.0 RESULTS

SITE #941; MANASSAS, VA

Sampling occurred from 20:30 – 08:00 April 12, 2020. During the storm event, bubbler line was dislodged due to the size of the storm. Therefore, flow data was not collected. The ISCO sampler's battery failed before a full sampling cycle was completed. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) did not record any precipitation for the 24-hour period from 4/11-4/12, and 1.82 inch of precipitation for the 24-hour period from 4/12-4/13. Temperatures ranged from 71-78 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.36 inches of rain on April 8. Samples were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on April 14, 2020.

SITE #4684; DALE CITY, VA

Sampling occurred from 22:00 – 09:30 April 12, 2020. During the storm event, the bubbler line was dislodged due to the size of the storm. Therefore, flow data was not collected. Upon initiation, the ISCO sampler did not collect a full sample, likely due to initially low flow conditions. The ISCO sampler's battery failed before a full sampling cycle was completed. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) did not record any precipitation for the 24-hour period from 4/11-4/12, and 2.16 inches of precipitation for the 24-hour period from 4/12-4/13. Temperatures ranged from 55-65 degrees Fahrenheit during the sample collection period. The storm event was preceded by 0.4 inches of rain on April 8. Samples were retained under refrigeration until they were composited and shipped overnight to Pace Analytical on April 14, 2020.

3.1 FLOW DATA

As previously mentioned, the magnitude of the storm caused the bubbler line to dislodge from both rings. This rendered the flow data unusable, and thus they are not included in this report.

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 1: 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 2: Results of Water Quality Analysis

	Analyte	Analyte Value*	Analyte Unit	Detection Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	34.1	µg/L	5	13	a
	Lead	ND	µg/L	5	120	a
	Nickel	5.2	µg/L	5	180	a
	Zinc	101	µg/L	10	120	a
	Total Suspended Solids	74.5	mg/L	10	100	b
	Nitrogen, Ammonia	.18	mg/L	0.1		-
	Nitrogen, Kjeldahl, Total	1.3	mg/L	0.5		-
	Nitrogen, NO ² plus NO ³	.54	mg/L	0.02		-
	Total Nitrogen	2.02	mg/L	-	2.2	c
	Phosphorus, Total	.16	mg/L	0.05	2	b
	Chemical Oxygen Demand	60.8	mg/L	25	120	b
	pH	7.0	Std. Units	0.1	6.0-9.0	d
	Dale City (#4684)	Copper	6.3	µg/L	5	13
Lead		ND	µg/L	5	120	a
Nickel		ND	µg/L	5	180	a
Zinc		43.6	µg/L	10	120	a
Total Suspended Solids		17.2	mg/L	10	100	b
Nitrogen, Ammonia		.43	mg/L	0.1		-
Nitrogen, Kjeldahl, Total		.84	mg/L	0.5		-
Nitrogen, NO ² plus NO ³		.54	mg/L	0.02		-
Total Nitrogen		1.81	mg/L	-	2.2	c
Phosphorus, Total		0.063	mg/L	0.05	2	b
Chemical Oxygen Demand		44.4	mg/L	25	120	b
pH		6.0	Std. Units	0.1	6.0-9.0	d

^aState Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100mg/L.

^bBased on benchmark criteria for the VPDES Industrial Stormwater General Permit.

^cThe sum of Nitrogen as Ammonia, NO², NO³, and Total Kjeldahl Nitrogen.

^dBased 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.

4.0 SUMMARY

As indicated in **Table 4**, exceedances occurred for Copper, Zinc, and TSS at Site #941, measuring and 14.3 µg/L, 101 µg/L, and 74.5 µg/L respectively. Copper exceedances remains persistent at the Manassas site. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

Figure 1: Exceedance tracking for the Wet Weather Monitoring Program.

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

		2016		2017				2018				2019				2020	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2*	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Dale City (#4684)	Copper	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		--								

* No sample collected at #4684 during Q2 2018.

APPENDIX A
SITE CONDITIONS

Manassas (#941)

Site #941 is located within the Bull Run watershed. It receives drainage from an industrial use area and parking lots with frequent truck traffic. Water levels are persistently found to be above 6 – 10 inches in the monitoring outfall.



Dale City (#4684)

Site #4684 receives flow from Neabsco Mills Road and the Stonebridge at Potomac Town Center development. It is a 54" concrete pipe that drains to a deep scour pool before draining to a large BMP that collects drainage for the Potomac Club development. Erosion around the headwall and apron of the outfall at this site continues to pose a risk during sampler deployment and retrieval.



APPENDIX B
WATER QUALITY LABORATORY RESULTS

April 27, 2020

Benjamin Green
WOOD E&I
14424 Albemarle Point Place
Suite 115
Chantilly, VA 20151

RE: Project: Prince William Co Q2 2020
Pace Project No.: 92473767

Dear Benjamin Green:

Enclosed are the analytical results for sample(s) received by the laboratory on April 15, 2020. 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,



Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92473767001	MAN 04142020	Water	04/13/20 08:30	04/15/20 10:00
92473767002	DAL 04142020	Water	04/13/20 10:00	04/15/20 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
92473767001	MAN 04142020	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A		
		SM 2540D-2011	RED	1	PASI-A		
		EPA 9040C	ECH	1	PASI-A		
		EPA 350.1 Rev 2.0 1993	CJH1	1	PASI-A		
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A		
		EPA 353.2 Rev 2.0 1993	CJH1	1	PASI-A		
		EPA 365.1 Rev 2.0 1993	MDW	1	PASI-A		
		SM 5220D-2011	MJP	1	PASI-A		
		92473767002	DAL 04142020	EPA 200.7 Rev 4.4 1994	SH1	4	PASI-A
				SM 2540D-2011	RED	1	PASI-A
EPA 9040C	ECH			1	PASI-A		
EPA 350.1 Rev 2.0 1993	CJH1			1	PASI-A		
EPA 351.2 Rev 2.0 1993	MFO			1	PASI-A		
EPA 353.2 Rev 2.0 1993	CJH1			1	PASI-A		
EPA 365.1 Rev 2.0 1993	MDW			1	PASI-A		
SM 5220D-2011	MJP			1	PASI-A		

PASI-A = Pace Analytical Services - Asheville

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

Sample: MAN 04142020	Lab ID: 92473767001	Collected: 04/13/20 08:30	Received: 04/15/20 10:00	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	34.1	ug/L	5.0	1	04/25/20 02:07	04/25/20 15:49	7440-50-8	
Lead	ND	ug/L	5.0	1	04/25/20 02:07	04/25/20 15:49	7439-92-1	BC
Nickel	5.2	ug/L	5.0	1	04/25/20 02:07	04/25/20 15:49	7440-02-0	
Zinc	101	ug/L	10.0	1	04/25/20 02:07	04/25/20 15:49	7440-66-6	
2540D TSS, Low-Level	Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville							
Total Suspended Solids	74.5	mg/L	4.5	1		04/17/20 17:45		D6
9040 pH	Analytical Method: EPA 9040C Pace Analytical Services - Asheville							
pH at 25 Degrees C	7.0	Std. Units	0.10	1		04/20/20 11:04		D6,H3
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	0.18	mg/L	0.10	1		04/19/20 18:46	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	04/21/20 07:14	04/22/20 00:18	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	0.54	mg/L	0.040	1		04/17/20 16:09		
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	0.16	mg/L	0.050	1	04/15/20 22:24	04/16/20 18:05	7723-14-0	
5220D COD	Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville							
Chemical Oxygen Demand	60.8	mg/L	25.0	1	04/17/20 16:25	04/18/20 11:26		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

Sample: DAL 04142020	Lab ID: 92473767002	Collected: 04/13/20 10:00	Received: 04/15/20 10:00	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	6.3	ug/L	5.0	1	04/25/20 02:07	04/25/20 15:52	7440-50-8	
Lead	ND	ug/L	5.0	1	04/25/20 02:07	04/25/20 15:52	7439-92-1	BC
Nickel	ND	ug/L	5.0	1	04/25/20 02:07	04/25/20 15:52	7440-02-0	
Zinc	43.6	ug/L	10.0	1	04/25/20 02:07	04/25/20 15:52	7440-66-6	
2540D TSS, Low-Level								
Analytical Method: SM 2540D-2011								
Pace Analytical Services - Asheville								
Total Suspended Solids	17.2	mg/L	2.0	1		04/17/20 17:46		
9040 pH								
Analytical Method: EPA 9040C								
Pace Analytical Services - Asheville								
pH at 25 Degrees C	6.0	Std. Units	0.10	1		04/20/20 11:16		H3
350.1 Ammonia								
Analytical Method: EPA 350.1 Rev 2.0 1993								
Pace Analytical Services - Asheville								
Nitrogen, Ammonia	0.43	mg/L	0.10	1		04/19/20 18:47	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	0.84	mg/L	0.50	1	04/21/20 07:14	04/22/20 00:22	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	0.54	mg/L	0.040	1		04/17/20 16:10		
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	0.063	mg/L	0.050	1	04/15/20 22:24	04/16/20 18:06	7723-14-0	
5220D COD								
Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011								
Pace Analytical Services - Asheville								
Chemical Oxygen Demand	44.4	mg/L	25.0	1	04/17/20 16:25	04/18/20 11:27		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020
Pace Project No.: 92473767

QC Batch: 538143 Analysis Method: EPA 200.7 Rev 4.4 1994
QC Batch Method: EPA 200.7 Rev 4.4 1994 Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2869734 Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	04/25/20 14:25	
Lead	ug/L	ND	5.0	04/25/20 14:25	
Nickel	ug/L	ND	5.0	04/25/20 14:25	
Zinc	ug/L	ND	10.0	04/25/20 14:25	

LABORATORY CONTROL SAMPLE: 2869735

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	493	99	85-115	
Lead	ug/L	500	490	98	85-115	
Nickel	ug/L	500	485	97	85-115	
Zinc	ug/L	500	483	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869736 2869737

Parameter	Units	92471432001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	506	493	101	99	70-130	3	20	
Nickel	ug/L	ND	500	500	500	488	100	97	70-130	2	20	
Zinc	ug/L	33.3	500	500	529	519	99	97	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2869738 2869739

Parameter	Units	92473461008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	503	500	101	100	70-130	1	20	
Nickel	ug/L	ND	500	500	505	499	101	99	70-130	1	20	
Zinc	ug/L	69.5	500	500	570	561	100	98	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

QC Batch: 536905

Analysis Method: SM 2540D-2011

QC Batch Method: SM 2540D-2011

Analysis Description: 2540D Total Suspended Solids

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2863985

Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	04/17/20 17:43	

LABORATORY CONTROL SAMPLE: 2863986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	236	94	90-110	

SAMPLE DUPLICATE: 2864122

Parameter	Units	92473767001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	74.5	101	30	10	D6

SAMPLE DUPLICATE: 2864123

Parameter	Units	92473934001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	204	396	64	10	D6

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020
 Pace Project No.: 92473767

QC Batch: 537018 Analysis Method: EPA 9040C
 QC Batch Method: EPA 9040C Analysis Description: 9040 pH
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

SAMPLE DUPLICATE: 2864431

Parameter	Units	92473767001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	6.7	4	9	D6,H3

SAMPLE DUPLICATE: 2864432

Parameter	Units	92474193002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.3	9.3	0	9	H3

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

QC Batch: 536986	Analysis Method: EPA 350.1 Rev 2.0 1993
QC Batch Method: EPA 350.1 Rev 2.0 1993	Analysis Description: 350.1 Ammonia
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2864298 Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	04/19/20 20:17	

LABORATORY CONTROL SAMPLE: 2864299

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: 2864300 2864301

Parameter	Units	2864300		2864301		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Ammonia	mg/L	1.9	5	7.2	7.0	105	102	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2864302 2864303

Parameter	Units	2864302		2864303		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Ammonia	mg/L	ND	5	5.2	5.2	104	104	90-110	0	10	

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020
Pace Project No.: 92473767

QC Batch: 537284 Analysis Method: EPA 351.2 Rev 2.0 1993
QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2865485 Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	04/22/20 00:09	

LABORATORY CONTROL SAMPLE: 2865486

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: 2865487 2865488

Parameter	Units	2865487		2865488		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Kjeldahl, Total	mg/L	131	10	144	142	125	109	90-110	1	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2865489 2865490

Parameter	Units	2865489		2865490		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Kjeldahl, Total	mg/L	1.9	10	10.8	10.9	89	90	90-110	1	10	M1

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020
Pace Project No.: 92473767

QC Batch: 536832 Analysis Method: EPA 353.2 Rev 2.0 1993
QC Batch Method: EPA 353.2 Rev 2.0 1993 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2863329 Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	04/17/20 15:39	

LABORATORY CONTROL SAMPLE: 2863330

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: 2863331 2863332

Parameter	Units	2863331		2863332		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	13.7	2.5	2.5	16.0	16.0	90	91	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2863333 2863334

Parameter	Units	2863333		2863334		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	0.027J	2.5	2.5	2.4	2.4	97	96	0	10	

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

QC Batch: 536403	Analysis Method: EPA 365.1 Rev 2.0 1993
QC Batch Method: EPA 365.1 Rev 2.0 1993	Analysis Description: 365.1 Phosphorus, Total
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2861305 Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	04/16/20 17:53	

LABORATORY CONTROL SAMPLE: 2861306

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.6	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861307 2861308

Parameter	Units	2861307		2861308		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.21	2.5	2.8	2.8	103	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2861309 2861310

Parameter	Units	2861309		2861310		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.065	2.5	2.6	2.6	100	100	90-110	0	10	

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QUALITY CONTROL DATA

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

QC Batch: 536818

Analysis Method: SM 5220D-2011

QC Batch Method: SM 5220D-2011

Analysis Description: 5220D COD

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92473767001, 92473767002

METHOD BLANK: 2863234

Matrix: Water

Associated Lab Samples: 92473767001, 92473767002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	04/18/20 11:18	

LABORATORY CONTROL SAMPLE: 2863235

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: 2863236 2863237

Parameter	Units	2863236		2863237		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Chemical Oxygen Demand	mg/L	92473489001 60.8	100	100	164	164	103	103	90-110	0	3	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2863238 2863239

Parameter	Units	2863238		2863239		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chemical Oxygen Demand	mg/L	92473489002 108	100	100	187	180	80	73	90-110	4	3 M1,R1

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QUALIFIERS

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

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.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.

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.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Prince William Co Q2 2020

Pace Project No.: 92473767

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92473767001	MAN 04142020	EPA 200.7 Rev 4.4 1994	538143	EPA 200.7 Rev 4.4 1994	538164
92473767002	DAL 04142020	EPA 200.7 Rev 4.4 1994	538143	EPA 200.7 Rev 4.4 1994	538164
92473767001	MAN 04142020	SM 2540D-2011	536905		
92473767002	DAL 04142020	SM 2540D-2011	536905		
92473767001	MAN 04142020	EPA 9040C	537018		
92473767002	DAL 04142020	EPA 9040C	537018		
92473767001	MAN 04142020	EPA 350.1 Rev 2.0 1993	536986		
92473767002	DAL 04142020	EPA 350.1 Rev 2.0 1993	536986		
92473767001	MAN 04142020	EPA 351.2 Rev 2.0 1993	537284	EPA 351.2 Rev 2.0 1993	537466
92473767002	DAL 04142020	EPA 351.2 Rev 2.0 1993	537284	EPA 351.2 Rev 2.0 1993	537466
92473767001	MAN 04142020	EPA 353.2 Rev 2.0 1993	536832		
92473767002	DAL 04142020	EPA 353.2 Rev 2.0 1993	536832		
92473767001	MAN 04142020	EPA 365.1 Rev 2.0 1993	536403	EPA 365.1 Rev 2.0 1993	536667
92473767002	DAL 04142020	EPA 365.1 Rev 2.0 1993	536403	EPA 365.1 Rev 2.0 1993	536667
92473767001	MAN 04142020	SM 5220D-2011	536818	SM 5220D-2011	536991
92473767002	DAL 04142020	SM 5220D-2011	536818	SM 5220D-2011	536991

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:

Wood E+I Chantilly

Project

WO#: **92473767**



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 4-15-20 AR

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: 93-T061

Type of Ice: Wet Blue None

Cooler Temp (°C): 0.6 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 0.6

Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

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

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

Field Data Required? Yes No

COMMENTS/SAMPLE DISCREPANCY

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
Sample Condition Upon Receipt (SCUR)
 Document No.:
F-CAR-CS-033-Rev.05

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*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/8915 (water) DOC, L/Hg

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

Project #

WO# : 92473767

PM: PTE

Due Date: 04/22/20

CLIENT: 92-Amec VA

Item #	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (C-)													
BP2U-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) (C-)													
BP2N-250 mL plastic HNO3 (pH < 2)													
BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)													
BP4C-125 mL Plastic NaOH (pH > 12) (C-)													
WGFW-Wide-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (C-)													
AG1H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (C-)													
AG1S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 mL Amber H2SO4 (pH < 2)													
AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)													
DG9H-40 mL VOA HCl (N/A)													
VG9T-40 mL VOA Na2S2O3 (N/A)													
VG9U-40 mL VOA Urp (N/A)													
DG9P-40 mL VOA H3PO4 (N/A)													
VOAK (5 vials per kit)-2015 kit (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)													
BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
AGBU-100 mL Amber Unpreserved vials (N/A)													
VG6U-30 mL Scintillation vials (N/A)													
DG8U-40 mL Amber Unpreserved vials (N/A)													

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 DEHR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers).



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 of 1

Section A

Requested Client Information:
 Company: Wood E&L - Chesley
 Address: 14424 Albemarle Point Place
 Chesley, VA 20151
 Email: benjamin.green@wood-e.com
 Phone: (703) 448-3795 Fax:
 Requested Date: ASAP (at least)

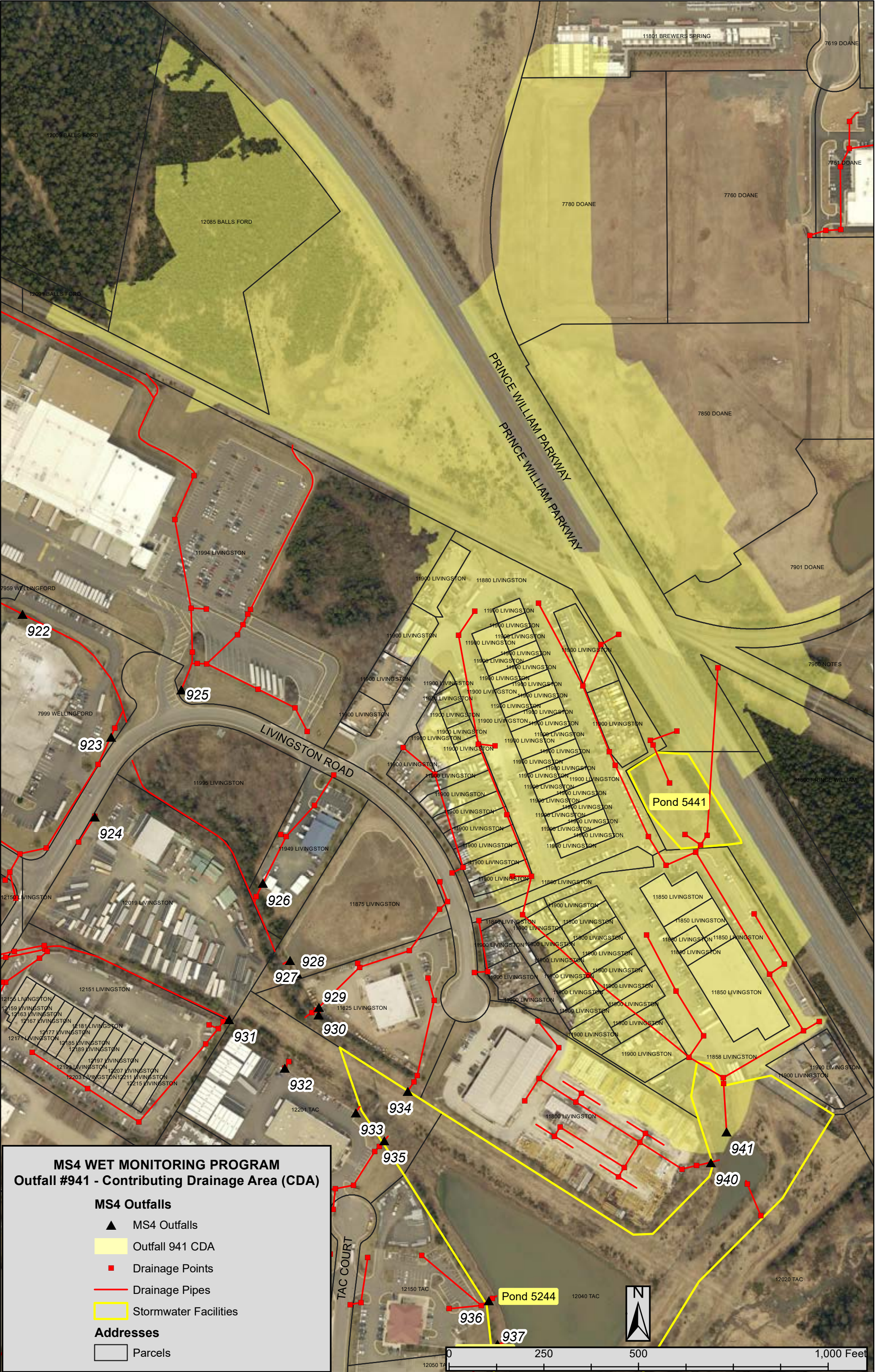
Section B
 Required Project Information:
 Report To: Benjamin Green
 Copy To: Sage Mitchell
 Purchase Order #: PRINCE WILLIAM CO Q3 2020
 Project Name: 1512-2-0004-0002-XXXX
 Project #:

Section C
 Invoice Information:
 Invoiced To: Sage Mitchell
 Company Name: Wood E&L
 Address:
 PO Box:
 PO Box Project Manager: WV@wood-e.com
 PO Box #: 6125-1

Section D
 Requested Analysis (T/N)
 pH
 Metals
 TSS
 Ammonia/Phosphorus/COD
 TKN + Nitrate+Nitrite
 Residual Chlorine (WN)
 VA

ITEM #	SAMPLE ID <small>One Character per box. (AZ, 0-9, -)</small> Sample ID's must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				PRESERVATIVES							ANALYSIS TEST					Residual Chlorine (WN)																			
				START DATE	START TIME	END DATE	END TIME	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O8	Methanol	Other	pH	Metals	TSS		Ammonia/Phosphorus/COD	TKN + Nitrate+Nitrite																	
1	MAN 0414 2020																																						
2	MAN 0414 2020																																						
3	MAN 0414 2020																																						
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							

SAMPLER NAME AND SIGNATURE		DATE	TIME	DATE	TIME	DATE	TIME	TEMP in C	Received on for (Y/N)	Cooling Sealed Cooler (Y/N)	Samples intact (Y/N)
Ben Green		4/14/2020	1300	4/15/20	1000	4/14/2020	0:6	Y	N	Y	
Ben Green		4/14/2020	1300	4/15/20	1000	4/14/2020	0:6	Y	N	Y	



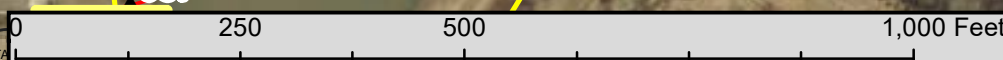
MS4 WET MONITORING PROGRAM
Outfall #941 - Contributing Drainage Area (CDA)

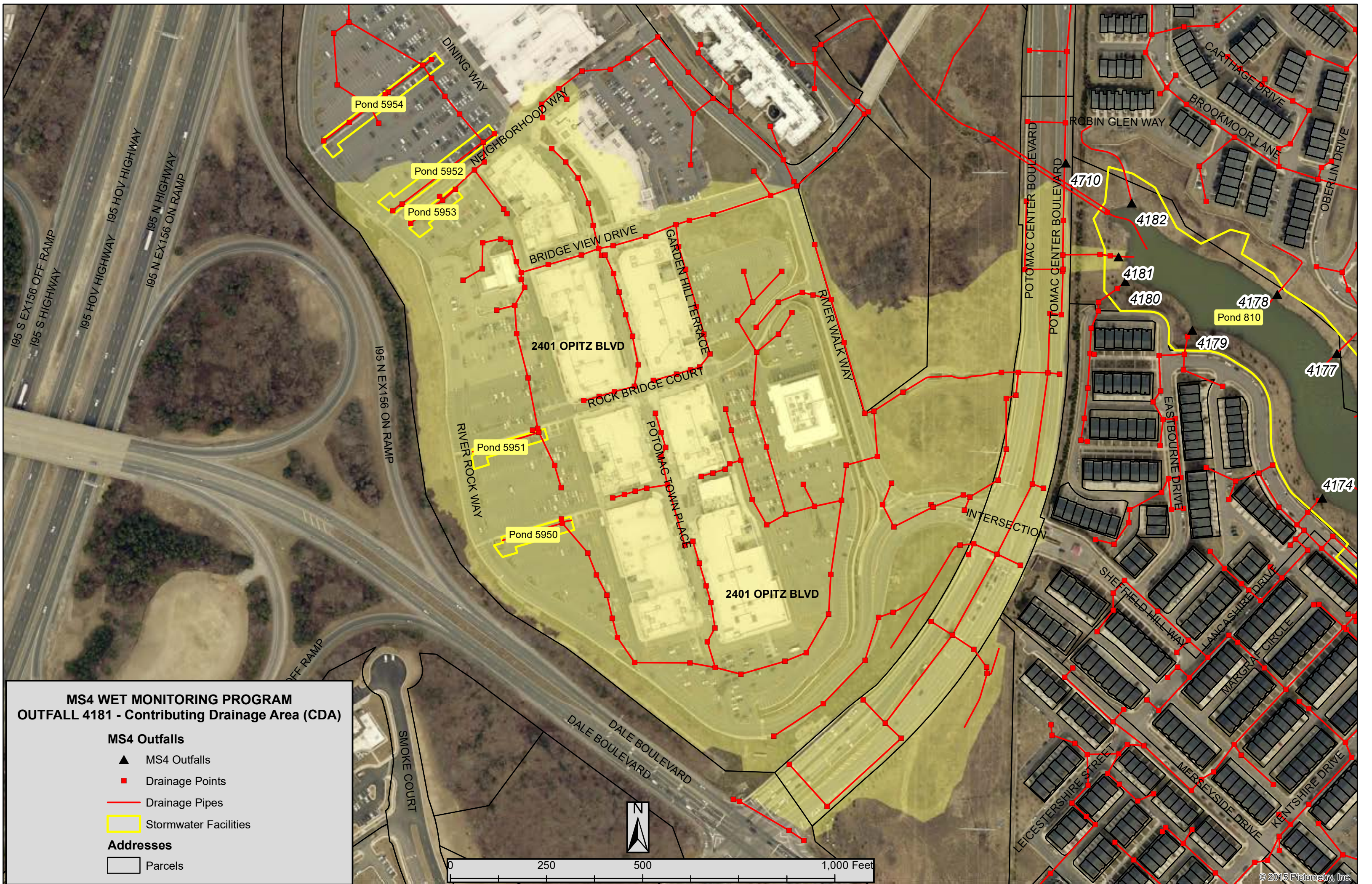
MS4 Outfalls

- ▲ MS4 Outfalls
- Outfall 941 CDA
- Drainage Points
- Drainage Pipes
- Stormwater Facilities

Addresses

- Parcels





**MS4 WET MONITORING PROGRAM
OUTFALL 4181 - Contributing Drainage Area (CDA)**

MS4 Outfalls

- ▲ MS4 Outfalls
- Drainage Points
- Drainage Pipes

□ Stormwater Facilities

Addresses

□ Parcels

0 250 500 1,000 Feet



Prince William County

Wet Weather Screening Program

Permit No.
VA0088595

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

12/1/2015

Table of Contents

I.	Introduction.....	1
II.	Wet Weather Monitoring Site Selection.....	2
i.	Initial Site Screening.....	2
a)	Hotspot ADC Zone selection	2
b)	Field Screening Site Selection	5
ii.	Final Site Selection	6
III.	Wet Weather Monitoring Field Procedures.....	8
i.	Sampling Methods	8
ii.	Analytes	8
iii.	Sampling Schedule.....	9
IV.	Documentation and Reporting.....	10
i.	Site Selection	10
ii.	Monitoring Station Construction.....	10
iii.	Annual Reporting.....	10
iv.	Trends and Long Term Analysis and Program Follow-up.....	10
	Appendix A – Hotspot Identification and Analysis Model.....	i
	Appendix B – Desktop Analysis Scoring Worksheet	xviii
	Appendix C – Field Assessment Scoring Worksheet	xix

I. Introduction

Prince William County is dedicated to providing its citizens with the healthiest environment possible. It is with this goal the County establishes programs aimed at reducing pollutant impacts from heavily urbanized and industrialized areas. Non-point source pollution from urban and industrial areas within the County is a great concern due to its potential to impact water quality. Pollutants are transported from these areas during rain events and often deposited untreated into nearby streams and rivers. To mitigate this issue, the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (VA-DEQ) have instituted programs aimed at reducing the potential impact of pollutants from urban areas.

Under the Virginia Pollutant Discharge Elimination System Permit Program (VPDS) and Virginia Stormwater Management Program (VSMP) permits are issued aimed at reducing pollution runoff from industrial and urban areas containing Municipal Separate Storm Sewers Systems or MS-4s. These systems transport water from urbanized areas to streams and rivers and are a major concern of point and non-point source pollution. Discharges from MS4s are regulated under the Virginia Stormwater Management Act and Clean Water Act (CWA) through permits issued by DEQ and the EPA. Through this program, Prince William County maintains a Phase 1 VSMP MS-4 permit (Permit No. VA0088595).

Through its VSMP permit, the County is required to monitor pollutants from areas suspected to be contributing excess levels of pollutants to its MS-4 by implementing a Wet Weather Screening Program. Unlike the Dry Weather Monitoring Program, the Wet Weather Screening Program is aimed at assessing pollutant load and composition during rain events. Using information obtained through this program, the County is to then develop strategies to reduce this pollutant load from these areas. The County's MS-4 permit, issued on December 17th, 2014, outlines requirements for the Wet Weather Screening Program as follows:

I.B.1.2) 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.

The County has identified potential high risk discharge sites through its hotspot analysis GIS model. This model will be used to guide site location through the identification of areas designated for further research during the field screening stage of the program. A qualified laboratory or contractor will be chosen to perform field sampling, and to present results to the County

This program manual describes the methods and procedures for Prince William County's Wet Weather Screening Program. All procedures are subject to modification as program feasibility and applicability are assessed during program implementation. All program modifications will be noted as part of the County's Program Plan.

II. Wet Weather Monitoring Site Selection

Using the IDDE hotspot Identification and Analysis Model as a basis, locations for Wet Weather monitoring are to be assessed and selected by County personnel. Initial screening locations will be selected using the Hotspot Identification tool and additional GIS desktop analysis. Sites selected in initial screening will be investigated further through field screening activities. Final sites for Wet Weather Screening will be identified using results from the field screening process.

i. Initial Site Screening

The IDDE Hotspot Identification and Analysis model is a tool used by the County to determine where to focus Dry Weather Monitoring Activities. The tool uses several metrics to determine where the highest probability of illicit discharges and discharge of pollutants are to occur. The tool breaks down the County into ADC zones and prioritizes those ADC zones with the highest probability for pollutant discharge to occur. These zones are then used to schedule which outfalls to screen during Dry Weather Monitoring activities. The Hotspot Identification and Analysis Modeling process can be viewed in the document located in [Appendix A](#), but is explained in lesser detail in the following section.

a) Hotspot ADC Zone selection

The Hotspot ID model uses various GIS data layers to determine pollutant discharge potential. Layers depicting Land Use, Residential development, VPDES permitted facilities, High Risk Land Use, Sanitary Sewer Cross Points, Impervious Area, Outfall Locations, Waterways, and 303(d) listed Impaired waterways are incorporated in the analysis. Each feature within a layer is assigned a probability of discharge, pollutant discharge, or component score according to a perceived ability to pollute (potential of discharge to occur, and potential for that discharge to cause harm to the environment, or in the case of an outfall, the number of potential pollution discharge locations). These probabilities of discharge are then summed within a defined area, in this case ADC zones, in order to determine where in the County illicit or other pollutant discharges are likely to occur.

Land uses are analyzed according to use code. High risk use codes were determined from parcels throughout Prince William County and assigned a relative probability of discharge from 1-5 according to their perceived discharge potential (1 being low, 5 being high).

Table 1 - Probability of Discharge According to Use Code

Use code	Use description	Use Probability
191	Technology Services	1
229	Other Utilities	1
349	Food Stores	1
140	Research and Testing	2
156	Wholesale Warehousing (Condo)	2
224	Sewage	2

343	Convenience Store	2
831	Golf Course	2
832	Golf Course	2
112	Industrial Conglomeration	3
151	Mini Warehousing	3
216	Auto Parking	3
311	Small Shopping Center	3
312	Shopping Center	3
313	Shopping Center	3
314	Large Mall	3
315	Large Mall	3
317	Shopping Center	3
318	Shopping Center	3
320	Building Materials	3
351	Restaurant	3
352	Restaurant	3
353	Restaurant	3
354	Restaurant	3
361	Motor Vehicle Sales	3
520	Barber/laundry/cleaners/etc	3
590	Barber/laundry/cleaners/etc	3
841	Swimming Pool	3
851	Marina	3
910	Agricultural Resources	3
911	Agricultural Resources	3
930	Agricultural Resources	3
121	Durable Manufacturing	4
126	Durable Manufacturing (Condo)	4
131	NonDurable Manufacturing	4
150	Wholesale Warehousing	4
160	Industrial Service Garage	4
190	Other Industrial	4
211	Railroad	4
212	Rail Rapid Transit	4
213	Bus	4
214	Motor Freight Transportation	4
219	Other Transportation	4
225	Solid Waste Disposal	4
344	Convenience Store with Gas	4
362	Gas and Service Station	4
363	Gas Station	4
369	Other Automotive	4
540	Other Repair	4

973	Storage Yard	4
366	Service Station	5
530	Motor Vehicle Repair	5

Also included in the analysis are parcels for which VPDES permits are associated. Permitted sites were screened for those which discharge into Prince William County's MS-4 and assigned a probability of discharge in the same manner as high risk parcels above. The results of this analysis are displayed below.

Table 2 - Probability of Discharge Scores for VPDES Permitted facilities

NAME	Permit No.	Score
PWCBOCS	VAR051078	0
CHASE DAVID D	VAG830458	1
GENERAL DYNAMICS LAND SYSTEMS INC	VAR051293	1
OVERNITE TRANSPORTATION CO	VAR051030	1
US FOODSERVICE INC	VAR051117	1
OLD DOMINION FREIGHT LINE INC	VAR051476	1
REMODELERS CREDIT CORP	VAR051996	2
PWC	VAR051477	2
FURR FLOYD H AND BARBARA J	VAG750237	2
SUPPORT TERMINALS OPERATING PTNSHP	VAR051039	2
7905 LC	VAR052008	2
W M TINDER INC	VAR052074	2
EVERED INC	VAR052190	3
POTOMAC & RAPPAHANNOCK TRANSPORTATION E	VAR051886	3
LAND VENTURE ONE L C	VAR051295	3
DALRYMPLE REALTY CORPORATION	VAG110100	3
THIRD GENERATION L P	VAR051085	3
KRAUSS RICHARD L TR	VAR050983	3
NEWBILL HOLDINGS LLC	VAR051639	3
ARCHIE HENRY E SR & ANNIE WILLIAMS	VAR052115	3
BURBAGE J E JR E M BURBAGE	VAR051939	3
VENABLE JEAN S	VAR052243	3
HOFFMASTERS MARINA INC	VAR051183	3
SLURRY PAVERS INC	VAR051911	3
DAVIS TEDDY R JR HELEN M ETAL	VAR052014	3
ENNSTONE INC	VAG110111	4
COSNER MEDFORD R	VAR051009	4
VIRGINIA CONCRETE CO INC	VAG110083	4
DALRYMPLE REALTY CORP	VAR051949	4
JULIUS BRANSCOME INC	VAR050908	4
JONES SAMUEL M ESTATE	VAR051298	4
CONCRETE PIPE AND PRODUCTS CO INC OF	VAG110313	4

ARBAN CAROSI INC	VAG110068	4
HARD ROCK CONCRETE LLC	VAG110067	4
SUPERIOR PROPERTIES INC	VAR051992	4
SUPERIOR PAVING CORP	VAR050901	4
POTOMAC LANDFILL INC	VAR051073	5

Additional values scored in the analysis include outfalls, cross connection points, residential development, impervious area, streams, and impaired waterways. These features are scored as described in the table below.

Table 3 - Discharge Probability Scores for other Features

NAME	Score
Outfalls - Standard	10
- VPDES Outfalls	30
- High Risk Outfalls	30
Cross Connection Points	20
Residential Areas	1
Impervious Area	1
Streams and Waterways	1
Impaired Streams and waterways	2

As stated above, scores were then summed within an ADC index area. The ADC index is a mapping tool used by the County for navigation. The ADC index's break the County into equal area blocks which are assigned alpha-numeric values that help identify their location within the County for mapping. These equal area blocks are ideal for use in segmenting the County for stormwater analysis and Dry Weather Monitoring activities. The top 20 ADC indexes are to be selected for further analysis as described below.

b) Field Screening Site Selection

Once the initial 20 ADC zones are selected for potential field screening they will be narrowed down to a final 5 for field screening. The 20 ADC zones selected in the first screening are sufficient for Dry Weather Monitoring activities, but need to be further analyzed for use in the Wet Weather Monitoring program due to different constraints on the program. ADC zones will be scored according to the worksheet in [Appendix B](#). The Desktop analysis worksheet analyzes the following aspects of each ADC zone:

- **Ms-4 service area** – The focus of the Wet Weather Monitoring Program is to assess pollutant discharges within areas covered under its VSMP MS-4 Permit. For this reason ADC zones with drainage areas discharging to the County's MS-4 will be required.
- **Size of drainage system** – Drainage systems in Prince William County can span many acres. It is important to select candidate sites with drainage systems that allow the County to focus on a particular type of land use category. Monitoring larger drainage systems is also complicated due

to the increased probability of MS-4 interconnectivity. Monitoring drainage catchments that include VDOT or other MS-4s can reduce the value of results by convoluting the identification of pollutant sources. Although such data may be valuable in some circumstances, it is not the County's goal for this program.

- **Location of drainage system** – Identifying which land uses drain into candidate sites allows for a better characterization of the pollutant-land use relationship. Selecting candidate sites that involve succinct, identifiable drainage locations is a priority.
- **Land use, VPDES permits** – Areas with a high density of high risk land use and/or VPDES permits will be preferred. These areas have a higher probability of pollutant discharge, and therefore are of particular interest to the County. A more homogeneous mixture of land use is preferred. This gives the County a better understanding of the types of pollutants discharged from a particular land use, and helps develop better strategies for reducing pollutant loadings. For example, a site which drains mostly from commercial land uses will give the County a better understanding of the discharges coming from these areas, as opposed to a mixture of many different land uses (Commercial/industrial/residential), where the pollutants identified during monitoring cannot be as easily attributed to their sources.
- **County Easements** – In order to be able to run the monitoring station, the County must have legal authority to place it within the stormsewer system. Candidate sites must have access through County maintenance and repair easements. Proper permissions must be given by any stakeholders that may be attached to the site. Sites are preferred to be easily and safely accessible to staff and lab officials collecting samples.
- **Potential Monitoring sites** – Due to time constraints to County staff, sites which have more potential monitoring sites will be preferred. A site which contains more potential monitoring sites reduces the amount of travel and assessment time as opposed to visiting ADC zones with only one potential monitoring site. This also gives the County more choices to find an acceptable Wet Weather Monitoring location.

ii. Final Site Selection

The final sites selected will be evaluated further through a field assessment. Potential sites will be evaluated using the scoring matrix provided in [Appendix C](#). This form incorporates all aspects of final site selection protocol in order to quantifiably compare potential monitoring locations. Factors that influence final site selection are as follows:

Evaluate environmental impact of site – Identify and locate areas where aggregate materials are stored, vehicles are permanently parked, the location of dumpsters and grease traps, locations where spills may occur. Identify potential pollutants that could enter the environment for the sampling site.

Evaluate outfall locations for potential sampling – Locate outfalls and further evaluate ability to facilitate sampling equipment. It is difficult for a desktop analysis to fully convey outfall conditions including ease of access and its ability to house sampling equipment. Assess whether the outfall is in good condition, headwalls are intact, and if the outfall is submerged or blocked by sediment. Assess potential security issues for sampling equipment. Identify all potential monitoring sites.

Evaluate Drainage Systems for overall sampling impact – more specifically identify areas from which the monitoring site drains. Confirm land use for businesses/industry contributing to runoff.

The top two scoring sites will be selected for Wet Weather Monitoring. Sites selected will be gauged to determine flow rates, and measured for the retrofit of sampling equipment.

III. Wet Weather Monitoring Field Procedures

i. Sampling Methods

Sampling will be accomplished using an automated sampler. The sampler is an electronic sampling device which collects discrete samples of stormwater runoff at intervals throughout a storm event. Flow rates will be recorded in order to compute flow weighted composite samples. This should provide the County with an idea of how pollutant concentrations change during the length of a storm event.

Samplers will be attached to outfalls of sampling sites as selected in the above protocol. When applicable, grab samples may be utilized in order to gather analyte data such as TPH. The specific model of sampler will be determined by the contractor or contracted laboratory when selected to perform modeling activities.

ii. Analytes

The Wet Weather Monitoring Program will test for a host of analytes commonly found in stormwater runoff. These include various nutrients, metals, hydrocarbons, and sediments. Many of these analytes are also measured as part of the County’s Dry Weather and In-Stream Monitoring programs. A list of these analytes can be seen below.

Table 4 - Wet Weather Program Monitoring Analytes

Analyte
pH
COD
Zinc
Copper
Led
Nickel
Total Phosphorous
Total Kjeldahl Nitrogen
Nitrate and Nitrite
TSS
Ammonia as Nitrogen

This list will be modified during the life of the program. Analytes may be added/removed according to results obtained during monitoring according to the effectiveness of monitoring efforts. Analytes will also be added or removed as recommended by assigned contractor or laboratory responsible for monitoring efforts.

iii. Sampling Schedule

There is no specific sampling schedule or threshold presented in the County's MS-4 Permit. The County would like to assess two Wet Weather Monitoring sites on a biennial basis. This allows the County to assess the concentration of pollutants during the first yearly cycle, install appropriate BMP's designed to reduce pollutants, and finally use the second yearly monitoring cycle to assess the installed BMPs effectiveness. Samples will be taken at the two sites on a quarterly basis. Once the two year monitoring cycle is complete, two additional sites will be selected for Wet Weather Monitoring activities using the protocols described in the preceding sections. During this time, program procedures will be re-evaluated and updated as needed.

IV. Documentation and Reporting

This section will describe the documentation and reporting processes for the County's Wet Weather Monitoring Program.

i. Site Selection

Results of site selection will be presented in the County's Annual Report once complete. This includes procedures for the desktop and field analysis protocols presented in this document. All applicable forms, site plans, photos, diagrams, and calculations will be included in this analysis. All procedures dealing with site selection should be completed by the County's next annual reporting period (June 30TH, 2016). Information detailing the sites location (latitude and longitude), internal ID number,

ii. Monitoring Station Construction

Processes detailing monitoring site installation and construction will be included in the County's Annual Report when completed. Details on the type of automatic sampling hardware, including in depth procedures dealing with the sampling and transportation of samples, as well as analyte processing procedures will be included in the updated manual once determined by contractor or certified laboratory. All maintenance activities on monitoring hardware will be reported as completed.

iii. Annual Reporting

As required by the County's MS-4 permit, each annual report will include a list of locations Wet Weather Screening has occurred and the results of monitoring samples. In addition, the County will include as part of each annual report the weather conditions, date and time, and time of most recent storm event for each discrete sample taken. Meteorological data associated with the most recent storm event to the time of sample taken will be gathered from weatherunderground.com.

iv. Trends and Long Term Analysis and Program Follow-up

As the County is proposing to monitor sites on a biennial basis, each annual report will present monitoring trends. This will include a trends analysis as samples are processed quarterly for the year, as well as an assessment of effectiveness of BMP's installed as part of the biennial monitoring process. Results from year 1 of monitoring efforts will be used to implement BMP's in the monitoring site drainage area aimed at reducing critical pollutants. The effectiveness of those BMP's will be evaluated in year 2 of the Wet Weather Monitoring Program. All results of this analysis will be presented in the County's Annual Report.

Appendix A – Hotspot Identification and Analysis Model



Prince William County

Wet Weather Screening Program

Introduction

As a requirement for meeting guidelines mandated by the USEPA (Part 1.B.2.l)1) of Permit No VA0088595), Prince William County must identify and inventory “areas of concern” or areas predisposed to illicit discharges within its Municipal Separate Storm Sewer system (MS4). These “areas of concern” include: areas such as car washes, car dealerships, pet kennels, and restaurants; sites with previously occurring illicit discharges; areas of older development; areas representing the general land use of the county; sites with a history of citizen complaint; and areas located near environmentally sensitive features. Previously the County identified areas for dry weather monitoring by using a schedule of grids and a subjective assessment of areas of interest. In an attempt to generate a more quantitative assessment of illicit discharge “hot spots” around the County, a GIS based risk assessment was developed.

Variables

GIS layers

- County Municipal boundaries and ADC Index
- Land Use
- Residential Development
- VPDES Permitted Facilities
- High Risk Land Use Facilities
- Sanitary Sewer Cross Points
- Impervious Area
- County Outfall locations (outfalls >15in)
- County Streams
- 303(d) listed Impaired Virginia Waterways
- Raster based County imagery

Data

- Previous discharges according to land use
- History of citizen complaint according to land use

Procedures

Data Collection

Data layers were collected from the County GIS system via database linkage within version 10.3 of ArcGIS, with the exception of the 303(d) listed impaired streams data, which was acquired through the DEQ website.

Initial Layer Synthesis and Input

In order to complete the hotspot analysis, data layers must be modified to yield the information needed. First, use codes were assessed for various land uses of interest and used to select a subset of parcels which could be determined as “high risk” land uses. A “use probability” was applied to each land use, which characterizes a land use’s probability for a discharge to occur, and potential severity of that discharge should it occur. This “use probability” is initially applied subjectively, but will be further defined as more data from the IDDE program is gathered and can be re-input into the model. Figure 1 displays the location of various land uses of interest of Prince William County.

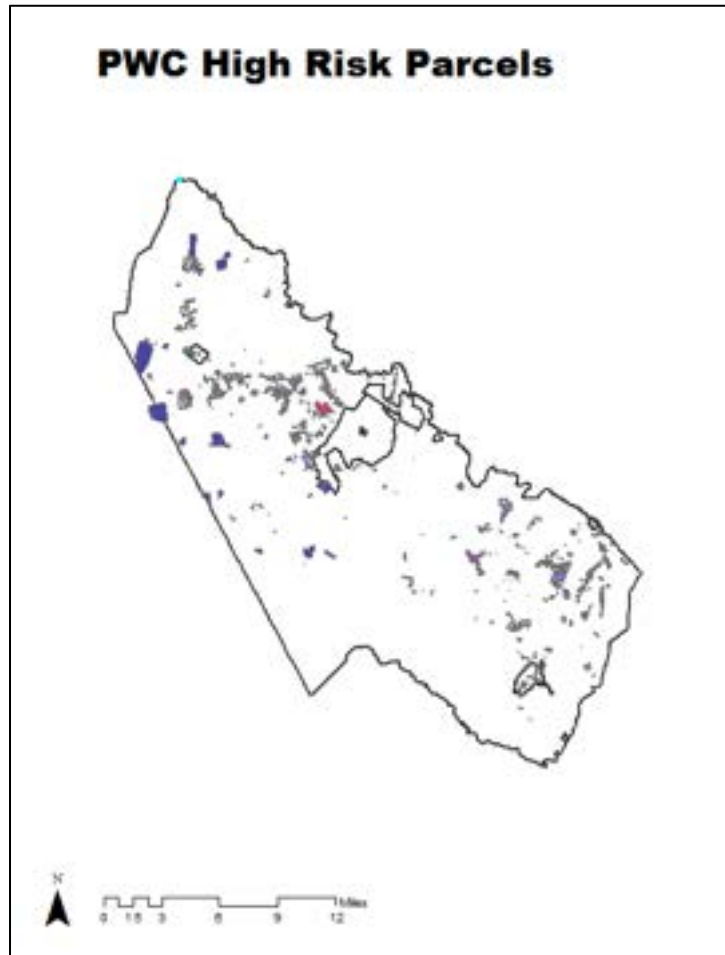


Figure 1: High Risk Parcels hotspot identification map

The impact value is a number from 1 to 5 characterizing each land use according to the potential of illicit discharge occurrence (determined from historical discharge data, low probability denotes low risk) and potential discharge severity (an assumption of the possible damage that may occur from a discharge). A list of land uses, use codes, and the initial scores given to the land uses can be seen below in Table 1.

Table 5: Impact values for Land Use hotspot identification

Use code	Use description	Use Probability
191	Technology Services	1
229	Other Utilities	1
349	Food Stores	1
140	Research and Testing	2
156	Wholesale Warehousing (Condo)	2
224	Sewage	2
343	Convenience Store	2
831	Golf Course	2
832	Golf Course	2
112	Industrial Conglomeration	3
151	Mini Warehousing	3
216	Auto Parking	3
311	Small Shopping Center	3
312	Shopping Center	3
313	Shopping Center	3
314	Large Mall	3
315	Large Mall	3
317	Shopping Center	3
318	Shopping Center	3
320	Building Materials	3
351	Restaurant	3
352	Restaurant	3
353	Restaurant	3
354	Restaurant	3
361	Motor Vehicle Sales	3
520	Barber/laundry/cleaners/etc	3
590	Barber/laundry/cleaners/etc	3
841	Swimming Pool	3
851	Marina	3
910	Agricultural Resources	3
911	Agricultural Resources	3
930	Agricultural Resources	3
121	Durable Manufacturing	4
126	Durable Manufacturing (Condo)	4
131	NonDurable Manufacturing	4
150	Wholesale Warehousing	4
160	Industrial Service Garage	4
190	Other Industrial	4
211	Railroad	4
212	Rail Rapid Transit	4

213	Bus	4
214	Motor Freight Transportation	4
219	Other Transportation	4
225	Solid Waste Disposal	4
344	Convenience Store with Gas	4
362	Gas and Service Station	4
363	Gas Station	4
369	Other Automotive	4
540	Other Repair	4
973	Storage Yard	4
366	Service Station	5
530	Motor Vehicle Repair	5

The same process was used for VPDES general stormwater discharge permit holders within the County. VPDES permitted facilities were identified using data obtained from DEQ. A determination on which VPDES permittees discharged into the County’s MS-4 system was made, and a score (discharge probability) was assigned to each facility according to its assumed probability to discharge pollutants.

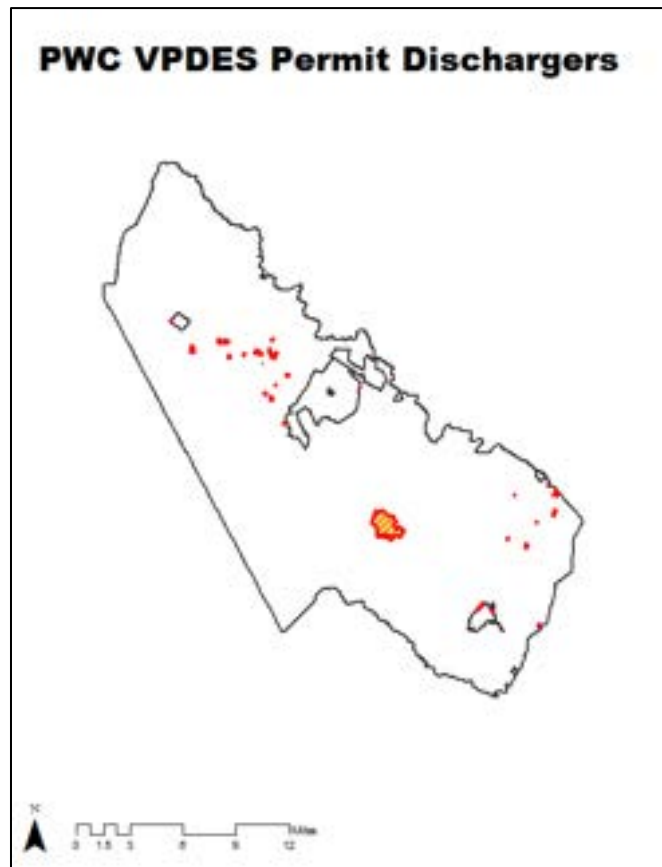


Figure 22: VPDES permitted facilities hotspot identification map

Table 2: Impact values for VPDES hotspot identification

NAME	Permit_No	Score
PWCBOCS	VAR051078	0
CHASE DAVID D	VAG830458	1
GENERAL DYNAMICS LAND SYSTEMS INC	VAR051293	1
OVERNITE TRANSPORTATION CO	VAR051030	1
US FOODSERVICE INC	VAR051117	1
OLD DOMINION FREIGHT LINE INC	VAR051476	1
REMODELERS CREDIT CORP	VAR051996	2
PWC	VAR051477	2
FURR FLOYD H AND BARBARA J	VAG750237	2
SUPPORT TERMINALS OPERATING PTNSHP	VAR051039	2
7905 LC	VAR052008	2
W M TINDER INC	VAR052074	2
EVERED INC	VAR052190	3
POTOMAC & RAPPAHANNOCK TRANSPORTATION E	VAR051886	3
LAND VENTURE ONE L C	VAR051295	3
DALRYMPLE REALTY CORPORATION	VAG110100	3
THIRD GENERATION L P	VAR051085	3
KRAUSS RICHARD L TR	VAR050983	3
NEWBILL HOLDINGS LLC	VAR051639	3
ARCHIE HENRY E SR & ANNIE WILLIAMS	VAR052115	3
BURBAGE J E JR E M BURBAGE	VAR051939	3
VENABLE JEAN S	VAR052243	3
HOFFMASTERS MARINA INC	VAR051183	3
SLURRY PAVERS INC	VAR051911	3
DAVIS TEDDY R JR HELEN M ETAL	VAR052014	3
ENNSTONE INC	VAG110111	4
COSNER MEDFORD R	VAR051009	4
VIRGINIA CONCRETE CO INC	VAG110083	4
DALRYMPLE REALTY CORP	VAR051949	4
JULIUS BRANSCOME INC	VAR050908	4
JONES SAMUEL M ESTATE	VAR051298	4
CONCRETE PIPE AND PRODUCTS CO INC OF	VAG110313	4
ARBAN CAROSI INC	VAG110068	4
HARD ROCK CONCRETE LLC	VAG110067	4
SUPERIOR PROPERTIES INC	VAR051992	4
SUPERIOR PAVING CORP	VAR050901	4
POTOMAC LANDFILL INC	VAR051073	5

Since the point of discharge is the ultimate target of the analysis, outfalls greater than 15 inches were identified through Prince William County. Applicable outfalls were identified and isolated using the feature selection tool and processed into an individual layer. The greater the density of outfalls within

an area the larger the chance of a discharge occurring. Outfalls associated with VPDES and High Risk facilities were also determined by creating a buffer around VPDES and High Risk parcels, and capturing all outfalls within the buffer. Outfalls were given a uniform impact value and factor in during the overall hotspot analysis (Standard outfall = 10, VPDES outfall = 30, High Risk Outfall = 30). Figure 3 displays the location of outfalls within the county.

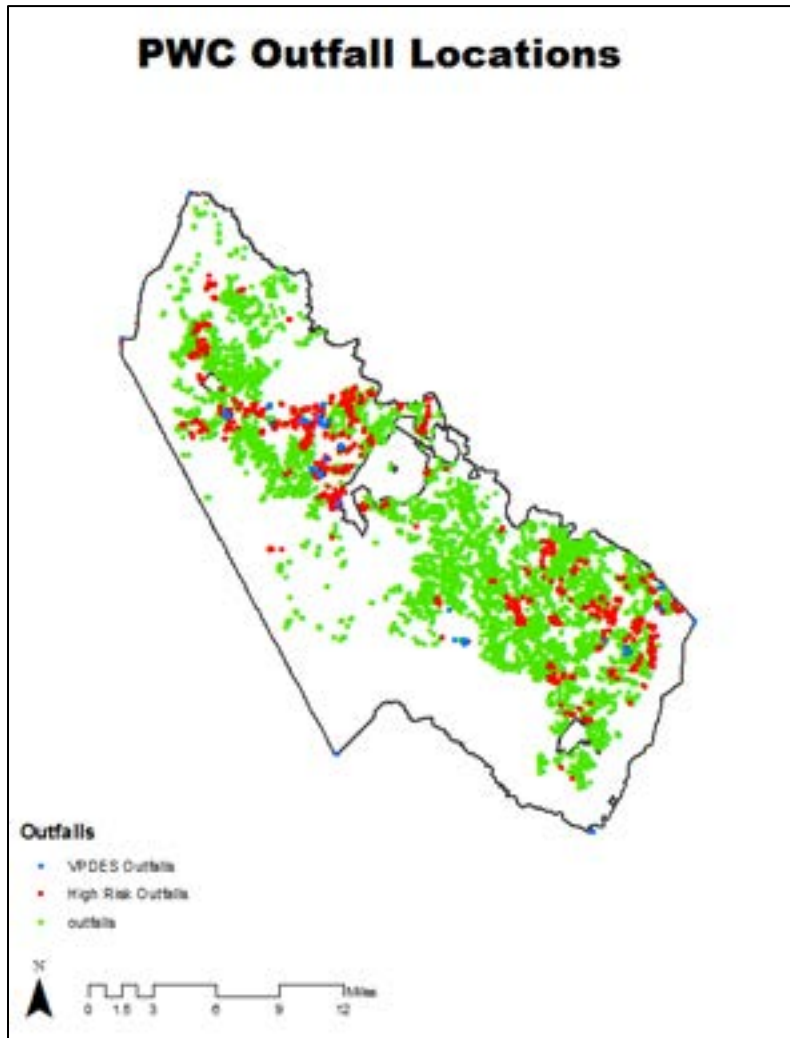


Figure 3: Location of outfalls within Prince William County

To address the potential impact of illicit discharge on environmentally sensitive areas, a streams and water body layer was included in the analysis (Figure 3). Major streams and rivers were isolated from man-made ditches and conveyances within the layer. These streams were given a uniform impact value. The area of stream within a region influences the potential discharge probability score by quantifying the amount of environmentally sensitive features in an area. Streams listed on the EPA 303(d) list of impaired water bodies have a greater potential of impact from illicit discharges and are therefore given an additional weight in model outputs.

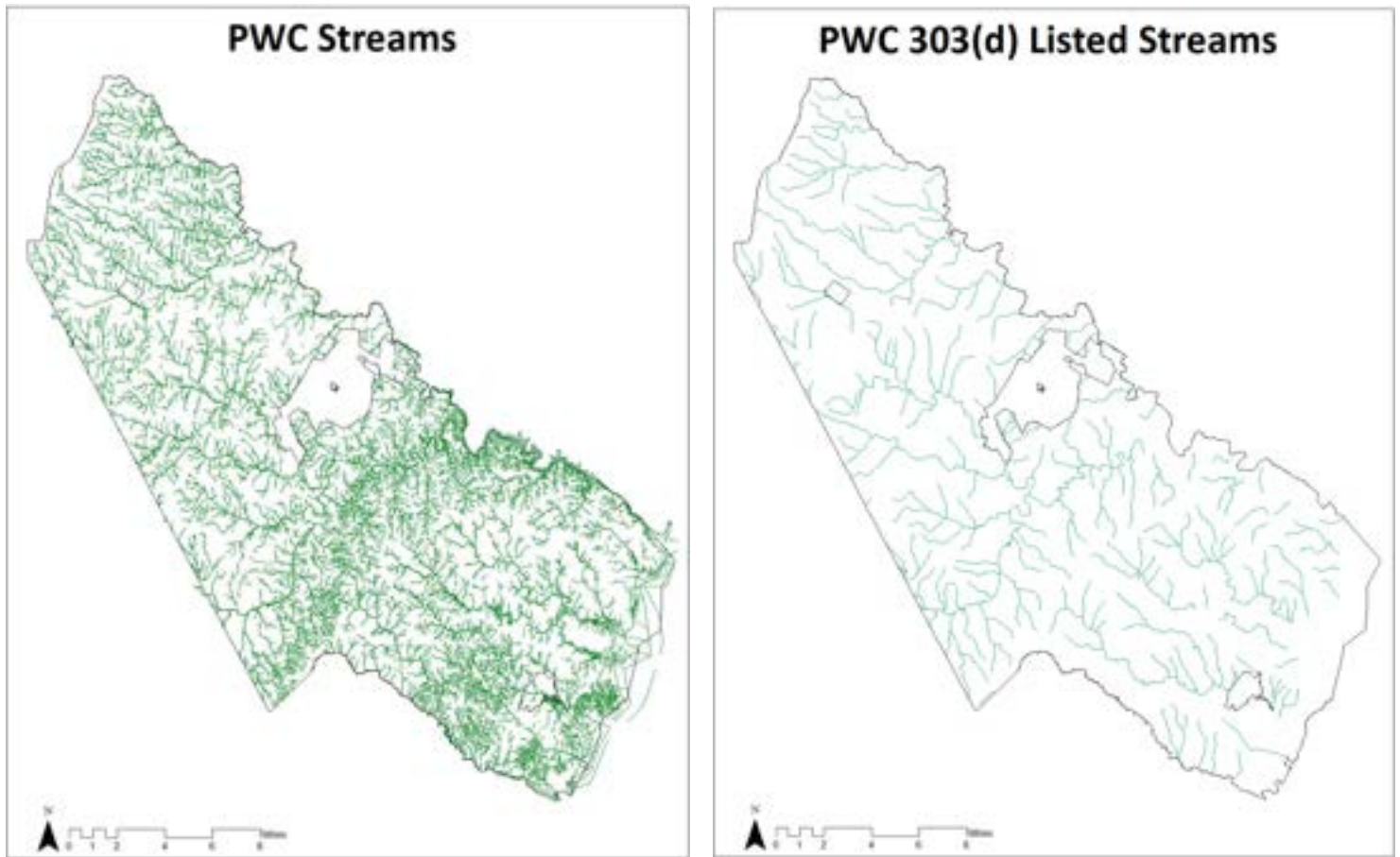


Figure 4: Streams and impaired streams within Prince William County's jurisdictional area

Next an assessment of potential areas for cross connections between the storm sewer and sanitary sewer system was performed. Areas where the storm and sanitary sewer system overlap create potential for cross contamination due to leaking sanitary sewer infrastructure. This analysis was accomplished by overlaying the storm and sanitary sewer layers using GIS, and isolating the locations where they overlap. These locations were turned into point features and assigned a uniform potential discharge probability score (20). This analysis is displayed below in Figure 5.

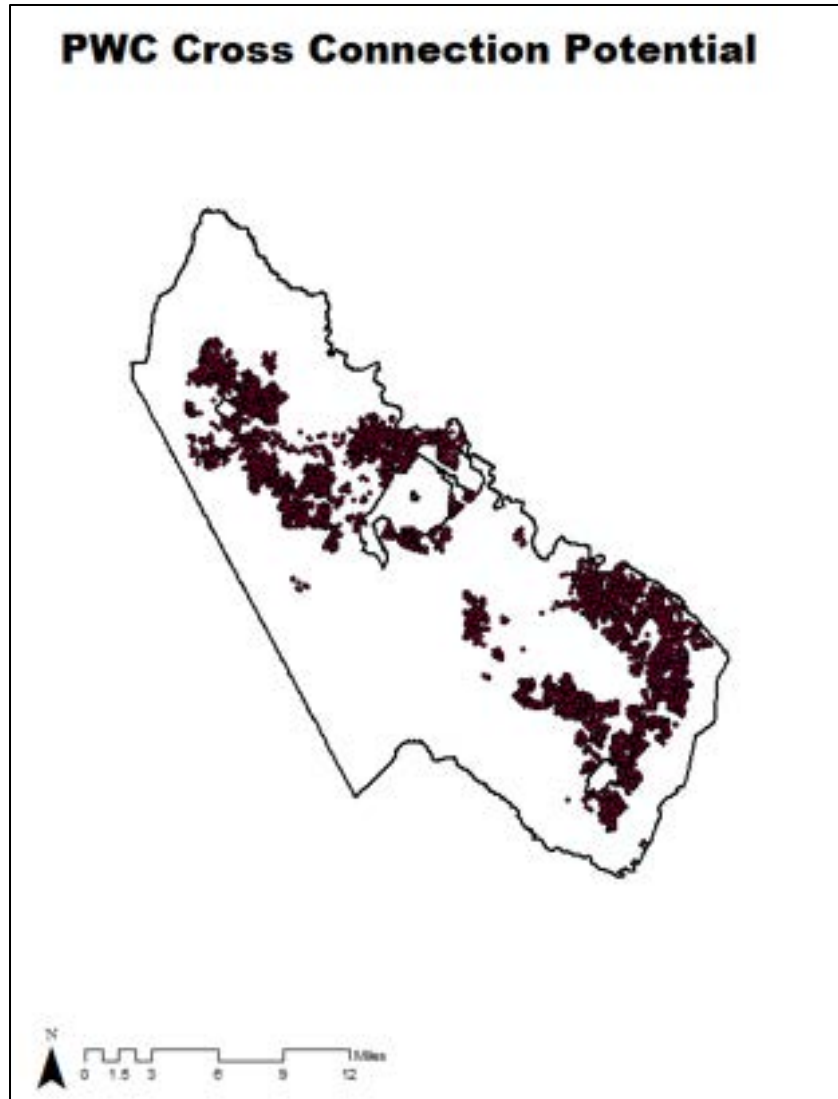


Figure 5: Location of potential cross connection sites within Prince William County

Often, areas with a higher percentage of impervious surfaces tend to contribute greater to pollutant loads. To account for this, a layer depicting impervious surface within the County was incorporated in the model. Impervious surface area is assigned a discharge score of 1. A low score was selected because the large areas covered by impervious surface can cause large impacts to model outputs. A score which balances the impact of impervious surface on pollutant output without weighing too much into model outcomes was desired. Figure 6 below shows impervious area within the County.

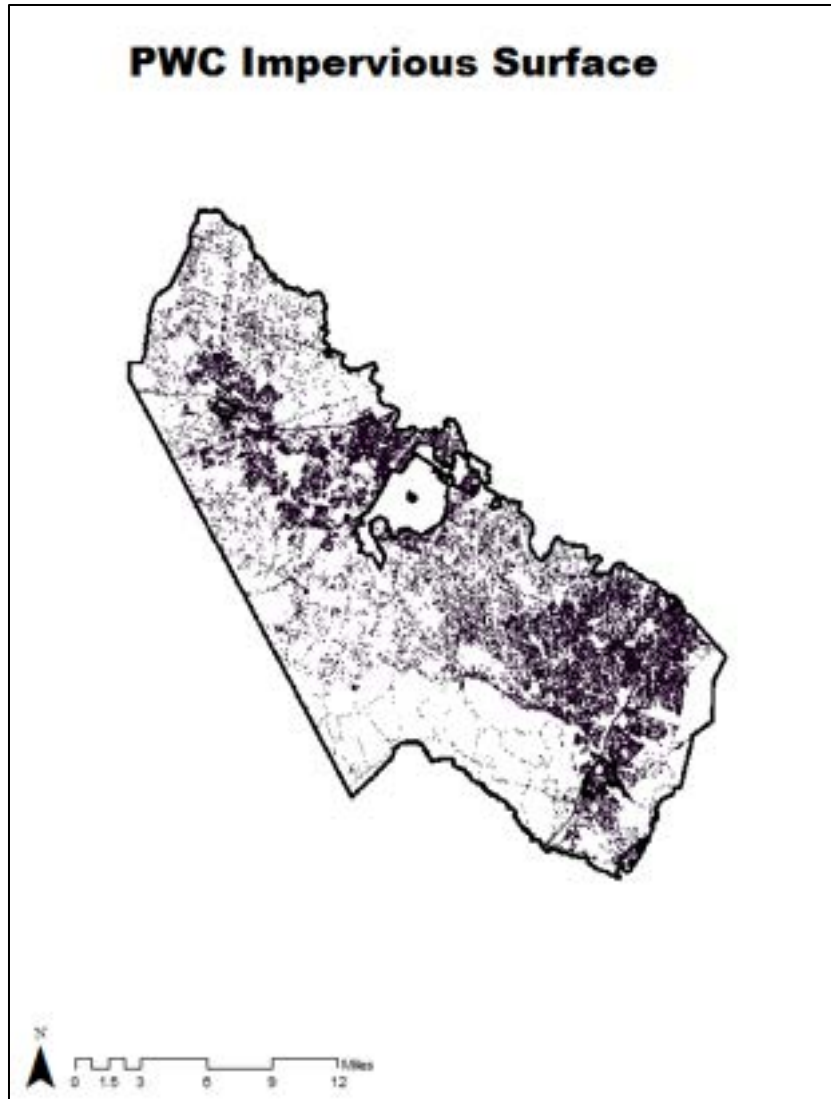


Figure 6: Impervious surface in Prince William County

Lastly, discharges from residential areas had to be accounted for. Although commercial and industrial areas were well represented in the hotspot analysis, residential areas within the County were lacking sufficient input into the model. Using a layer depicting the residential development in the County, these areas were isolated and assigned a discharge score of 1. This gives residential areas a proportioned impact on hotspot scores.

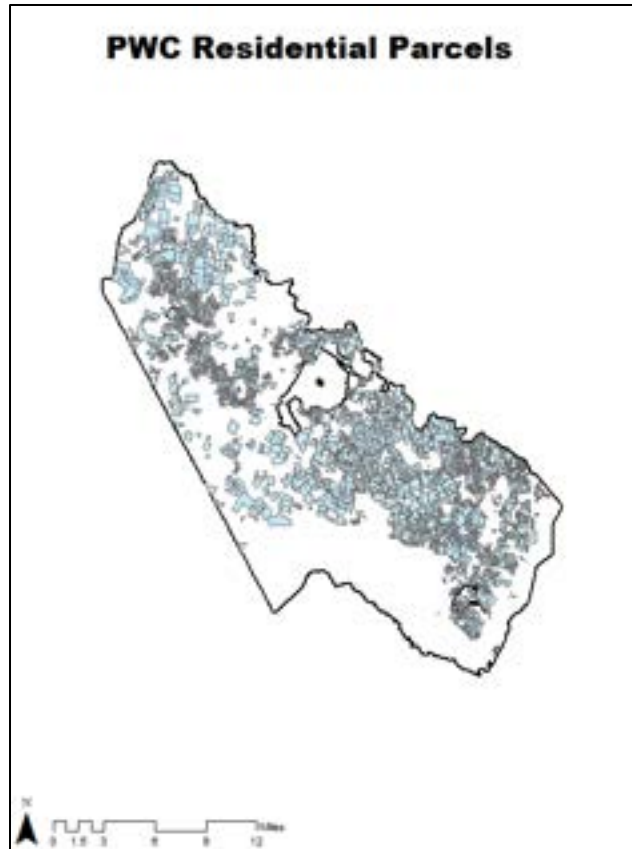


Figure 7: Impervious surface in Prince William County

Hotspot Analysis

Once the layers were manipulated to yield the desired data they had to be combined to produce the final hotspot analysis. Layers were converted from a polygon, line, or point to a raster format to allow for easier compatibility of the various data layers. The Raster format represents data in small cells, allowing for a point by point analysis of each location on the map. It facilitates the ability for data with different layer types (i.e. polygon, line, point) to be combined simply, since they are not compatible otherwise due to differences in shape, size, and location. Areas within a layer where empty space exists cause discontinuity when trying to combine them into the overall analysis. To remedy this, the Reclassify Raster tool was used. This tool removes the “Nodata” classification automatically applied to empty spots in the layer during the raster conversion, allowing a numerical value to be assigned in its place (0). Without this step, only the overlapping areas of data in each layer would be included in the analysis and an incomplete assessment of discharge probability would result.

Each layer was combined for hotspot analysis using the Raster Calculator tool. This tool performs simple mathematical operations at the cellular level, to combine the data into an overall assessment of County hotspots. The tool essentially adds together each included layer combining the discharge probability scores from each cell. Figure 8 below shows a simple representation of this process.

Data is then transposed to the ADC index and watershed maps of the County through simple Spatial Statistics tool. The Spatial Statistics tool performs a basic statistical analysis on raster cells within a specified polygon. For the purpose of this study the mean and sum of probabilities within both the

ADC index areas and sub-watersheds of the County were assessed.

Analysis using Mean vs. Area (Average) Score

There are various ways to interoperate the data output from the model. A score had to be generated for each ADC Index number and watershed in order to effectively assess and utilize model outputs; however, this presented a problem as to what mathematical method of assessment should be

used. The ArcGIS model is generated to output values for the mean, median, minimum, maximum, and sum of each individual ADC index area and watershed. As stated before, for the purpose of this analysis, only the sum and mean probability of discharge are of interest. The sum is the result of all cells within the identified area added together, while the mean is the average cell value within the area. For a watershed scale analysis, the mean probability of discharge must be used. This is because the area of each watershed differs, leaving the sum of the probabilities of each watershed highly dependent on its size. Larger watersheds will accommodate more cells leading to a larger overall probability of discharge. The ADC index, on the other hand has a uniform area removing the effect of size on the output. This allows for the sum of probabilities to be used, which gives a better overall assessment of the characteristics within that area.

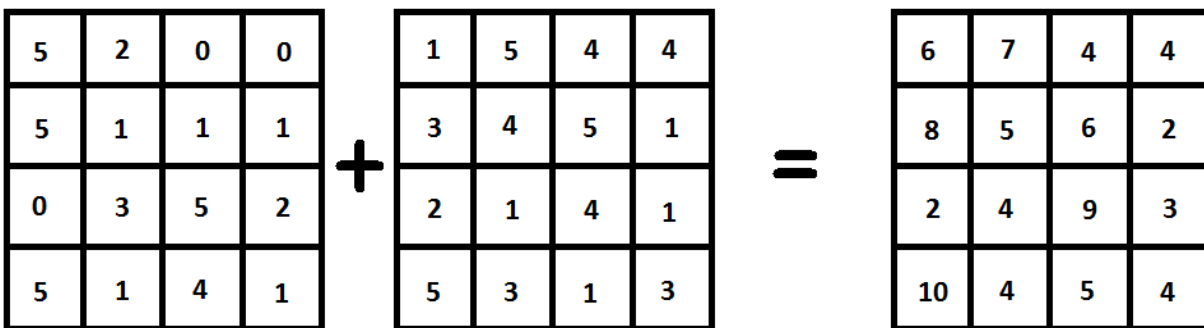


Figure 8: Raster Calculator Example

Isolation of Hotspots and Identification of Outfalls of interest

The first step in using hotspot analysis to identify outfalls for field inspection is to select the ADC index number with the highest probability of discharge is selected from the generated list. The ADC index was chosen as a basis for field analysis for a few reasons: it is easy to navigate to, being the basis for street map navigation; it encompasses a relatively small area, typically containing 8-10 outfalls per Index which is a good size for a day’s field assessment; and, it can be combined easily to into a larger area allowing for an broader perspective on illicit discharge trends. Assessing discharges on a watershed scale would incorporate too large of an area and would not be suitable for a quality comparison

between areas of the County. Once an index number is selected, then an index area map is generated showing all outfalls, storm sewer system, roads, and land uses of interest. Each map is created using ArcGIS tools to zoom to the applicable map location (ADC Index number), and to highlight all applicable features. From this map, a list of all outfalls and their size can be created. This map, with outfall information, can then be used as a field guide for the outfall monitoring.

Model Calibration

Model calibration is an important step in model development. Model outputs must be adjusted to more closely portray actual conditions. Since the raster layers used to sum severities in the model skew the data by giving more weight to larger polygons, point-sized items like outfalls must be given a larger value to compensate and allow ADC areas to more closely reflect the desired weight proportion between inputs. The value given to outfalls was adjusted so that their impact on model outputs was more representative of actual conditions.

Originally, some areas of the map contained a high probability of discharge, despite being located in more rural areas. This was found to be due to an increased proportion of streams meandering throughout the grid. In order to correct this, a balance was struck between the impact value given to streams, and their actual impact on real-world conditions. Similarly, rural areas were triggering high probabilities of discharge due to the age of parcel development despite not having substantial storm sewer systems. To remedy this, the residential and commercial layers were given a larger score to better reflect in-situ conditions.

The model will continue to be adjusted as more data becomes available pertaining to discharges within the County. Data will be used to validate and or adjust assumptions made in this version of the model.

Results and Conclusions

The results of the analysis showed areas with the greatest probability of discharge within Prince William County were consistent with previous field observations and expectations. The Route 1 corridor, Bull Run commercial area, and Potomac Mills Mall all generated high probabilities of discharge. Residential areas had a fairly constant probability of discharge. The highest probability of discharge was located around the specified land uses of interest including shopping centers and auto-related industrial areas. Rural areas with little to no storm sewer system recorded the lowest probability of discharge, as would be expected. A detailed map displaying parcel-based discharge probability was created using the methods described above (see figure 9). The land uses of interest are distinctly represented in red describing the highest discharge potential. Residential areas shown primarily in yellow present a moderate discharge potential. Rural areas are mostly indicated in blue, describing a low discharge potential which are most likely out of the scope for dry weather discharge monitoring. Outfall locations and numbers are not factored in this analysis.

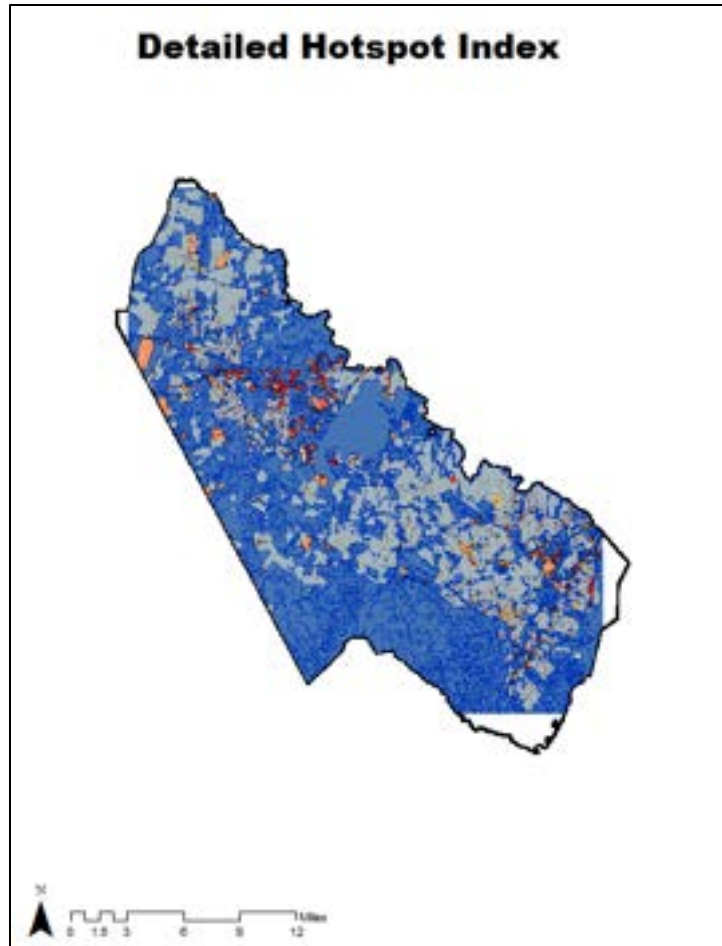


Figure 9: Detailed Discharge Probability

Previously a hotspot analysis was performed on a watershed scale. However, a watershed approach to discharge monitoring tends to skew the data, since discharge probabilities are averaged over the entire watershed making smaller pockets with high discharge; therefore, the ADC index method was determined to be the best.

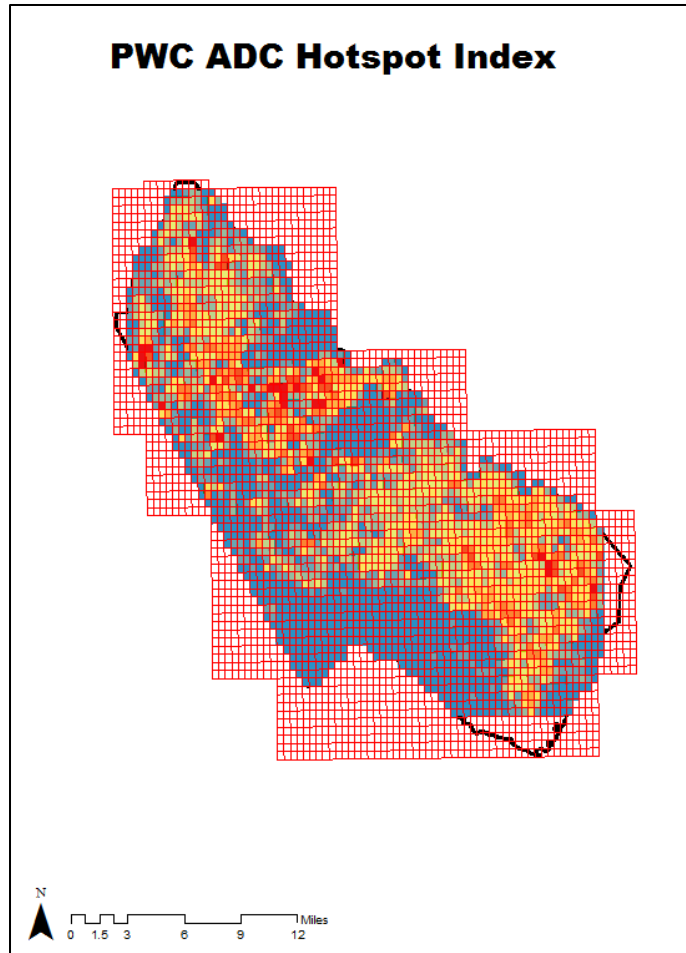


Figure 10: ADC index probability of discharge

The ADC index hotspot map, shown above (figure 10), is used for the inspection scheduling and field analysis of outfalls. As indicated in the parcel and watershed level assessments, County hotspots exist along the Route 1 corridor, Bull Run commercial area, and Town of Haymarket. Unlike the parcel and watershed level assessments, the ADC hotspot map provides a more thorough analysis of where the most probable locations for illicit discharge might actually be present. Table 3, shown below, displays the 50 ADC index areas with the highest probability of discharge. Sorted from highest to lowest, the table serves as the basis for the scheduling of dry weather outfall monitoring in the County.

Table6: Sum and mean probability of discharge scores by ADC index number

ADC_ID	MEAN	SUM
5992-C8	34916	56459172
5990-K5	34175	54919225
5756-G7	31523	51130306
5756-H7	30976	50243072
5991-A6	28771	46896730
5756-G3	27086	43879320
5992-C7	25886	42427154

5992-D7	24576	39641088
6110-G2	24456	39349704
5756-J7	24228	39322044
5757-A2	24170	39227910
5992-A6	23838	39189672
5991-A7	23096	37461712
5992-B6	22846	36782060
5991-A5	22637	36694577
5756-H4	22435	36322265
5992-G9	21579	35605350
5992-H8	21376	35270400
5756-K7	20886	33918864
5874-H7	20478	33542964
5638-G10	20215	33132385
5756-H5	20055	32609430
5756-K6	19838	32097884
5755-C4	19460	31914400
5872-C1	18951	30814326
5992-D8	18811	30624308
5874-J7	18896	30592624
5992-H7	18536	29842960
5756-H8	18295	29839145
5991-G7	18524	29675448
5756-J5	18332	29624512
5992-K10	17877	29211018
5990-C9	17834	29087254
5991-F7	17543	29033665
5992-E10	17820	28921860
5872-H10	17359	28746504
5756-G10	17724	28624260
5756-J6	17357	28222482
5991-B7	17339	28193214
5754-F5	17186	28167854
5756-C10	17250	28031250
5638-H10	17069	27839539
5756-G8	17085	27677700
5992-K6	16869	27597684
5755-E4	16728	27233184
5872-D1	16318	26777838
6110-E3	16210	26762710
5757-H6	16567	26623169
5991-K1	16215	26527740

Future Development of Model

The model will be updated as more detailed discharge information is gathered through the county monitoring program. In addition, updated data layers pertaining to the storm sewer system, outfalls, impaired stream listings, age of development, county land use, and parcel location will continually be introduced to the model. If more specific data on the age of storm sewer infrastructure becomes available, this will also be included in the model. Also, when the extent of the County's MS4 system is identified, model data will be adjusted accordingly. Finally, methods to incorporate the history of complaints and poorly maintained commercial areas will be evaluated and incorporated, if possible, into the assessment. All steps to increase the accuracy of the hotspot analysis will be evaluated for the model on an annual basis, and the model outputs will be re-assessed. An evaluation of the accuracy of the hotspot analysis, as well as verification of model outputs will be conducted on an annual basis.

Appendix B – Desktop Analysis Scoring Worksheet

Appendix C – Field Assessment Scoring Worksheet

Appendix M – Infrastructure Coordination

**Infrastructure Coordination Meeting Minutes
December 17, 2019, 10am-noon
NVRC**

Attendees:

NVRC	Normand Goulet	VDOT	Marian Carroll
Prince William Co.	Marc Aveni		J. Alex Foraste
	David Ungar		David Wilson
	Benjamin Eib		Tracey Harmon
Fairfax Co.	Craig Carinci		Michelle Fults
	Heather Ambrose	Arlington Co.	Diana Handy
	Martin Hurd		

1. Mapping

- VDOT has been consolidating legacy Access databases and moving to an ESRI ArcGIS online platform. Considerable progress has been made (and was demonstrated later in the meeting).
- VDOT is in the process of developing a public-facing web map application that will show their updated MS4 service areas, BMPs, outfalls and basins.
 - i. The app should allow for updates by localities and should be searchable by county, SWM ID, PDC
 - ii. Should be available to public in another six months
- Michelle confirmed that she has been working with Fairfax County’s GIS (Keith Appler) RE: data sharing and status updates.
- VDOT has transitioned from the ‘Falcon’ data management system to ‘Project Wise’. ProjectWise is able to store as-builts for BMPs but it is proving a challenge to integrate with ArcGIS.
- VDOT transitioning to Survey 123 to collect georeferenced information and photo imagery and moving forward with drones to get map-based imagery. VDOT will happily accept additional data from localities.
- VDOT developing an interface tool to generate site maps for new construction GPs
- Norm mentioned DEQ encouraging PDCs to become data collectors and to move to interactive maps (not static) that are available to the public
- Prince William Co. has been updating their MS4 service area annually as opposed to one time per permit cycle
- Fairfax County completed some minor updates (new infrastructure & corrections from field staff) to their MS4 service area and is amenable to share the data with adjacent MS4s.

2. Illicit Discharge Detection Elimination

- David: VDOT is using the Survey 123 app to collect IDDE data
- VDOT has replaced the older 8x11” IDDE field guide with a newer, sleeker pocket guide for field staff & contractors that is meant to be less programmatic
 - i. Norm suggested developing a regional field guide

- VDOT has revamped their IDDE training video which can be found on YouTube (search “VDOT IDDE”) and produced a Good Housekeeping video for contractors that is not MS4 specific
 - i. VDOT is including requirements that contractors document they have watched the video in new maintenance contracts
- VDOT will continue to coordinate with localities regarding IHRR facilities
- VDOT demonstrated their newly developed online dashboard and heat map of IDDE data collected through Survey 123. It is still being developed and is not yet available to the public. The dashboard categorizes incidents and allows users to click on a location to view the data associated with the incident
 - i. Public dashboards are a requirement of VDOT’s MS4 permit
- VDOT is investigating potential contaminated groundwater discharges into their storm system and has coordinated with Fairfax County’s IDID staff regarding groundwater discharges to their MS4 from the Lumens Bldg. in Tysons.
- Prince William Co. has recently updated their IHRR outfalls. They’ve noticed outfalls from shopping centers have increased potential to contribute pollution to the MS4 and are including them in their IHRR program.
- Fairfax County’s IHRR staff update the IHRR facility inventory on an annual basis, to add new facilities, change status (noting closures, relocations, or if a facility does not meet the definition of IHRR), and remove facilities. The GIS information can be shared with VDOT during data exchanges between staff (Michelle (VDOT) and Keith (FFX))
- Marian commented that Arlington Co. has an open line of communication with VDOT and regularly includes VDOT on emails to DEQ regarding IDDEs. Arlington recently collaborated with VDOT on a construction project to ensure VPDES permit coverage and adequate monitoring is being conducted to minimize stormwater pollution.

3. Chesapeake Bay TMDL

- VDOT has several TMDL projects underway
 - i. Mentioned Pike Branch in Fairfax County (4,300 LF stream restoration scheduled for completion in May or June 2020; completely contained within VDOT ROW) and Lake Ridge (700 LF) in PWC
- VDOT has developed an IFB to purchase nutrient credits-looking for more nitrogen credits.
- VDOT demonstrated a recently completed analysis that identified and optimized potential opportunities to implement grass swales and other plantings in medians and other parts of the ROW. Marc asked VDOT to please share the potential project locations with the localities.
- VDOT is investigating shoreline restoration projects, but none are located in the NOVA area at this time.
- VDOT also has several outfall restoration projects in the pipeline.
- Norm asked about the potential for tree planting on VDOT ROWs and open spaces given the Phase III WIP tree requirements that are included in the milestones document
 - i. Tracey explained that VDOT will get first choice on credit opportunities on lands managed by state agencies.

- Marty mentioned that Urban Forestry in Fairfax looking for ways to meet tree canopy goals and that this could be a potential partnership opportunity – Marian will act as the POC for these discussions.
- PWC and Fairfax both stated they are looking for partnership opportunities to meet TMDL reductions- Norm suggested having a follow up discussion in a future meeting
- VDOT working with RES on an on-call task order to pursue additional contracts that could be used for partnering opportunities and this has been a very cost-effective approach
 - i. VDOT mostly interested in turn-key project in which VDOT only pays for the lbs of pollutant removed
- Craig explained that Fairfax Co. has a comprehensive project prioritization and selection process that is used for both stream restoration and other basin projects.
 - i. Norm asked if Fairfax would present this tool at the next MS4 meeting in early 2020
- Norm advised the group to be careful of adopting the new protocols to stream restorations at this time- they are still under review by the CBP expert panel and DEQ has not yet provided a revised guidance document.
- Marty shared that the most recent details on the means, methods, and schedule for implementation to achieve reductions for the Chesapeake Bay special condition are available on Fairfax County’s website in the [FY19 MS4 Annual Report Appendix for the Bay TMDL Action Plan](#) and that he would provide the link to Norm after the meeting.
- The group re-affirmed that the current coordination and governance processes in place for project selection prevent the MS4s present from double-counting pollution reductions in our Bay TMDL Action Plans.

4. Local TMDLs

- VDOT has developed a local TMDL fact sheet for each residency including VDOT facilities in each TMDL watershed. VDOT will email the fact sheets to Norm to distribute to the MS4s.
- Norm suggested combining efforts regionally for TMDL education and outreach. NVRC is working on PCB outreach material that can be used by MS4s in the PDC.
- DEQ met with NVRC yesterday (Dec 16) to discuss the future of the SaMS effort and that there is a good chance that NVRC will be taking this over and adding an FTE to manage this program.
- Norm expects that chloride language will become less generic and more permit specific in the next round of MS4 permits.
- In the most recent DEQ 303(d) list, Four Mile Run was listed with a benthic impairment. An analysis to determine stressors (possibly Chloride) and a TMDL will probably be forthcoming.
- Heather gave an update on Fairfax County’s litter pilot program utilizing non-profit agencies and the County’s homeless population to assist with litter cleanup. Prince William Co. has staff that function as a litter pick-up crew.
- PWC recently toured DC’s bandalong installations and is considering installing one. Craig shared that Fairfax county’s bandalong construction has not been completed.
- Larry Camp is VDOT’s POC for the Adopt a Highway map

- Everyone agreed there is a need for increased TMDL coordination between VDOT and the localities.
- Marty asked for an update on Fairfax County's BOS letter to VDOT requesting that VDOT incorporate the county's local design standards into VDOT construction projects. Currently, VDOT requires a formal request be submitted during the public hearing for each individual construction project. Alex stated he would follow up with Chris Swanson and provide a status update.

5. Water Quality Monitoring

- Heather mentioned that Fairfax County's Watershed Assessment Branch continues to collect water quality, biological, and physical habitat data and is reiterated that the county can provide the information to VDOT and other partners present if it would be useful for their programs.

6. Annual Reporting

- Marty mentioned that Fairfax Co. has a permit requirement to report on VDOT coordination efforts. He offered to provide meeting notes to participants and asked for all to review the notes for accuracy as they will be included in our next MS4 Annual Report.



To: Madan Mohan, P.E., CFM
Chief, Watershed Management Branch
Environmental Services Branch
Prince William County Public Works

From: Glenn Pearson, P.E., Deputy Director of Operations & Maintenance

Date: July 23, 2020

Subject: MS4 Permit

Please find the following data as requested for the MS4 Permit regarding the Service Authority sanitary sewer system. The period covers July 1, 2019 to June 30, 2020.

NEW ASSET ACTIONS

Action Item	Results
New sanitary sewers constructed and inspected (miles):	13.62
New sanitary sewer manholes constructed and inspected:	363
New sanitary sewer laterals constructed and inspected:	1,077

EXISTING ASSET ACTIONS

Action Item	Results
Existing sanitary sewers inspected via closed circuit television inspection (CCTV) (Miles):	92
Existing sanitary sewers repaired via cured-in-place rehabilitation (Feet):	23,136
Existing sanitary sewer manholes inspected and repaired:	228
Existing sanitary sewer lateral inspected via CCTV:	5
Existing cleanouts repaired:	56

SANITARY SEWER OVERFLOW

Date	Cause	Discharge Vol. (Gal.)	Comment
8/5/19	Sanitary sewer overflow occurred in an easement behind 14005 Telegraph Road, Woodbridge, VA. The eroded creek bank and bed exposed the sewer line and may have caused separation in the 8" gravity sewer main.	Unknown	SA Staff rejoined and repaired the pipe and stopped the SSO. The SA has replaced the existing PVC sewer main with ductile iron pipe. Creek stabilization was performed to cover and protect the exposed pipe from future bank erosion.
12/26/19	Two of the three pumps at Belmont sewage pump station (13760 Dabney Road, Woodbridge) had stopped; the third pump was previously taken off-line for scheduled maintenance. The pump stoppage caused a high wet well level creating an overflow from the pick holes of four manholes immediately upstream of the pump station. Some of the overflow reached nearby Marumsco Creek. However, most of the overflow was contained in a low-lying area adjacent to the pump station, which was pumped back into the sewer system.	Unknown	The impacted low-lying area was cleaned and treated with lime. SSO warning signs were posted in the vicinity, and public notifications were posted on the corporate website and on social media outlets. Additional investigation on the cause of the pump stoppage revealed a problem with the pumps' auto rotate SCADA coding and a high wet well level switch that faulted. The SCADA issues have been resolved.
3/11/20	During a scheduled CCTV inspection of a 12-inch Ductile Iron Pipe located at 10640 Davidson Place, Manassas, SA staff observed a manhole overflowing into a nearby storm water retention pond. A Vactor-truck was immediately dispatched to the location, and the overflow was stopped after the crew dislodged 2 very large rocks, which were restricting flow.	Unknown	Sewage that entered the pond was pumped back into the sanitary sewer system. The area impacted by the SSO was cleaned and treated with lime. SSO warning signs were posted in the vicinity, and public notifications were posted on the corporate website and on social media outlets. An additional CCTV inspection of the upstream and downstream line segments were completed and no other flow restrictions were found.
4/3/20	A loss of phase from Dominion Energy occurred at the Occoquan Creek pump station located at 13221 Marina Way Woodbridge. The Automatic Transfer Switch (ATS) did not switch over to the emergency generator to power the station. SA staff responded to the alarm and observed a sanitary sewer overflow condition at a manhole near the pump station. Some of the overflow entered the Occoquan River.	Unknown	The pumps were restarted and the SSO at the manhole was stopped. The area impacted by the SSO was cleaned and treated with lime. SSO warning signs were posted in the vicinity, and public notifications were posted on the corporate website and on social media outlets. The issue that caused the ATS failure has been resolved.

Date	Cause	Discharge Vol. (Gal.)	Comment
5/11/20	SA staff responded to customer complaint of odor near 9533 Country Roads Lane, Manassas, and observed an overflowing manhole. There was evidence of vandalism: the manhole lid was removed and tree limbs and sticks were in the manhole. Several attempts were made to dislodge the blockage in the manhole and the 8-inch sewer main. A sewer bypass pump system was deployed to stop the overflow, which continued in operation through the night. A CCTV inspection of the line revealed a 35lb dumbbell and multiple rocks were lodged in the sewer main.	2,000 – 5,000	FloodSaxs were placed around the manhole to contain the overflow, and a vacuum/flush truck was dispatched. The dumbbell and rocks were removed from the sewer main and normal flow was restored. The area impacted by the SSO was cleaned and treated with lime. SSO warning signs were posted in the vicinity, and public notifications were posted on the corporate website and on social media outlets. After the debris was removed, an additional CCTV inspection of the upstream and downstream line segments were completed and no other flow restrictions were found. SA crew bolted down the manhole lids in the area to prevent future vandalism.
6/21/20	SA staff responded to a customer call for a possible water main break with a sewer smell near 16524 Hayes Lane, Woodbridge. SA staff observed sewage flowing from under the pavement and confirmed it was an overflow. A leak-noise correlator system deployed to locate the break in the 10-inch ductile iron force main. Some sewage from the break entered the storm water inlet and discharged through the storm water outfall to a nearby storm water ditch where the flow was contained and did not reach a body of water.	Unknown	SA staff used FloodSaxs to stop the flow of wastewater into a nearby storm water inlet while Vactor trucks pumped wastewater from the storm water inlet. The force main was repaired with repair band. SA staff flushed Hayes Lane to remove residual sewage to reduce any remaining sewer odor in the area. The storm water outfall area was cleaned and treated with lime. The Service Authority posted SSO warning signs in the vicinity of the storm water outfall, and public notifications were posted on the corporate website and on social media outlets.
9/27/19	SA staff responded after a contractor hit a 2" sewer force main at 14429 Bristow Road, Nokesville.	50	Sewage was contained in the excavated hole. VAC truck was used to collect all escaped sewer in the hole and repaired the pipe.
1/10/20	Dispatchers were notified of raw sewage coming from a manhole at 12100 Edmund Saul Court, Nokesville. Air Release valve malfunctioned causing sewer to fill the manhole and causing the overflow	100	Pump station was shutoff, crew vacuumed sewer at the ARV manhole and plugged off the ARV. The impacted area was cleaned up and lime sprayed. Top soil with seed and straw was placed to address ruts in the yard. Overflow was contained, vacuumed up and did not reach a water body.

Appendix 1 – Biological Stream Monitoring

Benthic Macroinvertebrate Population and Water Quality Monitoring Report

Fall 2019 and Spring 2020

Prepared for:



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August 28, 2020
Project No. 151270003

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 BACKGROUND.....	1
1.2 PURPOSE	1
2.0 METHODS.....	2
3.0 RESULTS	3
3.1 FIELD CONDITION AND PARAMETER RESULTS	3
3.2 WATER QUALITY LABORATORY RESULTS.....	5
3.3 BENTHIC MACROINVERTEBRATE RESULTS.....	8
3.4 COMPARISON TO BASELINE RESULTS.....	10
4.0 SUMMARY AND CONCLUSIONS	12
4.1 SUMMARY.....	12
4.2 CONCLUSIONS	13
5.0 REFERENCES	14

TABLES

Table 1	Fall 2018 Field Condition and Parameter Results
Table 2	Spring 2019 Field Condition and Parameter Results
Table 3	Fall 2018 Water Quality Results
Table 4	Spring 2019 Water Quality Results
Table 5	Fall 2018 Benthic Macroinvertebrate Results
Table 6	Spring 2019 Benthic Macroinvertebrate Results
Table 7	Habitat and Benthic Community Comparison Summary

FIGURES

Figure 1	Cow Branch Sampling Location Map
Figure 2	Dawkins Branch Sampling Location Map
Figure 3	Little Bull Run Sampling Location Map
Figure 4	Neabsco Creek Sampling Location Map
Figure 5	Purcell Branch Sampling Location Map

APPENDICES

Appendix A	Site Data Sheets
Appendix B	Water Quality Laboratory Results
Appendix C	Benthic Macroinvertebrate Laboratory Results

LIST OF ACRONYMS

BI	Biotic Index
°C	Degrees Celsius
CWA	Clean Water Act
DO	Dissolved Oxygen
<i>E. coli</i>	<i>Escherichia coli</i>
EPT	Ephemeroptera/Plecoptera/Tricoptera
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
VDEQ	Virginia Department of Environmental Quality
VSCI	Virginia Stream Condition Index
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) 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 2019 fall and 2020 spring sampling events, which were 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. In addition, this report provides a comparison summary with the baseline results from the 2016 spring and fall sampling events (spring and fall baselines).

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, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch (Figures 1 through 5).

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

Sample collection occurred from October 2 to 3, 2019, and from May 11 to 13, 2020, in accordance with the Sampling Plan. Benthic macroinvertebrate and surface water samples were collected by Wood personnel from five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch (Figures 1 through 5). 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 with a Marsh-McBirney Flo-Mate current meter 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 Wood'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

Sampling was conducted from October 1-3, 2019, and from May 11-13, 2020 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 2019 event and Table 2 for spring 2020 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 ($\mu\text{S}/\text{cm}$). The conductivity of streams generally range from 0 to 1500 $\mu\text{S}/\text{cm}$, while studies of inland fresh waters indicate that streams supporting mixed fisheries have a range between 50 and 500 $\mu\text{S}/\text{cm}$.
- 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 2019

RBP physical habitat assessment scores ranged from 117 (Purcell Branch) to 136 (Neabsco Creek). The scores indicated that all sites exhibited suboptimal 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 2019 Field Condition and Parameter Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Assessment/ Characterization Score	--	132	134	120	136	117
RBP Habitat Condition Category	--	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
pH	SU	6.78	7.65	7.86	7.49	7.61
Specific Conductance	µS/cm	259	432	583	168	176
Temperature	°C	23.36	23.37	22.76	21.17	22.71
DO	mg/L	8.78	6.36	5.48	8.87	9.16
Turbidity	NTU	1.88	NR	NR	2.24	NR
Water Depth	m	0.30	0.14	0.19	0.18	0.15
Secchi Depth	m	0.30	0.14	0.19	0.18	0.15
Reach Length	m	100	100	100	100	100
Reach Width	m	5.79	5.79	9.14	7.16	7.77
Surface Velocity	m/s	0.17	0.15	0.06	0.21	0.18

Abbreviations:

NR = Not Reported
 °C = degrees Celsius
 mg/L = milligrams per liter

Prepared by: BTG 08/18/2020
 Checked by: BTG 08/21/2020

3.1.2 Spring 2020

RBP physical habitat assessment scores ranged from 89 (Purcell Branch) to 127 (Neabsco Creek). The scores indicated that four of the five sites had suboptimal habitat for supporting benthic communities, while Purcell Branch was marginal for supporting a benthic community.

As shown in Table 2, the physical water quality characteristics of the five sites meet the typical water quality conditions described above, with the exception of elevated pH measurements at Dawkins Branch and Little Bull Run.

Table 2. Spring 2020 Field Condition and Parameter Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Assessment/ Characterization Score	--	107	106	102	127	89
RBP Habitat Condition Category	--	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal
pH	SU	6.95	8.19	8.12	7.76	7.65
Specific Conductance	µS/cm	340	416	328	186	203
Temperature	°C	12.83	13.55	12.33	12.22	9.44
DO	mg/L	10.25	9.23	11.9	10.98	11.4
Turbidity	NTU	1.08	6.7	1.75	NR	0.74
Water Depth	m	0.32	0.24	0.12	0.10	0.18
Secchi Depth	m	0.32	0.24	0.12	0.10	0.18
Reach Length	m	100	100	100	100	100
Reach Width	m	6.10	5.49	8.08	2.09	6.71
Surface Velocity	m/s	0.07	0.08	0.34	0.13	0.82

Abbreviations:

NR = Not Reported
 °C = degrees Celsius
 mg/L = milligrams per liter

Prepared by: BTG 08/18/2020

Checked by: BTG 08/21/2020

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 2019

As shown in Table 3, the water quality results for the five sites meet the typical water quality conditions described above, with exception of elevated *E. coli* levels, ranging from 150 to 1,050 MPN/100mL. Samples from each site were in excess of the Virginia Water Quality Standard of 126 MPN/100mL. Elevated *E. coli* levels are typically associated with sewage and animal waste. These elevated levels could be attributed to storm events preceding Fall 2019 sampling.

Table 3. Fall 2019 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	0.01	0.02	0.01
<i>E. coli</i>	MPN/100mL	1050	150	201	579	548
Nitrate+Nitrite	mg/L	0.16	0.05	0.02	0.3	0.54
Orthophosphate as P	mg/L	<0.01	<0.01	<0.01	0.02	0.01
TKN	mg/L	<0.50	<0.50	<0.50	0.58	<0.50
Total Phosphorus	mg/L	0.02	0.03	0.03	0.02	0.02
TSS	mg/L	<1.0	9.4	<1.0	<1.0	1.8

Abbreviations:

< = not detected at the associated reporting limit

mg/L = milligrams per liter

bold indicates a result exceeding the VA water quality standards

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Checked by: CCD 08/20/2020

The laboratory analytical report for the fall 2019 sampling is provided in Appendix B.

3.2.2 Spring 2020

As shown in Table 4, the water quality results for the five sites meet the typical water quality conditions described above, with the exception of elevated Nitrate + Nitrite levels recorded at Purcell Branch. While this is not an exceedance of a Virginia water quality standard, it indicates increased potential for excessive plant growth impacting DO levels.

Table 4. Spring 2020 Water Quality Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Ammonia as N	mg/L	0.05	0.03	0.01	0.01	0.01
<i>E. coli</i>	MPN/100mL	18.9	106	101	35.5	34.5
Nitrate+Nitrite	mg/L	0.50	0.07	0.41	0.32	0.67
Orthophosphate as P	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
TKN	mg/L	<0.5	0.58	<0.5	<0.5	<0.5
Total Phosphorus	mg/L	<0.01	0.03	0.02	<0.01	0.01
TSS	mg/L	1.0	3.6	<1.0	<1.0	<1.0

Abbreviations:

< = not detected at the associated reporting limit

mg/L = milligrams per liter

bold indicates a result exceeding the VA water quality standards

Prepared by: BTG 08/20/2020

Checked by: CCD 08/20/2020

The laboratory analytical report for the spring 2020 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.

Wood’s laboratory sorted and identified the organisms in the benthic macroinvertebrate samples and provided reports dated January 13 and August 13, 2020 for the fall 2019 and the spring 2020 sampling events, respectively (Appendix C). The results of the sampling are provided in the Tables 5 and 6 below and summarized in this section.

3.3.1 Fall 2019

A total of 76 taxa were identified from the fall samples. Among the five sites, taxa richness ranged from 24 - 36, while abundance ranged from 172 - 234. This metric indicated no impairment. EPT taxa ranged from 5 to 8 among the sites.

The percentage of the top taxa ranged from 14.04 to 64.29%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 23.39 to 70.41%, excellent stream quality conditions across the sites, with the exception of Purcell Branch, which indicated a stressed condition.

The HBI ranged from 5.59 to 6.61 for the sites, with corresponding HBI Category scores of “Fair” and “Fairly Poor”. The PMA ranged from 39.08 – 80.34 for the sites, indicating levels of impactedness ranging from “Moderately Impacted” at Cow Branch, to “Non-impacted” at Little Bull Run.

Results from the calculation of the VSCI for the individual sample sites ranged from 42.95 (Cow Branch) to 67.99 (Little Bull Run). The standing of these sites is the same as was reported for the Fall of 2018 as well, meaning that their level of overall benthic health relative to the other stream sites has not shifted significantly.

Table 5. Fall 2019 Benthic Macroinvertebrate Results.

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	36	35	32	33
Abundance	196	171	234	172	179
EPT Index	5	7	8	5	7
EPT/EPT+ Chironomidae	0.88	0.75	0.80	0.72	0.78
Percent Dominant Taxon	64.29	14.04	24.36	22.67	33.52
Percent Chironomidae	10.20	9.94	13.68	19.77	15.64
BI	6.61	6.52	6.24	5.63	5.59
BI Category	Fairly Poor	Fairly Poor	Fair	Fair	Fair
PMA	39.08	56.90	80.34	52.33	50.67
PMA Category	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
VSCI	42.95	62.99	67.99	56.10	60.76
VSCI Category	Stress	Good	Good	Stress	Good

Abbreviations:

- BI = Biotic Index
- EPT = Ephemeroptera, Plecoptera, and Tricoptera
- PMA = percent model affinity
- VSCI = Virginia Stream Condition Index

Prepared by: BTG 08/20/2020
 Checked by: CCD 08/20/2020

3.3.2 Spring 2020

A total of 57 taxa were identified from the spring samples. Among the five sites, taxa richness ranged from 20 to 33, while abundance ranged from 183 to 248. This metric indicated no impairment for the samples. EPT taxa ranged from 2 to 6 among the sites.

The percentage of the top taxa ranged from 20.08% to 62.87%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 28.45% to 70.79%, indicating excellent stream quality conditions across all sites.

The percentage of Chironomidae showed severely stressed stream quality conditions at Neabsco Creek, stress at Cow Branch, Little Bull Run, and Purcell Branch, and excellent conditions at Dawkins Branch. The biological scores for the percentage of scrapers showed severely stressed conditions across every site.

The HBI ranged from 5.23 to 7.20 for the sites, with corresponding HBI Category scores of "Fairly Poor" (Cow Branch) to "Good" at three of the five sites. The PMA ranged from 36.69 to

56.44 for the sites, with corresponding PMA Category scores of "Moderately Impacted" to "Slightly Impacted".

Results from the calculation of the VSCI for the individual sample sites ranged from 34.52 (Cow Branch) to 47.53 (Purcell Branch). This corresponds to "Severe Stress" and "Stress" stream quality conditions under the VSCI assessment. Similar to the results of the Fall assessment, the highest and lowest-scoring sites did not change relative to the other sites.

Table 6. Spring 2020 Benthic Macroinvertebrate Results.

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	20	25	33	29
Abundance	248	202	183	239	201
EPT Index	2	4	2	6	6
EPT/EPT+ Chironomidae	0.12	0.43	0.12	0.24	0.17
Percent Dominant Taxon	34.68	62.87	21.86	20.08	34.83
Percent Chironomidae	44.35	15.84	67.21	59.41	55.72
BI	7.20	5.25	5.49	5.69	5.23
BI Category	Fairly Poor	Good	Good	Fair	Good
PMA	36.69	40.79	49.67	49.64	56.44
PMA Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI	34.52	41.42	42.77	47.03	47.53
VSCI Category	Severe Stress	Severe Stress	Stress	Stress	Stress

Abbreviations:

- BI = Biotic Index
- EPT = Ephemeroptera, Plecoptera, and Tricoptera
- PMA = percent model affinity
- VSCI = Virginia Stream Condition Index

Prepared by: BTG 08/20/2020
 Checked by: CCD 08/20/2020

3.4 Comparison to Baseline Results

In the assessment of measured field and laboratory water quality parameters, the fall 2019 and spring 2020 sampling results have shown slight improvements compared to the fall and spring baseline sampling results from 2016, are within the normal ranges, and are below Virginia's Water Quality Standards, with the exception of *E. coli* results. Four of five sites were found to be in exceedance of the state water quality standard, but this can most likely be attributed to storm conditions prior to mobilization for sample collection. The number of exceedances decreased to a single site during the spring sampling, but *E. coli* results should remain a focus of monitoring efforts.

The habitat and benthic community results among the events are summarized below in Table 7. Habitat assessment scores at Dawkins Branch have stabilized year over year, after a decline from baseline events. Steady increases in metrics assessing the health of the benthos at each site now appear to have regressed, with VSCI scores dropping in for Spring and Fall sampling, except for Dawkins Branch.

Table 7. Habitat and Benthic Community Comparison Summary

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Score	Baseline (Spring)	94	126	120	134	103
	Baseline (Fall)	104	147	110	136	87
	2017 (Spring)	98	134	94	123	108
	2017 (Fall)	101	116	98	114	80
	2018 (Spring)	93	126	103	113	106
	2018 (Fall)*	106	114	126	129	105
	2019 (Spring)*	113	99	124	117	103
	2019 (Fall)	132	134	120	136	117
2020 (Spring)	107	106	102	127	89	
RBP Habitat Category	Baseline (Spring)	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	Baseline (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal
	2017 (Spring)	Marginal	Suboptimal	Marginal	Suboptimal	Suboptimal
	2017 (Fall)	Suboptimal	Suboptimal	Marginal	Suboptimal	Marginal
	2018 (Spring)	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2018 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2019 (Spring)	Suboptimal	Marginal	Suboptimal	Suboptimal	Suboptimal
	2019 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
2020 (Spring)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal	
BI Category	Baseline (Spring)	Fair	Fair	Good	Good	Good
	Baseline (Fall)	Good	Fair	Fair	Fair	Fair
	2017 (Spring)	Fairly Poor	Good	Fair	Fair	Good
	2017 (Fall)	Fair	Fair	Fair	Fair	Good
	2018 (Spring)	Fair	Fairly Poor	Fair	Fairly Poor	Good
	2018 (Fall)*	Fair	Good	Good	Good	Good
	2019 (Spring)*	Fair	Good	Fair	Fair	Good
	2019 (Fall)	Fairly Poor	Fairly Poor	Fair	Fair	Fair
2020 (Spring)	Fairly Poor	Good	Good	Fair	Good	
PMA Category	Baseline (Spring)	Severely Impacted	Moderately Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
	Baseline (Fall)	Slightly Impacted	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted
	2017 (Spring)	Moderately Impacted	Slightly Impacted	Moderately Impacted	Moderately Impacted	Moderately Impacted
	2017 (Fall)	Moderately Impacted	Slightly Impacted	Non-Impacted	Slightly Impacted	Slightly Impacted
	2018 (Spring)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Moderately Impacted	Moderately Impacted
	2018 (Fall)*	Moderately Impacted	Moderately Impacted	Slightly Impacted	Moderately Impacted	Slightly Impacted
	2019 (Spring)*	Moderately Impacted	Moderately Impacted	Moderately Impacted	Slightly Impacted	Non-impacted
	2019 (Fall)	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
	2020 (Spring)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI Score	Baseline (Spring)	27.85	35.67	39.29	32.96	46.40
	Baseline (Fall)	36.54	49.42	56.59	39.44	57.34
	2017 (Spring)	37.17	39.85	38.66	47.03	41.71
	2017 (Fall)	41.78	49.71	61.83	58.67	63.60
	2018 (Spring)	40.61	48.25	52.47	42.94	48.40
	2018 (Fall)*	49.91	52.64	74.17	60.74	64.67
	2019 (Spring)*	37.33	45.35	49.27	44.68	47.14
	2019 (Fall)	42.95	62.99	67.99	56.10	60.76
2020 (Spring)	34.52	41.42	42.77	47.03	47.53	

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
VSCI Category	Baseline (Spring)	Severe Stress	Severe Stress	Severe Stress	Severe Stress	Stress
	Baseline (Fall)	Severe Stress	Stress	Stress	Severe Stress	Stress
	2017 (Spring)	Severe Stress	Severe Stress	Severe Stress	Stress	Severe Stress
	2017 (Fall)	Severe Stress	Stress	Good	Stress	Good
	2018 (Spring)	Severe Stress	Stress	Stress	Stress	Stress
	2018 (Fall)*	Stress	Stress	Excellent	Good	Good
	2019 (Spring)*	Severe Stress	Stress	Stress	Stress	Stress
	2019 (Fall)	Stress	Good	Good	Stress	Good
2020 (Spring)	Severe Stress	Severe Stress	Stress	Stress	Stress	

*Previously reported VSCI Scores for Fall 2018 and Spring 2019 have shifted slightly due to a calculation error.

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The PMA category has marginally improved from baseline; two of the five sites received scores of “Severely Impacted” during the baseline sampling. Only one of the sites was scored as “Moderately Impacted” in the fall, an improvement from three sites in the previous year. For the spring, there were two sites scoring as “Moderately Impacted”, also an improvement from the previous year.

4.0 SUMMARY AND CONCLUSIONS

The following sections present a summary of the fall 2019 and spring 2020 sampling events, and compare the results with the previous sampling events conducted in 2016, 2017, and 2018. This section also provides conclusions for the current report period. It should be noted that there are biological changes associated with seasonality, with taxa emerging in the spring, and transitional life stages (e.g., metamorphosis) during and between events that may account for benthic community dynamics.

4.1 Summary

4.1.1 Fall 2019

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. However, there were elevated *E. coli* levels at each of the sites in exceedance of the Virginia Water Quality standard, which could be indicative of sewage or animal waste contributions following storm events.

4.1.2 Spring 2020

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. However, the *E. coli* levels at Purcell Branch were above the Virginia Water Quality standard, which could be indicative of sewage or animal waste.

Stressed conditions remain apparent, consistent with seasonal variation during spring season collections.

4.2 Conclusions

The measured field and laboratory water quality parameters from the fall 2019 and spring 2020 sampling results are generally comparable to the baseline sampling results, are within the normal ranges, and are below Virginia's Water Quality Standards, with the exception of elevated *E. coli* and pH measurements. Monitoring efforts will be targeted to avoid collection periods following storm events to characterize the benthos and ambient water quality conditions.

Biological metrics, habitat assessments, and evaluations of the benthic macroinvertebrate communities at each site have indicated a marginal level of improvement compared to baseline conditions. Seasonal fluctuation in benthic macroinvertebrate assessments has still shown an upward trend for most sites.

This seasonal trend allows for clear distinctions from baseline levels in fall sampling, while spring sampling only shows slight improvement in benthic health. Based on the fall 2018 and spring 2019 sampling results, stream conditions have shown slight improvement from baseline conditions. The results of this report indicate that the health of these representative monitoring sites from across Prince William County are in stable condition.

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FIGURES

APPENDIX A
SITE DATA SHEETS

APPENDIX B
WATER QUALITY LABORATORY RESULTS

APPENDIX C
BENTHIC MACROINVERTEBRATE LABORATORY RESULTS

Benthic Macroinvertebrate Population and Water Quality Monitoring Report

Fall 2019 and Spring 2020

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August 28, 2020
Project No. 151270003

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 BACKGROUND.....	1
1.2 PURPOSE	1
2.0 METHODS.....	2
3.0 RESULTS	3
3.1 FIELD CONDITION AND PARAMETER RESULTS	3
3.2 WATER QUALITY LABORATORY RESULTS.....	5
3.3 BENTHIC MACROINVERTEBRATE RESULTS.....	8
3.4 COMPARISON TO BASELINE RESULTS.....	10
4.0 SUMMARY AND CONCLUSIONS	12
4.1 SUMMARY.....	12
4.2 CONCLUSIONS	13
5.0 REFERENCES	14

TABLES

Table 1	Fall 2018 Field Condition and Parameter Results
Table 2	Spring 2019 Field Condition and Parameter Results
Table 3	Fall 2018 Water Quality Results
Table 4	Spring 2019 Water Quality Results
Table 5	Fall 2018 Benthic Macroinvertebrate Results
Table 6	Spring 2019 Benthic Macroinvertebrate Results
Table 7	Habitat and Benthic Community Comparison Summary

FIGURES

Figure 1	Cow Branch Sampling Location Map
Figure 2	Dawkins Branch Sampling Location Map
Figure 3	Little Bull Run Sampling Location Map
Figure 4	Neabsco Creek Sampling Location Map
Figure 5	Purcell Branch Sampling Location Map

APPENDICES

Appendix A	Site Data Sheets
Appendix B	Water Quality Laboratory Results
Appendix C	Benthic Macroinvertebrate Laboratory Results

LIST OF ACRONYMS

BI	Biotic Index
°C	Degrees Celsius
CWA	Clean Water Act
DO	Dissolved Oxygen
<i>E. coli</i>	<i>Escherichia coli</i>
EPT	Ephemeroptera/Plecoptera/Tricoptera
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
VDEQ	Virginia Department of Environmental Quality
VSCI	Virginia Stream Condition Index
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) 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 2019 fall and 2020 spring sampling events, which were 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. In addition, this report provides a comparison summary with the baseline results from the 2016 spring and fall sampling events (spring and fall baselines).

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, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch (Figures 1 through 5).

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

Sample collection occurred from October 2 to 3, 2019, and from May 11 to 13, 2020, in accordance with the Sampling Plan. Benthic macroinvertebrate and surface water samples were collected by Wood personnel from five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch (Figures 1 through 5). 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 with a Marsh-McBirney Flo-Mate current meter 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 Wood'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

Sampling was conducted from October 1-3, 2019, and from May 11-13, 2020 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 2019 event and Table 2 for spring 2020 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 ($\mu\text{S}/\text{cm}$). The conductivity of streams generally range from 0 to 1500 $\mu\text{S}/\text{cm}$, while studies of inland fresh waters indicate that streams supporting mixed fisheries have a range between 50 and 500 $\mu\text{S}/\text{cm}$.
- 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 2019

RBP physical habitat assessment scores ranged from 117 (Purcell Branch) to 136 (Neabsco Creek). The scores indicated that all sites exhibited suboptimal 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 2019 Field Condition and Parameter Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Assessment/ Characterization Score	--	132	134	120	136	117
RBP Habitat Condition Category	--	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
pH	SU	6.78	7.65	7.86	7.49	7.61
Specific Conductance	µS/cm	259	432	583	168	176
Temperature	°C	23.36	23.37	22.76	21.17	22.71
DO	mg/L	8.78	6.36	5.48	8.87	9.16
Turbidity	NTU	1.88	NR	NR	2.24	NR
Water Depth	m	0.30	0.14	0.19	0.18	0.15
Secchi Depth	m	0.30	0.14	0.19	0.18	0.15
Reach Length	m	100	100	100	100	100
Reach Width	m	5.79	5.79	9.14	7.16	7.77
Surface Velocity	m/s	0.17	0.15	0.06	0.21	0.18

Abbreviations:

NR = Not Reported
 °C = degrees Celsius
 mg/L = milligrams per liter

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3.1.2 Spring 2020

RBP physical habitat assessment scores ranged from 89 (Purcell Branch) to 127 (Neabsco Creek). The scores indicated that four of the five sites had suboptimal habitat for supporting benthic communities, while Purcell Branch was marginal for supporting a benthic community.

As shown in Table 2, the physical water quality characteristics of the five sites meet the typical water quality conditions described above, with the exception of elevated pH measurements at Dawkins Branch and Little Bull Run.

Table 2. Spring 2020 Field Condition and Parameter Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Assessment/ Characterization Score	--	107	106	102	127	89
RBP Habitat Condition Category	--	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal
pH	SU	6.95	8.19	8.12	7.76	7.65
Specific Conductance	µS/cm	340	416	328	186	203
Temperature	°C	12.83	13.55	12.33	12.22	9.44
DO	mg/L	10.25	9.23	11.9	10.98	11.4
Turbidity	NTU	1.08	6.7	1.75	NR	0.74
Water Depth	m	0.32	0.24	0.12	0.10	0.18
Secchi Depth	m	0.32	0.24	0.12	0.10	0.18
Reach Length	m	100	100	100	100	100
Reach Width	m	6.10	5.49	8.08	2.09	6.71
Surface Velocity	m/s	0.07	0.08	0.34	0.13	0.82

Abbreviations:

NR = Not Reported
 °C = degrees Celsius
 mg/L = milligrams per liter

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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 2019

As shown in Table 3, the water quality results for the five sites meet the typical water quality conditions described above, with exception of elevated *E. coli* levels, ranging from 150 to 1,050 MPN/100mL. Samples from each site were in excess of the Virginia Water Quality Standard of 126 MPN/100mL. Elevated *E. coli* levels are typically associated with sewage and animal waste. These elevated levels could be attributed to storm events preceding Fall 2019 sampling.

Table 3. Fall 2019 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	0.01	0.02	0.01
<i>E. coli</i>	MPN/100mL	1050	150	201	579	548
Nitrate+Nitrite	mg/L	0.16	0.05	0.02	0.3	0.54
Orthophosphate as P	mg/L	<0.01	<0.01	<0.01	0.02	0.01
TKN	mg/L	<0.50	<0.50	<0.50	0.58	<0.50
Total Phosphorus	mg/L	0.02	0.03	0.03	0.02	0.02
TSS	mg/L	<1.0	9.4	<1.0	<1.0	1.8

Abbreviations:

< = not detected at the associated reporting limit

mg/L = milligrams per liter

bold indicates a result exceeding the VA water quality standards

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Checked by: CCD 08/20/2020

The laboratory analytical report for the fall 2019 sampling is provided in Appendix B.

3.2.2 Spring 2020

As shown in Table 4, the water quality results for the five sites meet the typical water quality conditions described above, with the exception of elevated Nitrate + Nitrite levels recorded at Purcell Branch. While this is not an exceedance of a Virginia water quality standard, it indicates increased potential for excessive plant growth impacting DO levels.

Table 4. Spring 2020 Water Quality Results.

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Ammonia as N	mg/L	0.05	0.03	0.01	0.01	0.01
<i>E. coli</i>	MPN/100mL	18.9	106	101	35.5	34.5
Nitrate+Nitrite	mg/L	0.50	0.07	0.41	0.32	0.67
Orthophosphate as P	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
TKN	mg/L	<0.5	0.58	<0.5	<0.5	<0.5
Total Phosphorus	mg/L	<0.01	0.03	0.02	<0.01	0.01
TSS	mg/L	1.0	3.6	<1.0	<1.0	<1.0

Abbreviations:

< = not detected at the associated reporting limit

mg/L = milligrams per liter

bold indicates a result exceeding the VA water quality standards

Prepared by: BTG 08/20/2020

Checked by: CCD 08/20/2020

The laboratory analytical report for the spring 2020 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.

Wood’s laboratory sorted and identified the organisms in the benthic macroinvertebrate samples and provided reports dated January 13 and August 13, 2020 for the fall 2019 and the spring 2020 sampling events, respectively (Appendix C). The results of the sampling are provided in the Tables 5 and 6 below and summarized in this section.

3.3.1 Fall 2019

A total of 76 taxa were identified from the fall samples. Among the five sites, taxa richness ranged from 24 - 36, while abundance ranged from 172 - 234. This metric indicated no impairment. EPT taxa ranged from 5 to 8 among the sites.

The percentage of the top taxa ranged from 14.04 to 64.29%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 23.39 to 70.41%, excellent stream quality conditions across the sites, with the exception of Purcell Branch, which indicated a stressed condition.

The HBI ranged from 5.59 to 6.61 for the sites, with corresponding HBI Category scores of “Fair” and “Fairly Poor”. The PMA ranged from 39.08 – 80.34 for the sites, indicating levels of impactedness ranging from “Moderately Impacted” at Cow Branch, to “Non-impacted” at Little Bull Run.

Results from the calculation of the VSCI for the individual sample sites ranged from 42.95 (Cow Branch) to 67.99 (Little Bull Run). The standing of these sites is the same as was reported for the Fall of 2018 as well, meaning that their level of overall benthic health relative to the other stream sites has not shifted significantly.

Table 5. Fall 2019 Benthic Macroinvertebrate Results.

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	36	35	32	33
Abundance	196	171	234	172	179
EPT Index	5	7	8	5	7
EPT/EPT+ Chironomidae	0.88	0.75	0.80	0.72	0.78
Percent Dominant Taxon	64.29	14.04	24.36	22.67	33.52
Percent Chironomidae	10.20	9.94	13.68	19.77	15.64
BI	6.61	6.52	6.24	5.63	5.59
BI Category	Fairly Poor	Fairly Poor	Fair	Fair	Fair
PMA	39.08	56.90	80.34	52.33	50.67
PMA Category	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
VSCI	42.95	62.99	67.99	56.10	60.76
VSCI Category	Stress	Good	Good	Stress	Good

Abbreviations:

- BI = Biotic Index
- EPT = Ephemeroptera, Plecoptera, and Tricoptera
- PMA = percent model affinity
- VSCI = Virginia Stream Condition Index

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3.3.2 Spring 2020

A total of 57 taxa were identified from the spring samples. Among the five sites, taxa richness ranged from 20 to 33, while abundance ranged from 183 to 248. This metric indicated no impairment for the samples. EPT taxa ranged from 2 to 6 among the sites.

The percentage of the top taxa ranged from 20.08% to 62.87%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 28.45% to 70.79%, indicating excellent stream quality conditions across all sites.

The percentage of Chironomidae showed severely stressed stream quality conditions at Neabsco Creek, stress at Cow Branch, Little Bull Run, and Purcell Branch, and excellent conditions at Dawkins Branch. The biological scores for the percentage of scrapers showed severely stressed conditions across every site.

The HBI ranged from 5.23 to 7.20 for the sites, with corresponding HBI Category scores of "Fairly Poor" (Cow Branch) to "Good" at three of the five sites. The PMA ranged from 36.69 to

56.44 for the sites, with corresponding PMA Category scores of "Moderately Impacted" to "Slightly Impacted".

Results from the calculation of the VSCI for the individual sample sites ranged from 34.52 (Cow Branch) to 47.53 (Purcell Branch). This corresponds to "Severe Stress" and "Stress" stream quality conditions under the VSCI assessment. Similar to the results of the Fall assessment, the highest and lowest-scoring sites did not change relative to the other sites.

Table 6. Spring 2020 Benthic Macroinvertebrate Results.

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	20	25	33	29
Abundance	248	202	183	239	201
EPT Index	2	4	2	6	6
EPT/EPT+ Chironomidae	0.12	0.43	0.12	0.24	0.17
Percent Dominant Taxon	34.68	62.87	21.86	20.08	34.83
Percent Chironomidae	44.35	15.84	67.21	59.41	55.72
BI	7.20	5.25	5.49	5.69	5.23
BI Category	Fairly Poor	Good	Good	Fair	Good
PMA	36.69	40.79	49.67	49.64	56.44
PMA Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI	34.52	41.42	42.77	47.03	47.53
VSCI Category	Severe Stress	Severe Stress	Stress	Stress	Stress

Abbreviations:

- BI = Biotic Index
- EPT = Ephemeroptera, Plecoptera, and Tricoptera
- PMA = percent model affinity
- VSCI = Virginia Stream Condition Index

Prepared by: BTG 08/20/2020
 Checked by: CCD 08/20/2020

3.4 Comparison to Baseline Results

In the assessment of measured field and laboratory water quality parameters, the fall 2019 and spring 2020 sampling results have shown slight improvements compared to the fall and spring baseline sampling results from 2016, are within the normal ranges, and are below Virginia's Water Quality Standards, with the exception of *E. coli* results. Four of five sites were found to be in exceedance of the state water quality standard, but this can most likely be attributed to storm conditions prior to mobilization for sample collection. The number of exceedances decreased to a single site during the spring sampling, but *E. coli* results should remain a focus of monitoring efforts.

The habitat and benthic community results among the events are summarized below in Table 7. Habitat assessment scores at Dawkins Branch have stabilized year over year, after a decline from baseline events. Steady increases in metrics assessing the health of the benthos at each site now appear to have regressed, with VSCI scores dropping in for Spring and Fall sampling, except for Dawkins Branch.

Table 7. Habitat and Benthic Community Comparison Summary

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
RBP Habitat Score	Baseline (Spring)	94	126	120	134	103
	Baseline (Fall)	104	147	110	136	87
	2017 (Spring)	98	134	94	123	108
	2017 (Fall)	101	116	98	114	80
	2018 (Spring)	93	126	103	113	106
	2018 (Fall)*	106	114	126	129	105
	2019 (Spring)*	113	99	124	117	103
	2019 (Fall)	132	134	120	136	117
2020 (Spring)	107	106	102	127	89	
RBP Habitat Category	Baseline (Spring)	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	Baseline (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal
	2017 (Spring)	Marginal	Suboptimal	Marginal	Suboptimal	Suboptimal
	2017 (Fall)	Suboptimal	Suboptimal	Marginal	Suboptimal	Marginal
	2018 (Spring)	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2018 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2019 (Spring)	Suboptimal	Marginal	Suboptimal	Suboptimal	Suboptimal
	2019 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
2020 (Spring)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal	
BI Category	Baseline (Spring)	Fair	Fair	Good	Good	Good
	Baseline (Fall)	Good	Fair	Fair	Fair	Fair
	2017 (Spring)	Fairly Poor	Good	Fair	Fair	Good
	2017 (Fall)	Fair	Fair	Fair	Fair	Good
	2018 (Spring)	Fair	Fairly Poor	Fair	Fairly Poor	Good
	2018 (Fall)*	Fair	Good	Good	Good	Good
	2019 (Spring)*	Fair	Good	Fair	Fair	Good
	2019 (Fall)	Fairly Poor	Fairly Poor	Fair	Fair	Fair
2020 (Spring)	Fairly Poor	Good	Good	Fair	Good	
PMA Category	Baseline (Spring)	Severely Impacted	Moderately Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
	Baseline (Fall)	Slightly Impacted	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted
	2017 (Spring)	Moderately Impacted	Slightly Impacted	Moderately Impacted	Moderately Impacted	Moderately Impacted
	2017 (Fall)	Moderately Impacted	Slightly Impacted	Non-Impacted	Slightly Impacted	Slightly Impacted
	2018 (Spring)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Moderately Impacted	Moderately Impacted
	2018 (Fall)*	Moderately Impacted	Moderately Impacted	Slightly Impacted	Moderately Impacted	Slightly Impacted
	2019 (Spring)*	Moderately Impacted	Moderately Impacted	Moderately Impacted	Slightly Impacted	Non-impacted
	2019 (Fall)	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
	2020 (Spring)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI Score	Baseline (Spring)	27.85	35.67	39.29	32.96	46.40
	Baseline (Fall)	36.54	49.42	56.59	39.44	57.34
	2017 (Spring)	37.17	39.85	38.66	47.03	41.71
	2017 (Fall)	41.78	49.71	61.83	58.67	63.60
	2018 (Spring)	40.61	48.25	52.47	42.94	48.40
	2018 (Fall)*	49.91	52.64	74.17	60.74	64.67
	2019 (Spring)*	37.33	45.35	49.27	44.68	47.14
	2019 (Fall)	42.95	62.99	67.99	56.10	60.76
2020 (Spring)	34.52	41.42	42.77	47.03	47.53	

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
VSCI Category	Baseline (Spring)	Severe Stress	Severe Stress	Severe Stress	Severe Stress	Stress
	Baseline (Fall)	Severe Stress	Stress	Stress	Severe Stress	Stress
	2017 (Spring)	Severe Stress	Severe Stress	Severe Stress	Stress	Severe Stress
	2017 (Fall)	Severe Stress	Stress	Good	Stress	Good
	2018 (Spring)	Severe Stress	Stress	Stress	Stress	Stress
	2018 (Fall)*	Stress	Stress	Excellent	Good	Good
	2019 (Spring)*	Severe Stress	Stress	Stress	Stress	Stress
	2019 (Fall)	Stress	Good	Good	Stress	Good
	2020 (Spring)	Severe Stress	Severe Stress	Stress	Stress	Stress

*Previously reported VSCI Scores for Fall 2018 and Spring 2019 have shifted slightly due to a calculation error.

Prepared by: BTG 08/20/2020
 Checked by: BTG 08/25/2020

The PMA category has marginally improved from baseline; two of the five sites received scores of “Severely Impacted” during the baseline sampling. Only one of the sites was scored as “Moderately Impacted” in the fall, an improvement from three sites in the previous year. For the spring, there were two sites scoring as “Moderately Impacted”, also an improvement from the previous year.

4.0 SUMMARY AND CONCLUSIONS

The following sections present a summary of the fall 2019 and spring 2020 sampling events, and compare the results with the previous sampling events conducted in 2016, 2017, and 2018. This section also provides conclusions for the current report period. It should be noted that there are biological changes associated with seasonality, with taxa emerging in the spring, and transitional life stages (e.g., metamorphosis) during and between events that may account for benthic community dynamics.

4.1 Summary

4.1.1 Fall 2019

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. However, there were elevated *E. coli* levels at each of the sites in exceedance of the Virginia Water Quality standard, which could be indicative of sewage or animal waste contributions following storm events.

4.1.2 Spring 2020

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. However, the *E. coli* levels at Purcell Branch were above the Virginia Water Quality standard, which could be indicative of sewage or animal waste.

Stressed conditions remain apparent, consistent with seasonal variation during spring season collections.

4.2 Conclusions

The measured field and laboratory water quality parameters from the fall 2019 and spring 2020 sampling results are generally comparable to the baseline sampling results, are within the normal ranges, and are below Virginia's Water Quality Standards, with the exception of elevated *E. coli* and pH measurements. Monitoring efforts will be targeted to avoid collection periods following storm events to characterize the benthos and ambient water quality conditions.

Biological metrics, habitat assessments, and evaluations of the benthic macroinvertebrate communities at each site have indicated a marginal level of improvement compared to baseline conditions. Seasonal fluctuation in benthic macroinvertebrate assessments has still shown an upward trend for most sites.

This seasonal trend allows for clear distinctions from baseline levels in fall sampling, while spring sampling only shows slight improvement in benthic health. Based on the fall 2018 and spring 2019 sampling results, stream conditions have shown slight improvement from baseline conditions. The results of this report indicate that the health of these representative monitoring sites from across Prince William County are in stable condition.

5.0 REFERENCES

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- Barbour, M. T., J. Gerritsen, B. D. Snyder, and J. B. Stribling, 1999. Rapid bioassessment protocols for use in streams and wadeable rivers: periphyton, benthic macroinvertebrates, and fish. 2nd ed. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC.
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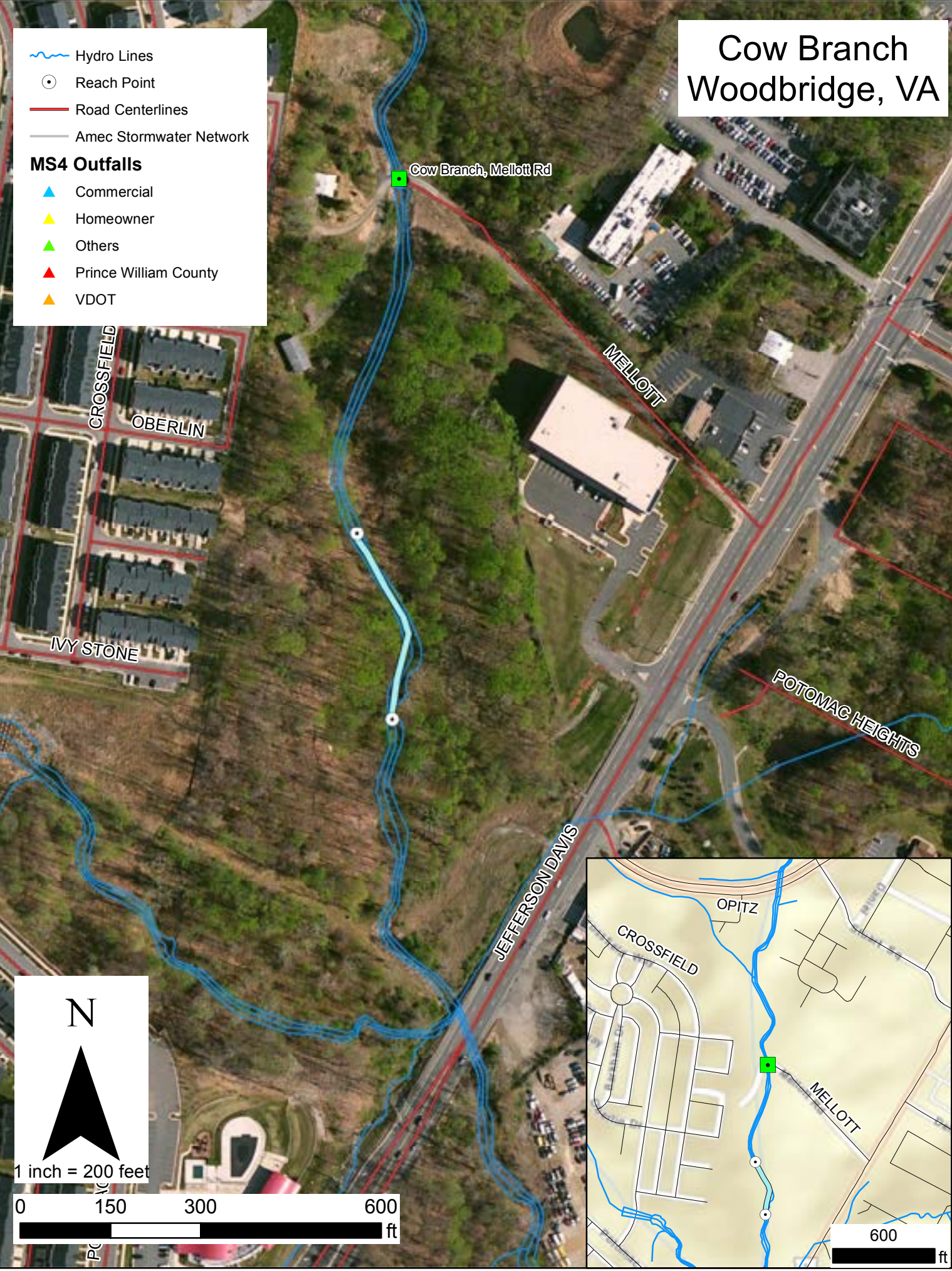
FIGURES

Cow Branch Woodbridge, VA

- Hydro Lines
- Reach Point
- Road Centerlines
- Amec Stormwater Network

MS4 Outfalls

- Commercial
- Homeowner
- Others
- Prince William County
- VDOT



Cow Branch, Mellott Rd

CROSSFIELD

OBERLIN

IVY STONE

MELLOTT

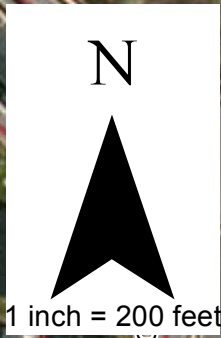
JEFFERSON DAVIS

POTOMAC HEIGHTS

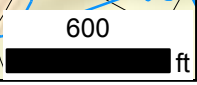
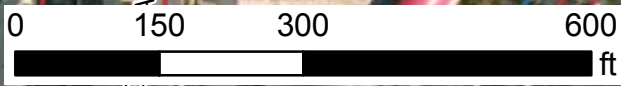
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CROSSFIELD

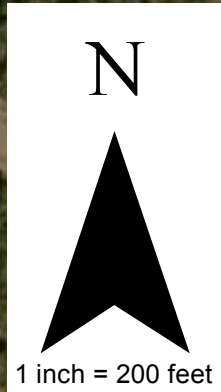
MELLOTT



1 inch = 200 feet



Dawkins Branch Manassas, VA



- Reach Point
- ~ Hydro Lines
- Amec Stormwater Network
- Road Centerlines

MS4 Outfalls

- ▲ Commercial
- ▲ Homeowner
- ▲ Others
- ▲ Prince William County
- ▲ VDOT

TAC

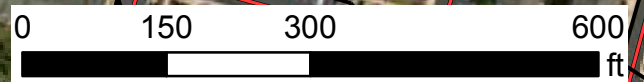
WELLINGTON



Little Bull Run Gainesville, VA

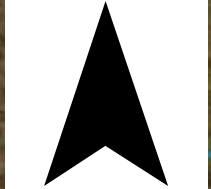


- Reach Point
- ~ Hydro Lines
- Amec Stormwater Network
- Road Centerlines
- MS4 Outfalls**
- ▲ Commercial
- ▲ Homeowner
- ▲ Others
- ▲ Prince William County
- ▲ VDOT



Neabsco Creek Dale City, VA

N



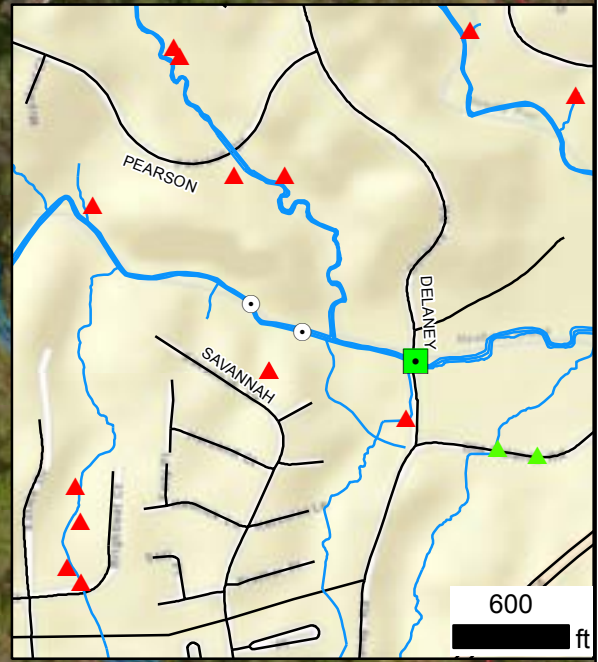
1 inch = 200 feet

- Hydro Lines
- Reach Point
- Road Centerlines
- Amec Stormwater Network

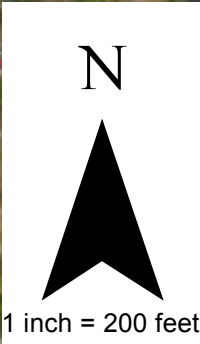
MS4 Outfalls

- Commercial
- Homeowner
- Others
- Prince William County
- VDOT

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ft

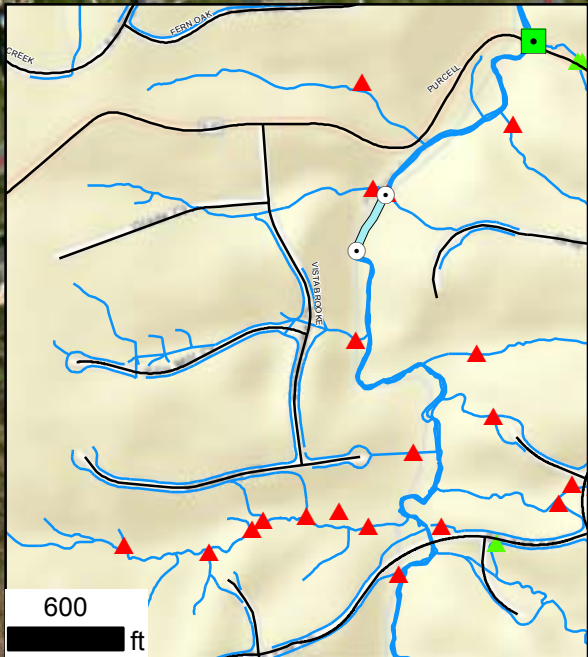


Purcell Branch Manassas, VA



PURCELL

VISTA BROOKE



- Reach Point
 - ~ Hydro Lines
 - Amec Stormwater Network
 - Road Centerlines
- MS4 Outfalls**
- ▲ Commercial
 - ▲ Homeowner
 - ▲ Others
 - ▲ Prince William County
 - ▲ VDOT



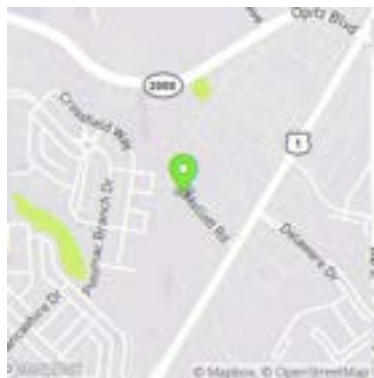
APPENDIX A
SITE DATA SHEETS

Prince William Biological Monitoring Form



Stream Name	Cow Branch
Location	PWC
River Basin	
Investigators	Ben Green and Anna Allie
Date	10/03/2019
Time	10:01 AM 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)	19.0
Est. Stream Depth (ft)	1.0
Surface Velocity (ft/sec at thalweg)	0.55
Canopy Cover	Partly open
High Water Mark (ft)	6.5
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	50
Run (%)	40
Pool (%)	10

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	60

WATER QUALITY

Temperature	23.36
Specific Conductance	0.259
Dissolved Oxygen	8.78
pH	6.78
Turbidity	1.88
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- Flecks
- None
- Other

Inorganic Substrate Components
(should add up to 100%)

Substrate Type	Diameter	% Composition in sampling reach
Bedrock		0.0
Boulder	>256 mm (10")	5.0
Cobble	64 - 256 mm (2.5" - 10")	40.0
Gravel	2 - 64 mm (0.1" - 2.5")	25.0
Sand	0.06 - 2 mm (gritty)	10.0
Silt	0.004 - 0.06 mm	20.0
Clay	< 0.004 mm (slick)	0.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	11
Embeddedness	8
Velocity / Depth Regime	8
Sediment Deposition	11
Channel Flow Status	13

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	10
Bank Stability (LEFT BANK)	9
Bank Stability (RIGHT BANK)	10
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	9
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	8

Field Photography

Image 1



Caption for Image 1

Mid point looking upstream

Image 2



Caption for Image 2

Midpoint downstream.

Image 3



Caption for Image 3

Downstream from sample beginning. Tree has fallen on sample original point. Moved slightly upstream.

Report completed by:

BTG

Signature

A handwritten signature in black ink, appearing to be the letters 'BTG' with a stylized flourish.

Signature Date/Time

10/01/2019 01:45 PM GMT-04:00

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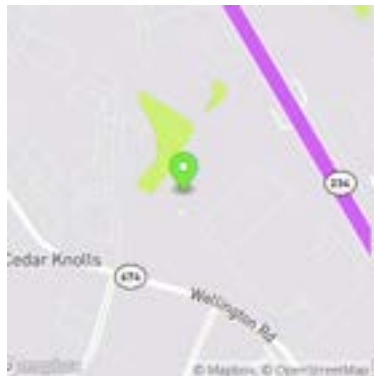
Powered by www.doForms.com

Prince William Biological Monitoring Form



Stream Name	Dawkins Branch
Location	Manassas
River Basin	
Investigators	Ben Green and Anna Allie
Date	10/03/2019
Time	10:02 AM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	Clear / Sunny

GPS location



RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Shrubs
----------------------	--------

INSTREAM FEATURES

Est. Stream Width (ft)	19.0
Est. Stream Depth (ft)	0.45
Surface Velocity (ft/sec at thalweg)	0.5
Canopy Cover	Partly open
High Water Mark (ft)	3.8
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	50
Run (%)	30
Pool (%)	20

AQUATIC VEGETATION

Dominant Type	Rooted emergent
Portion of reach with aquatic veg	30

WATER QUALITY

Temperature	23.37
Specific Conductance	.432
Dissolved Oxygen	6.36
pH	7.65
Turbidity	
WQ Instrument Used	YSI
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	5.0
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)	0.0
Silt	0.004 - 0.06 mm	20.0
Clay	< 0.004 mm (slick)	10.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	17
Embeddedness	10
Velocity / Depth Regime	8
Sediment Deposition	13
Channel Flow Status	11

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	18
Frequency of Riffles (or Bends)	11
Bank Stability (LEFT BANK)	8
Bank Stability (RIGHT BANK)	7
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	8
Riparian Vegetative Zone Width (LEFT BANK)	7
Riparian Vegetative Zone Width (RIGHT BANK)	7

Field Photography

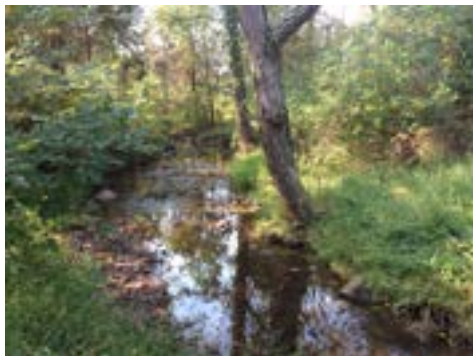
Image 1



Image 2



Image 3



Report completed by:

Anna Allie

Signature

A handwritten signature consisting of two stylized, cursive letters 'A' and 'A' written in black ink.

Signature Date/Time

10/02/2019 11:02 AM GMT-04:00

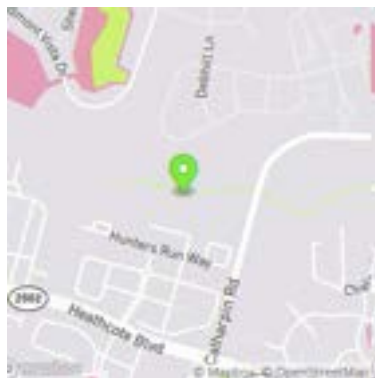
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Prince William Biological Monitoring Form



Stream Name	Little Bull
Location	Manassas
River Basin	
Investigators	Ben Green and Anna Allie
Date	10/03/2019
Time	11:34 AM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	60% Cloud Cover

GPS location



RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Shrubs
----------------------	--------

INSTREAM FEATURES

Est. Stream Width (ft)	30.0
Est. Stream Depth (ft)	0.62
Surface Velocity (ft/sec at thalweg)	0.19
Canopy Cover	Partly open
High Water Mark (ft)	4.5
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	40
Run (%)	10
Pool (%)	50

AQUATIC VEGETATION

Dominant Type	Rooted emergent
Portion of reach with aquatic veg	20

WATER QUALITY

Temperature	22.76
Specific Conductance	0.583
Dissolved Oxygen	5.48
pH	7.86
Turbidity	
WQ Instrument Used	YSI
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	5.0
Cobble	64 - 256 mm (2.5" - 10")	35.0
Gravel	2 - 64 mm (0.1" - 2.5")	20.0
Sand	0.06 - 2 mm (gritty)	15.0
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	11
Embeddedness	13
Velocity / Depth Regime	6
Sediment Deposition	15
Channel Flow Status	9

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	17
Frequency of Riffles (or Bends)	8
Bank Stability (LEFT BANK)	7
Bank Stability (RIGHT BANK)	5
Vegetative Protection (LEFT BANK)	7
Vegetative Protection (RIGHT BANK)	6
Riparian Vegetative Zone Width (LEFT BANK)	7
Riparian Vegetative Zone Width (RIGHT BANK)	9

Field Photography

Image 1



Image 2



Image 3



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	Woodbridge
River Basin	
Investigators	Ben Green and Anna Allie
Date	10/03/2019
Time	10:01 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)	23.5
Est. Stream Depth (ft)	0.6
Surface Velocity (ft/sec at thalweg)	0.7
Canopy Cover	Partly shaded
High Water Mark (ft)	3.5
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No

Proportion of Reach by Stream Morphology Types

Riffle (%)	50
Run (%)	10
Pool (%)	40

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	10

WATER QUALITY

Temperature	21.17
Specific Conductance	0.168
Dissolved Oxygen	8.87
pH	7.49
Turbidity	2.24
WQ Instrument Used	YSI 556
Water Odors	<input type="checkbox"/> Normal / None <input checked="" type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	40.0
Cobble	64 - 256 mm (2.5" - 10")	15.0
Gravel	2 - 64 mm (0.1" - 2.5")	5.0
Sand	0.06 - 2 mm (gritty)	10.0
Silt	0.004 - 0.06 mm	
Clay	< 0.004 mm (slick)	

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	16
Embeddedness	13
Velocity / Depth Regime	13
Sediment Deposition	15
Channel Flow Status	14

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)	7
Bank Stability (RIGHT BANK)	6
Vegetative Protection (LEFT BANK)	5
Vegetative Protection (RIGHT BANK)	4
Riparian Vegetative Zone Width (LEFT BANK)	7
Riparian Vegetative Zone Width (RIGHT BANK)	9

Field Photography

Image 1



Caption for Image 1

Upstream end, looking upstream. Marker visible in foreground.

Image 2



Caption for Image 2

Downstream at midpoint.

Image 3



Caption for Image 3

Downstream extent.

Report completed by:

BTG

Signature

A handwritten signature in black ink, appearing to be the letters 'BTG' in a stylized, cursive font.

Signature Date/Time

10/01/2019 03:24 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.

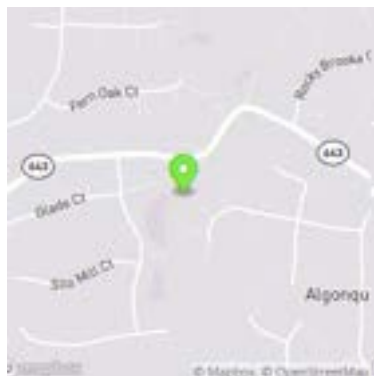
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Prince William Biological Monitoring Form



Stream Name	Purcell Branch
Location	
River Basin	
Investigators	Ben Green and Anna Allie
Date	10/02/2019
Time	01:26 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)	0.48
Surface Velocity (ft/sec at thalweg)	0.59
Canopy Cover	Shaded
High Water Mark (ft)	3.5
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	45
Run (%)	50
Pool (%)	5

AQUATIC VEGETATION

Dominant Type	Rooted emergent
Portion of reach with aquatic veg	10

WATER QUALITY

Temperature	22.71
Specific Conductance	.176
Dissolved Oxygen	9.16
pH	7.61
Turbidity	
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	25.0
Cobble	64 - 256 mm (2.5" - 10")	20.0
Gravel	2 - 64 mm (0.1" - 2.5")	10.0
Sand	0.06 - 2 mm (gritty)	15.0
Silt	0.004 - 0.06 mm	10.0
Clay	< 0.004 mm (slick)	0.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	12
Embeddedness	12
Velocity / Depth Regime	9
Sediment Deposition	12
Channel Flow Status	10

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	9
Bank Stability (LEFT BANK)	6
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	4
Vegetative Protection (RIGHT BANK)	3
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	7

Field Photography

Image 1



Caption for Image 1

Looking downstream from upstream end of reach

Image 2



Caption for Image 2

Erosion at upstream end of sampling reach.

Image 3



Caption for Image 3

Upstream from midpoint.

Image 4



Caption for Image 4

Downstream from midpoint.

Image 5



Caption for Image 5

Looking upstream from downstream extent of sampling reach.

Signature

A handwritten signature in black ink, appearing to read "Bryson", is centered within a white rectangular box.

Signature Date/Time

10/02/2019 01:43 PM GMT-04:00

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Prince William Biological Monitoring Form



Stream Name	Cow Branch
Location	Woodbridge, VA
River Basin	
Investigators	Ben Green and John Miller
Date	05/11/2020
Time	10:24 AM 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)	20.0
Est. Stream Depth (ft)	1.05
Surface Velocity (ft/sec at thalweg)	0.2
Canopy Cover	Partly open
High Water Mark (ft)	5.5
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	50
Run (%)	30
Pool (%)	20

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	5

WATER QUALITY

Temperature	55.1
Specific Conductance	.340
Dissolved Oxygen	10.25
pH	6.95
Turbidity	1.08
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- Flecks
- None
- Other

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")	20.0
Sand	0.06 - 2 mm (gritty)	30.0
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	7
Embeddedness	8
Velocity / Depth Regime	10
Sediment Deposition	11
Channel Flow Status	13

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	5
Frequency of Riffles (or Bends)	10
Bank Stability (LEFT BANK)	7
Bank Stability (RIGHT BANK)	6
Vegetative Protection (LEFT BANK)	6
Vegetative Protection (RIGHT BANK)	8
Riparian Vegetative Zone Width (LEFT BANK)	6
Riparian Vegetative Zone Width (RIGHT BANK)	10

Field Photography

Image 1



Image 2



Image 3



Report completed by:

BTG

Signature

A handwritten signature in black ink, appearing to read 'BTG', is centered within a white rectangular box.

Signature Date/Time

05/11/2020 11:42 AM GMT-04:00

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Prince William Biological Monitoring Form



Stream Name	Dawkins
Location	Manassas, VA
River Basin	Potomac
Investigators	Ben Green and John Miller
Date	05/12/2020
Time	11:51 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)	18.0
Est. Stream Depth (ft)	0.8
Surface Velocity (ft/sec at thalweg)	0.25
Canopy Cover	Partly open
High Water Mark (ft)	3.5
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No

Proportion of Reach by Stream Morphology Types

Riffle (%)	35
Run (%)	65
Pool (%)	0

AQUATIC VEGETATION

Dominant Type	Rooted emergent
Portion of reach with aquatic veg	30

WATER QUALITY

Temperature	56.4
Specific Conductance	.416
Dissolved Oxygen	9.23
pH	8.19
Turbidity	6.7
WQ Instrument Used	YSI556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- Flecks
- None
- Other

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")	5.0
Gravel	2 - 64 mm (0.1" - 2.5")	25.0
Sand	0.06 - 2 mm (gritty)	0.0
Silt	0.004 - 0.06 mm	30.0
Clay	< 0.004 mm (slick)	25.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	7
Embeddedness	6
Velocity / Depth Regime	10
Sediment Deposition	6
Channel Flow Status	11

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	11
Frequency of Riffles (or Bends)	7
Bank Stability (LEFT BANK)	8
Bank Stability (RIGHT BANK)	5
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	8
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	9

Field Photography

Image 1



Caption for Image 1

Looking downstream from sample point. Beaver dam appears to have blown out.

Image 2



Caption for Image 2

Looking upstream from downstream extent of sampling reach. Stake cannot be located.

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	Gainesville
River Basin	Bull Run
Investigators	Ben Green and John Miller
Date	05/13/2020
Time	09:44 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)	26.5
Est. Stream Depth (ft)	0.4
Surface Velocity (ft/sec at thalweg)	1.1
Canopy Cover	Partly shaded
High Water Mark (ft)	5.0
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	30
Run (%)	40
Pool (%)	30

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	100

WATER QUALITY

Temperature	54.2
Specific Conductance	.328
Dissolved Oxygen	111.9
pH	8.12
Turbidity	1.75
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	0.0
Cobble	64 - 256 mm (2.5" - 10")	15.0
Gravel	2 - 64 mm (0.1" - 2.5")	15.0
Sand	0.06 - 2 mm (gritty)	5.0
Silt	0.004 - 0.06 mm	20.0
Clay	< 0.004 mm (slick)	15.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	7
Embeddedness	4
Velocity / Depth Regime	13
Sediment Deposition	9
Channel Flow Status	13

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	11
Frequency of Riffles (or Bends)	6
Bank Stability (LEFT BANK)	4
Bank Stability (RIGHT BANK)	3
Vegetative Protection (LEFT BANK)	7
Vegetative Protection (RIGHT BANK)	7
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	8

Field Photography

Image 1



Caption for Image 1

End of reach

Image 2



Caption for Image 2

Looking upstream towards end of reach. Note bar on left bank has grown.

Image 3



Caption for Image 3

Looking downstream about midway through the reach.

Image 4



Caption for Image 4

High embeddedness. Attached algae spans stream reach. Likely from residential developments and golf course upstream.

Report completed by:

BTG

Signature

A handwritten signature in black ink, appearing to be the letters 'BTG' in a stylized, cursive font.

Signature Date/Time

05/13/2020 11:49 AM GMT-04:00

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Prince William Biological Monitoring Form



Stream Name	Neabsco Creek
Location	Dale City
River Basin	Occoquan
Investigators	Ben Green and John Miller
Date	05/11/2020
Time	01:39 PM GMT-04:00
Reason for Survey	Biological monitoring
Weather Conditions	Clear / Sunny

RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Trees
----------------------	-------

INSTREAM FEATURES

Est. Stream Width (m)	6.858
Est. Stream Depth (m)	0.32
Surface Velocity (m/sec at thalweg)	0.426
Canopy Cover	Shaded
High Water Mark (m)	1.07
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	45
Run (%)	20
Pool (%)	35

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	85

WATER QUALITY

Temperature	54.0
Specific Conductance	0.186
Dissolved Oxygen	10.98
pH	7.76
Turbidity	
WQ Instrument Used	YSI 556
Water Odors	<input type="checkbox"/> Normal / None <input checked="" type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	30.0
Cobble	64 - 256 mm (2.5" - 10")	15.0
Gravel	2 - 64 mm (0.1" - 2.5")	10.0
Sand	0.06 - 2 mm (gritty)	20.0
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	12
Embeddedness	11
Velocity / Depth Regime	15
Sediment Deposition	15
Channel Flow Status	15

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	10
Frequency of Riffles (or Bends)	10
Bank Stability (LEFT BANK)	6
Bank Stability (RIGHT BANK)	6
Vegetative Protection (LEFT BANK)	6
Vegetative Protection (RIGHT BANK)	6
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	6

Field Photography

Image 1



Caption for Image 1

End of reach

Image 2



Caption for Image 2

Below reach

Image 3



Caption for Image 3

Upstream

Report completed by:

John Miller

Signature

A handwritten signature in black ink that reads "John P. Miller". The signature is written in a cursive style with a large initial 'J' and 'M'.

Signature Date/Time

05/11/2020 01:40 PM GMT-04:00

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Prince William Biological Monitoring Form



Stream Name	Purcell Branch
Location	Coles, VA
River Basin	Potomac
Investigators	Ben Green and John Miller
Date	05/12/2020
Time	10:51 AM GMT-04:00
Reason for Survey	PWC Biological Monitoring
Weather Conditions	Clear / Sunny

RIPARIAN VEGETATION
(18 meter buffer)

Dominant Type	Trees
----------------------	-------

INSTREAM FEATURES

Est. Stream Width (ft)	22.0
Est. Stream Depth (ft)	0.6
Surface Velocity (ft/sec at thalweg)	2.7
Canopy Cover	
High Water Mark (ft)	4.0
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	30
Run (%)	70
Pool (%)	0

AQUATIC VEGETATION

Dominant Type	Attached Algae
Portion of reach with aquatic veg	60

WATER QUALITY

Temperature	49.0
Specific Conductance	.203
Dissolved Oxygen	11.4
pH	7.65
Turbidity	.74
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other

Water Surface Oils

- Slick
- Sheen
- Globbs
- 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")	7.0
Cobble	64 - 256 mm (2.5" - 10")	7.0
Gravel	2 - 64 mm (0.1" - 2.5")	4.0
Sand	0.06 - 2 mm (gritty)	40.0
Silt	0.004 - 0.06 mm	15.0
Clay	< 0.004 mm (slick)	0.0

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	6
Embeddedness	7
Velocity / Depth Regime	10
Sediment Deposition	6
Channel Flow Status	10

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category
Channel Alteration	6
Frequency of Riffles (or Bends)	7
Bank Stability (LEFT BANK)	3
Bank Stability (RIGHT BANK)	6
Vegetative Protection (LEFT BANK)	6
Vegetative Protection (RIGHT BANK)	7
Riparian Vegetative Zone Width (LEFT BANK)	7
Riparian Vegetative Zone Width (RIGHT BANK)	8

Field Photography

Image 1



Caption for Image 1

Looking upstream from end of reach.

Image 2



Caption for Image 2

Looking downstream towards end of reach. Note blowout on right bank.

Image 3



Caption for Image 3

Looking downstream towards recently finished stormwater pond. End of sampling reach.

Image 4



Caption for Image 4

Looking upstream from downstream extent of sampling reach.

Report completed by:

BTG

Signature

A handwritten signature in black ink, appearing to read "Benjamin Taylor", is centered within a white rectangular box.

Signature Date/Time

05/12/2020 09:24 AM GMT-04:00

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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: Mr. Benjamin Green
 Wood www.woodplc.com
 14424 Albemarle Point Place, Suite 115
 Chantilly, VA 20151

Analysis Report

Report #20180719

Description	Sample Date	Sample ID	Result	Unit	Reporting Limit	Method	Analysis Date
Ammonia as N	10/1/2019	19-2525 PC20	0.02	mg/L	0.01	SM4500-NH3 G	10/7/2019
E. coli	10/1/2019	19-2525 PC20	1050	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	10/2/2019
Nitrate+nitrite as N	10/1/2019	19-2525 PC20	0.16	mg/L	0.01	SM4500-NO3-F	10/7/2019
Orthophosphate as P	10/1/2019	19-2525 PC20	<0.01	mg/L	0.01	SM4500-P F	10/7/2019
Total Kjeldahl Nitrogen	10/1/2019	19-2525 PC20	<0.50	mg/L	0.50	Lachat 10-107-06-2D	10/11/2019
Total Phosphorus	10/1/2019	19-2525 PC20	0.02	mg/L	0.01	SM4500-P F, 4500-P J	10/9/2019
Total Suspended Solids	10/1/2019	19-2525 PC20	<1.0	mg/L	1.0	SM2540D	10/10/2019
Ammonia as N	10/1/2019	19-2526 PC60	0.02	mg/L	0.01	SM4500-NH3 G	10/7/2019
E. coli	10/1/2019	19-2526 PC60	579	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	10/2/2019
Nitrate+nitrite as N	10/1/2019	19-2526 PC60	0.3	mg/L	0.01	SM4500-NO3-F	10/7/2019
Orthophosphate as P	10/1/2019	19-2526 PC60	0.02	mg/L	0.01	SM4500-P F	10/7/2019
Total Kjeldahl Nitrogen	10/1/2019	19-2526 PC60	0.58	mg/L	0.50	Lachat 10-107-06-2D	10/11/2019
Total Phosphorus	10/1/2019	19-2526 PC60	0.02	mg/L	0.01	SM4500-P F, 4500-P J	10/9/2019
Total Suspended Solids	10/1/2019	19-2526 PC60	<1.0	mg/L	1.0	SM2540D	10/10/2019
Ammonia as N	10/2/2019	19-2533 PC30	0.03	mg/L	0.01	SM4500-NH3 G	10/7/2019
E. coli	10/2/2019	19-2533 PC30	150	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	10/3/2019
Nitrate+nitrite as N	10/2/2019	19-2533 PC30	0.05	mg/L	0.01	SM4500-NO3-F	10/7/2019
Orthophosphate as P	10/2/2019	19-2533 PC30	<0.01	mg/L	0.01	SM4500-P F	10/7/2019
Total Kjeldahl Nitrogen	10/2/2019	19-2533 PC30	<0.50	mg/L	0.50	Lachat 10-107-06-2D	10/11/2019
Total Phosphorus	10/2/2019	19-2533 PC30	0.03	mg/L	0.01	SM4500-P F, 4500-P J	10/9/2019
Total Suspended Solids	10/2/2019	19-2533 PC30	9.4	mg/L	1.0	SM2540D	10/10/2019
Ammonia as N	10/2/2019	19-2534 PC10	0.01	mg/L	0.01	SM4500-NH3 G	10/7/2019
E. coli	10/2/2019	19-2534 PC10	548.00	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	10/3/2019
Nitrate+nitrite as N	10/2/2019	19-2534 PC10	0.54	mg/L	0.01	SM4500-NO3-F	10/7/2019
Orthophosphate as P	10/2/2019	19-2534 PC10	0.01	mg/L	0.01	SM4500-P F	10/7/2019
Total Kjeldahl Nitrogen	10/2/2019	19-2534 PC10	<0.50	mg/L	0.50	Lachat 10-107-06-2D	10/11/2019
Total Phosphorus	10/2/2019	19-2534 PC10	0.02	mg/L	0.01	SM4500-P F, 4500-P J	10/9/2019
Total Suspended Solids	10/2/2019	19-2534 PC10	1.8	mg/L	1.0	SM2540D	10/10/2019
Ammonia as N	10/3/2019	19-2535 PC90	0.01	mg/L	0.01	SM4500-NH3 G	10/7/2019
E. coli	10/3/2019	19-2535 PC90	201.00	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	10/4/2019
Nitrate+nitrite as N	10/3/2019	19-2535 PC90	0.02	mg/L	0.01	SM4500-NO3-F	10/7/2019
Orthophosphate as P	10/3/2019	19-2535 PC90	<0.01	mg/L	0.01	SM4500-P F	10/7/2019
Total Kjeldahl Nitrogen	10/3/2019	19-2535 PC90	<0.50	mg/L	0.50	Lachat 10-107-06-2D	10/11/2019
Total Phosphorus	10/3/2019	19-2535 PC90	0.03	mg/L	0.01	SM4500-P F, 4500-P J	10/9/2019
Total Suspended Solids	10/3/2019	19-2535 PC90	<1.0	mg/L	1.0	SM2540D	10/10/2019

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: Mr. Benjamin Green
 Wood www.woodplc.com
 14424 Albemarle Point Place, Suite 115
 Chantilly, VA 20151

Analysis Report

Report #20180719

Description	Blank	LCS, %R	Duplicate, RPD	Spike, %R	Matrix Spike, %R	Method	Analysis Date
Ammonia as N	-0.003	103		103	100	SM4500-NH3 G	10/7/2019
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
E. coli	n.a.	n.a.	n.a.	n.a.	n.a.	SM9221 B(LT)E(EC)C MPN	10/4/2019
Accepted Range							
Nitrate+nitrite as N	-0.003	100		110	103	SM4500-NO3-F	10/7/2019
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Orthophosphate as P	0.004	91		92	93	SM4500-P F	10/7/2019
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	
Accepted Range							
Total Phosphorus	0.006	106	3.4	110	n.a.	SM4500-P F, 4500-P J	10/9/2019
Accepted Range	-0.01~0.01	100±10	±10	100±10	100±10		
Total Suspended Solids			2			SM2540D	10/10/2019
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

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 Laboratory Supervisor

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 Manassas, VA 20110
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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	5/11/2020	20-1039 PC20	0.05	mg/L	0.01	SM4500-NH3 G	5/13/2020
E. coli	5/11/2020	20-1039 PC20	18.9	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	5/18/2020
Nitrate+nitrite as N	5/11/2020	20-1039 PC20	0.50	mg/L	0.01	SM4500-NO3-F	5/13/2020
Orthophosphate as P	5/11/2020	20-1039 PC20	<0.01	mg/L	0.01	SM4500-P F	5/13/2020
Total Kjeldahl Nitrogen	5/11/2020	20-1039 PC20	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/20/2020
Total Phosphorus	5/11/2020	20-1039 PC20	<0.01	mg/L	0.01	SM4500-P F, 4500-P J	5/14/2019
Total Suspended Solids	5/11/2020	20-1039 PC20	1.0	mg/L	1.0	SM2540D	5/26/2020
Ammonia as N	5/11/2020	20-1040 PC60	0.01	mg/L	0.01	SM4500-NH3 G	5/13/2020
E. coli	5/11/2020	20-1040 PC60	35.5	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	5/18/2020
Nitrate+nitrite as N	5/11/2020	20-1040 PC60	0.32	mg/L	0.01	SM4500-NO3-F	5/13/2020
Orthophosphate as P	5/11/2020	20-1040 PC60	<0.01	mg/L	0.01	SM4500-P F	5/13/2020
Total Kjeldahl Nitrogen	5/11/2020	20-1040 PC60	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/20/2020
Total Phosphorus	5/11/2020	20-1040 PC60	<0.01	mg/L	0.01	SM4500-P F, 4500-P J	5/14/2019
Total Suspended Solids	5/11/2020	20-1040 PC60	<1.0	mg/L	1.0	SM2540D	5/26/2020
Ammonia as N	5/12/2020	20-1049 PC10	0.01	mg/L	0.01	SM4500-NH3 G	5/19/2020
E. coli	5/12/2020	20-1049 PC10	34.5	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	5/18/2020
Nitrate+nitrite as N	5/12/2020	20-1049 PC10	0.67	mg/L	0.01	SM4500-NO3-F	5/19/2020
Orthophosphate as P	5/12/2020	20-1049 PC10	<0.01	mg/L	0.01	SM4500-P F	5/21/2020
Total Kjeldahl Nitrogen	5/12/2020	20-1049 PC10	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/20/2020
Total Phosphorus	5/12/2020	20-1049 PC10	0.01	mg/L	0.01	SM4500-P F, 4500-P J	5/14/2019
Total Suspended Solids	5/12/2020	20-1049 PC10	<1.0	mg/L	1.0	SM2540D	5/26/2020
Ammonia as N	5/12/2020	20-1050 PC30	0.03	mg/L	0.01	SM4500-NH3 G	5/19/2020
E. coli	5/12/2020	20-1050 PC30	106	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	5/18/2020
Nitrate+nitrite as N	5/12/2020	20-1050 PC30	0.07	mg/L	0.01	SM4500-NO3-F	5/19/2020
Orthophosphate as P	5/12/2020	20-1050 PC30	<0.01	mg/L	0.01	SM4500-P F	5/21/2020
Total Kjeldahl Nitrogen	5/12/2020	20-1050 PC30	0.58	mg/L	0.50	Lachat 10-107-06-2D	5/20/2020
Total Phosphorus	5/12/2020	20-1050 PC30	0.03	mg/L	0.01	SM4500-P F, 4500-P J	5/14/2019
Total Suspended Solids	5/12/2020	20-1050 PC30	3.6	mg/L	1.0	SM2540D	5/26/2020
Ammonia as N	5/13/2020	20-1051 PC90	0.01	mg/L	0.01	SM4500-NH3 G	5/19/2020
E. coli	5/13/2020	20-1051 PC90	101	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	5/18/2020
Nitrate+nitrite as N	5/13/2020	20-1051 PC90	0.41	mg/L	0.01	SM4500-NO3-F	5/19/2020
Orthophosphate as P	5/13/2020	20-1051 PC90	<0.01	mg/L	0.01	SM4500-P F	5/21/2020
Total Kjeldahl Nitrogen	5/13/2020	20-1051 PC90	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/20/2020
Total Phosphorus	5/13/2020	20-1051 PC90	0.02	mg/L	0.01	SM4500-P F, 4500-P J	5/14/2019
Total Suspended Solids	5/13/2020	20-1051 PC90	<1.0	mg/L	1.0	SM2540D	5/26/2020

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

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Virginia Laboratory ID: 460026

Att: Mr. Benjamin Green

Wood www.woodplc.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	0.004	105	n.a.	96	98	SM4500-NH3 G	5/13/2020
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
E. coli	n.a.	n.a.	0.00	n.a.	n.a.	SM9221 B(LT)E(EC)C MPN	5/18/2020
Accepted Range							
Nitrate+nitrite as N	-0.005	99	n.a.	98	93	SM4500-NO3-F	5/13/2020
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Orthophosphate as P	0.004	96	n.a.	90	90	SM4500-P F	5/13/2020
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	5/20/2020
Accepted Range							
Total Phosphorus	0.005	107	1.0	99	n.a.	SM4500-P F, 4500-P J	5/14/2019
Accepted Range	-0.01~0.01	100±10	±10	100±10	100±10		
Total Suspended Solids	-0.10	n.a.	0	n.a.	n.a.	SM2540D	5/26/2020
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



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404 SW 140th Terrace
Newberry, FL 32669
USA

T: 352.332.3318

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January 13, 2020

Mr. Benjamin Green
Wood Environment & Infrastructure Solutions, Inc.
14424 Albemarle Point Place, Suite 115
Chantilly, VA 20151

**Subject: Prince William County Multiple Habitat Sampling Method Report
Wood Project No.: 15123000**

Dear Mr. Green,

Wood Environment & Infrastructure Solutions, Inc. (Wood) (Gainesville office) completed benthic macroinvertebrate determinations for samples collected by Wood (Chantilly office), in October 2019. Wood (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.

1.0 Multiple Habitat Sampling Method

1.1 Methods and Procedures

All samples collected by Wood, Chantilly office, in October 2019, were received by Wood's taxonomy laboratory at Newberry, 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 Wood Senior Taxonomist.



1.2 Benthic Macroinvertebrate Results

The benthic macroinvertebrate community data were used to generate metrics outlined in the Wood draft sampling plan. The Multiple Habitat Sampling assessments conducted for the five samples are summarized below in Table 1.

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	24	36	35	32	33
Abundance	196	171	234	172	179
EPT Index	72.5	108.7	105.8	96.5	99.7
EPT/EPT + Chironomidae Ratio	0.88	0.75	0.80	0.72	0.78
Percent Dominant Taxon	64.29	14.04	24.36	22.67	33.52
Percent Chironomidae	10.20	9.94	13.68	19.77	15.64
Biotic Index (BI)	6.61	6.52	6.24	5.63	5.59
BI Category	Fairly Poor	Fairly Poor	Fair	Fair	Fair
Percent Model Affinity (PMA)	39.08	56.90	80.34	52.33	50.67
PMA Category	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
VSCI	49.76 42.95	67.54 62.99	71.40 67.99	62.91 56.10	65.31 60.76

Source: Wood, 2020

Prepared By: NFP Checked By: RJM

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.

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) 333-3634, or via email at shannon.mcmorrow@woodplc.com.

Sincerely

Wood Environment & Infrastructure Solutions, Inc.



Shannon McMorrow
Senior Ecologist
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Attachments:

Attachment 1: Tabulated Data

Attachment 2: References



wood.

**Attachment 1
Tabulated Data**

Multiple Habitat Sampling
 Samples Collected 10/2019
 Project #: 151270003

Metrics	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	36	35	32	33
Abundance	196	171	234	172	179
EPT Index	72	108	105	96	99
EPT/EPT + Chironomidae Ratio	0.88	0.75	0.80	0.72	0.78
Percent Dominant Taxon	64.29	14.04	24.36	22.67	33.52
Percent Chironomidae	10.20	9.94	13.68	19.77	15.64
Biotic Index (BI)	6.61	6.52	6.24	5.63	5.59
Biotic Index (BI) Category	Fairly Poor	Fairly Poor	Fair	Fair	Fair
Percent Model Affinity (PMA)	39.08	56.90	80.34	52.33	50.67
Percent Model Affinity (PMA) Category	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
VSCI	49.76	67.54	71.40	62.91	65.31

Created By: NFP
 Checked By: RJM
 Source: Wood, 2020

Cow Branch
 Multiple Habitat Sampling
 Sample Collected 10/01/2019
 Project #: 151270003

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		Enopla		Hoploneurata	Tetrastemmatidae	<i>Prostoma</i> spp.	6	0	0	0	0		6.1	0.19	0	0	6	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais</i> spp.	1	0	0	0	0		8.7	0.04	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	4	0	0	0	0		8.7	0.18	0	4	0	0		
Annelida		Clitellata	Oligochaeta	Opisthopora	Sparganophilidae	<i>Sparganophilus</i> spp.	2	0	0	0	0		0.00	0.00	0	2	0	0		
Annelida		Clitellata	Hirudinida	Arhynchobdellida	Erpobdellidae	<i>Erpobdella</i> spp.	1	0	0	0	0		8.6	0.04	0	0	1	0		
Mollusca		Gastropoda			Gastropoda spp.		2	0	0	0	0		7	0.07	0	0	2	0		
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	<i>Ancylidae</i> spp.	1	0	0	0	0		7	0.04	0	0	1	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetidae</i> spp.	12	12	0	0	0		6.1	0.37	0	0	0	0	0	12
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis</i> spp.	1	1	0	0	0		4.51	0.02	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	126	0	0	126	0	126	6.6	4.24	0	0	0	0	0	126
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche</i> spp.	3	0	0	3	0		4.3	0.07	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	10	0	0	10	0		7.9	0.40	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Elmidae</i> spp.	3	0	0	0	0		6	0.09	3	0	0	0	3	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	1	0	0	0	0		5.6	0.03	1	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Chironomidae</i> spp.	1	0	0	0	1		6.2	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	4	0	0	0	4		6.6	0.13	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	2	0	0	0	2		5.89	0.06	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus bicinctus</i>	4	0	0	0	4		8.7	0.18	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladus</i> spp.	1	0	0	0	1		4.4	0.02	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	2	0	0	0	2		8	0.08	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella</i> grp. sp.	6	0	0	0	6		8.4	0.26	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Rhagovelia</i> spp.	1	0	0	0	0		6	0.03	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Microvelia</i> spp.	1	0	0	0	0		6	0.03	0	0	1	0	0	
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Limnesiidae	<i>Limnesia</i> spp.	1	0	0	0	0		0.00	0.00	0	0	1	0	0	

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	33.37
Model % Plecoptera	5	5.00
Model % Trichoptera	10	60.92
Model % Chironomidae	20	9.80
Model % Coleoptera	10	7.96
Model % Oligochaeta	5	1.43
Model % Other	10	3.37
Sum of Difference		121.84
Sum of Difference * 0.5		60.92
Percent Model Affinity		39.08
Percent Model Affinity Category		Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	24	109.09	100.00
Total Abundance	196		
% Ephemeroptera	6.63	10.82	10.82
% Plecoptera	0.00		
% Trichoptera	70.92		
% Chironomidae	10.20	89.80	89.80
% Dominant Taxon	64.29		
Biotic Index	6.61	49.78	49.78
% Coleoptera	2.04		
% Oligochaeta	3.57		
% Other	6.63		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	2.55	4.94	4.94
% Top 2 Dominant Taxa	70.41	42.76	42.76
EPT Index	72	654.55	100.00
EPT/EPT + Chironomidae Ratio	0.88		

Hilsenhoff Biotic Index Category: Fairly Poor

Final VSCI score: 49.76

Created By: NFP
 Checked By: RJM
 Source: Wood, 2020

Dawkins Branch
 Multiple Habitat Sampling
 Sample Collected 10/02/2019
 Project #: 151270003

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	
Platyhelminthes						Platyhelminthes spp.	1	0	0	0	0			0.00	0	0	1	0			
Nemertea		Enopla		Hoplonemertea	Tetrastemmatidae	<i>Prostoma</i> spp.	1	0	0	0	0			6.1	0	0	1	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Tubificinae</i> spp.	3	0	0	0	0			9.5	0	3	0	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Pristina leidy</i>	1	0	0	0	0			7.7	0	1	0	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Dero flabelliger</i>	2	0	0	0	0			9.8	0	2	0	0			
Annelida		Clitellata	Hirudinida	Rhynchobdellida	Glossiphoniidae	<i>Placobdella</i> spp.	2	0	0	0	0			9	0	0	2	0			
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	<i>Ancylidae</i> spp.	12	0	0	0	0			7	0	12	0	12			
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physella</i> spp.	6	0	0	0	0			8.84	0	0	6	0	6		
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Planorbella</i> spp.	9	0	0	0	0			6.82	0	0	9	0	9		
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Planorbella scalaris</i>	1	0	0	0	0			6.82	0	0	1	0	1		
Mollusca		Bivalvia	Heterodonta	Veneroida	Corbiculidae	<i>Corbicula</i> spp.	16	0	0	0	0			6.12	0	16	0	16		16	
Mollusca		Bivalvia	Heterodonta	Veneroida	Sphaeriidae	<i>Sphaeriidae</i> spp.	1	0	0	0	0			6.6	0	0	1	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	<i>Caenis</i> spp.	14	14	0	0	0			6.8	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	<i>Caenis diminuta</i>	8	8	0	0	0			7.41	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetidae</i> spp.	1	1	0	0	0			6.1	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	<i>Argia</i> spp.	12	0	0	0	0			8.3	0	0	12	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Oecetis</i> spp.	7	0	0	7	0			5.1	0	0	0	7	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsychidae</i> spp.	10	0	0	10	0			4	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	8	0	0	8	0			6.6	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	2	0	0	2	0			3.3	0	0	0	2	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Elmidae</i> spp.	1	0	0	0	0			6	0	0	0	0	1		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Dubirapha</i> spp.	2	0	0	0	0			5.5	0	0	0	0	2		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	24	0	0	0	0	24		5.6	0.79	24	0	0	0	24	24
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Halplidae	<i>Peltodytes</i> spp.	1	0	0	0	0			8.4	0.05	1	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	4	0	0	0	4			6.6	0.15	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum flavum</i>	1	0	0	0	1			5.7	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum illinoense</i> group	5	0	0	0	5			8.7	0.25	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	3	0	0	0	3			5.89	0.10	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Dicrotendipes</i> spp.	1	0	0	0	1			7.2	0.04	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	1	0	0	0	1			5.7	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	2	0	0	0	2			8	0.09	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	<i>Atrichopogon</i> spp.	3	0	0	0	0			6.1	0.11	0	0	3	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Tipulidae</i> spp.	1	0	0	0	0			4.9	0.03	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	2	0	0	0	0			4.9	0.06	0	0	2	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Empididae	<i>Hemerodromia</i> spp.	2	0	0	0	0			7.57	0.09	0	0	2	0	0	
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Arrenuridae	<i>Arrenurus</i> spp.	1	0	0	0	0			0.00	0	0	1	0	0		

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	26.55
Model % Plecoptera	5	5.00
Model % Trichoptera	10	5.79
Model % Chironomidae	20	10.06
Model % Coleoptera	10	6.37
Model % Oligochaeta	5	1.49
Model % Other	10	30.94
Sum of Difference		86.20
Sum of Difference * 0.5		43.10
Percent Model Affinity		56.90
Percent Model Affinity Category		Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	36	163.64	100.00
Total Abundance	171		
% Ephemeroptera	13.45	21.94	21.94
% Plecoptera	0.00		
% Trichoptera	15.79		
% Chironomidae	9.94	90.06	90.06
% Dominant Taxon	14.04		
Biotic Index	6.52	51.17	51.17
% Coleoptera	16.37		
% Oligochaeta	3.51		
% Other	40.94		
% Plecoptera + Trichoptera (less Hydropsychidae)	5.26	14.78	14.78
% Scrapers	32.16	62.33	62.33
% Top 2 Dominant Taxa	23.39	110.71	100.00
EPT Index	108	981.82	100.00
EPT/EPT + Chironomidae Ratio	0.75		

Hilsenhoff Biotic Index Category: Fairly Poor

Final VSCI score: 67.54

Created By: NFP
 Checked By: RJM
 Source: Wood, 2020

Little Bull Run
 Multiple Habitat Sampling
 Sample Collected 10/03/2019
 Project #: 151270003

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
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.04	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais pardalis</i>	3	0	0	0	0		8.7	0.11	0	3	0	0		
Annelida		Clitellata	Oligochaeta	Opisthophora	Sparganophilidae	<i>Sparganophilus</i> spp.	2	0	0	0	0			0.00	0	2	0	0		
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	Ancylidae spp.	3	0	0	0	0		7	0.09	0	3	0	0	3	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Planorbella</i> spp.	3	0	0	0	0		6.82	0.09	0	0	3	0	3	
Mollusca		Bivalvia	Heterodonta	Veneroida	Corbiculidae	<i>Corbicula</i> spp.	2	0	0	0	0		6.12	0.05	0	0	2	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	<i>Caenis</i> spp.	49	49	0	0	0		6.8	1.42	0	0	0	0	49	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	<i>Caenis diminuta</i>	57	57	0	0	0	57	7.41	1.81	0	0	0	0	57	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	1	1	0	0	0		6.1	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	2	2	0	0	0		4	0.03	0	0	0	0	2	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	<i>Argia</i> spp.	2	0	0	0	0		8.3	0.07	0	0	2	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Polycentropodidae	<i>Polycentropus</i> spp.	3	0	0	3	0		3.53	0.05	0	0	0	3		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Oecetis</i> spp.	11	0	0	11	0		5.1	0.24	0	0	0	11		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Mystacides sepulchralis</i>	6	0	0	6	0		2.6	0.07	0	0	0	6		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	1	0	0	1	0		6.6	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Elmidae spp.	4	0	0	0	0		6	0.10	4	0	0	0	4	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Dubiraphia</i> spp.	14	0	0	0	0		5.5	0.33	14	0	0	0	14	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	21	0	0	0	0		5.6	0.50	21	0	0	0	21	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Curculionidae	Curculionidae spp.	1	0	0	0	0		4	0.02	1	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	<i>Psephenus</i> spp.	14	0	0	0	0		2.35	0.14	14	0	0	0	14	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	3	0	0	0	3		6.2	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	7	0	0	0	7		6.6	0.20	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum illinoense</i> group	1	0	0	0	1		8.7	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Procladius</i> spp.	2	0	0	0	2		8.8	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	2	0	0	0	2		5.89	0.05	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Ablabesmyia mallochi</i>	1	0	0	0	1		7.4	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Dicrotendipes</i> spp.	9	0	0	0	9		7.2	0.28	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus bicinctus</i>	2	0	0	0	2		8.7	0.07	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	1	0	0	0	1		5.7	0.02	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum beckae</i>	1	0	0	0	1		5.69	0.02	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	1	0	0	0	1		8	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Paratanytarsus</i> spp.	1	0	0	0	1		8	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanimyia</i> grp. sp.	1	0	0	0	1		8.4	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	Ceratopogonidae spp.	1	0	0	0	0		5.9	0.03	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	<i>Atrichopogon</i> spp.	1	0	0	0	0		6.1	0.03	0	0	1	0		

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	6.58
Model % Plecoptera	5	5.00
Model % Trichoptera	10	1.03
Model % Chironomidae	20	6.32
Model % Coleoptera	10	13.08
Model % Oligochaeta	5	2.44
Model % Other	10	4.87
Sum of Difference		39.32
Sum of Difference * 0.5		19.66
Percent Model Affinity		80.34
Percent Model Affinity Category		Non-impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	35	159.09	100.00
Total Abundance	234		
% Ephemeroptera	46.58	75.99	75.99
% Plecoptera	0.00		
% Trichoptera	8.97		
% Chironomidae	13.68	86.32	86.32
% Dominant Taxon	24.36		
Biotic Index	6.24	55.29	55.29
% Coleoptera	23.08		
% Oligochaeta	2.56		
% Other	5.13		
% Plecoptera + Trichoptera (less Hydropsychidae)	8.55	24.01	24.01
% Scrapers	26.07	50.52	50.52
% Top 2 Dominant Taxa	45.30	79.05	79.05
EPT Index	105	954.55	100.00
EPT/EPT + Chironomidae Ratio	0.80		

Hilsenhoff Biotic Index Category Fair

Final VSCI score 71.40

Created By: NFP
 Checked By: RJM
 Source: Wood, 2020

Neabsco Creek
 Multiple Habitat Sampling
 Sample Collected 10/01/2019
 Project #: 151270003

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
Nemertea		Enopla		Hoploneurata	Tetrastemmatidae	<i>Prostoma</i> spp.	5	0	0	0	0		6.1	0.18	0	0	5	0		
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	<i>Pristina</i> spp.	1	0	0	0	0		7.7	0.04	0	1	0	0		
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	6	0	0	0	0		8.7	0.30	0	6	0	0		
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	<i>Nais pardalis</i>	1	0	0	0	0		8.7	0.05	0	1	0	0		
Annelida		Citellata	Oligochaeta	Opisthopora	Sparganophilidae	<i>Sparganophilus</i> spp.	1	0	0	0	0		0.00	0.00	0	1	0	0		
Mollusca		Gastropoda	Heterobranch	Hygrophila	Ancylidae	<i>Ancylus</i> spp.	9	0	0	0	0		7	0.37	0	0	9	0	9	
Mollusca		Gastropoda	Heterobranch	Hygrophila	Physidae	<i>Physella</i> spp.	2	0	0	0	0		8.84	0.10	0	0	2	0	2	
Mollusca		Bivalvia	Heterodonta	Veneroida	Corbiculidae	<i>Corbicula</i> spp.	6	0	0	0	0		6.12	0.21	0	0	6	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis</i> spp.	11	11	0	0	0		6.1	0.39	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis</i> spp.	1	1	0	0	0		4.51	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Gomphidae	<i>Gomphidae</i> spp.	1	0	0	0	0		5	0.03	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	39	0	0	0	39	39	6.6	1.50	0	0	0	0		39
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	8	0	0	0	8	0	7.9	0.37	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	28	0	0	0	28	0	3.3	0.54	0	0	0	28		28
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	1	0	0	0	0		5.6	0.03	1	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Chironomidae</i> spp.	5	0	0	0	5		6.2	0.18	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladinae</i> spp.	1	0	0	0	1		5	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	2	0	0	0	2		6.6	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium haierale</i> group	2	0	0	0	2		7.4	0.09	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium scalaenum</i> group	1	0	0	0	1		8.5	0.05	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium flavum</i>	4	0	0	0	4		5.7	0.13	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium illinoense</i> group	1	0	0	0	1		8.7	0.05	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	8	0	0	0	8		5.89	0.27	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tribelos fuscicorne</i>	2	0	0	0	2		5.1	0.06	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus bicinctus</i>	2	0	0	0	2		8.7	0.10	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	1	0	0	0	1		8	0.05	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella grp. sp.</i>	2	0	0	0	2		8.4	0.10	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	2	0	0	0	2		4.7	0.05	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladus</i>	1	0	0	0	1		4.86	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Dicranota</i> spp.	9	0	0	0	0		0	0.00	0	0	9	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	8	0	0	0	0		4.9	0.23	0	0	8	0		
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Unionicolidae	<i>Unionicola</i> spp.	1	0	0	0	0		0.00	0.00	0	0	1	0		

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 33.02
Model % Plecoptera	5 5.00
Model % Trichoptera	10 33.60
Model % Chironomidae	20 0.23
Model % Coleoptera	10 9.42
Model % Oligochaeta	5 0.23
Model % Other	10 13.84
Sum of Difference	95.35
Sum of Difference * 0.5	47.67
Percent Model Affinity	52.33
Percent Model Affinity Category	Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	32	145.45	100.00
Total Abundance	172		
% Ephemeroptera	6.98	11.38	11.38
% Plecoptera	0.00		
% Trichoptera	43.60		
% Chironomidae	19.77	80.23	80.23
% Dominant Taxon	22.67		
Biotic Index	5.63	64.24	64.24
% Coleoptera	0.58		
% Oligochaeta	5.23		
% Other	23.84		
% Plecoptera + Trichoptera (less Hydropsychidae)	16.28	45.73	45.73
% Scrapers	6.98	13.52	13.52
% Top 2 Dominant Taxa	38.95	88.22	88.22
EPT Index	96	872.73	100.00
EPT/EPT + Chironomidae Ratio	0.72		

Hilsenhoff Biotic Index Category | Fair

Final VSCI score | 62.91

Created By: NFP
 Checked By: RJM
 Source: Wood, 2020

Purcell Branch
 Multiple Habitat Sampling
 Sample Collected 10/02/2019
 Project #: 151270003

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		Enopla		Hoplonemertea	Tetrastemmatidae	<i>Prostoma</i> spp.	2	0	0	0	0		6.1	0.07	0	0	2	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.05	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	1	0	0	0	0		8.7	0.05	0	1	0	0		
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	Ancylidae spp.	6	0	0	0	0		7	0.23	0	0	6	0	6	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Menetus dilatatus</i>	1	0	0	0	0		7.6	0.04	0	0	1	0	1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Planorbella scalaris</i>	1	0	0	0	0		6.82	0.04	0	0	1	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	1	1	0	0	0		6.1	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	6	6	0	0	0		4	0.13	0	0	0	0	6	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Aeshnidae	<i>Boyeria</i> spp.	1	0	0	0	0		4	0.02	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Oecetis</i> spp.	2	0	0	2	0		5.1	0.06	0	0	0	2		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Mystacides sepulchralis</i>	1	0	0	1	0		2.6	0.01	0	0	0	1		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	60	0	0	60	0	60	6.6	2.21	0	0	0	0	60	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	1	0	0	1	0		7.9	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	30	0	0	30	0		3.3	0.55	0	0	0	30	30	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Elmidae spp.	2	0	0	0	0		6	0.07	2	0	0	0	2	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Dubiraphia</i> spp.	3	0	0	0	0		5.5	0.09	3	0	0	0	3	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	16	0	0	0	0		5.6	0.50	16	0	0	0	16	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	<i>Psephenus</i> spp.	5	0	0	0	0		2.35	0.07	5	0	0	0	5	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	2	0	0	0	2		6.2	0.07	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum halterale</i> group	2	0	0	0	2		7.4	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum flavum</i>	4	0	0	0	4		5.7	0.13	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum illinoense</i> group	4	0	0	0	4		8.7	0.19	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus</i> spp.	6	0	0	0	6		6.5	0.22	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	5	0	0	0	5		5.89	0.16	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Ablabesmyia mallochi</i>	1	0	0	0	1		7.4	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Carynoneura</i> spp.	3	0	0	0	3		5.7	0.10	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	1	0	0	0	1		8	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Prianocera</i> spp.	1	0	0	0	0		4	0.02	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Dicranota</i> spp.	2	0	0	0	0		0	0.00	0	0	2	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	4	0	0	0	0		4.9	0.11	0	0	4	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Empididae	<i>Hemerodromia</i> spp.	1	0	0	0	0		7.57	0.04	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Rhagovelia</i> spp.	2	0	0	0	0		6	0.07	0	0	2	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Microvelia</i> spp.	1	0	0	0	0		6	0.03	0	0	1	0		

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 36.09
Model % Plecoptera	5 5.00
Model % Trichoptera	10 42.51
Model % Chironomidae	20 4.36
Model % Coleoptera	10 4.53
Model % Oligochaeta	5 3.88
Model % Other	10 2.29
Sum of Difference	98.66
Sum of Difference * 0.5	49.33
Percent Model Affinity	50.67
Percent Model Affinity Category	Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	33	150.00	100.00
Total Abundance	179		
% Ephemeroptera	3.91	6.38	6.38
% Plecoptera	0.00		
% Trichoptera	52.51		
% Chironomidae	15.64	84.36	84.36
% Dominant Taxon	33.52		
Biotic Index	5.59	64.79	64.79
% Coleoptera	14.53		
% Oligochaeta	1.12		
% Other	12.29		
% Plecoptera + Trichoptera (less Hydropsychidae)	18.44	51.79	51.79
% Scrapers	22.35	43.31	43.31
% Top 2 Dominant Taxa	50.28	71.85	71.85
EPT Index	99	900.00	100.00
EPT/EPT + Chironomidae Ratio	0.78		

Hilsenhoff Biotic Index Category | Fair

Final VSCI score | 65.31

Created By: NFP
 Checked By: RJM
 Source: Wood, 2020



wood.

**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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- Merritt, R. W., K. W. Cummings and M. B. Berg. 2008. An introduction to the aquatic insects of North America. 4th ed. Kendall Hunt Publishing Company, Dubuque, IA.
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- Novak, M. A. and R. W. Bode. 1992. Percent model affinity: a new measure of macroinvertebrate community composition. *Journal of North American Benthological Society* 11 (1): 80-85.
- Tennessee Department of Environment and Conservation. 2011. Quality system standard operating procedure for macroinvertebrate stream surveys. Division of Water Pollution Control. Nashville, Tennessee.
- Virginia Department of Environmental Quality. 2008. Biological monitoring program: quality assurance project plan for wadeable streams and rivers. Division of Water Quality, Office of Water Quality Monitoring and Assessment Programs, Richmond, VA.



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August 13, 2020

Mr. Benjamin Green
Wood Environment & Infrastructure Solutions, Inc.
14424 Albemarle Point Place, Suite 115
Chantilly, VA 20151

**Subject: Prince William County Multiple Habitat Sampling Method Report
Wood Project No.: 15123000**

Dear Mr. Green,

Wood Environment & Infrastructure Solutions, Inc. (Wood) (Gainesville office) completed benthic macroinvertebrate determinations for samples collected by Wood (Chantilly office), in May 2020. Wood (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.

1.0 Multiple Habitat Sampling Method

1.1 Methods and Procedures

All samples collected by Wood, Chantilly office, in May 2020, were received by Wood's taxonomy laboratory at Newberry, 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 Wood Senior Taxonomist.



1.2 Benthic Macroinvertebrate Results

The benthic macroinvertebrate community data were used to generate metrics outlined in the Wood draft sampling plan. The Multiple Habitat Sampling assessments conducted for the five samples are summarized below in Table 1.

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	24	20	25	33	29
Abundance	248	202	183	239	201
EPT Index	2	4	2	6	6
EPT/EPT + Chironomidae Ratio	0.12	0.43	0.12	0.24	0.17
Percent Dominant Taxon	34.68	62.87	21.86	20.08	34.83
Percent Chironomidae	44.35	15.84	67.21	59.41	55.72
Biotic Index (BI)	7.20	5.25	5.49	5.69	5.23
BI Category	Fairly Poor	Good	Good	Fair	Good
Percent Model Affinity (PMA)	36.69	40.79	49.67	49.64	56.44
PMA Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI	34.52	41.42	42.77	47.03	47.53

Source: Wood, 2020 Prepared By: JSD Checked By: SEM

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.

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) 333-3634, or via email at shannon.mcmorrow@woodplc.com.

Sincerely

Wood Environment & Infrastructure Solutions, Inc.



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Attachments:

- Attachment 1: Tabulated Data
- Attachment 2: References



The page features two large, light grey curved shapes. One is a thick, curved band in the top left corner, and the other is a larger, thick, curved band in the bottom left corner, both curving towards the right.

**Attachment 1
Tabulated Data**

Multiple Habitat Sampling

Samples Collected: May 2020

Project #: 151270003

Metrics	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	24	20	25	33	29
Abundance	248	202	183	239	201
EPT Index	2	4	2	6	6
EPT/EPT + Chironomidae Ratio	0.12	0.43	0.12	0.24	0.17
Percent Dominant Taxon	34.68	62.87	21.86	20.08	34.83
Percent Chironomidae	44.35	15.84	67.21	59.41	55.72
Biotic Index (BI)	7.20	5.25	5.49	5.69	5.23
Biotic Index (BI) Category	Fairly Poor	Good	Good	Fair	Good
Percent Model Affinity (PMA)	36.69	40.79	49.67	49.64	56.44
Percent Model Affinity (PMA) Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI	34.52	41.42	42.77	47.03	47.53

Created By: JSD

Checked By: SEM

Source: Wood, 2020

Cow Branch
 Multiple Habitat Sampling
 Sample Collected: 11-May-2020
 Project #: 151270003

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
Platyhelminthes						Platyhelminthes spp.	3	0	0	0	0			0.00	0	0	3	0		
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	2	0	0	0	0		5	0.04	0	2	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	13	0	0	0	0		9.5	0.50	0	13	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Limnodrilus udekemianus</i>	1	0	0	0	0		9.7	0.04	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	86	0	0	0	0	86	8.7	3.02	0	86	0	0		86
Annelida		Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae	<i>Lumbriculus cf. variegatus</i>	1	0	0	0	0		7.03	0.03	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Enchytraeida	Enchytraeidae	Enchytraeidae spp.	6	0	0	0	0		9.84	0.24	0	6	0	0		
Mollusca		Bivalvia	Heterodonta	Veneroida	Sphaeriidae	Sphaeriidae spp.	1	0	0	0	0		6.6	0.03	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	Coenagrionidae spp.	1	0	0	0	0		6.1	0.02	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	1	0	0	1	0		6.6	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	14	0	0	14	0		7.9	0.45	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera	Diptera spp.	5	0	0	0	0		7	0.14	0	0	5	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium scalaenum</i> group	20	0	0	0	20		8.5	0.69	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Dicrotendipes</i> spp.	2	0	0	0	2		7.2	0.06	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Larsia</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladus</i> spp.	8	0	0	0	8		4.4	0.14	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Paratanytarsus</i> spp.	1	0	0	0	1		8	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemannimyia</i> grp. sp.	7	0	0	0	7		8.4	0.24	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametriocnemus</i> spp.	1	0	0	0	1		3.9	0.02	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	12	0	0	0	12		4.7	0.23	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladus</i>	57	0	0	0	57		4.86	1.12	0	0	0	0		57
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	Tipulidae spp.	1	0	0	0	0		4.9	0.02	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Tipula</i> spp.	3	0	0	0	0		7.5	0.09	0	0	3	0		

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	40.00
Model % Plecoptera	5	5.00
Model % Trichoptera	10	3.95
Model % Chironomidae	20	24.35
Model % Coleoptera	10	10.00
Model % Oligochaeta	5	38.95
Model % Other	10	4.35
Sum of Difference		126.61
Sum of Difference * 0.5		63.31
Percent Model Affinity		36.69
Percent Model Affinity Category		Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	24	109.09	100.00
Total Abundance	248		
% Ephemeroptera	0.00	0.00	0.00
% Plecoptera	0.00		
% Trichoptera	6.05		
% Chironomidae	44.35	55.65	55.65
% Dominant Taxon	34.68		
Biotic Index	7.20	41.12	41.12
% Coleoptera	0.00		
% Oligochaeta	43.95		
% Other	5.65		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	0.00	0.00	0.00
% Top 2 Dominant Taxa	57.66	61.18	61.18
EPT Index	2	18.18	18.18
EPT/EPT + Chironomidae Ratio	0.12		

Hilsenhoff Biotic Index Category: Fairly Poor

Final VSCI score: 34.52

Created By: JSD
 Checked By: SEM
 Source: Wood, 2020

Dawkins Branch
 Multiple Habitat Sampling
 Sample Collected: 12-May-2020
 Project #: 151270003

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
Platyhelminthes						Platyhelminthes spp.	6	0	0	0	0			0.00	0	0	6	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.05	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	1	0	0	0	0		8.7	0.04	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Slavina appendiculata</i>	3	0	0	0	0		8.4	0.12	0	3	0	0		
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physa acuta</i>	1	0	0	0	0		8.84	0.04	0	0	1	0	1	
Mollusca		Bivalvia	Heterodonta	Veneroida	Sphaeriidae	<i>Sphaeriidae</i> spp.	3	0	0	0	0		6.6	0.10	0	0	3	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	<i>Caenis</i> spp.	2	2	0	0	0		6.8	0.07	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsychidae</i> spp.	5	0	0	5	0		4	0.10	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	16	0	0	16	0		6.6	0.52	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	<i>Hydroptila</i> spp.	1	0	0	1	0		6.5	0.03	0	0	0	1	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	3	0	0	0	0		5.6	0.08	3	0	0	0	3	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	1	0	0	0	1		6.6	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum illinoense</i> group	7	0	0	0	7		8.7	0.30	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus bicinctus</i>	2	0	0	0	2		8.7	0.09	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladius</i> spp.	1	0	0	0	1		4.4	0.02	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	2	0	0	0	2		8	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	3	0	0	0	3		4.7	0.07	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladius</i>	16	0	0	0	16		4.86	0.38	0	0	0	0		16
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	127	0	0	0	0	127	4.9	3.08	0	0	127	0		127
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera		<i>Heteroptera</i> spp.	1	0	0	0	0		6	0.03	0	0	1	0		

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 39.01
Model % Plecoptera	5 5.00
Model % Trichoptera	10 0.89
Model % Chironomidae	20 4.16
Model % Coleoptera	10 8.51
Model % Oligochaeta	5 2.52
Model % Other	10 58.32
Sum of Difference	118.42
Sum of Difference * 0.5	59.21
Percent Model Affinity	40.79
Percent Model Affinity Category	Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	20	90.91	90.91
Total Abundance	202		
% Ephemeroptera	0.99	1.62	1.62
% Plecoptera	0.00		
% Trichoptera	10.89		
% Chironomidae	15.84	84.16	84.16
% Dominant Taxon	62.87		
Biotic Index	5.25	69.89	69.89
% Coleoptera	1.49		
% Oligochaeta	2.48		
% Other	68.32		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.50	1.39	1.39
% Scrapers	2.48	4.80	4.80
% Top 2 Dominant Taxa	70.79	42.21	42.21
EPT Index	4	36.36	36.36
EPT/EPT + Chironomidae Ratio	0.43		

Hilsenhoff Biotic Index Category | Good

Final VSCI score | 41.42

Created By: JSD
 Checked By: SEM
 Source: Wood, 2020

Little Bull Run
 Multiple Habitat Sampling
 Sample Collected: 13-May-2020
 Project #: 151270003

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.	3	0	0	0	0			0.00	0	0	3	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.05	0	1	0	0		
Mollusca		Bivalvia	Heterodonta	Veneroida	Sphaeriidae	Sphaeriidae spp.	1	0	0	0	0		6.6	0.04	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	Caenis spp.	15	15	0	0	0		6.8	0.56	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	Coenagrionidae spp.	1	0	0	0	0		6.1	0.03	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Cheumatopsyche spp.	2	0	0	0	2		6.6	0.07	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Stenelmis spp.	21	0	0	0	0		5.6	0.64	21	0	0	0	21	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	Psephenus spp.	3	0	0	0	0		2.35	0.04	3	0	0	0	3	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	1	0	0	0	0		7	0.04	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	6	0	0	0	6		6.2	0.20	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaeniinae spp.	3	0	0	0	3		5	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tanytarsus spp.	7	0	0	0	7		6.6	0.25	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium illinoense group	1	0	0	0	1		8.7	0.05	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheotanytarsus spp.	4	0	0	0	4		6.5	0.14	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Ablabesmyia mallochi	2	0	0	0	2		7.4	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Dicratendipes spp.	1	0	0	0	1		7.2	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus spp.	34	0	0	0	34		5.78	1.07	0	0	0	0	34	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Corynoneura spp.	7	0	0	0	7		5.7	0.22	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Larsia spp.	1	0	0	0	1		6.5	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladus spp.	40	0	0	0	40	40	4.4	0.96	0	0	0	0	40	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemanniella xena	6	0	0	0	6		8	0.26	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Nanocladius spp.	2	0	0	0	2		7.4	0.08	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tvetenia tshernovskii	2	0	0	0	2		3.5	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheocricotopus spp.	7	0	0	0	7		4.7	0.18	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	Simulium spp.	12	0	0	0	0		4.9	0.32	0	0	12	0		

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	31.80
Model % Plecoptera	5.00
Model % Trichoptera	8.91
Model % Chironomidae	47.21
Model % Coleoptera	3.11
Model % Oligochaeta	4.45
Model % Other	0.16
Sum of Difference	100.66
Sum of Difference * 0.5	50.33
Percent Model Affinity	49.67
Percent Model Affinity Category	Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	25	113.64	100.00
Total Abundance	183		
% Ephemeroptera	8.20	13.37	13.37
% Plecoptera	0.00		
% Trichoptera	1.09		
% Chironomidae	67.21	32.79	32.79
% Dominant Taxon	21.86		
Biotic Index	5.49	66.33	66.33
% Coleoptera	13.11		
% Oligochaeta	0.55		
% Other	9.84		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	13.11	25.42	25.42
% Top 2 Dominant Taxa	40.44	86.07	86.07
EPT Index	2	18.18	18.18
EPT/EPT + Chironomidae Ratio	0.12		

Hilsenhoff Biotic Index Category: Good

Final VSCI score: 42.77

Created By: JSD
 Checked By: SEM
 Source: Wood, 2020

Neabsco Creek
 Multiple Habitat Sampling
 Sample Collected: 11-May-2020
 Project #: 151270003

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
Platyhelminthes						Platyhelminthes spp.	1	0	0	0	0			0.00	0	0	1	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Pristina osborni</i>	1	0	0	0	0		7.7	0.03	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	14	0	0	0	0		8.7	0.51	0	14	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais pardalis</i>	11	0	0	0	0		8.7	0.40	0	11	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais behningi</i>	1	0	0	0	0		8.7	0.04	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Dero trifida</i>	1	0	0	0	0		9.8	0.04	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Slavina appendiculata</i>	2	0	0	0	0		8.4	0.07	0	2	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	7	7	0	0	0		6.1	0.18	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis</i> spp.	6	6	0	0	0		4.51	0.11	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	14	0	0	14	0		4	0.23	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	7	0	0	7	0		6.6	0.19	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	7	0	0	7	0		4.3	0.13	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	4	0	0	4	0		3.3	0.06	0	0	0	4		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	2	0	0	0	0		5.6	0.05	2	0	0	0	2	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Ancyronyx variegatus</i>	3	0	0	0	0		6.8	0.09	3	0	0	0	3	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera spp.	Diptera spp.	3	0	0	0	0		7	0.09	0	0	3	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	8	0	0	0	8		6.2	0.21	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaadiinae spp.	1	0	0	0	1		5	0.02	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	7	0	0	0	7		6.6	0.19	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum flavum</i>	20	0	0	0	20		5.7	0.48	0	0	0	0	20	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum illinoense</i> group	1	0	0	0	1		8.7	0.04	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	10	0	0	0	10		5.89	0.25	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus bicinctus</i>	3	0	0	0	3		8.7	0.11	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Larsia</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladus</i> spp.	10	0	0	0	10		4.4	0.18	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Labrundinia</i> spp.	1	0	0	0	1		6.2	0.03	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemannimyia</i> grp. sp.	3	0	0	0	3		8.4	0.11	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametricnemus</i> spp.	7	0	0	0	7		3.9	0.11	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	48	0	0	0	48	48	4.7	0.94	0	0	0	0	48	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladus</i>	6	0	0	0	6		4.86	0.12	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Brillia</i> spp.	16	0	0	0	16		5.7	0.38	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	Ceratopogonidae spp.	3	0	0	0	0		5.9	0.07	0	0	3	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	10	0	0	0	0		4.9	0.21	0	0	10	0		

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 34.56
Model % Plecoptera	5 5.00
Model % Trichoptera	10 3.39
Model % Chironomidae	20 39.41
Model % Coleoptera	10 7.91
Model % Oligochaeta	5 7.55
Model % Other	10 2.89
Sum of Difference	100.71
Sum of Difference * 0.5	50.36
Percent Model Affinity	49.64
Percent Model Affinity Category	Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	33	150.00	100.00
Total Abundance	239		
% Ephemeroptera	5.44	8.87	8.87
% Plecoptera	0.00		
% Trichoptera	13.39		
% Chironomidae	59.41	40.59	40.59
% Dominant Taxon	20.08		
Biotic Index	5.69	63.46	63.46
% Coleoptera	2.09		
% Oligochaeta	12.55		
% Other	7.11		
% Plecoptera + Trichoptera (less Hydropsychidae)	1.67	4.70	4.70
% Scrapers	2.09	4.05	4.05
% Top 2 Dominant Taxa	28.45	103.39	100.00
EPT Index	6	54.55	54.55
EPT/EPT + Chironomidae Ratio	0.24		

Hilsenhoff Biotic Index Category Fair

Final VSCI score 47.03

Created By: JSD
 Checked By: SEM
 Source: Wood, 2020

Purcell Branch
 Multiple Habitat Sampling
 Sample Collected: 12-May-2020
 Project #: 151270003

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
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	1	0	0	0	0		5	0.02	0	1	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	4	0	0	0	0		8.7	0.17	0	4	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Nais behningi</i>	3	0	0	0	0		8.7	0.13	0	3	0	0		
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Slavina appendiculata</i>	3	0	0	0	0		8.4	0.13	0	3	0	0		
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Isopoda	Asellidae	<i>Caecidotea</i> spp.	1	0	0	0	0		8.4	0.04	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	4	4	0	0	0		6.1	0.12	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis</i> spp.	11	11	0	0	0		4.51	0.25	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	1	1	0	0	0		4	0.02	0	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera		Trichoptera spp.	1	0	0	0	1			0.00	0	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	5	0	0	0	5		4	0.10	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	1	0	0	0	1		3.3	0.02	0	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	22	0	0	0	0		5.6	0.61	22	0	0	0	22	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	1	0	0	0	0		7	0.03	0	0	1	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	6	0	0	0	6		6.2	0.19	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaeniinae spp.	2	0	0	0	2		5	0.05	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	3	0	0	0	3		6.6	0.10	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum flavum</i>	2	0	0	0	2		5.7	0.06	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus exiguus</i> group	6	0	0	0	6		5.89	0.18	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> spp.	2	0	0	0	2		5.78	0.06	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	8	0	0	0	8		5.7	0.23	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladus</i> spp.	3	0	0	0	3		4.4	0.07	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Apedilum</i> spp.	1	0	0	0	1		5.69							
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemannimyia</i> grp. sp.	1	0	0	0	1		8.4	0.04	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametriocnemus</i> spp.	4	0	0	0	4		3.9	0.08	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	70	0	0	0	70	70	4.7	1.64	0	0	0	0	0	70
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Endochironomus</i> spp.	1	0	0	0	1		7.79	0.04	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Diplocladius cultriger</i>	3	0	0	0	3		8	0.12	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	Tipulidae spp.	2	0	0	0	0		4.9	0.05	0	0	2	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	29	0	0	0	0		4.9	0.71	0	0	29	0	0	29

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	32.04
Model % Plecoptera	5.00
Model % Trichoptera	6.52
Model % Chironomidae	35.72
Model % Coleoptera	0.95
Model % Oligochaeta	0.47
Model % Other	6.42
Sum of Difference	87.11
Sum of Difference * 0.5	43.56
Percent Model Affinity	56.44
Percent Model Affinity Category	Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	29	131.82	100.00
Total Abundance	201		
% Ephemeroptera	7.96	12.99	12.99
% Plecoptera	0.00		
% Trichoptera	3.48		
% Chironomidae	55.72	44.28	44.28
% Dominant Taxon	34.83		
Biotic Index	5.23	70.11	70.11
% Coleoptera	10.95		
% Oligochaeta	5.47		
% Other	16.42		
% Plecoptera + Trichoptera (less Hydropsychidae)	1.00	2.80	2.80
% Scrapers	11.44	22.18	22.18
% Top 2 Dominant Taxa	49.25	73.33	73.33
EPT Index	6	54.55	54.55
EPT/EPT + Chironomidae Ratio	0.17		

Hilsenhoff Biotic Index Category: Good

Final VSCI score: 47.53

Created By: JSD
 Checked By: SEM
 Source: Wood, 2020



wood.

**Attachment 2
References**

Attachment 2 - References

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Sampling Plan Benthic Macroinvertebrate Population and Water Quality Monitoring

Prepared for:



Prince William County Department of Public Works
Virginia

Prepared by:

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December 29, 2015

Project No. 151270003.0001

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 BACKGROUND.....	1
1.2 PURPOSE AND OBJECTIVES	1
2.0 SITE BACKGROUND AND SETTING	2
3.0 SAMPLING, ANALYSIS, AND REPORTING	3
3.1 SAMPLING LOCATIONS	3
3.2 SAMPLING AND FIELD DATA COLLECTION ACTIVITIES	3
3.2.1 Physical and Chemical Data Collection	3
3.2.2 Habitat Assessment.....	5
3.2.3 Benthic Macroinvertebrate Sample Collection	6
3.2.4 Field Duplicates.....	7
3.3 BENTHIC MACROINVERTEBRATE SAMPLE SORTING	7
3.3.1 Quality Assurance/Quality Control Procedures	9
3.3.2 Benthic Macroinvertebrate Sample Results Evaluation.....	9
3.3 REPORTING	11
4.0 REFERENCES	12

APPENDICES

Appendix A	Sampling Stations
Appendix B	Field Forms
Appendix C	Laboratory Forms

LIST OF ACRONYMS

Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
BI	Biotic Index
cm	Centimeter
COC	Chain of Custody
CWA	Clean Water Act
CFR	Code of Federal Regulations
DO	Dissolved Oxygen
<i>E. coli</i>	<i>Escherichia coli</i>
EPT	Ephemeroptera/Plecoptera/Tricoptera
GPS	Global Positioning System
m	Meter
µm	Micrometer
MS4	Municipal Separate Storm Sewer System
PMA	Percent Model Affinity
RBP	USEPA Rapid Bioassessment Protocol
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VSCI	Virginia Stream Condition Index
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) has prepared this sampling plan 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. Section I.C.1 of the permit requires the continued implementation of a biological stream monitoring program that includes an assessment of the habitat and benthic macroinvertebrate community of select Prince William County streams. This sampling plan provides detailed descriptions of the sampling and analytical activities, as well as a technical approach and methods to scientifically evaluate natural conditions in Prince William County streams.

1.1 BACKGROUND

The United States 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.

1.2 PURPOSE AND OBJECTIVES

The purpose of this sampling plan is to outline a plan of study 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, upstream best management practices effectiveness.

2.0 SITE BACKGROUND AND SETTING

A MS4 is a system of conveyances which may include roads with drainage systems, municipal streets, catch basins, ditches, gutters, curbs, man-made channels, or storm drains. It is designed to collect or convey stormwater. The Prince William County MS4 is composed of numerous sites throughout Prince William County and contains over 11,000 miles of stormwater conveyance structures. The Prince William County MS4 discharges stormwater into 24 6th order hydrologic units within 9 major watersheds of the Potomac River Basin.

Prince William County is 338 square miles in area and is bordered by the Potomac River to the east, Fairfax and Loudoun Counties to the north, Fauquier and Stafford Counties to the south, and Fauquier County to the west. The majority of Prince William County is located in the Piedmont Province with the remainder in the Atlantic Coastal Plain province. The Piedmont Province is an eastward sloping plateau characterized by moderate to very steep slopes. The Atlantic Coastal Plain province has primarily flat terrain with elevations ranging from sea level to about 300 feet. The Fall Line is a transitional area where the softer, less consolidated rocks of the Coastal Plain to the east intersect with harder and more resistant metamorphic rocks of the Piedmont to the west, forming an area of ridges, waterfalls and rapids. Land use surrounding the proposed sampling locations includes residential, undeveloped, commercial and recreational areas.

3.0 SAMPLING, ANALYSIS, AND REPORTING

This section describes the activities for the biological stream monitoring and in-stream monitoring required by Part I.C.1 and I.C.2 of VSMP MS4 Permit VA0088595.

3.1 SAMPLING LOCATIONS

Benthic macroinvertebrate and surface water samples will be collected from five locations in Prince William County (Appendix A).

- Little Bull Run, Catharpin Road, Gainesville, Virginia;
- Dawkins Branch, Wellington Road, Manassas, Virginia;
- Purcell Branch, Purcell Road, Manassas, Virginia;
- Neabsco Creek, Delaney Road, Dale City, Virginia;
- Cow Branch, Mellott Road, Woodbridge, Virginia.

Benthic macroinvertebrate sampling reaches will be 100 meters (m) long, ideally located 100 m upstream from road or bridge crossings, and have no major tributaries discharging to the reach. Sample locations will be verified using a handheld global positioning system (GPS) unit. The limits will be marked in the field using survey stakes, pins, or an appropriate alternative for subsequent sampling events. Sample stations and their limits will be re-verified each sampling event using a handheld GPS and will be re-marked, if necessary.

3.2 SAMPLING AND FIELD DATA COLLECTION ACTIVITIES

Sampling and field data collection activities will include physical and chemical data collection, habitat assessment and benthic macroinvertebrate sampling. Sampling will be conducted following the requirements of VSMP MS4 Permit VA0088595 and procedures outlined in the USEPA Rapid Bioassessment Protocol (RBP) (Barbour et al. 1999).

3.2.1 Physical and Chemical Data Collection

Physical and chemical data collection includes collection of in-situ water quality readings, collection of surface water samples, and documentation of stream characteristics. The equipment needed for collection of these data includes a YSI Model 556 water quality meter (or equivalent), Lamotte 2020 turbidity meter (or equivalent), sample collection bottles, gloves, RBP Physical Characterization and Water Quality Field Data Sheets (Appendix B), a camera, a 100-m tape measure, and a flow meter (such as the Marsh-McBirney Flo-Mate). Field activities, measurements and observations will be recorded in indelible ink in a bound field logbook.

3.2.1.1 Water Quality

Water quality readings and surface water samples will be collected prior to disturbance of the sample reach. In-stream monitoring is required to be conducted at 5 stream sites for the following parameters per VSMP MS4 Permit VA0088595:

- pH,
- dissolved oxygen (DO),
- temperature,
- total suspended solids (TSS),
- ammonia as nitrogen,
- nitrate plus nitrite nitrogen,
- total Kjeldahl nitrogen (TKN),
- total nitrogen (calculation),
- dissolved phosphorus,
- total phosphorus, and
- *Escherichia (E.) coli*.

The RBP Physical Characterization and Water Quality Field Data Sheet (Appendix B) requires the measurement of pH, DO, and temperature as well as the following parameters in addition to those required by VSMP MS4 Permit VA0088595:

- conductivity or specific conductance, and
- turbidity.

In-situ water quality data will be collected using a multiprobe water quality meter (YSI Model 556 or equivalent) and a handheld turbidity meter (Lamotte 2020 or equivalent). The multiprobe will be calibrated daily using standard solutions. A calibration form is included in Appendix B.

Multiprobe readings are taken mid-channel and the unit should be allowed to stabilize before recording readings.

Grab surface water samples to be collected for laboratory analysis of TSS, ammonia, nitrate/nitrite, total Kjeldahl nitrogen (TKN), dissolved phosphorus, total phosphorus, and *E. coli* should be collected at mid-channel at the zero mark of the reach in an area with cross-sectional homogeneity, and well mixed water. The samples will be placed in coolers on ice and shipped overnight under chain-of-custody (COC) procedures to a qualified laboratory licensed in the Commonwealth of Virginia. Custody seals will be employed to check for tampering during shipment. Samples will be analyzed in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial

Environmental Laboratories. Methods used for sample analysis will be those approved by Title 40 Code of Federal (CFR) Regulations Part 136 or alternative methods approved by USEPA.

3.2.1.2 Stream Characteristics

Upstream and downstream photographs will be taken at each sampling location to document conditions at the time of sampling. Physical characteristics of the streams will be recorded on the Physical Characterization and Water Quality Field Data Sheet of the RBP (Appendix B). This field sheet includes a description of the sample location, weather conditions, stream characterization, watershed features (surrounding land use, non-point source pollution, erosion), riparian vegetation, instream features (high water mark, width, depth, morphology, velocity, canopy cover, channelization, and dams), large woody debris, aquatic vegetation, water quality, and substrate (odors, oils, deposits, components). The high water mark to be recorded on the form is defined as the vertical distance from the bankfull margin of the stream bank to the peak overflow level, as indicated by debris hanging in riparian or floodplain vegetation and deposition of silt or soil.

An estimate of large woody debris in contact with the stream water is recorded on the Physical Characterization and Water Quality Field Data Sheet (Appendix B). Each woody debris formation with a surface area in the plane of the water surface that is greater than 0.25 square m is recorded on the stream reach drawing with the size of the woody debris estimated to the nearest 0.5 m. Only the portion in contact with the water is measured. Woody debris with a length or width less than 0.5 m is not counted. Root wads and logs/limbs in the water margin that are in contact with the water are arbitrarily given a width of 0.5 m. The length and width of each formation are multiplied and the resulting products are summed to give the aquatic habitat area influenced. This area is divided by the water surface area within the reach to obtain the large woody debris density.

3.2.2 Habitat Assessment

Habitat characteristics will be assessed using the Habitat Assessment Field Data Sheet (Appendix B), as specified in the RBP. The habitat assessment is performed along the 100-m reach from which the biological sampling is to be conducted. Care will be taken not to disturb the benthic macroinvertebrate sampling habitat during the habitat assessment.

The Habitat Assessment Field Data Sheet (Appendix B) of the RBP will be completed at each location. There are high gradient stream and low gradient stream versions of this form. The high gradient form is used for streams located in moderate to high gradient landscapes with coarse substrates. The low gradient form is used for streams that are located in low to moderate

gradient landscapes and have fine substrates. The appropriate data form for each sampling location will be determined during the site reconnaissance.

The habitat assessment incorporates features of the entire sampling reach. The form rates ten parameters as optimal, suboptimal, marginal, or poor. The parameters to be rated include epifaunal substrate, embeddedness or pool substrate characterization, velocity/depth regime or pool variability, sediment deposition, channel flow status, channel alteration, riffle frequency or channel sinuosity, bank stability, bank vegetative protection, and riparian zone. The Habitat Assessment Field Data Sheet should be completed by a team of 2 or more qualified personnel that come to a consensus on determination of quality.

3.2.3 Benthic Macroinvertebrate Sample Collection

Biological stream monitoring will be conducted twice per year, spring and fall, at 5 locations (Appendix B). The collection of wildlife for scientific and/or educational purposes in Virginia requires a scientific collection permit. Permit applications are available from the Virginia Department of Game and Inland Fisheries (VDGIF) and should be submitted at least 1 month prior to benthic macroinvertebrate sample collection. The permit requires annual renewal and submittal of annual catch report. VDGIF requests to be notified seven days in advance of each sampling event.

The multiple habitat sampling method will be used to characterize the benthic macroinvertebrate community, as outlined in USEPA RBP Section 7.2. This method is used to collect benthic macroinvertebrates from various substrate types and micro-habitats available within a 100-m sampling reach. Sampling begins at the downstream end of the reach and proceeds upstream. Habitats will be sampled by using a 0.3-m wide, 500-micrometer (μm) mesh, D-frame dip net. A total of 20 jabs or kicks are taken from all major habitat types in the reach. A jab consists of forcefully thrusting the net into a productive habitat for a linear distance of 0.5 m. A kick is accomplished by positioning the net and disturbing the substrate for a distance of 0.5 m upstream of the net.

Different types of habitat are to be sampled in approximate proportion to their representation of surface area of total macroinvertebrate habitat in the reach. The habitats sampled typically consist of loose cobble, fallen logs and tree limbs (snags), vegetated banks or undercut banks with exposed plant root material, sand and silt bottom materials, and submerged macrophytes. Other habitats that may be sampled include bedrock, large rocks, boards and litter; and detrital pockets of twigs and leaves. The RBP Benthic Macroinvertebrate Field Data Sheet (Appendix B) will be completed for each sample. This form includes a summary of the percent of each

habitat type present, the number of jabs or kicks taken in each habitat type, and field observations of aquatic biota.

The jab or kick method varies with habitat type. Shallow areas with coarse substrates are sampled by holding the bottom of the dip net against the substrate and kicking the substrate upstream of the net. Submerged woody debris can be sampled by kicking while placing a net downstream, jabbing directly into medium-sized woody debris or by rinsing the woody debris directly into the sieve bucket. Sample submerged undercut banks by jabbing into the habitat. Bump or jab the net along the bottom of plants in the stream to sample rooted macrophytes. Sand and soft sediment can be sampled by bumping the net along the surface of the substrate.

The 20 jabs and kicks will be composited into a 0.5- μ m mesh sieve bucket to obtain a single homogenous sample. The net will be thoroughly back-washed into the sieve bucket every few jabs to facilitate collection of benthic macroinvertebrates that are not readily visible. Large debris will be rinsed and removed from the sieve bucket. Observable benthic macroinvertebrates will be collected from the net with forceps and placed in a labeled, sample container. Small debris will be transferred from the sieve bucket to the sample container. An index card indicating the sample identification, date, stream name, sample location, and sampler name will be placed inside each sample container. The index card will be printed in pencil to prevent dissolution of the label by preservative which will be added by the analytical laboratory.

Benthic macroinvertebrate samples will be placed on ice in coolers and shipped overnight under COC procedures to an accredited benthic macroinvertebrate laboratory. Custody seals will be employed to check for tampering during shipment.

3.2.4 Field Duplicates

Duplicates are collected in the field for surface water analytical samples and benthic macroinvertebrate samples at a frequency of 1 per ten samples. Since there are five sample locations, duplicates will be collected every other sampling event at one sample location. Surface water duplicates will be collected by filling extra grab sample bottles for each analysis. The benthic macroinvertebrate duplicates will be collected from a sample location with habitat available for 2 sets of 20 jabs within the sample reach.

3.3 BENTHIC MACROINVERTEBRATE SAMPLE SORTING

The laboratory will sort, mount, identify, enumerate, evaluate, and classify benthic macroinvertebrates. In addition to sorting and identification of benthic macroinvertebrates, the laboratory staff will perform appropriate benthic macroinvertebrate index calculations and will perform and interpret statistical analyses of the benthic macroinvertebrate database. The

laboratory staff will also utilize the habitat descriptions and evaluations and the field physical/chemical water data parameters collected by field sampling personnel in the evaluation of benthic macroinvertebrates in the context of their physical/chemical habitats at the sampling location.

Samples should be logged in on a designated form or logbook such as the RBP Benthic Macroinvertebrate Sample Log-In Sheet (Appendix C). The log-in should contain the information from the sample label and the number of containers. A minimum of 200 ± 20 percent organisms will be sorted from each benthic macroinvertebrate sample, using the Caton subsampler (Caton 1991). This subsampler consists of square metal frame with a gridded mesh bottom (screen), a plastic tray that accommodates the frame, a square metal “cookie cutter” (cutter), and a metal scoop. The sample will be emptied onto the 500- μ m mesh screen and washed to remove fixative and excess detritus. The sample and screen will then be placed into the tray and enough water added to cover the sample contents. The contents will be evenly distributed over the screen, which will then be lifted from the tray of water so the sample contents will settle onto the screen, which is divided into 6 centimeter (cm) by 6 cm portions (grids). After randomly selecting four grids and locating them using an alphanumeric designation and crosspieces on the top of the screen, the contents of each grid will be removed using a scoop and a brush. A minimum of four grids will be used to obtain the specified number. If the four grids do not contain 200 ± 20 percent organisms, enough grids will be examined to acquire this number. If the four grids contain too many organisms, they will be emptied into a smaller subsampler of similar design, and four grids randomly chosen for sorting.

The contents from each grid will be transferred to a container, and enough water will be added to keep the organisms moist during the sorting process. The selected subsample will then be taken to the sorting station. Small aliquots of sample will be put into a gridded Petri dish, and the organisms removed, counted and placed into patent lip vials containing 70 percent ethanol by major group (e.g., Trichoptera, Ephemeroptera, Bivalvia, etc.). Vials will be labeled with site, date, major group, number of individuals, and size of subsample. The RBP Benthic Macroinvertebrate Laboratory Bench Sheet (Appendix C) should be completed. The sorted and unsorted portions of the sample will be preserved separately using the original fixative.

Organisms will be identified to the generic/specific level, except for groups such as nematodes, and damaged or very small individuals. Organisms, except oligochaetes and chironomid larvae, will be identified using a stereomicroscope. Oligochaetes and chironomid larvae will be mounted on microscope slides using CMC mounting medium prior to identification using a compound microscope.

3.3.1 Quality Assurance/Quality Control Procedures

Subsequent to benthic macroinvertebrate sample sorting, the residue from a minimum of 10 percent of the samples will be rechecked to document that 95 percent of the total number of organisms has been removed. If there is an error of greater than 5 percent, then all of the samples completed by that particular sorter will be re-examined. The results from these checks will be recorded on the laboratory bench sheets (Appendix C) and will be presented with the other data in the report.

A voucher collection for Prince William County dataset, consisting of one to three specimens for each taxon will be prepared in accordance with the RBP. These slides will be labeled, kept separate from the remaining identifications, and noted on the laboratory bench sheets. A taxonomist not responsible from the original identifications should spot check samples according to the identifications on the bench sheet.

Data will be entered into a standardized Excel spreadsheet and double-checked for accuracy.

3.3.2 Benthic Macroinvertebrate Sample Results Evaluation

Metrics are biological attributes that represent elements of the structure and function of the bottom-dwelling macroinvertebrate assemblage. Metrics are specific measures of diversity, composition, and tolerance to pollution, and when combined into a multimetric index can integrate biological community characteristics and measure the overall response of the community to environmental stressors. Biological metrics include:

- **Taxa Richness** – The number of taxa reflects the health of the community through a measurement of the variety of taxa present. This measure generally increases with increasing water quality, habitat diversity, and/or habitat suitability.
- **Abundance** – The number of individual organisms found at each location. This measure can indicate whether an area is supporting a large, and when coupled with taxa richness, diverse community.
- **EPT Index (Ephemeroptera/Plecoptera/Trichoptera [mayflies/stoneflies/caddisflies])** – The EPT Index is the total number of distinct taxa within these three orders. This value summarizes taxa richness within the insect orders that are generally considered to be the most sensitive to pollution.
- **EPT/EPT + Chironomidae (midgeflies) Ratio** – A measure of abundance ratio of these two groupings indicates the balance of the benthic community diversity.

- **Percent Dominant Taxon** – This measure is the percentage occurrence of the most dominant taxon for each location. This measure is based on the assumption that dominance by a single taxon reflects an impaired community.
- **Percent Chironomidae** -- This measure is the ratio of the abundance of Chironomidae to the total number of organisms found in a replicate. The response of this measure is to increase with increased perturbation.
- **Biotic Index (BI)** – The BI assigns tolerance values to individual taxa ranging from 0 to 10, with 0 being intolerant of pollution and 10 being very tolerant of pollution. The tolerance values assigned to the various taxa are taken from a variety of sources that best reflect the area sampled, such as Bode et al. (2002), Klemm et al. (1990), Hilsenhoff (1987), North Carolina Department of Environment, Health, and Natural Resources (2003), and the Tennessee Department of Environment and Conservation (2011). The formula for calculating the BI is:

$$BI = \sum [(tv)_i n_i / N]$$

where:

- (tv)_i = the tolerance value of the ith taxon,
- n_i = the abundance of the ith taxon, and
- N = the total number of individuals in the sample.

- **Percent Model Affinity (PMA)** – The PMA expresses the sample as the percentage composition of seven major organism groups (Chironomidae, Trichoptera, Ephemeroptera, Plecoptera, Coleoptera [beetles], Oligochaeta [aquatic segmented worms], and others) and compares it to an ideal community composition derived from data from unpolluted streams (Bode et al., 2002). The degree of affinity of the sample percentage composition with that of the ideal is used to make a judgment about the water quality of the stream being studied.

Additional biological metrics will be used, if appropriate, such as:

- percentage oligochaetes + chironomids,
- percentage scrapers/scrapers + filterers,
- percentage clingers
- percentage EPT,
- percentage Oligochaeta,
- percentage Hydropsychidae/Trichoptera, and
- number of taxa in each tolerance category.

VDEQ has developed the Virginia Stream Condition Index (VSCI) (TetraTech 2003) that predicts the health of Virginia's non-coastal streams. The VSCI uses biological, physical, and chemical conditions from a least disturbed reference site within the region and has been statistically calibrated by VDEQ data. Eight VSCI metrics are combined in a multimetric approach to identify biological impairment as discussed in the VDEQ 2008 Quality Assurance Project Plan (VDEQ 2008). The eight biological measures used in the VSCI are: total taxa, EPT taxa, percent Ephemeroptera, percent Plecoptera-Trichoptera less Hydropsychidae, percent scrapers, percent Chironomidae, percent top 2 dominant taxa, and biotic index. Prince William County benthic macroinvertebrate samples will be evaluated using the VSCI.

3.3 REPORTING

An annual summary report will be prepared following each year of sampling. This report will summarize the macroinvertebrate and in-stream monitoring results and analyses, and include an interpretation of the data with respect to long-term patterns and trends. Initial or first year results from sampling and analysis will serve as a benchmark at each station for subsequent sampling events, and for comparative analysis performed on a station-by-station basis. Report appendices will include data and documentation from that year of sampling events.

4.0 REFERENCES

- Barbour, M. T., J. Gerritsen, B. D. Snyder, and J. B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish. 2nd ed. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC.
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**APPENDIX A
SAMPLING STATIONS**



Little Bull Run - Catharpin Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Little Bull Run - Catharpin Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

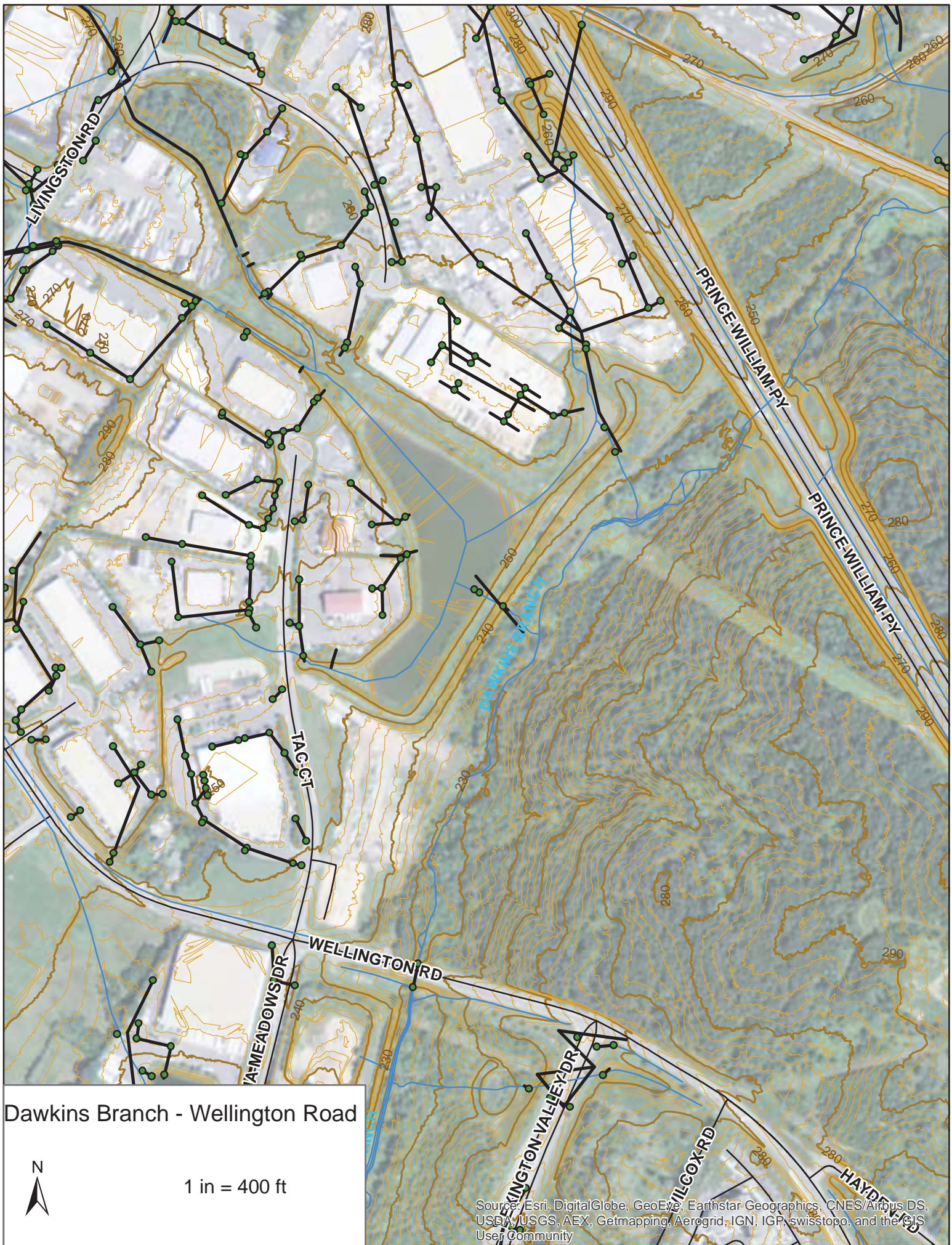


Dawkins Branch - Wellington Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Purcell Branch - Purcell Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

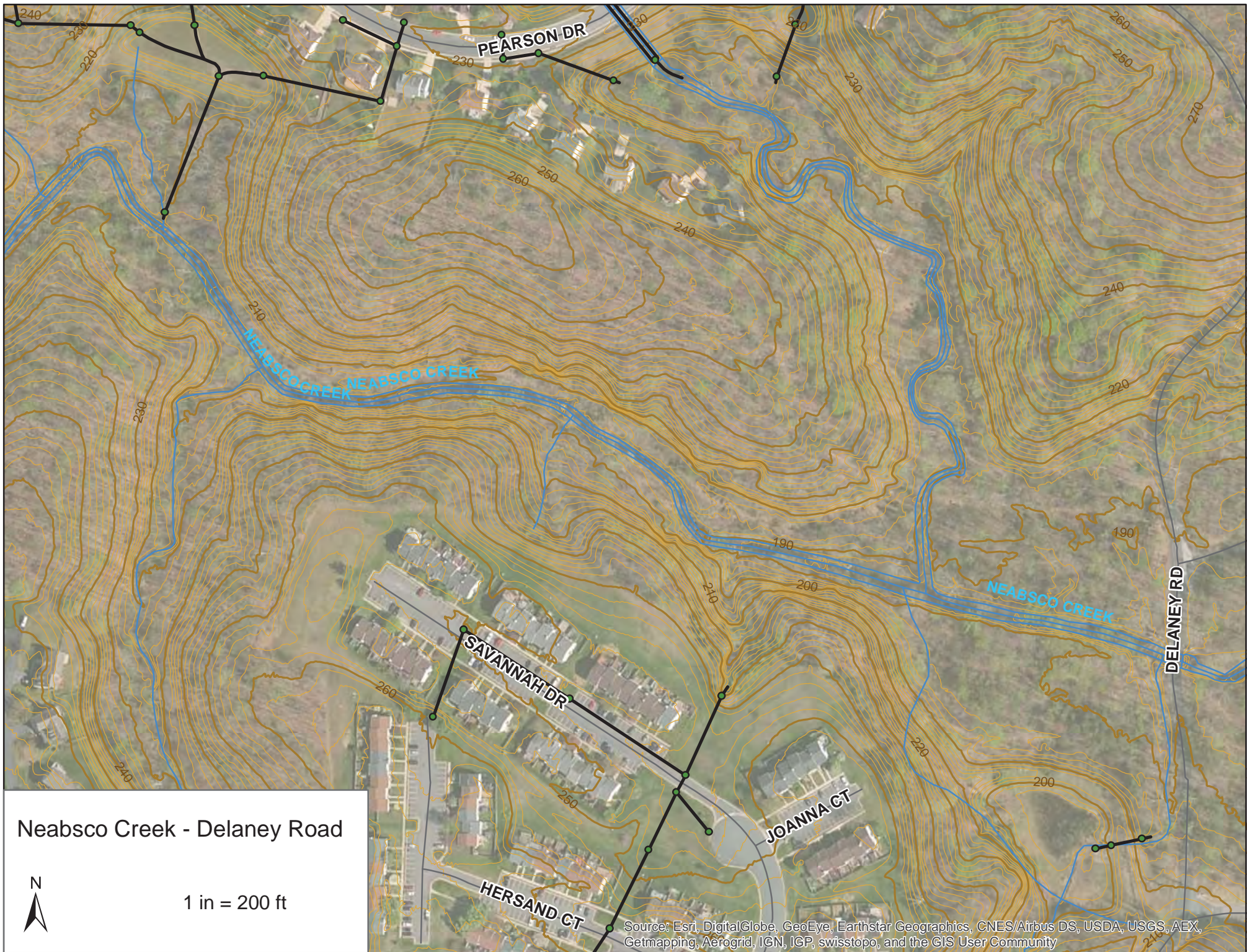


Purcell Branch - Purcell Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Neabsco Creek - Delaney Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Neabsco Creek - Delaney Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Cow Branch - Mellott Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

**APPENDIX B
FIELD FORMS**

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (FRONT)

STREAM NAME _____	LOCATION _____	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY _____	
INVESTIGATORS _____		
FORM COMPLETED BY _____	DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

WEATHER CONDITIONS	Now <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover _____ <input type="checkbox"/> clear/sunny	Past 24 hours <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> % _____ <input type="checkbox"/>	Has there been a heavy rain in the last 7 days? <input type="checkbox"/> Yes <input type="checkbox"/> No Air Temperature _____ °C Other _____
SITE LOCATION/MAP	Draw a map of the site and indicate the areas sampled (or attach a photograph)		
STREAM CHARACTERIZATION	Stream Subsystem <input type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Tidal		Stream Type <input type="checkbox"/> Coldwater <input type="checkbox"/> Warmwater
	Stream Origin <input type="checkbox"/> Glacial <input type="checkbox"/> Spring-fed <input type="checkbox"/> Non-glacial montane <input type="checkbox"/> Mixture of origins <input type="checkbox"/> Swamp and bog <input type="checkbox"/> Other _____		Catchment Area _____ km ²

**PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(BACK)**

WATERSHED FEATURES	Predominant Surrounding Landuse <input type="checkbox"/> Forest <input type="checkbox"/> Commercial <input type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input type="checkbox"/> Other _____ <input type="checkbox"/> Residential		Local Watershed NPS Pollution <input type="checkbox"/> No evidence <input type="checkbox"/> Some potential sources <input type="checkbox"/> Obvious sources	
	Local Watershed Erosion <input type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy			
RIPARIAN VEGETATION (18 meter buffer)	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous dominant species present _____			
INSTREAM FEATURES	Estimated Reach Length _____ m Estimated Stream Width _____ m Sampling Reach Area _____ m ² Area in km ² (m ² x1000) _____ km ² Estimated Stream Depth _____ m Surface Velocity _____ m/sec (at thalweg)		Canopy Cover <input type="checkbox"/> Partly open <input type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded High Water Mark _____ m Proportion of Reach Represented by Stream Morphology Types <input type="checkbox"/> Riffle _____% <input type="checkbox"/> Run _____% <input type="checkbox"/> Pool _____% Channelized <input type="checkbox"/> Yes <input type="checkbox"/> No Dam Present <input type="checkbox"/> Yes <input type="checkbox"/> No	
LARGE WOODY DEBRIS	LWD _____ m ² Density of LWD _____ m ² /km ² (LWD/ reach area)			
AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating Algae <input type="checkbox"/> Attached Algae dominant species present _____ Portion of the reach with aquatic vegetation _____%			
WATER QUALITY	Temperature _____ °C Specific Conductance _____ Dissolved Oxygen _____ pH _____ Turbidity _____ WQ Instrument Used _____		Water Odors <input type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____ Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input type="checkbox"/> None <input type="checkbox"/> Other _____ Turbidity (if not measured) <input type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____	
SEDIMENT/SUBSTRATE	Odors <input type="checkbox"/> Normal <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic <input type="checkbox"/> None <input type="checkbox"/> Other _____ Oils <input type="checkbox"/> Absent <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Profuse		Deposits <input type="checkbox"/> Sludge <input type="checkbox"/> Sawdust <input type="checkbox"/> Paper fiber <input type="checkbox"/> Sand <input type="checkbox"/> Relict shells <input type="checkbox"/> Other _____ Looking at stones which are not deeply embedded, are the undersides black in color? <input type="checkbox"/> Yes <input type="checkbox"/> No	

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")		Muck-Mud	black, very fine organic (FPOM)	
Cobble	64-256 mm (2.5"-10")				
Gravel	2-64 mm (0.1"-2.5")		Marl	grey, shell fragments	
Sand	0.06-2mm (gritty)				
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME _____		LOCATION _____	
STATION # _____	RIVERMILE _____	STREAM CLASS _____	
LAT _____	LONG _____	RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY _____		DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

	Habitat Parameter	Condition Category																			
		Optimal				Suboptimal				Marginal				Poor							
Parameters to be evaluated broader than sampling reach	6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.				Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.				Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.				Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.							
	SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.				Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.				Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.				Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.							
	SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.				Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.				Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.				Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.							
	Note: determine left or right side by facing downstream.																				
	SCORE ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
	9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.				70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.				50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.				Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.							
	SCORE ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0		
	10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.				Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.				Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.				Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.							
	SCORE ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0		

Total Score _____

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME _____		LOCATION _____	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY _____		DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.																				
	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.																				
Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.																					
Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.																					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)																				
	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.																				
The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.																					
Channel straight; waterway has been channelized for a long distance.																					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																				
	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.																				
Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.																					
Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																					
SCORE __ (LB)	Left Bank				10	9	8	7	6	5	4	3	2				1	0			
SCORE __ (RB)	Right Bank				10	9	8	7	6	5	4	3	2				1	0			
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																				
	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.																				
50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.																					
Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.																					
SCORE __ (LB)	Left Bank				10	9	8	7	6	5	4	3	2				1	0			
SCORE __ (RB)	Right Bank				10	9	8	7	6	5	4	3	2				1	0			
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.																				
	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.																				
Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.																					
Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.																					
SCORE __ (LB)	Left Bank				10	9	8	7	6	5	4	3	2				1	0			
SCORE __ (RB)	Right Bank				10	9	8	7	6	5	4	3	2				1	0			

Parameters to be evaluated broader than sampling reach

Total Score _____

BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

STREAM NAME _____		LOCATION _____	
STATION # _____	RIVERMILE _____	STREAM CLASS _____	
LAT _____	LONG _____	RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____		LOT NUMBER _____	
FORM COMPLETED BY _____		DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

HABITAT TYPES	Indicate the percentage of each habitat type present <input type="checkbox"/> Cobble _____% <input type="checkbox"/> Snags _____% <input type="checkbox"/> Vegetated Banks _____% <input type="checkbox"/> Sand _____% <input type="checkbox"/> Submerged Macrophytes _____% <input type="checkbox"/> Other (_____) _____%
SAMPLE COLLECTION	Gear used <input type="checkbox"/> D-frame <input type="checkbox"/> kick-net <input type="checkbox"/> Other _____ How were the samples collected? <input type="checkbox"/> wading <input type="checkbox"/> from bank <input type="checkbox"/> from boat Indicate the number of jabs/kicks taken in each habitat type. <input type="checkbox"/> Cobble _____ <input type="checkbox"/> Snags _____ <input type="checkbox"/> Vegetated Banks _____ <input type="checkbox"/> Sand _____ <input type="checkbox"/> Submerged Macrophytes _____ <input type="checkbox"/> Other (_____) _____
GENERAL COMMENTS	

QUALITATIVE LISTING OF AQUATIC BIOTA

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare, 2 = Common, 3 = Abundant, 4 = Dominant

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

FIELD OBSERVATIONS OF MACROBENTHOS

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare (1-3 organisms), 2 = Common (3-9 organisms), 3 = Abundant (>10 organisms), 4 = Dominant (>50 organisms)

Porifera	0	1	2	3	4	Anisoptera	0	1	2	3	4	Chironomidae	0	1	2	3	4
Hydrozoa	0	1	2	3	4	Zygoptera	0	1	2	3	4	Ephemeroptera	0	1	2	3	4
Platyhelminthes	0	1	2	3	4	Hemiptera	0	1	2	3	4	Trichoptera	0	1	2	3	4
Turbellaria	0	1	2	3	4	Coleoptera	0	1	2	3	4	Other	0	1	2	3	4
Hirudinea	0	1	2	3	4	Lepidoptera	0	1	2	3	4						
Oligochaeta	0	1	2	3	4	Sialidae	0	1	2	3	4						
Isopoda	0	1	2	3	4	Corydalidae	0	1	2	3	4						
Amphipoda	0	1	2	3	4	Tipulidae	0	1	2	3	4						
Decapoda	0	1	2	3	4	Empididae	0	1	2	3	4						
Gastropoda	0	1	2	3	4	Simuliidae	0	1	2	3	4						
Bivalvia	0	1	2	3	4	Tabinidae	0	1	2	3	4						
						Calcidae	0	1	2	3	4						

YSI Calibration Form

Project: _____
 Date: _____
 Pre-Calibration Time (24-hr Clock): _____
 Post-Calibration Time (24-hr Clock): _____

Pine Sonde ID No.: _____
 Pine Handset ID No.: _____
 Battery Voltage (%): _____

Prior to Operation - Check the Following Items:

- Ensure Equipment is Operable Prior to Mobilization - Checked By _____
- Attach Carabiner to Sonde
- Attach Safety Line (Non-Wadeable Conditions) NA (Wadeable Conditions)
- Check Batteries/Back-Up Batteries



User Tips:

Keep the handset and sonde in the shade when not in use (i.e., cooler, bucket, bin).
 Keep the sensors damp between readings, check the sponge to ensure adequate moisture.
 Do not keep the slotted cover on the sonde between readings or sites, or during mobilization.
 If the calibration is "outside of range", call Pine Environmental at (770) 925-2855 or (800) 842-1088 for assistance, or for instructions to reset the default calibration settings.

Pre- Post-
 Calibration Calibration

DISSOLVED OXYGEN (DO)			
Was DO membrane changed? Yes, Time/Date: _____ <input type="checkbox"/> No <input type="checkbox"/> NA (optical sensor)			
Current Air Temperature °C (meter reading):			
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):	<input type="checkbox"/> NA (YSI includes barometer)		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration (or YSI barometer reading if available):	Ex.: 30.02 in. Hg x 25.4 = mm Hg; subtract 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg Elevation: Calvert, AL is 50 ft, and Athens, GA site is 700 ft.		
DO concentration before Calibration (mg/L):			
DO concentration after Calibration (mg/L):			
CONDUCTIVITY [Note: Calibrate before pH]			
Temperature (°C)			
Reading before Calibration (mS/cm ²)			
Reading AFTER Calibration (mS/cm ²)			
pH			
pH 7.0 value before calibration:			
pH 7.0 value after calibration:			
pH 7.0 mV (range is -50 to +50 mV):			
pH 10.0 value before calibration:			
pH 10.0 value after calibration:			
pH 10.0 mV (range is -130 to -230 mV):			
pH 4.0 value before calibration:			
pH 4.0 value after calibration:			
pH 4.0 mV (range is 130 to 230 mV):			
OXIDATION/REDUCTION POTENTIAL (ORP)			
Calibration Temperature (°C):			
Reading before calibration (mV):			
Reading after calibration (mV):			
TURBIDITY			
0 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
1 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
10 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
126 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:

Pre-Calibrated By: _____

Post-Calibrated By: _____

Checked by: _____

**APPENDIX C
LABORATORY FORMS**

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BENTHIC MACROINVERTEBRATE LABORATORY BENCH SHEET (FRONT)

page _____ of _____

STREAM NAME _____		LOCATION _____
STATION # _____	RIVERMILE _____	STREAM CLASS _____
LAT _____	LONG _____	RIVER BASIN _____
STORET # _____		AGENCY _____
COLLECTED BY _____	DATE _____	LOT # _____
TAXONOMIST _____	DATE _____	SUBSAMPLE TARGET <input type="checkbox"/> 100 <input type="checkbox"/> 200 <input type="checkbox"/> 300 <input type="checkbox"/> Other _____

Enter Family and/or Genus and Species name on blank line.

Organisms	No.	LS	TI	TCR	Organisms	No.	LS	TI	TCR
Oligochaeta					Megaloptera				
Hirudinea					Coleoptera				
Isopoda									
Amphipoda					Diptera				
Decapoda									
Ephemeroptera					Gastropoda				
					Pelecypoda				
Plecoptera									
					Other				
Trichoptera									
Hemiptera									

Taxonomic certainty rating (TCR) 1-5: 1=most certain, 5=least certain. If rating is 3-5, give reason (e.g., missing gills). LS= life stage: I = immature; P = pupa; A = adult TI = Taxonomists initials

Total No. Organisms _____

Total No. Taxa _____

BENTHIC MACROINVERTEBRATE LABORATORY BENCH SHEET (BACK)

<p>SUBSAMPLING/SORTING INFORMATION</p> <p>Sorter _____</p> <p>Date _____</p>	<p>Number of grids picked: _____</p> <p>Time expenditure _____ No. of organisms _____</p> <p>Indicate the presence of large or obviously abundant organisms:</p> <p>_____</p> <hr/> <p>QC: <input type="checkbox"/> YES <input type="checkbox"/> NO QC Checker _____</p> <div style="text-align: center;"> $\begin{matrix} \# \text{ organisms} \\ \text{originally sorted} \end{matrix} \div \left(\begin{matrix} \# \text{ organisms} \\ \text{recovered by} \\ \text{checker} \end{matrix} + \begin{matrix} \# \text{ organisms} \\ \text{originally sorted} \end{matrix} \right) = \begin{matrix} \% \text{ sorting} \\ \text{efficiency} \end{matrix}$ <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 40px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="font-size: 24px;">÷</div> <div style="border: 1px solid black; padding: 5px;"> $\left(\begin{matrix} \# \text{ organisms} \\ \text{recovered by} \\ \text{checker} \end{matrix} + \begin{matrix} \# \text{ organisms} \\ \text{originally sorted} \end{matrix} \right)$ </div> <div style="font-size: 24px;">=</div> <div style="border: 1px solid black; width: 40px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div> </div> <p>≥90%, sample passes _____</p> <p><90%, sample fails, action taken _____</p>
<p>TAXONOMY</p> <p>ID _____</p> <p>Date _____</p>	<p>Explain TCR ratings of 3-5:</p> <p>_____</p> <p>Other Comments (e.g. condition of specimens):</p> <p>_____</p> <hr/> <p>QC: <input type="checkbox"/> YES <input type="checkbox"/> NO QC Checker _____</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Organism recognition _____</p> <p>Verification complete _____</p> </div> <div style="width: 50%;"> <p><input type="checkbox"/> pass <input type="checkbox"/> fail</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> </div> </div>

General Comments (use this space to add additional comments):

Appendix 2 – In-Stream Monitoring

Appendix 3 – Floatables and Solids Monitoring

Prince William County Floatable Survey

2020 Fiscal Year Report

Figure 1. Top on the list Floatable Items collected during the 1st Quarter

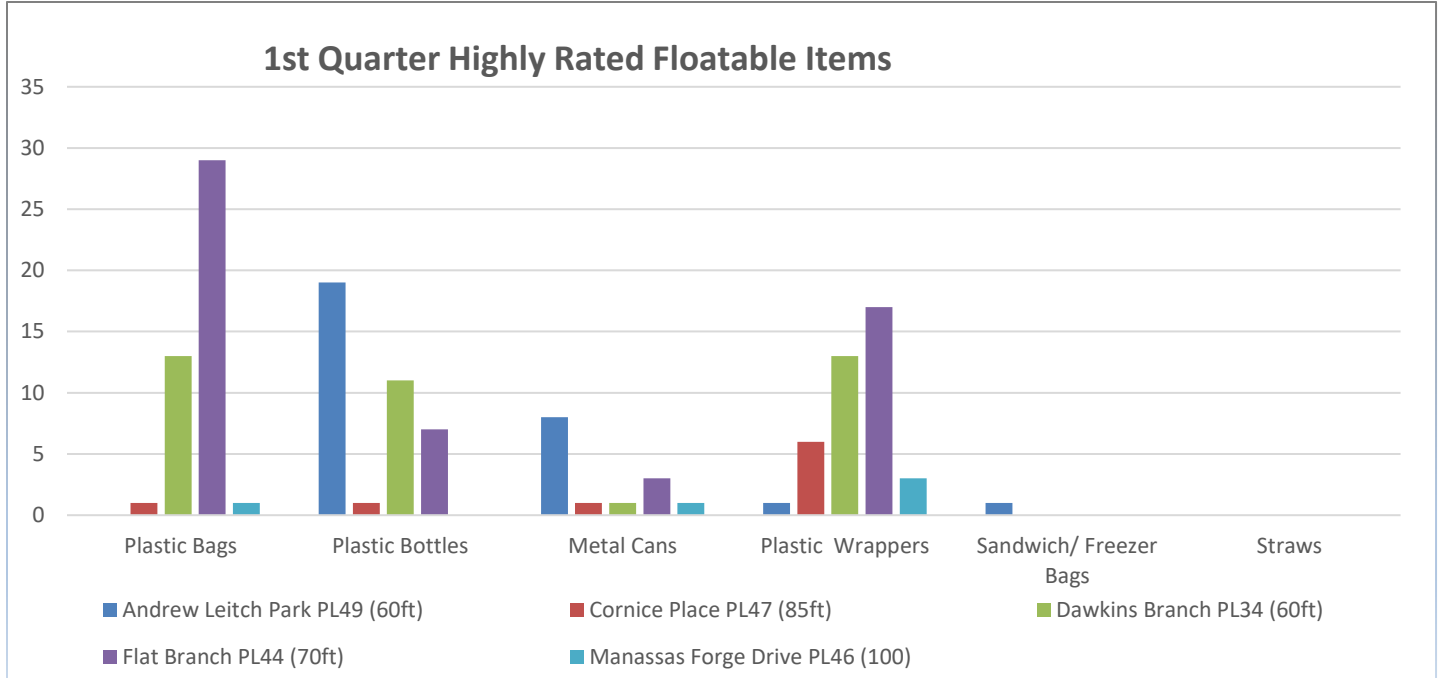


Figure 1a. Proportion of plastic bags in 1st Quarter

Figure 1 b. Proportion of plastic bottles in the 1st Quarter

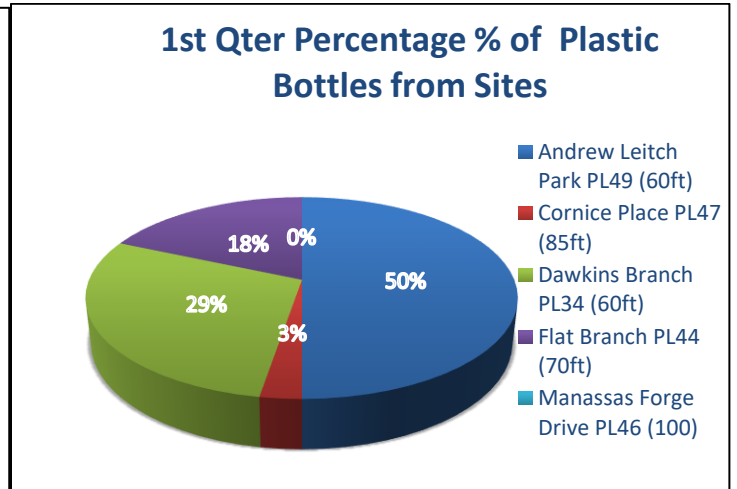
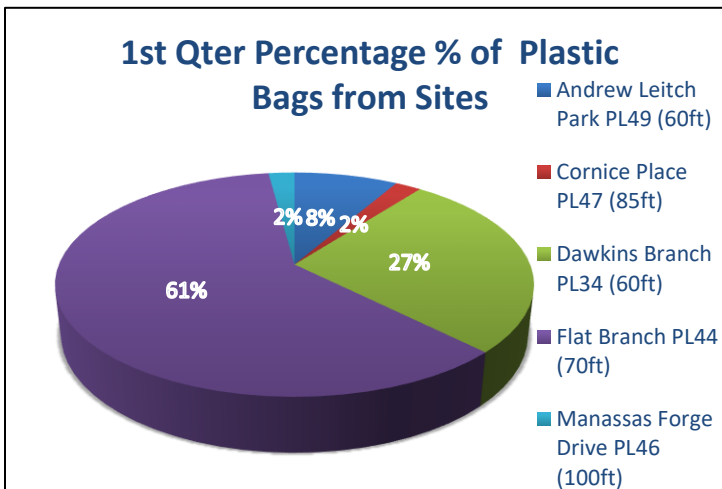
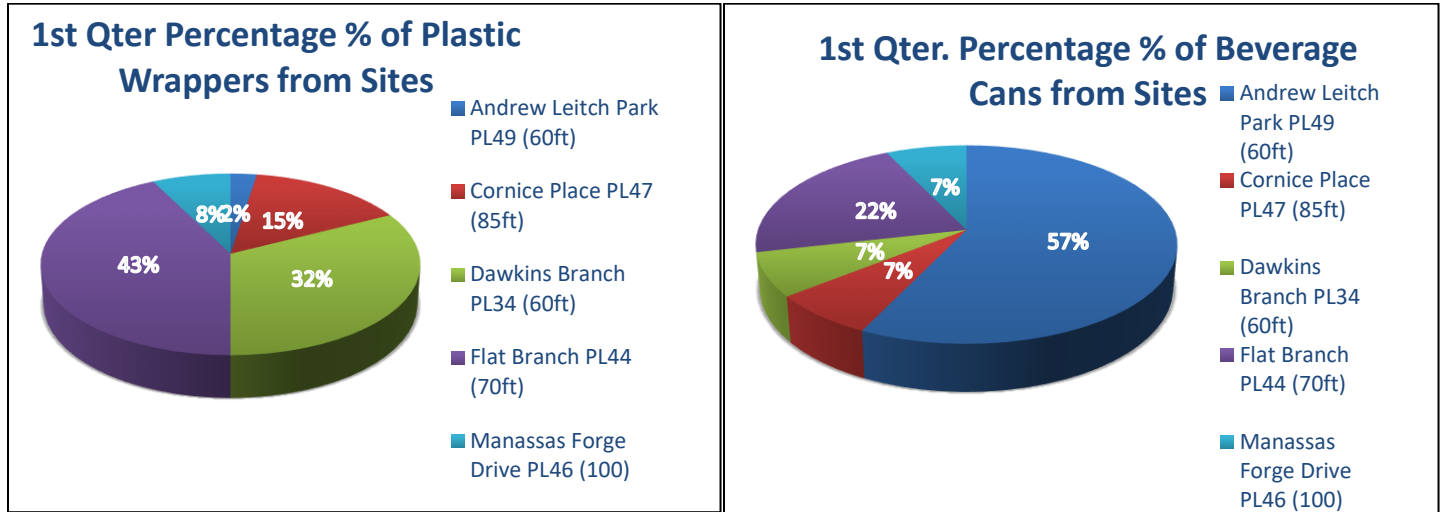


Figure 1 c. Proportion of plastic wrappers - 1st Quarter

Figure 1 d. Proportion of beverage cans - 1st Quarter



Phase 2

Figure 2. Top on the list Floatable Items collected during the 2nd Quarter

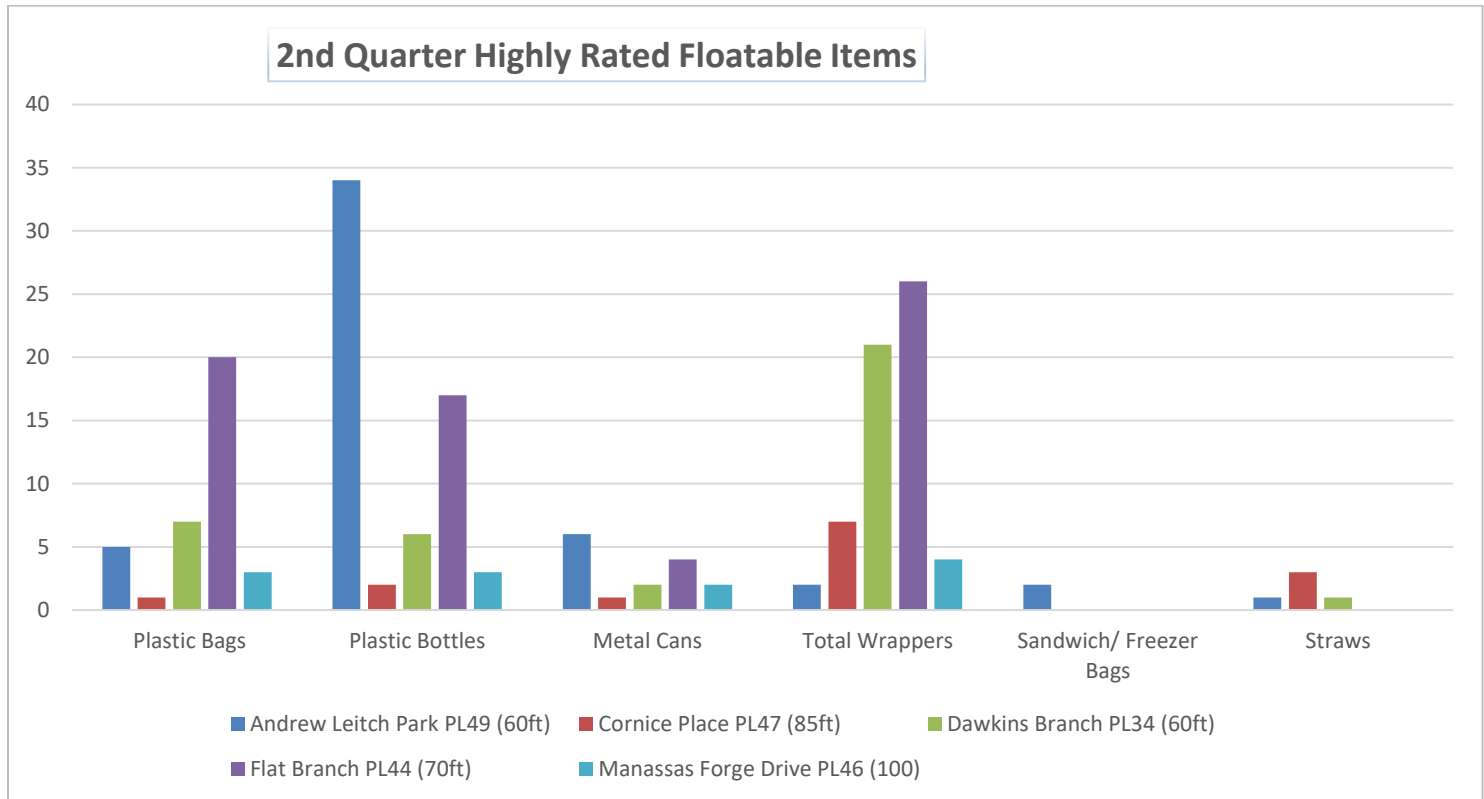


Figure 2a. Proportion of plastic bags- 2nd Quarter

Figure 2b. Proportion of plastic bottles - 2nd Quarter

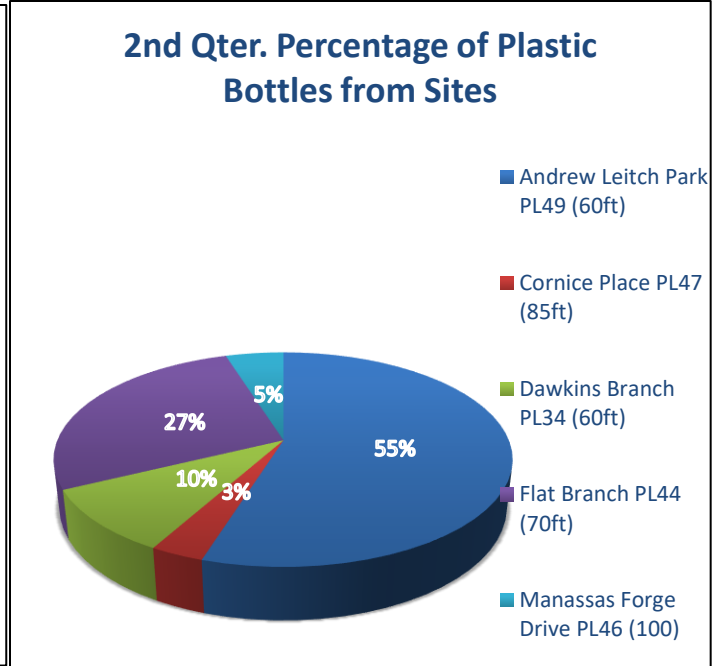
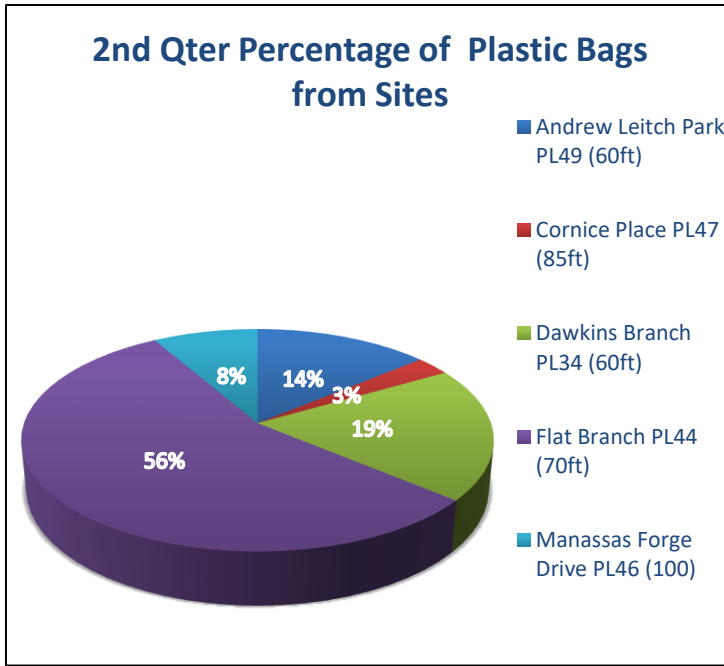
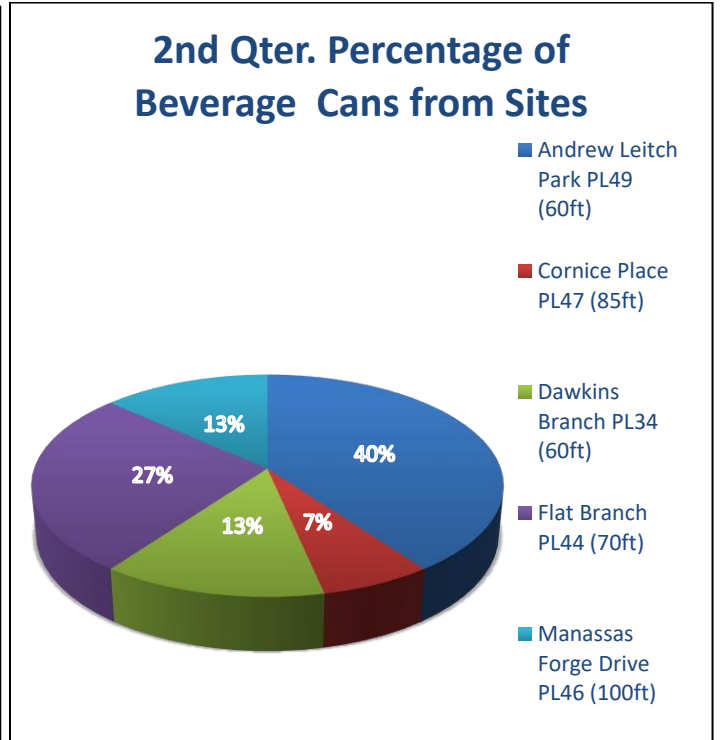
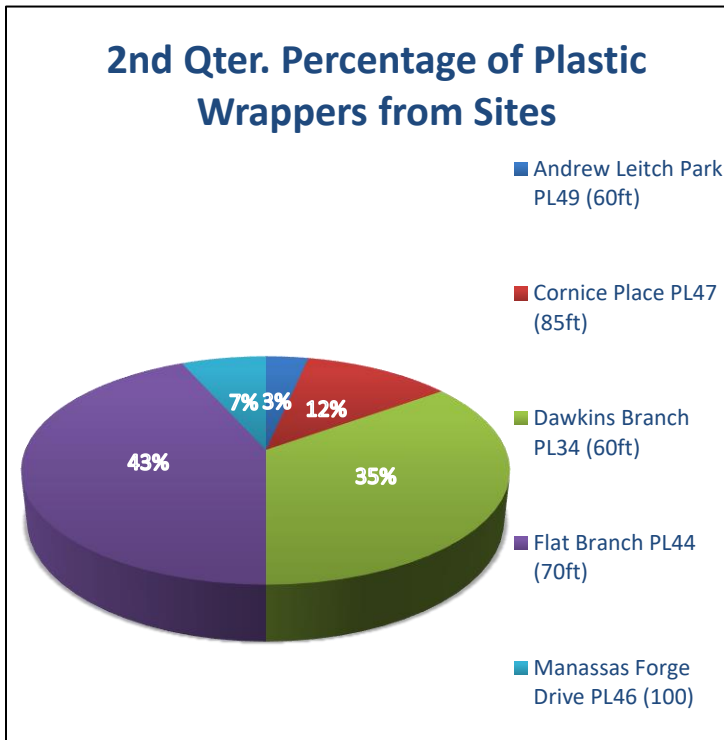


Figure 2 c. Proportion of plastic wrappers – 2nd Quarter

Figure 2d. Proportion of beverage cans -2nd Quarter



Phase III

Figure 3. Top on the list Floatable Items collected during the 3rd Quarter

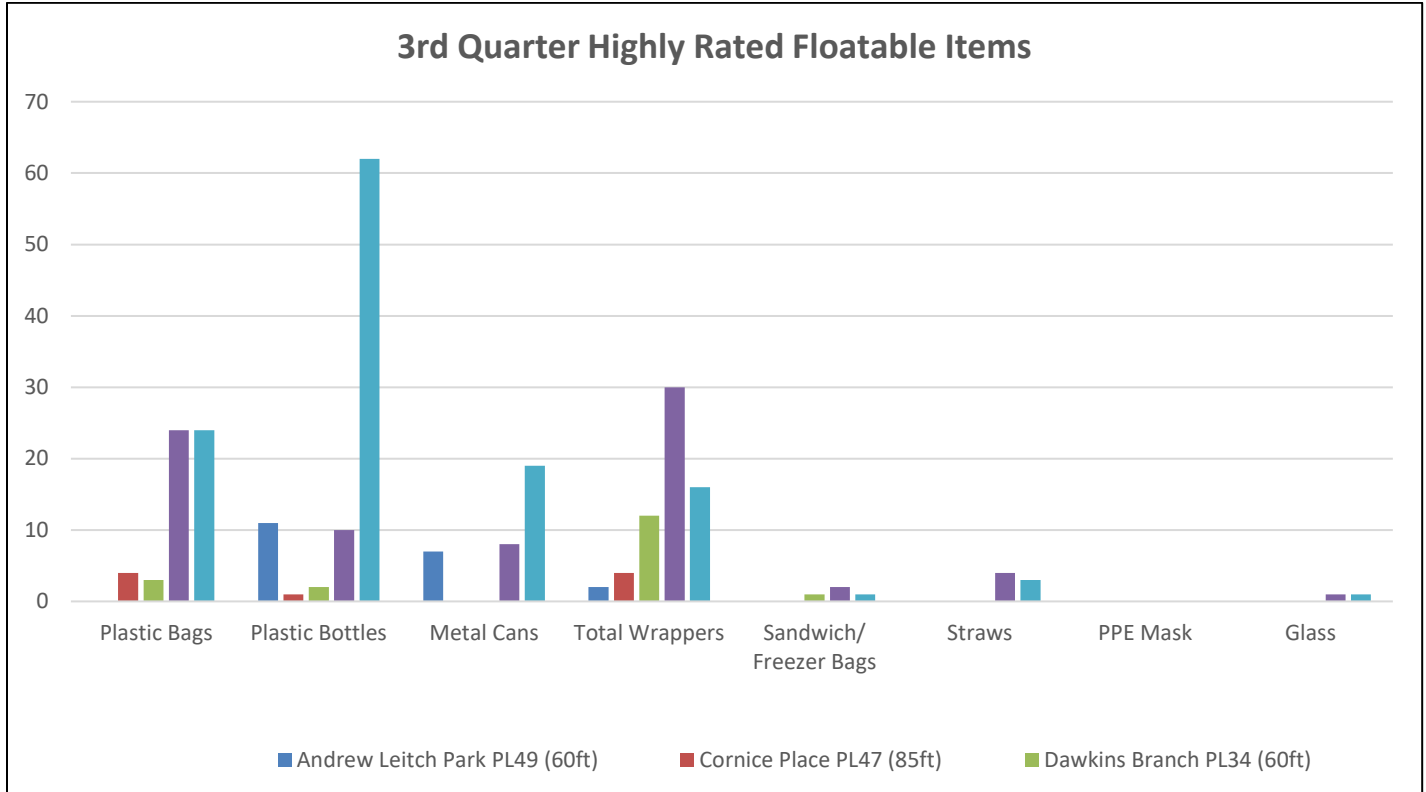


Figure 3a. Proportion of plastic bags - 3rd Quarter

Figure 3b. Proportion of plastic bottles - 3rd Quarter

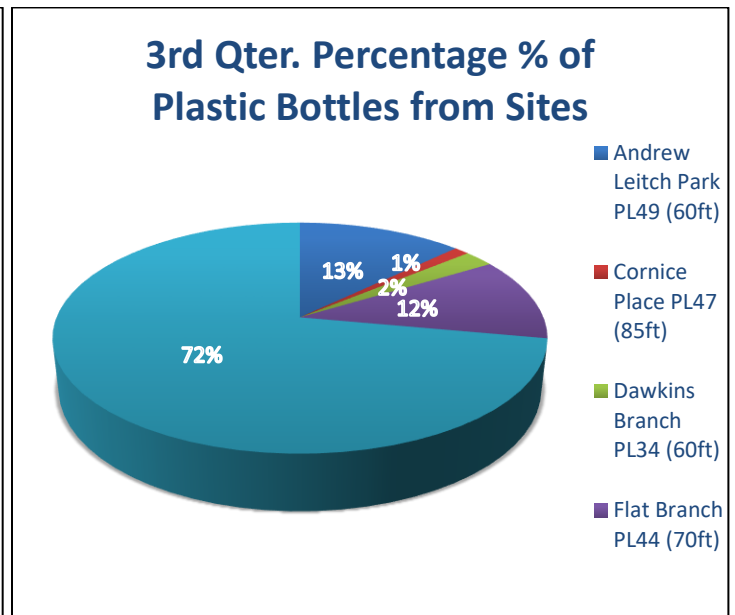
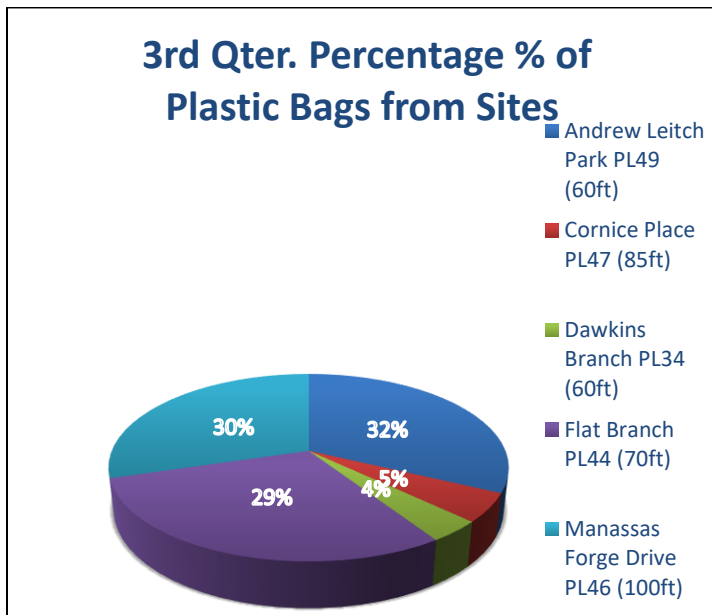
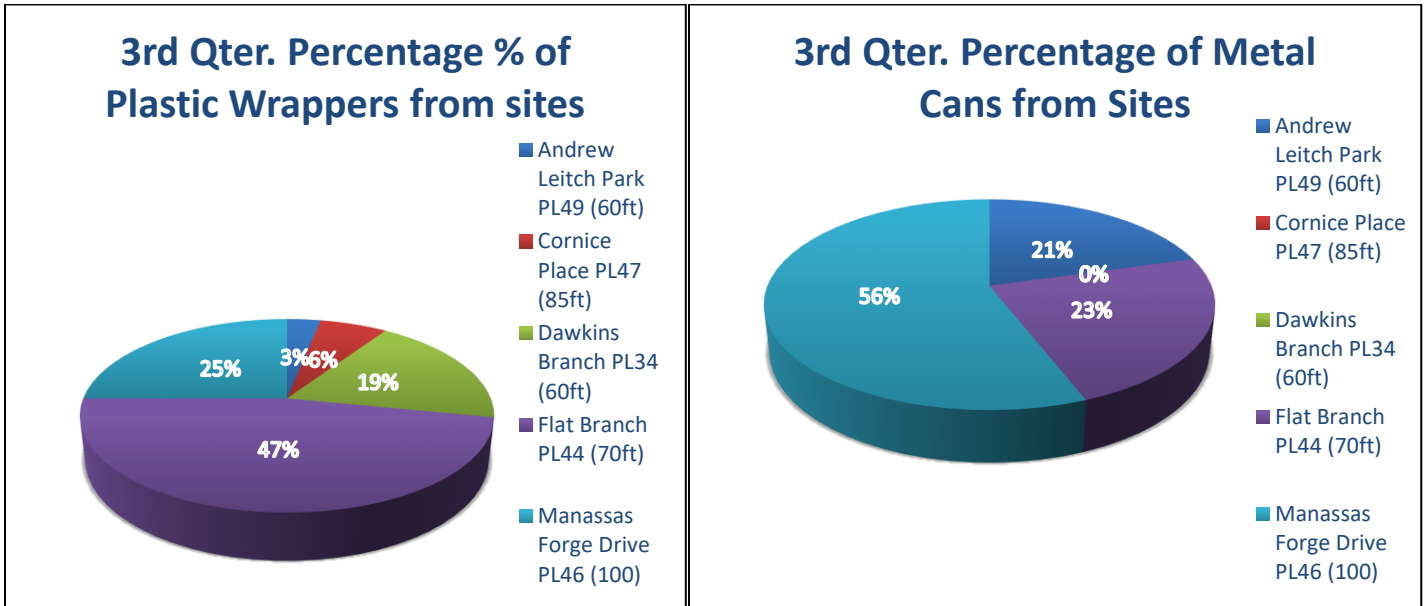


Figure 3 c. Proportion of plastic wrappers – 3rd Quarter Figure 3d. Proportion of beverage cans –3rd Quarter



Phase IV

Figure 4. Top on the list Floatable Items collected during the 4th Quarter

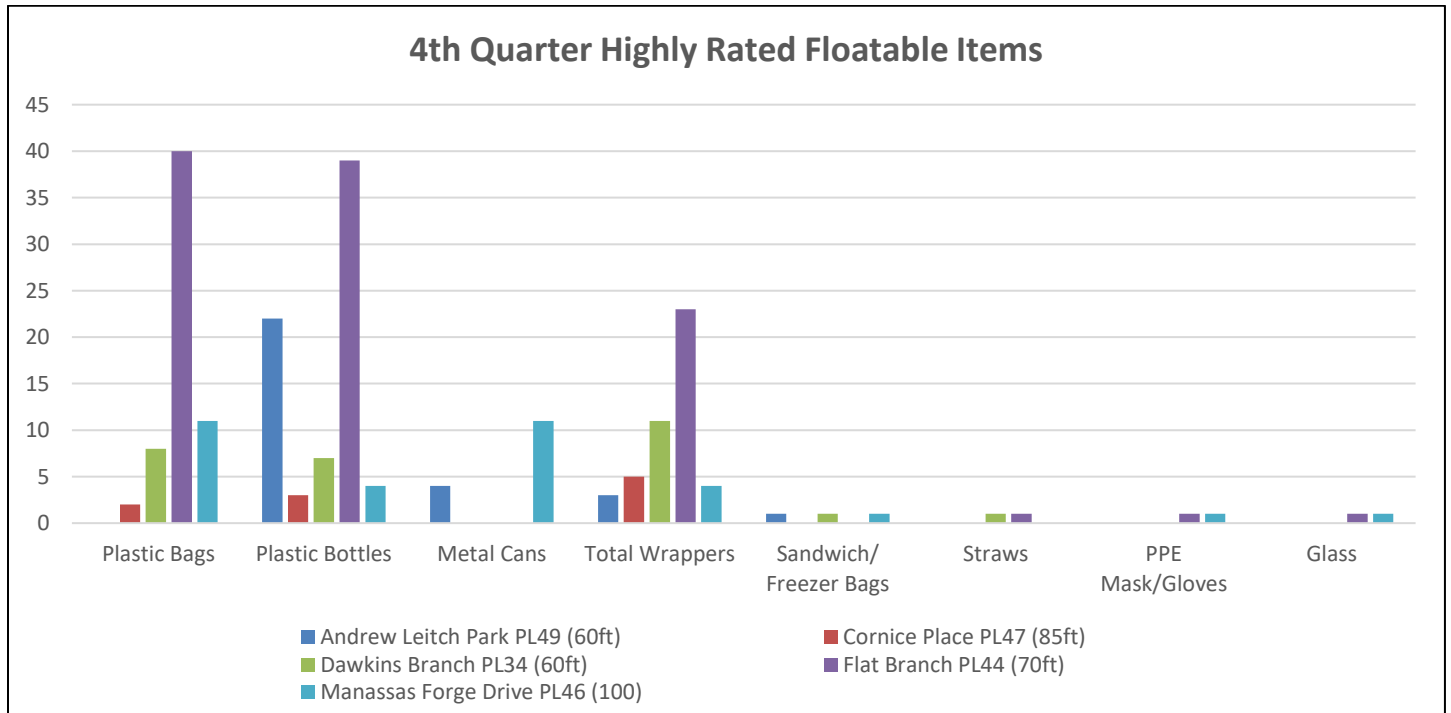


Figure 4a. Proportion of plastic bags - 4th Quarter

Figure 4b. Proportion of plastic bottles - 4th Quarter

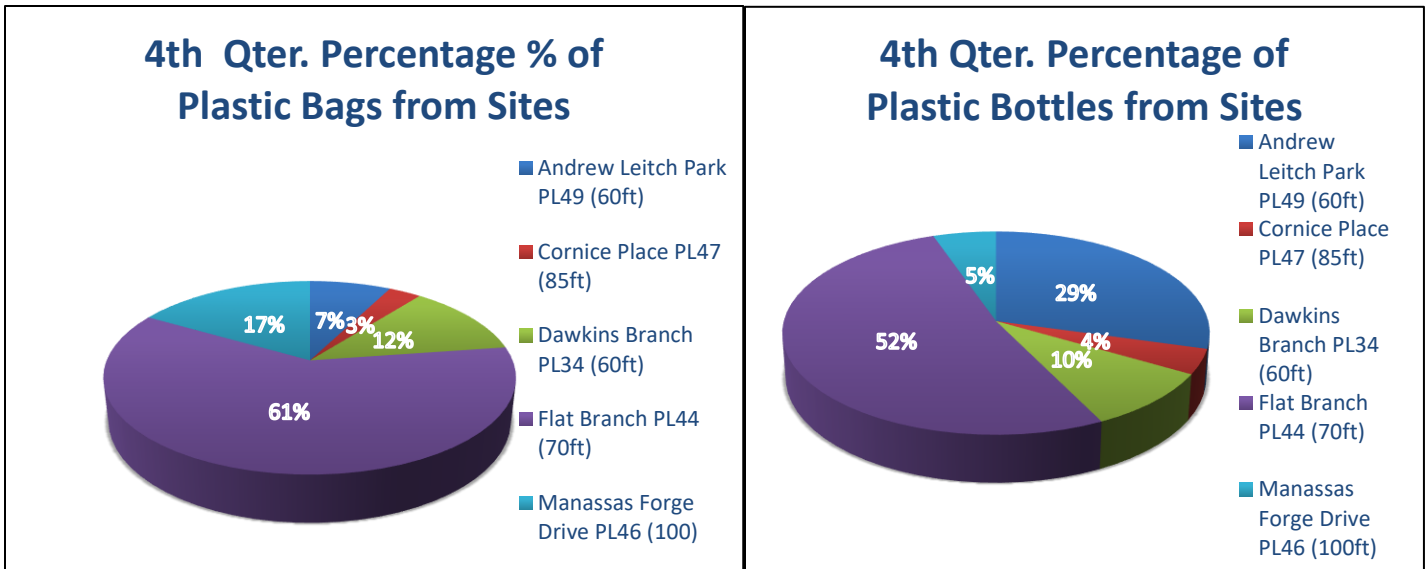
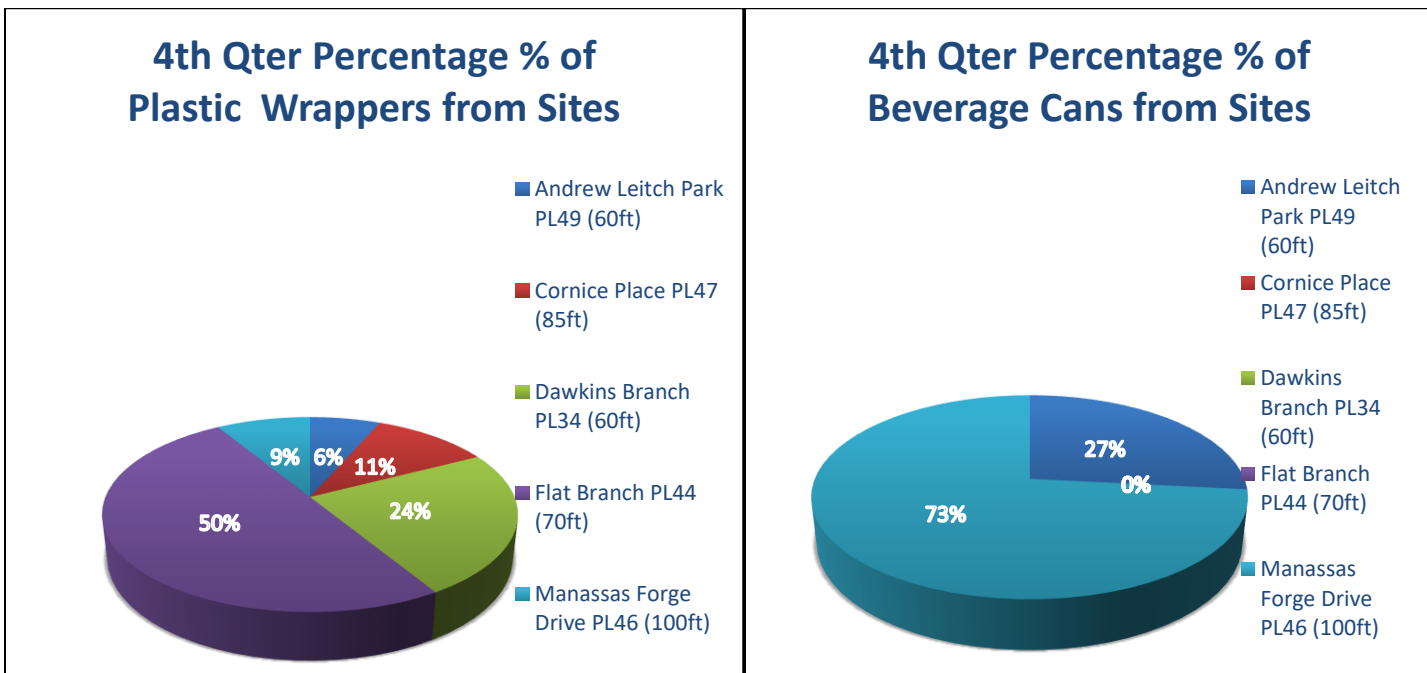


Figure 4 c. Proportion of plastic wrappers – 4th Quarter

Figure 4d. Proportion of beverage cans –4th Quarter



Overall analysis of floatable items collected from July 2019 – June 2020

Figure 5. Amount of floatable load/weight (lbs.) collected July 2019 – June 2020

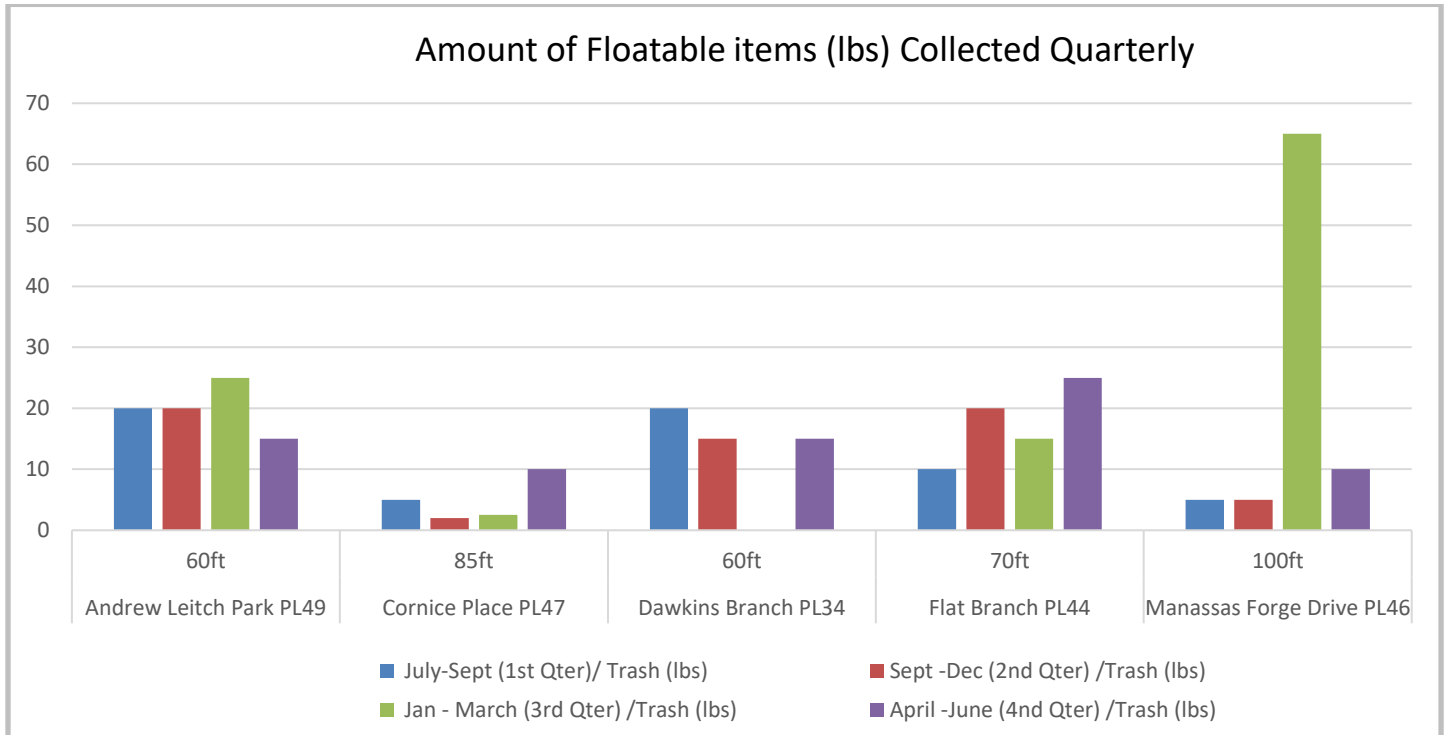
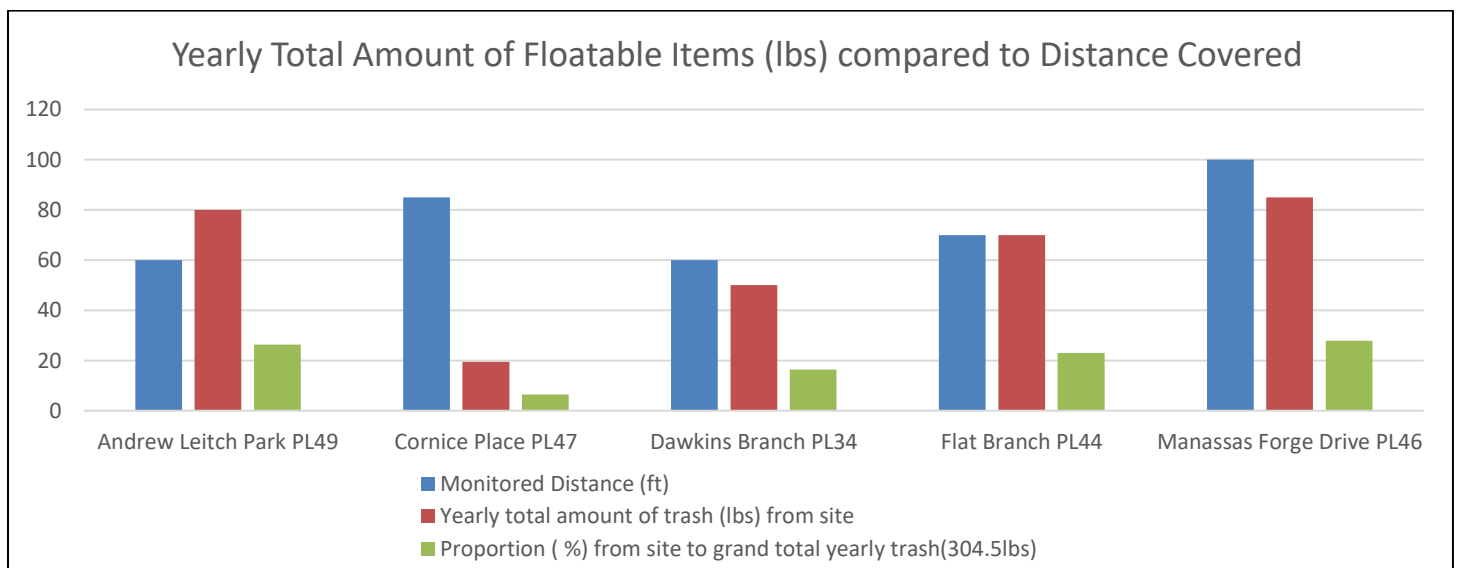


Figure 6. Relation between distance monitored and total trash collected yearly





The Prince William County Floatable Monitoring program which started in July 2016, has seen progress in applied techniques to help capture meaningful data that will support the County's Green Community Goals.

Every year, lessons and knowledge gained from the previous years are put in place to for a better for a better structure. For example, the 2019 report laid more emphases on plastic bags and plastic bottles from the list of dominant items recorded.

The 2020 report has gone further to added plastic wrappers, beverage cans and Personal Protective Equipment.(PPE). This is because there is need to learn more about micro plastics and its impact on water pollution. The COVID-19 pandemic is made PPE is a growing floatable item in waterways. It is important to examine this new PPE trend in waterways with the current virus crises.

Phases

This report covers five floatable monitoring sites which are monitored quarterly: **Phase I** (July 2019 – September), **Phase II** (October 2019 – December 2019), **Phase III** (January 2020 – March 2020) and **Phase IV** (April 2020 – June 2020).

Phase I. Flat Branch recorded the highest number of plastic bags (61%) and plastic wrappers (50%). while Andrew Leitch recorded the highest in plastic bottles and beverage cans. Manassas Forge and Cornice Place recorded the least number of floatable items, respectively.

Dawkins branch recorded a high amount of all the plastics related items especially in the number of plastic wrappers which is more significant (See Figure 1, 1a,1b, 1c and 1d).

Phase II. The trend of floatable items recorded in the second quarter reflected the same trend as in Phase I. Flat Branch record the highest number of plastic bags followed by Andrew Leitch and Dawkins Branch. Andrew Leitch maintained its highest trend in both plastic bottles and beverage cans while Dawkin's Branch recorded the highest number of plastic wrappers.

Although Cornice Place showed a significant amount of low floatable items, the occurrence of straws is a significant item at the site (See Figure 2, 2a, 2b, 2c and 2d).

Phase III. Manassas Forge recorded a high amount of all the top-rated floatable items, followed by Flat Branch and Andrew Leitch (See Figure 3, 3a, 3b, 3c and 3d).

Phase IV. The 4th Quarter data left Flat Branch, Andrew Leitch and Manassas Forge respectively at the top of the list with the most floatable items. Dawkin's Branch showed a significant number of plastic bags, bottles and wrappers. As often the case, Cornice Place recorded the lowest number of floatable items.



A significant occurrence of PPE (masks and gloves) was also noticed during this phase as recorded at Flat Branch and Manassas Forge. It becomes interesting to watch the trend of PPE items with the current COVID -19 environment (See Figure 4, 4a, 4b, 4c and 4d).

An overview of Phases I, II, III and IV throughout the year

Andrew Leitch (60ft) and Flat Branch (70ft) maintained a constant large number of floatable items as has been the case in past years. Cornice Place (85ft) maintained the least number of floatable items but harbors an always present small pool of oil sheen.

Manassas Forge (100ft) showed an exceptional increase in floatable load in Phase III and Phase IV displacing Dawkin's Branch to the fourth position compared to 2019. This new trend of floatable items at the Manassas Forge site could be attributed to the fact that, less spring vegetation gave access to an entangled vegetative area. Also the establishment of new businesses upstream from the Manassas Forge site such as the new WAWA Gas Station may have been a contributing factor to the change in data trend. For example, this site recorded WAWA coffee cups and more plastic bags, bottles and beverage compared to the past years. (See figure 5).

With Andrew Leitch, its constant high floatable amount could be attributed to the already existing challenges faced by the Neabsco Creek Watershed. For example, high buildup area with heavy runoffs, restricted stream buffers and more.

The high records of Flat Branch could be attributed to the Manassas Mall and other businesses like 7-11 upstream that has constantly released plastic bags to the site.

Dawkin's Branch and its high trend in plastic wrappers could be attributed to the Victory Elementary School, the nearby public playground and littering from the Broad Run Trail users.

Distance covered at all monitoring sites

Variation in monitoring distances for all five sites due to seasonal accessibility challenges did not impair the data trend and results. Regardless of the variation in distances covered, the recorded data from all five sites still gave a good reflection of the amount/type of floatable items collected. (See Figure 6)



Some recommendations:

- The need for general education on water quality and plastic pollution in Prince William County (residents and schools)
- The need to add one or two new floatable monitoring sites to the existing list with direct connection to more active sites like malls. This will capture data that will support the enforcement laws for businesses to manage floatable items better

Conclusion

As Prince William County advances in floatable monitoring, the data collected is getting more meaning in addressing the growing challenges around water quality and plastic pollution.

Water pollution is an important topic relating to human vitality. Therefore, there is great need to promote this awareness for a sustainable Prince William County. This will also get more folks engage in building the County's Green Community Goals.



Prince William County

Floatables Monitoring Program

Permit No.
VA0088595

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

5/1/2016

Table of Contents

I.	Introduction	3
II.	Site Selection.....	4
a.	Initial Locations and Site Screening	4
i.	Methods and Results	4
b.	Selection of final sampling sites.....	4
i.	Methods.....	4
c.	Site Rotation.....	5
III.	Field Procedures.....	6
a.	Pilot Program	6
i.	Methods.....	6
c.	Sampling Methods	6
d.	Safety	7
IV.	Documentation	9
V.	Future Program Goals	11
	APPENDIX A – Site Identification Forms	12
	APPENDIX B – Field Inspection Forms.....	24
	APPENDIX C – Floatables Monitoring Database	25

I. Introduction

Prince William County is dedicated to Program providing its citizens with the healthiest environment possible. It is with this goal the County establishes programs aimed at reducing pollutant impacts from heavily urbanized and industrialized areas. Non-point source pollution from urban and industrial areas within the County is a great concern due to its potential to impact water quality. Pollutants are transported from these areas during rain events and often deposited untreated into nearby streams and rivers. To mitigate this issue, the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (VA-DEQ) have instituted programs aimed at reducing the potential impact of pollutants from urban areas. Goes into

Under the Virginia Pollutant Discharge Elimination System Permit Program (VPDS) and Virginia Stormwater Management Program (VSMP) permits are issued aimed at reducing pollution runoff from industrial and urban areas containing Municipal Separate Storm Sewers Systems or MS-4s. These systems transport water from urbanized areas to streams and rivers and are a major concern of point and non-point source pollution. Discharges from MS4s are regulated under the Virginia Stormwater Management Act and Clean Water Act (CWA) through permits issued by DEQ and the EPA. Through this program, Prince William County maintains a Phase 1 VSMP MS-4 permit (Permit No. VA0088595).

Through its VSMP permit, the County is required to monitor floatables from areas suspected to be contributing excess levels of trash and refuse to its MS-4 by implementing a Floatables Monitoring Program. Unlike the Dry Weather Monitoring Program and Wet Weather Screening Program, the Floatables Monitoring Program is aimed at assessing trash loadings to streams. Using information obtained through this program, the County is to then develop strategies to reduce refuse load from these areas. The County's MS-4 permit, issued on December 17th, 2014, outlines requirements for the Floatables Monitoring Program as follows:

3. Floatables Solids Monitoring

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:

- a) Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.
- b) Monitoring shall be conducted once per quarter after program implementation.
- c) The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.

This program manual describes the methods and procedures for Prince William County's Floatables Monitoring Program. All procedures are subject to modification as program feasibility and applicability are assessed during program implementation. All program modifications will be noted as part of the County's Program Plan.

II. Site Selection

- a. Initial Locations and Site Screening
 - i. Methods and Results

Initial site locations were provided by the Prince William County Soil and Water Conservation District (PWCSWCD) from a list of sites currently monitored under its stream stewards program. These nine sites were selected as the starting point during site screening since the PWCSWCD currently visits these sites on a quarterly basis, and Floatables monitoring could straightforwardly be incorporated with the stream stewards program.

Three additional sites were identified using GIS in the need to incorporate a more diverse set of land uses in the floatables analysis, as the sites monitored by PWCSWCD were located in mostly residential areas. These sites were located by making an overall observation of the County's service area and the location of its regulated outfalls in relation to areas with diverse land uses. The first supplementary site was located off of Liberia Avenue, near the intersection of Liberia and route 294. This site includes discharge from an upstream commercial area. The second additional site is located on flat branch near the intersection of Sudley Road and Goodwin Drive. This site incorporates an area with a high degree of impervious surfaces and includes drainage from commercial and industrial land uses. Finally the third additional site is located on Cornice Place off of Old Bridge Road. This area drains from a smaller shopping center, and would be a good opportunity to see how BMPs applied in that shopping center can effect floatables numbers downstream.

- b. Selection of final sampling sites
 - i. Methods

Sites identified during initial site screening were visited and scored according to a set of metrics. These metrics were adopted in order to identify optimal locations for floatables monitoring. Metrics incorporated elements analyzing the quality of upstream conditions, land uses, safety and access of the site, size of contributing drainage systems, and opportunity to reduce floatable sources. Each metric was scored on a scale of 1-5 with a score of 5 being the most desirable, and 1 being the least. The total score for each site was calculated by averaging the scores from each metric for the site. Sites with the highest average score were the most desirable for use in the floatables monitoring program.

Within each site, a sampling area will be selected. This sampling area will outline where volunteers or staff are to assess floatables. This sampling site will be selected during the first sampling period, and will encompass the area where the most floatables are identified.

- ii. Results

All 12 sites were analyzed for use in the program. The score results from each site are located in Table 1 below.

Table 1: Site Assessment Scores

Site	Score
Site 7: Neabsco Creek, Andrew Leitch Park	3.6
Site 10: Liberia and 294	3.6
Site 3: Dawkins Branch, Victory Elementary	3.4

Site 11: Flat Branch	3.4
Site 12: Cornice Place and Old Bridge Road	3.2
Site 4: Dewey's Creek, Wayside Drive	3.2
Site 9: Powell's Creek, Monclair	3.0
Site 6: Hooe's Run, Springwood Drive	2.6
Site 5: Hooe's Run, Castile Court	2.6
Site 2: Catharpin Creek, James Long Park	2.6
Site 8: Neabsco Creek, Cloverdale Park	2.4
Site 1: Bull Run, Ben Lomond Park	0

Site scores varied from 3.6 to 0. Site 1 was disqualified due to a lack of MS-4 outfalls discharging into the stream segment. Sites that ranked the highest typically had a mix of contributing land uses and highly accessible, countable, and identifiable sources of floatables within the stream segment. Sites typically had one to three regulated outfalls discharging to the stream, and had medium to small contributing drainage areas. The top 5 sites are selected for the program, with the top 2 sites used for the pilot study. Completed site assessment sheets are available in Appendix A.

c. Site Rotation

Sites will be rotated from monitoring cycle if it is determined that the site does not perform as expected. This can occur for several reasons such as, if the site does not receive sufficient trash counts, if access to the site becomes too dangerous for staff to safely perform monitoring, or if activities occur on site that render monitoring impractical such as a stream restoration or redevelopment projects. Sites must remain in the program for at least one year before being replaced by another site, unless circumstances arise that prevent monitoring from occurring.

Replacement sites will be selected in the same method as described above in section b. New candidate sites will be selected from the list of sites that were not selected in the initial site selection procedure and from suggestions from County Staff.

III. Field Procedures

a. Pilot Program

i. Methods

To test and refine monitoring program procedures as well as assess staff effectiveness in monitoring efforts, the Floatables Monitoring Program will first operate under a pilot program. The pilot program will conduct monitoring at two sites for four sampling periods. In order to proceed with main sampling program in a reasonable timeframe, the pilot monitoring will take place at an accelerated schedule. Instead of sampling once per quarter, monitoring will be conducted once per month. Factors such as sampling procedures, sampling site characteristics, safety measures, and monitoring forms will be evaluated during this time. The pilot program will last a total of 4 months before the main monitoring program begins.

ii. Results

Pilot Program results will be included at the end of the pilot study for the program.

b. Training

Sampling will be performed with a mix of paid staff and volunteers. In order to maintain consistency in the program in the event that different groups of people sample different sites, or different groups of people sample from each sampling period to the next, training must take place. Staff will be responsible for reading and understanding the methods presented in this manual, and relaying that information to volunteers. Staff will be directed to either be present during all sampling events, or at the very least be present for the first sampling event a volunteer participates in. Important concepts to place emphasis on when training volunteers are bankfull depth, the location of site markers, and the layout of the sampling form. A sampling manual shall be provided to each volunteer performing monitoring and each inspection sheet will include instructions and a detailed list of site locations. Volunteers can be directed to contact PWC staff if needed.

c. Sampling Methods

Sampling will be consistent across all sites. As referenced in section II.b, a sampling area will be selected within each monitoring site. The sampling area will be identified on site with simple wooden stakes. The stakes will be labeled to indicate the direction to follow when sampling and also indicate the bankfull height of the stream. If a distinct sampling direction is not indicated, it will be assumed sampling will take place in the direction of stream flow. The distance between stakes will be approximately 100 ft. Floatables monitoring staff will walk the length of the sampling area counting the type and amount of each floatable type. Refuse will be considered a floatable eligible to be counted if it is above the water line, within the confines of the stream, and below the bankfull mark of the channel, as described in figure 1 below. Observations will be recorded on the form presented in section IV.a. Data sheets will be provided to the County at the end of each monitoring year and kept within the County's Floatables monitoring manual in Appendix B.

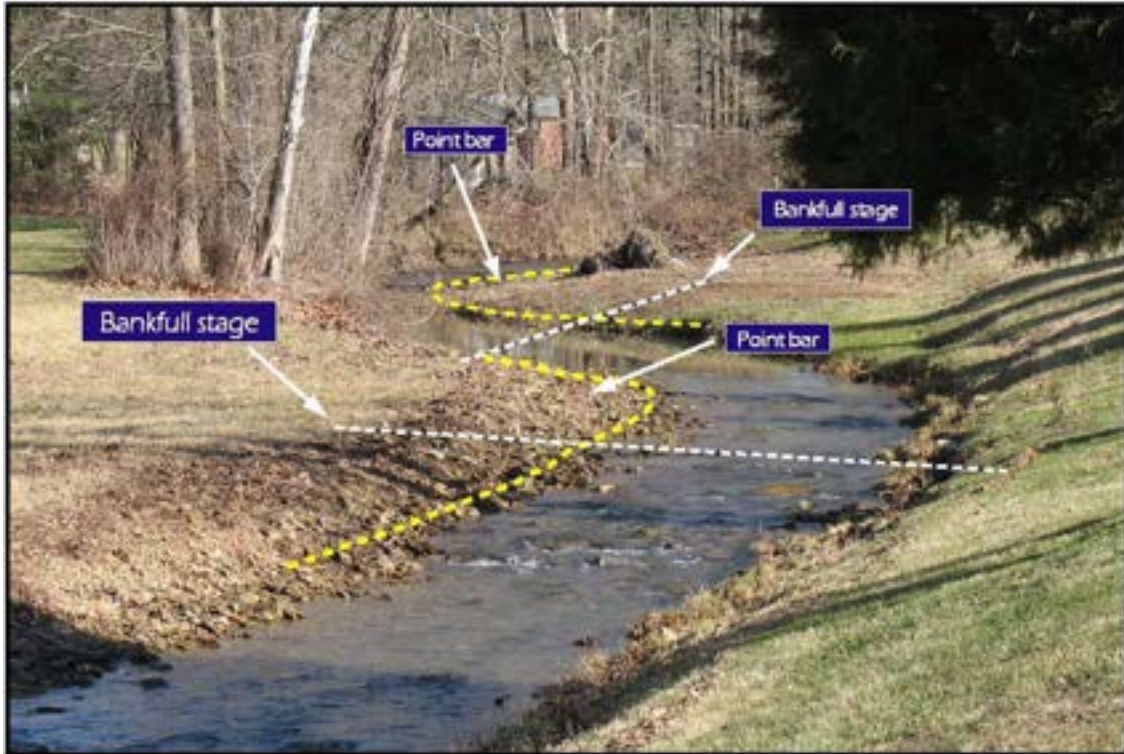


Figure 1. Bankfull Diagram, Credit Indiana FDH

d. Safety

Safety an important goal of the floatables monitoring program. When performing monitoring, staff should be equipped with proper footwear and clothing. This includes at a minimum closed toed shoes. Staff are recommended to also wear long sleeved shirts and pants, as well as waterproof gaiters or shoes in the event entering the stream is necessary. Staff should avoid accessing areas with high slopes and steep drop-offs.

The accessibility and safety of monitoring sites are incorporated in the site analysis used to determine sampling sites. Within sampling sites, sampling areas are identified that incorporate safe access and easy visibility for monitoring. Health and safety responsibility and accountability involves every employee. Some additional measures that should be followed or noticed includes:

- 1) Bring cell phone on all field site visits.
- 2) Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
- 3) Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
- 4) Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

i. DANGEROUS FLORA AND FAUNA

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); rabid mammals; and poisonous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction.

ii. WEATHER-RELATED HAZARDS

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of site personnel.

iii. HEAT STRESS

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps.

iv. COLD STRESS

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

IV. Documentation
a. Forms

There are two types of data acquisition forms used in the program, the site identification/evaluation form, and the field inspection form. The site identification/evaluation form is used during the site selection process to evaluate potential sampling sites. It will also be used whenever new potential sites are evaluated for inclusion into the program. This form uses a set of metrics to score and average to generate a quantitative comparison between candidate sites. An example of the Site identification form can be seen in figure 2 below:

Site #: Site Description

Site Map

Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Figure 2: Site Identification Form

Field inspection forms are completed during each inspection. They incorporate information on the date, time, weather conditions, and site number of the inspection, Information on the person/group performing the inspection, and information on the floatables found on site. Each inspection from includes the basic sampling methods, and breaks down each floatable type typically observed in the field. An example of the field inspection form can be seen in figure 3 below:

Prince William County Floatables Monitoring Field Inspection Form

Location:	Date:	Time:
Name:		Weather Conditions:

The sampling area will be identified on site with simple wooden stakes. The stakes will be labeled to indicate the direction to follow when sampling and also indicate the bankfull height of the stream. If a distinct sampling direction is not indicated, it will be assumed sampling will take place in the direction of stream flow. The distance between stakes will be approximately 100 ft. Floatables monitoring staff will walk the length of the sampling area counting the type and amount of each floatable type observed. Refuse will be considered a floatable eligible to be counted if it is above the water line, within the confines of the stream, and below the bankfull mark of the channel.

Plastic Bags:	
Plastic Bottles:	
Snack bags or wrappers:	
Aluminum Cans:	
Oil containers:	
Cardboard:	
Styrofoam:	
Other:	

Signature: _____ Date: _____

Figure 3: Field Inspection Form

b. Documentation and trends analysis

Data gathered in the field will be organized using an excel database provided by Prince William County. This database incorporates all site characteristics and inspections and allows for the easy identification of continued trends within each sampling site.

Each site has its own sheet within the database. Each sheet contains easily identifiable areas to enter data gathered from the field. Each site is identified at the top of the sheet along with a description of the site location. This database will be the main form of data transfer between monitoring staff and PWC.

V. Future Program Goals

a. Trash Mitigation plans

As data is gathered at sampling sites, an effort to help reduce the amount of floatables entering the streams will be developed. Using data gathered on floatables entering the stream segments, a determination of their source will be made. Efforts will then be undertaken in the surrounding drainage areas to reduce the amount of the floatables identified in the stream reaches.

These mitigation plans will focus on efforts such as ensuring recycling and trash bins have lids, enhancing trash storage, enforcing and promoting current recycling standards, promoting trash pickup events, encouraging street sweeping efforts in commercial areas, and other methods. An assessment on the effectiveness of these efforts can then be made, with the possibility of expanding mitigation plans to other parts of the County.

b. Adapting to changing MS-4 Regulations

As the program continues throughout the length of the County's current MS-4 permit, the County will monitor trends related to future requirements within the MS-4 program. This could lead to changes in the floatables monitoring program. Since the permit requirements can only be changed during permit issuance, current program goals and methods will remain constant throughout each permit period (5 years). As the timeline advances towards the County receiving a new MS-4 permit, potential changes to the program will be observed and incorporated into the next monitoring period.

APPENDIX A – Site Identification Forms

Site 1: Bull Run, Ben Lomond Park



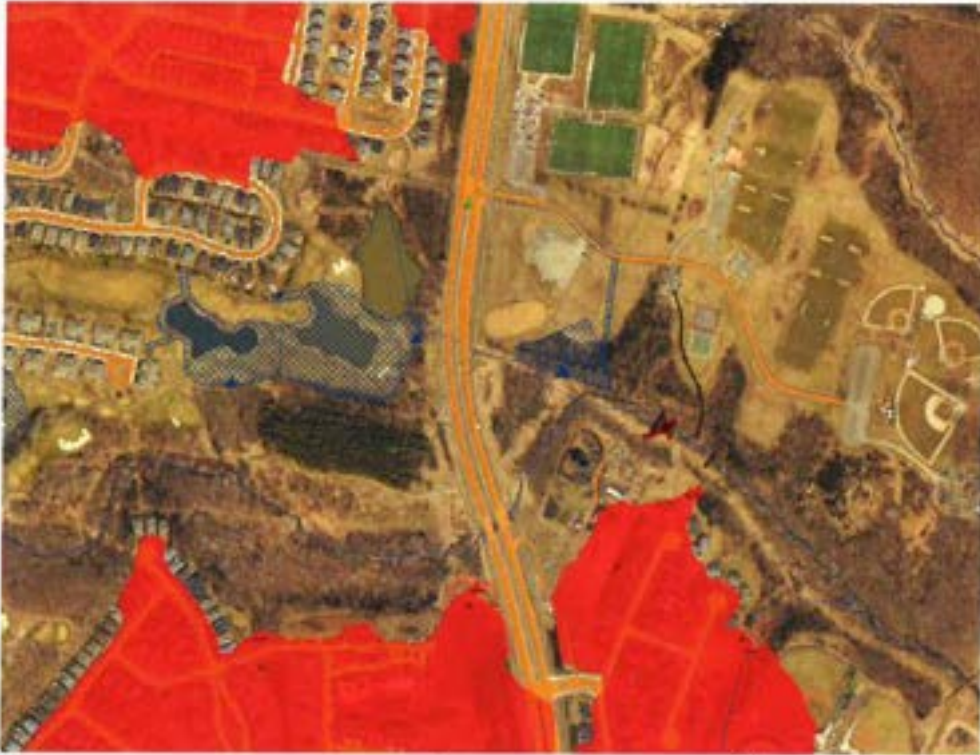
Quality of upstream MS-4 outfalls: No quality upstream outfalls [0]
Upstream land uses: Residential, some Commercial [2]
Opportunity to reduce floatables sources: _____ []
Access and feasibility: _____ []
Size of contributing drainage area(s): Large >10ac [1]

Notes:

No MS-4 outfalls eliminates this site from the floatables monitoring program.

Site Score: 0

Site 2: Catharpin Creek, James Long Park



Quality of upstream MS-4 outfalls: Mostly Nonpoint, One MS-4 outfall (1)

Upstream land uses: Residential, Large lot, Sports Complex (2)

Opportunity to reduce floatables sources: Not Much trash present (1)

Access and feasibility: Very easy access, ~~limited~~ Easy Mobility, lot # 5

Size of contributing drainage area(s): Small-Med (1)

Notes:

Access easily available from library parking lot. Site is degraded by
lack of floatable input, Not many MS-4 outfalls nearby, Little Nonpoint
Sources. Site good for monitoring, Bad for trend analysis

Site Score: 2.6

Site 3: Dawkins Branch, Victory Elementary School



Quality of upstream MS-4 outfalls:	<u>2 quality outfalls</u>	<u>[3]</u>
Upstream land uses:	<u>Residential, Schools, Roadway</u>	<u>[3]</u>
Opportunity to reduce floatables sources:	<u>Some floatables, limited but excessive sources</u>	<u>[4]</u>
Access and feasibility:	<u>Potential access across, lot access good</u>	<u>[5]</u>
Size of contributing drainage area(s):	<u>Med. large</u>	<u>[3]</u>

Notes:

Good open area for monitoring. Outfalls can be isolated to single residential area. Met many floatables present after site inspection occurred

Site Score: 3.4

Site 4: Dewey's Creek, Wayside Drive



Quality of upstream MS-4 outfalls:	One sanitary outfall,	[3]
Upstream land uses:	Residential, Commercial, Roadway	[4]
Opportunity to reduce floatables sources:	Large amount of trash	[3] ^{Trash Source from Stormwater}
Access and feasibility:	Available parking, easy access	[3]
Size of contributing drainage area(s):	Large	[3]

Notes:

Stream will undergo Restoration project in coming years. May complete Monitoring efforts [fall 2016]. Could be good pilot site

Site Score: ~~4.0~~ 3.2

Site 5: Hooes Run, Castile Court



Quality of upstream MS-4 outfalls:	<u>2-3 quality outfalls</u>	[3]
Upstream land uses:	<u>Residential,</u>	[2]
Opportunity to reduce floatables sources:	<u>good amount of trash identifiable sources</u>	[4]
Access and feasibility:	<u>Neighborhood w/ little parking, hill difficult</u>	[2]
Size of contributing drainage area(s):	<u>Medium</u>	[2]

Notes:

good opportunity to reduce floatables, Access may be difficult, Steep Slopes
Down to Stream and Stream has high steep banks.

Site Score: 2.6

Site 6: Hooes Run, Springwood Drive



Quality of upstream MS-4 outfalls: 3 quality outfalls [3]
Upstream land uses: Residential [2]
Opportunity to reduce floatables sources: little to no trash [2]
Access and feasibility: hilly area to descend, path helps access [3]
Size of contributing drainage area(s): med-large [4]

Notes:

larger stream, access good, but roads may vary according to
where along road sampling occurs. very little trash in stream.

Site Score: 7.6

Site 7: Neabsco Creek, Andrew Leitch Park



Quality of upstream MS-4 outfalls: 2 quality outfalls [2]
Upstream land uses: Residential small lot [3]
Opportunity to reduce floatables sources: Low numbers of floatables [4]
Access and feasibility: good access, too few inputs good isolated inputs [10] [5]
Size of contributing drainage area(s): Small - Mid [4]

Notes:

Many potential sampling sites, but most trash found in stream access is good. Stream size is good. easy simple area to reduce floatables.

Site Score: 3.6

Site 8: Neabsco Creek, Cloverdale Park



Quality of upstream MS-4 outfalls: 2-3 quality [2]
Upstream land uses: Residential [2]
Opportunity to reduce floatables sources: would be difficult to ID sources [2] *little amount of trash*
Access and feasibility: big way from parking, wide deep channel [2]
Size of contributing drainage area(s): Mid-Large [3]

Notes:

wide stream makes it difficult for monitoring efforts.

Site Score: 2.4

Site 9: Powells Creek, Monclair



Quality of upstream MS-4 outfalls: 1-2 quality outfalls [2]

Upstream land uses: Residential [2]

Opportunity to reduce floatables sources: ~~Some trash, difficult to~~ [2]

Access and feasibility: ~~large distance from parking, access through lot with trees, bridge down~~ [4]

Size of contributing drainage area(s): Small - not [4]

Identifiably sources (3)
Some trash easy access

Notes:

Trash present as part of Prior Stream Restoration project which must be removed from analysis. wide but shallow stream bed receives high flows.

Site Score: 3.0

Site 10:



Quality of upstream MS-4 outfalls: <u>Many upstream outfalls</u>	[4]
Upstream land uses: <u>Commercial/Residential</u>	[4]
Opportunity to reduce floatables sources: <u>Some</u>	[3]
Access and feasibility: <u>Fence impedes Access, utility before stream</u>	[3]
Size of contributing drainage area(s): <u>Small-med</u>	[4]

Notes:

No current sampling site. Inaccessible to private property
Mostly Residential, with access to BML, but site can be located before fence off area
leaves identifiable input drainage areas. floatables are few, but have potential for more.

Site Score: 3.6

Site 11: Flat Branch

2



Quality of upstream MS-4 outfalls:	<u>Many</u>	(4)
Upstream land uses:	<u>Commercial/Residential</u>	(4)
Opportunity to reduce floatables sources:	<u>Sufficient floatables</u>	(4)
Access and feasibility:	<u>Ingress/Egress through private property</u>	(3) (Local access good)
Size of contributing drainage area(s):	<u>Large</u>	(2)

Notes:

No current sampling site. Ingress/Egress through private property. Sufficient floatables exist, but may not be attributed to MS-4 outfalls. Transported from upstream

Site Score: 3.4

Site 12:



Quality of upstream MS-4 outfalls: Many (4)
Upstream land uses: Commercial/Residential (4)
Opportunity to reduce floatables sources: Good amount of floatables (4)
Access and feasibility: Small stream, easy access from Roadway (3)
Size of contributing drainage area(s): Very Large (1)

Notes:

No current sampling site. Small stream with good floatable #s. easy access
May be able to discern source of floatables for possible commercial sources

Site Score: 3.2

APPENDIX B – Field Inspection Forms

Forms will be added to this section upon completion

Appendix 4 – Structural and Source Controls

Appendix III – Administrative and Programmatic

FY20 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

FY20 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	Interim Approved	Coastal Plain	95.25	86.36	19,215.10	28%	277.11	32.85	27,422.95	68.35	61.97	13,788.21
99	Dewey's Creek Reach 2	Construction	2019	38.56572	-77.30986	4,865	Interim Approved	Coastal Plain	364.875	330.82	73,607.45	29%	334.00	38.01	31,377.59	259.17	292.81	52,283.42

FY20 Report - SWM Retrofits: Stormwater Facility Retrofits Beginning July 1, 2009

WMB Number	Project Name	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

**1st Permit Cycle
Bay TMDL
Reduction Calculation Worksheet**

SWM Facility #424 Wet Pond, L1

1 Determine existing published efficiency

BMP Type	Source	TN	TP	TSS
Dry Detention Pond	CBP	5%	10%	10%

2 Apply downward modification to BMP Efficiency

Facility Name	BMP Type	Lat	Long	Modification Type	Downward Modification Applied
SWM Facility #424	Dry Detention Pond	38.57761	-77.30891	No sediment forebay No micropool	-10% -10%
Total					-20%

3 Calculate modified existing efficiency

		TN	TP	TSS
Published Efficiency	Step 1	5%	10%	10%
Efficiency Modification	Step 2	-20%	-20%	-20%
Modified Efficiency		4%	8%	8%

4 Determine efficiency of proposed BMP Type

Source	BMP Type	TN	TP	TSS
BMP Clearinghouse	Wet Pond, L1	25%	50%	60%

Runoff storage (acre-feet)
Impervious acres
Runoff depth #DIV/0!

Retrofit Equation Results
TN #DIV/0!
TP #DIV/0!
TSS #DIV/0!

5 Calculate Incremental Removal Rate

		TN	TP	TSS	
Removal Rate	Wet Pond, L1	25%	50%	60%	BMP Clearinghouse
Modified existing efficiency	Step 3	4%	8%	8%	
Incremental Removal Rate		21%	42%	52%	

6 Calculate Load Reduction

6a Characterize the Drainage Area

	Urban Impervious Acres	Pervious Acres	Forested Acres	Total
PWC Regulated Land	20.66	32.51	11.04	64.21
Other Regulated Land	7.00	2.55	0.02	9.57
Unregulated Land	11.35	6.82	0.05	18.22
	39.01	41.88	11.11	92.01

6b Account for Total Baseline Reductions on Unregulated Land

	POC	Required 5% Load Reductions	Baseline Loading Rate (*20)	Acres	Baseline Reduction
Unregulated Impervious	TN	0.07587000	1.51740000	11.35	17.22
Unregulated Pervious	TN	0.03021000	0.60420000	6.82	4.12
Unregulated Impervious	TP	0.01296000	0.25920000	11.35	2.94
Unregulated Pervious	TP	0.00148625	0.02972500	6.82	0.20
Unregulated Impervious	TSS	11.71320000	234.26400000	11.35	2,658.38
Unregulated Pervious	TSS	0.76912500	15.38250000	6.82	104.94

6c Calculate Total Load Reduction

Land Use	Pollutant	2009 EOS Loading Rate (lbs/acre/yr)	DA	Load	Efficiency	Initial Reduction	Baseline	Total Reduction	Sub-total/POC
Urban Impervious	Nitrogen	16.86	39.01	657.78	21%	138.13	17.22	120.91	
Urban Pervious	Nitrogen	10.07	41.88	421.77	21%	88.57	4.12	84.45	217.71
Forest	Nitrogen	5.29	11.11	58.79	21%	12.35	0.00	12.35	
Urban Impervious	Phosphorus	1.62	39.01	63.20	42%	26.55	2.94	23.60	
Urban Pervious	Phosphorus	0.41	41.88	17.17	42%	7.21	0.20	7.01	31.22
Forest	Phosphorus	0.13	11.11	1.44	42%	0.61	0.00	0.61	
Urban Impervious	Total Suspended Solids	1,171.32	39.01	45,698.12	52%	23,763.02	2,658.38	21,104.64	
Urban Pervious	Total Suspended Solids	175.80	41.88	7,363.26	52%	3,828.89	104.94	3,723.95	25,290.37
Forest	Total Suspended Solids	79.91	11.11	888.03	52%	461.78	0.00	461.78	

7 Reduction Summary Table

Project Name	BMP Type	Lat	Long	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
SWM Facility #424	Wet Pond, L1	38.57761	-77.30891	217.71	31.22	25,290.37



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

June 28, 2017

Christopher E. Martino
County Executive
County of Prince William
1 Complex Court
Prince William, VA 22192

Transmitted electronically to (CEmartino@pwcgov.org)

RE: Virginia Pollutant Discharge Elimination System (VPDES) MS4 Permit
VA0088595, County of Prince William, Chesapeake Bay TMDL Action Plan
Approval

Dear Mr. Martino:

The Department of Environmental Quality (DEQ) has reviewed the Chesapeake Bay TMDL Action Plan for received on February 21, 2017 in accordance Part I.D.1 of the MS4 Permit. Additional information was received March 13, 2017, March 14, 2017 and May 16, 2017.

As submitted, the action plan will result in the following annual reduction of pollutants of concern:

Pollutant of Concern	Annual Load Reduction (lb/yr)	Percentage of L2 Reduction Achieved After Implementation
Total Nitrogen	6706.58	33.5%
Total Phosphorus	1370.40	62.0%
Total Suspended Solids	893286.63	49.4%

The Chesapeake Bay TMDL Action Plan is hereby approved and is an enforceable part of the MS4 Program Plan.

Please note any modifications to the Chesapeake Bay TMDL Action Plan shall be made in accordance with Part I.A.7 of the MS4 Permit.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty (30) days from the date you received this decision within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Virginia Department of Environmental Quality.

Please contact Jeff Selengut at (804) 698-4265 or at Jeffrey.selengut@deq.virginia.gov if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Allan Brockenbrough II". The signature is written in a cursive style with a double underline at the end.

Allan Brockenbrough II, P.E.
Manager, Office of VPDES Permits

Copies: File
Mark Aveni, Prince William County (maveni@pwcgov.org)



COUNTY OF PRINCE WILLIAM

5 County Complex Ct., Suite 260
Prince William, Virginia 22192-5308
(703) 792-6820 Fax: (703) 792-6828

Thomas Bruun
Director

Department of
Public Works



A Nationally Accredited
Public Works Agency

June 29, 2018

Department of Environmental Quality
Northern Regional Office
ATTN: Anna Tuthill
13901 Crown Court
Woodbridge, VA 22193

RE: Prince William County MS4 Permit No. VA0088595 Review of Local TMDL
Action Plans (Bacteria, Sediment, PCBs) – Response to Comments

Dear Ms. Tuthill,

Prince William County (PWC) is submitting the following information in response to your comments on PWC's Local TMDL Action Plans, received May 4th, 2018. Please refer to our comment responses below as well as the revised Action Plans attached to this letter.

- 1) There are currently three streams in Prince William County (PWC) associated with Bacteria TMDLs (Powells Creek, Quantico Creek, and the North Branch of Chopawamsic Creek). PWC, Prince William County Public Schools, and the VDOT MS4s share aggregated E.coli loads for Powells Creek and Quantico Creek. PWC has been assigned the entire E.coli load for the North Branch of Chopawamsic Creek. However, it appears that the entire North Branch of Chopawamsic Creek watershed may be within the Quantico Marine Corps Base and the boundaries of their permitted MS4 area (VAR040069). Based upon this information, staff will continue to review the TMDL to identify responsibility for the WLA developed for the North Branch of Chopawamsic Creek and will provide updated comments to the County should this review draw a different conclusion than that identified above.*

To clarify, there are eight streams associated with the four bacteria TMDLs assigned to Prince William County as listed in Table 2.A in our Action Plan. There are the three streams identified in the bacteria TMDL for tributaries to the Potomac river (Powells Creek, Quantico Creek, and the North Branch of Chopawamsic Creek). We concur with County's limited role within the Chopawamsic Creek watershed and will address any updated comments received from DEQ.

- 2) *Street sweeping is addressed in the PWC MS4 Program Plan under Housekeeping, and pet waste stations are present throughout the County, particularly in the dog parks. Staff recommends these practices be discussed and incorporated into the Bacteria TMDL Action Plan.*

The county is currently developing SOPs related to street sweeping. However, the sweeping will not be used for BMP credit and therefore will not be included in the Action Plan.

There are privately maintained pet waste stations and dog parks located throughout the County. The County does not currently maintain any dog parks or pet waste stations. As stated in the revised attached Action Plan, we will perform an initial assessment of waste deposits to determine the need to install signage or pet waste station(s).

The County continues to distribute brochures on proper collection and disposal of pet wastes to the sites listed in Table 2.F as part of a public outreach event.

- 3) *Clarify the procedure for the review of waste deposits on county-owned or operated properties. Please state the method in which the measure of effectiveness of a property being a significant source of bacteria is determined.*

Clarification on this procedure has been updated in the Bacteria TMDL Action Plan under Section 2.5, and is summarized below. In addition, the County will distribute pet waste brochures to the private facilities found in Table 2.F.

- The County will assess portions of the trail system operated by the Department of Parks and Recreation. This assessment will include evaluating their proximity to residential neighborhoods, performing a field survey for prevalent waste deposit problems, and use staff knowledge of trail systems. If the County believes a waste deposit problem area has been discovered, installing signage will be considered to remind pet owners of the County's pet waste clean-up laws and penalties associated with non-compliance. If the County finds the installed signage to be ineffective, pet waste stations will be considered for installation. Continued monitoring will reoccur on an as needed basis to determine effectiveness of installed preventative measures.

- 4) *Establish a monitoring plan and/or use existing DEQ bacteria monitoring data to determine if measurable bacteria load reduction goals are being met.*

The County will review DEQ's bacteria monitoring data and trend analysis to determine if load reduction goals are being met.

- 5) *To assist with the implementation of this TMDL (Sediment), public education efforts that specifically target controlling discharge of sediments to local waterways should be enhanced.*

Section 2.5 of the Benthic TMDL Action Plan identifies the existing public education and outreach programs. These programs include components that specifically target controlling the discharge of sediments into the local waterways. Section 2.7 has been updated with a list of topics that specifically target controlling discharge of sediments to local waterways. They include:

- Urban nutrient management
- Homeowner stormwater and soil BMPs (use of native plants, mulching, rooftop disconnection, bio-retention etc.)
- Management of effective riparian buffers
- Citizen reporting of illicit discharges
- Citizen reporting of erosion and sediment runoff
- Preservation of Resource Protection Areas
- Storm drain labelling to promote awareness of stormwater discharges
- Erosion and sediment control as well as stormwater management information associated with Site Development

- 6) *To assist with the implementation of this TMDL (PCB), a standard operating procedure for disposal of materials from renovation of structures constructed prior to 1979 should be developed.*

The County will prepare an SOP that addresses the required controls to be implemented during the demolition of county-facilities that minimize the exposure of potential PCB materials to stormwater runoff. The SOP shall apply to any structure with at least 10,000 square feet of floor space and built or renovated prior to January 1, 1980. Section 2.5.2 and 2.8 of the PCB TMDL Action Plan has been revised to include the development of this SOP.

If you have any questions, please contact the MS-4 Coordinator of the Watershed Management Branch, Mr. David Ungar at (703) 792-7104 or email DUngar@pwcgov.org.

Sincerely,

Marc T. Aveni
Environmental Services Division Chief

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 the infrastructure needed for employees to serve our community.



Community Development Expenditure Budget:
\$170,445,457

Expenditure Budget:
\$81,514,565

\$

47.8% of Community Development

Programs:

- Director's Office: \$789,252
- Stormwater Infrastructure Management: \$4,056,120
- Site Development: \$3,892,739
- Watershed Improvement: \$5,232,116
- Fleet Management: \$12,237,289
- Facilities Construction Management: \$125,000
- Sign Shop: \$236,545
- Small Project Construction: \$1,988,454
- Mosquito & Forest Pest Management: \$1,628,540
- Solid Waste: \$21,159,085
- Buildings & Grounds: \$12,036,096
- Property Management: \$13,532,959
- Neighborhood Services: \$4,235,082
- Service Districts: \$365,287

Mandates

Public Works provides mandated services for public records management and preservation, solid waste management and recycling, and maintenance of 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.

State Code: [42.1-76 through 42.1-91](#) (Virginia Public Records Act), [9VAC20-130](#) (Solid Waste Management and Recycling), [33.2-328](#) (Street Name Signs), [28.2-1303](#) (Local Wetlands Board), [62.1-44.15:74](#) (Chesapeake Bay Preservation Areas)

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)

Public Works



Expenditure and Revenue Summary

Expenditure by Program	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted	% Change Budget FY19/ Budget FY20
Director's Office	\$1,326,506	\$1,402,381	\$1,396,542	\$771,566	\$789,252	2.29%
Historic Preservation	\$1,352,263	\$1,429,156	\$1,315,257	\$1,476,229	\$0	(100.00%)
Stormwater Infrastructure Management	\$2,798,956	\$3,211,587	\$3,546,384	\$3,762,204	\$4,056,120	7.81%
Site Development	\$3,129,368	\$3,218,681	\$3,374,458	\$3,664,356	\$3,892,739	6.23%
Watershed Improvement	\$4,326,518	\$4,610,526	\$7,365,168	\$5,023,871	\$5,232,116	4.15%
Fleet Management	\$9,509,587	\$10,328,019	\$9,263,362	\$10,700,295	\$12,237,289	14.36%
Facilities Construction Management	(\$14,110)	\$172,172	(\$30,906)	\$125,000	\$125,000	0.00%
Sign Shop	\$245,535	\$160,318	\$244,324	\$224,436	\$236,545	5.40%
Small Project Construction	\$2,713,579	\$2,509,070	\$2,016,298	\$2,089,249	\$1,988,454	(4.82%)
Mosquito & Forest Pest Mgmt	\$1,431,993	\$1,448,821	\$1,472,725	\$1,855,340	\$1,628,540	(12.22%)
Solid Waste	\$16,579,543	\$16,374,694	\$15,397,112	\$19,923,809	\$21,159,085	6.20%
Buildings & Grounds	\$10,463,388	\$11,582,695	\$11,588,120	\$11,846,225	\$12,036,096	1.60%
Property Management	\$11,096,827	\$12,391,406	\$13,318,745	\$13,495,044	\$13,532,959	0.28%
Neighborhood Services	\$3,783,055	\$3,685,299	\$3,771,062	\$4,318,476	\$4,235,082	(1.93%)
Service Districts	\$226,516	\$459,435	\$321,687	\$365,311	\$365,287	(0.01%)
Total Expenditures	\$68,969,521	\$72,984,262	\$74,360,337	\$79,641,412	\$81,514,565	2.35%

Expenditure by Classification

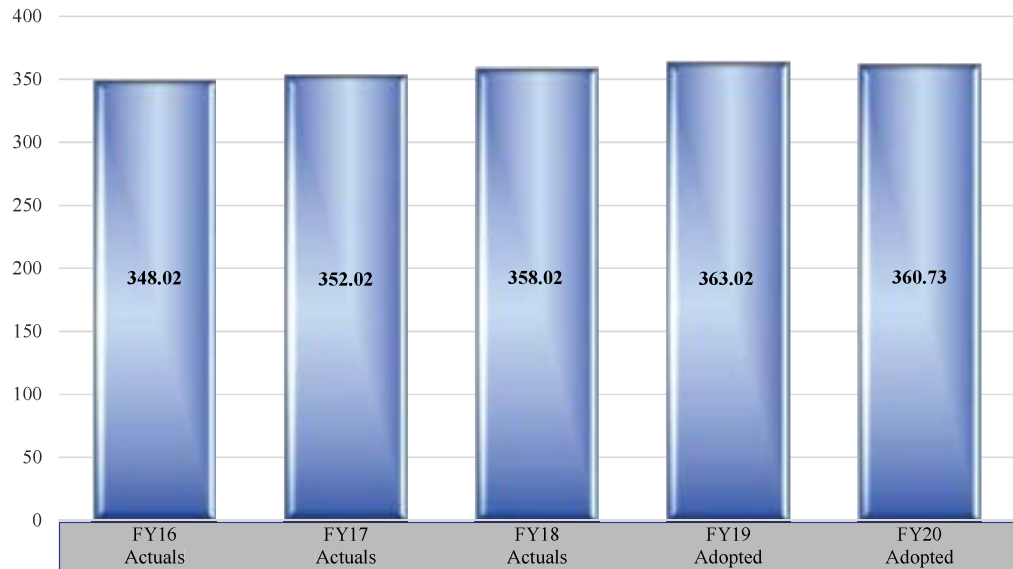
Salaries and Benefits	\$27,216,854	\$27,101,696	\$27,745,780	\$29,332,685	\$29,625,855	1.00%
Contractual Services	\$11,607,479	\$13,913,982	\$12,925,241	\$13,571,292	\$13,575,799	0.03%
Internal Services	\$3,277,379	\$3,561,507	\$3,907,809	\$2,882,271	\$2,992,383	3.82%
Purchase of Goods & Services	\$11,038,682	\$9,162,176	\$11,945,348	\$14,647,619	\$15,438,604	5.40%
Capital Outlay	\$2,144,190	\$3,661,048	\$1,902,712	\$4,060,299	\$4,661,514	14.81%
Leases & Rentals	\$6,513,416	\$7,032,916	\$7,357,523	\$7,968,156	\$7,569,618	(5.00%)
Reserves & Contingencies	(\$1,407,876)	(\$1,027,699)	(\$2,736,857)	(\$2,823,507)	(\$2,766,957)	(2.00%)
Amortization	\$1,483,825	\$1,950,797	\$656,594	\$2,085,793	\$2,085,793	0.00%
Depreciation	\$1,404,086	\$2,178,910	\$1,492,152	\$2,098,713	\$2,158,713	2.86%
Transfers Out	\$5,691,485	\$5,448,929	\$9,164,036	\$5,818,091	\$6,173,242	6.10%
Total Expenditures	\$68,969,521	\$72,984,262	\$74,360,337	\$79,641,412	\$81,514,565	2.35%

Funding Sources

Revenue from Federal Government	\$330,000	\$0	\$0	\$330,000	\$0	(100.00%)
Permits & Fees	\$2,300,354	\$2,554,061	\$2,479,062	\$2,407,996	\$2,407,996	0.00%
Fines & Forfeitures	\$9,015	\$6,939	\$2,004	\$0	\$0	0.00%
Use of Money & Property	\$1,978,405	\$1,237,373	\$1,306,429	\$2,100,600	\$2,076,000	(1.17%)
Miscellaneous Revenue	\$516,140	\$394,643	\$744,526	\$492,932	\$489,932	(0.61%)
Non-Revenue Receipts	\$423,236	\$306,241	\$277,087	\$173,700	\$243,700	40.30%
General Property Taxes	\$1,710,112	\$1,767,398	\$1,772,646	\$1,794,771	\$1,870,287	4.21%
Charges for Services	\$38,453,850	\$37,894,772	\$38,073,282	\$36,819,833	\$38,307,145	4.04%
Revenue from Commonwealth	\$517,762	\$548,132	\$666,006	\$552,728	\$157,424	(71.52%)
Transfers In	\$2,101,448	\$2,220,690	\$1,827,770	\$1,677,559	\$985,270	(41.27%)
Total Designated Funding Sources	\$48,340,322	\$46,930,250	\$47,148,813	\$46,350,119	\$46,537,754	0.40%
Use/(Contribution) of Fund Balance	(\$7,386,786)	(\$4,120,859)	(\$2,175,022)	\$1,628,677	\$3,499,558	
Net General Tax Support	\$28,015,985	\$30,174,871	\$29,386,546	\$31,662,616	\$31,477,253	(0.59%)
Net General Tax Support	40.62%	41.34%	39.52%	39.76%	38.62%	

Public Works

Staff History by Program



	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Director's Office	5.77	5.77	5.27	6.27	6.27
Historic Preservation	14.55	14.55	14.55	14.55	0.00
Stormwater Infrastructure Management	23.75	25.15	25.16	26.44	27.01
Site Development	27.70	27.79	27.78	27.50	29.23
Watershed Improvement	11.27	11.28	11.22	11.22	10.92
Fleet Management	35.15	35.15	35.15	35.15	44.41
Facilities Construction Management	9.50	9.50	10.00	10.00	10.00
Sign Shop	4.03	4.12	4.16	4.16	4.16
Small Project Construction	14.98	14.39	14.43	14.43	12.43
Mosquito & Forest Pest Management	14.02	14.02	14.00	14.00	14.00
Solid Waste	60.72	60.72	60.72	62.72	65.72
Buildings & Grounds	73.47	76.47	80.47	80.47	81.47
Property Management	16.00	16.00	18.00	19.00	19.00
Neighborhood Services	37.11	37.11	37.11	37.11	36.11
Service Districts*	0.00	0.00	0.00	0.00	0.00
Full-Time Equivalent (FTE) Total	348.02	352.02	358.02	363.02	360.73

* Bull Run and Lake Jackson

Future Outlook

Building and Facilities Program Positive Impacts – In FY18, the County's Buildings & Facilities Program began. This visionary program approved by the Board of County Supervisors (BOCS) has allowed the Public Works and the Parks, Recreation & Tourism Departments (DPRT) to complete cyclic replacement of large facility and campus components. In the first year, 41 projects were initiated or completed at a cost of \$7.5 million. These projects included swimming pool system improvements, heating, ventilation, and air conditioning replacements, roof replacements, Americans with Disabilities Act (ADA) compliance, parking lot repairs, and facility safety improvements. These projects will mitigate catastrophic component failures and the interruptions associated with them. Furthermore, these projects have enhanced the recreational amenities enjoyed at multiple parks and historic sites. The Building & Facilities Program is a proactive program that allows the Department of Public Works and the DPRT to better serve the citizens of Prince William County (PWC).

Public Works

Space and Infrastructure Requirements Challenges – There are ongoing challenges to keeping up with increasing and aging space and infrastructure around the County, often added without adequate funding for staffing, maintenance, security, and technology updates. In addition, Fleet’s facility cannot be expanded to support the annually increasing public safety fleet, so another facility that is sized and configured to accommodate the additional equipment and mechanics will soon be needed.

Construction Costs – The County and construction industry continue to experience increases in construction costs. Multiple factors have contributed to the rise in costs. Skilled labor availability has been decreasing. Material costs are still rising. Furthermore, recent large-scale natural disasters have increased the demand for construction materials like wood, concrete and steel. When combining these factors, it makes it difficult to anticipate and budget future County capital projects (large and small).

Solid Waste Issues – The development of the Phase II and Phase III liner systems has been accelerated, and construction costs are rising. Therefore, the Phase IV landfill area needs to happen sooner than originally anticipated. In addition, recycling markets have greatly decreased, which increases the cost to process recyclable materials. The value decline in recycling materials makes it difficult for haulers to find markets for collections. This market trend will increase the cost to recycle and will result in the reduction of the overall recycling rates in the County. As a result of the above considerations, a Solid Waste Fee increase will be needed in the near future.

State and Local Mandates – Expectations and requirements from mandates in the areas of street sign maintenance, water quality improvement, dam safety, and solid waste continue to expand. Many of these require expensive projects and monitoring to ensure the County is adequately performing and achieving desired results. Also, in an effort to extend the life of the landfill, changes to Chapter 22 of the code, making separation of yard waste mandatory, could be considered by the County. While this change would extend the life of the landfill, it would to some degree likely increase prices refuse haulers charge residential customers.

General Overview

A. Increase 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.

- In FY20, the indirect cost transfer amount reimbursing the general fund for Solid Waste increases by \$262,051 from \$1,109,384 in FY19 to \$1,371,435 in FY20.
- In FY20, the indirect cost transfer amount reimbursing the general fund for Mosquito & Forest Pest Management increases by \$44,692 from \$214,138 in FY19 to \$258,830 in FY20.
- In FY20, the indirect cost transfer amount reimbursing the general fund for Stormwater Infrastructure Management increases by \$217,498 from \$925,232 in FY19 to \$1,142,730 in FY20.

B. Base Revenue Adjustments – The FY2020 Budget includes the following base budget revenue adjustments:

- **Fleet** – Increase the Fleet base revenue budget, sales of vehicles, by \$70,000. The general fund impact is a \$70,000 reduction in general fund tax support.
- **Building & Grounds** – Increase the Building & Grounds base revenue budget by \$35,000. This aligns the revenue budget with historical trends. The general fund impact is a \$35,000 reduction in general fund tax support.
- **Property Management** – Decrease the Property Management base revenue budget in the general grants fund by \$330,000. These funds are no longer received by Public Works.

Public Works

- C. **Mosquito & Forest Pest Management** – Based on the Principles of Sound Financial Management, the Mosquito & Forest Pest Management budget is adjusted to achieve a structurally balanced budget whereby ongoing expenses are funded from current year revenue, based on the County’s revenue forecast. Budgeted revenue increases by \$75,500 and budgeted expenditures decrease by \$258,000. There is no impact to the general fund.
- D. **Historic Preservation Program transferred to Parks, Recreation, & Tourism** – The Historic Preservation program moved from the Department of Public Works to the DPRT. The reorganization aligns Historic Preservation’s mission with the tourism component of DPRT’s overall mission. This results in a budget shift of approximately \$1.56M and 14.55 FTEs.
- E. **Transfer Fleet & Equipment Repair Activity from Parks, Recreation, & Tourism to Public Works** – The Fleet and Equipment Repair activity, an activity in the Operations program of the DPRT agency is merging into the Fleet program under Public Works. This includes a budget shift of approximately \$1.4 million and 9.26 FTEs. This merger is a result of a September 2018 study conducted by a consultant. Benefits to the County include overall reductions in duplicated efforts for fleet maintenance; a unified approach to fleet management that results in a holistic view of fleet efficiency and cost reduction; standardization of processes, tools, and equipment; economies of scale for procurements; increased bench strength through sharing of expertise, and the ability to implement change throughout the fleet organization.
- F. **Solid Waste** – The FY2020 Budget for the Solid Waste enterprise fund includes an estimated pension expense of \$147,000. Assumptions underlying this projection include discount rates, mortality tables, inflation, healthcare trends, and projected payroll. Budgeting Other Post-Employment Benefits liabilities is a requirement of the Governmental Accounting Standards Board (GASB) for enterprise funds. There is no impact to the general fund.
- G. **Property Management** – Since 2008, PWC has leased 13,839 square feet of office space at 4001 Prince William Parkway. The Commonwealth of Virginia Department of General Services subsequently subleased the space from PWC. This lease expired in FY19 and was not renewed. Therefore, both rental income and lease expense were reduced by \$395,304 in the FY2020 Budget.
- H. **Position Shift from Neighborhood Services to Buildings & Grounds** – An Administrative Support Coordinator I was reclassified to a Building Operations Technician (BOT) and shifted from the Neighborhood Services program to the Buildings & Grounds program. Due to lack of labor resources, security maintenance operations became reactive in nature. The addition of the BOT works towards the development and implementation of a preventative maintenance program for the physical components of the security system, resulting in less reliance on contractors. This shifts approximately \$68,000 between programs.

Budget Initiatives

A. Budget Initiatives

1. Lease Escalation and Utility Increase Costs – Property Management

Expenditure	\$365,000	General Fund Impact	\$365,000
Revenue	\$0	FTE Positions	0.00

a. **Description** – This initiative provides funding for \$280,000 in contractual lease escalation costs and \$85,000 in increases of utility costs.

b. **Service Level Impacts** – Existing service levels are maintained.

Public Works

2. Increase Landscaping Budget – Neighborhood Services

Expenditure	\$84,525	General Fund Impact	\$84,525
Revenue	\$0	FTE Positions	0.00

- a. **Description** – This initiative funds maintenance of new landscaping sites/improvements that were added during the FY2019 budget process. These sites include landscaping at Dale Boulevard and Route 1.
- b. **Service Level Impacts** – New landscaping sites will be maintained for survival. Additionally, maintenance at the corner of Dale Boulevard and Route 1 will include mowing of new grass, weeding, mulching, pruning, watering, and trash removal. This will ensure survival of the plantings.

3. Replace Track Gradall ES3238 – Small Project Construction

Expenditure	\$250,000	General Fund Impact	\$0
Revenue	\$0	FTE Positions	0.00

- a. **Description** – This initiative provides funding to replace the aged Track Gradall ES3238, at a cost of \$250,000. This initiative is funded from the construction crew internal service fund. There is no general fund impact.
- b. **Service Level Impacts** – The service level impacts are the following:

- **Community improvement projects completed within 10% of estimated cost**

FY20 w/o Addition	50%
FY20 w/ Addition	95%

4. Increase Internal Service Fund Construction Services Budget – Stormwater Infrastructure Management

Expenditure	\$150,000	General Fund Impact	\$0
Revenue	\$0	FTE Positions	0.00

- a. **Description** – This initiative provides ongoing funding for increased construction crew work performed on major drainage maintenance projects to address the deterioration of the aging stormwater infrastructure in the Environmental Services Division. It provides the ability to timely respond to citizen complaints, and to acknowledge the quantity of required work that has been and is continuing to increase. The initiative is funded by existing Stormwater Management Fee revenue in combination with funds from the Stormwater fund. There is no general fund impact.
- b. **Service Level Impacts** – The service level impacts are the following:
- **Number of major maintenance and/or drainage improvement projects completed by the Construction Crew**

FY20 w/o Addition	3
FY20 w/ Addition	8

Public Works

5. Watershed Study – Watershed Improvement

Expenditure	\$250,000	General Fund Impact	\$0
Revenue	\$0	FTE Positions	0.00

a. **Description** – A component of the County’s Municipal Separate Storm Sewer System (MS4) permit is to complete a watershed study/management plan every two years. This initiative allows for the completion of a watershed study that corresponds with the four small area plans being developed by the Planning office. The initiative is funded using the existing Stormwater Management Fee fund balance. There is no general fund impact.

b. **Service Level Impacts** – The service level impacts are the following:

- **Number of Watershed Studies/Management Plans completed**

FY20 w/o Addition	0
FY20 w/ Addition	1

6. Soil and Water Conservation District Funding – Watershed Improvement

Expenditure	\$42,736	General Fund Impact	\$0
Revenue	\$0	FTE Positions	0.00

a. **Description** – This initiative increases Public Works’ Soil and Water Conservation District funding. This funding supports two pilot programs/deliverables, and the increase will allow these programs to continue at existing service levels for the County’s MS4 permit. The initiative is funded using the existing Stormwater Management Fee revenue. There is no general fund impact.

b. **Service Level Impacts** – The service level impacts are the following:

- **Adopt-A-Stream pounds of trash collected**

FY20 w/o Addition	15,000
FY20 w/ Addition	25,000

- **Floatables monitoring program – quarterly monitoring (# of sites)**

FY20 w/o Addition	0
FY20 w/ Addition	15

- **Virginia Conservation Assistance Program (VCAP) program (# of Best Management Practices installed)**

FY20 w/o Addition	0
FY20 w/ Addition	2

7. Replace 1999 Jeep Cherokee ES1714 – Watershed Improvement

Expenditure	\$35,000	General Fund Impact	\$0
Use of Fund Balance (Stormwater Mgmt.)	\$35,000	FTE Positions	0.00

a. **Description** – This initiative provides one-time funding for the replacement of the 1999 Jeep Cherokee ES1714 and is funded using the existing Stormwater Management Fee fund balance. There is no general fund impact.

b. **Service Level Impacts** – Existing service levels are maintained.

Public Works

8. One-time Increase Equipment and Vehicle Budget – Solid Waste

Expenditure	\$900,000	General Fund Impact	\$0
Use of Fund Balance (Solid Waste)	\$900,000	FTE Positions	0.00

a. Description – The equipment being replaced includes \$50,000 for a 2001 fuel tank-diesel purchased in 2002, \$400,000 for a heavy equipment cat dozer (SW3575) that is used daily to process refuse and has reached the end of its life, and \$450,000 for a hydraulic excavator (SW2275) acquired in 2004. This initiative provides one-time funding for the replacement of solid waste equipment and vehicles and is funded using the Solid Waste Enterprise fund balance. There is no general fund impact.

b. Service Level Impacts – The service level impacts are the following:

▪ **Items Inspected by Virginia Department of Environmental Quality and in compliance with regulations**

FY20 w/o Addition | 85%

FY20 w/ Addition | 95%

▪ **Refuse processed**

FY20 w/o Addition | 420,000 tons

FY20 w/ Addition | 450,000 tons

▪ **Fleet maintenance costs**

FY20 w/o Addition | \$553,000

FY20 w/ Addition | \$533,335

9. One-Time Increase to Revise and Update 2004 Solid Waste Management Plan – Solid Waste

Expenditure	\$120,000	General Fund Impact	\$0
Use of Fund Balance (Solid Waste)	\$120,000	FTE Positions	0.00

a. Description – The current Solid Waste Plan was adopted in 2004. The development and upkeep of this plan is required by the Code of Virginia and Virginia Department of Environmental Quality regulations. Periodic reviews are required every five years, and any significant changes require a formal submission and approval process. The plan is a countywide comprehensive plan on the management of solid waste, including how recycling requirements will be met and how the system will be funded. The plan also includes performance goals, technology, and infrastructure used in the industry. Due to significant changes in market conditions, and new technologies available, a complete review, approval, and resubmission of the plan is needed. Additionally, the current Solid Waste Fee was adopted in 1999. This update could help plan the Solid Waste Fee for the next 10–20 years. This initiative provides one-time funding for the study and is funded using the existing Solid Waste Enterprise fund balance. There is no general fund impact.

b. Service Level Impacts – The service level impacts are the following:

▪ **Waste diverted from the Landfill (Division Goal)**

FY20 w/o Addition | 27%

FY20 w/ Addition | 35%

Public Works

10. Motor Equipment Operator II for Landfill Citizen Convenience Center – Solid Waste

Expenditure	\$114,661	General Fund Impact	\$0
Revenue	\$0	FTE Positions	2.00

a. Description – This initiative funds two Motor Equipment Operator II FTEs in Solid Waste. Citizens drop off refuse and recycling at the convenience center at the landfill, which is then hauled to the landfill workface and recycling centers. As a result of the closing of the recycling center at the landfill, materials are now hauled off site. This increases transportation and processing costs. Between FY14 and FY18, refuse tons have increased 16.4% from 29,250 to 34,046 respectively. Additional truck drivers, one for each shift, are needed to keep up with this increase in work load. This initiative is funded with Solid Waste Fee revenue. There is no general fund impact.

b. Service Level Impacts – The service level impacts are the following:

- **Amount recycled by County crews**
 - FY20 w/o Addition | 1,500 tons
 - FY20 w/ Addition | 1,700 tons
- **Refuse hauled from Citizen Center (Landfill)**
 - FY20 w/o Addition | 34,000 tons
 - FY20 w/ Addition | 36,000 tons

11. Increase Park-Out Refuse Service Budget – Solid Waste

Expenditure	\$95,000	General Fund Impact	\$0
Revenue	\$0	FTE Positions	0.00

a. Description – The County was awarded a new contract to provide weekly park-out refuse service at the west end of the county. This includes areas west of Woodbridge and Manassas such as Nokesville, Haymarket, and Gainesville. The County currently offers Park-Out service at two rural locations: Nokesville School in Nokesville and Evergreen Fire Department located off Route 15 west of Haymarket. The previous contract charged approximately \$82,000 per fiscal year. The new contract costs approximately \$175,000 per fiscal year. This increase in contract cost will require the County to reduce service by one-half (either eliminate a site or reduce service to every other week) if additional funds are not allocated. This initiative is funded by the existing Solid Waste Fee revenue. There is no general fund impact.

b. Service Level Impacts – The service level impacts are the following:

- **Number of citizens served at the Park-outs**
 - FY20 w/o Addition | 13,000
 - FY20 w/ Addition | 26,000
- **Number of park-out events per fiscal year**
 - FY20 w/o Addition | 52
 - FY20 w/ Addition | 104

Public Works

12. Motor Equipment Operator III for Balls Ford Road Compost Facility – Solid Waste

Expenditure	\$65,547	General Fund Impact	\$0
Revenue	\$0	FTE Positions	1.00

a. Description – This initiative funds one Motor Equipment Operator III for the Balls Ford Road Compost Facility. The Balls Ford Road Citizen Convenience Center is open seven days a week. Only one supervisor (a Crew Supervisor) is assigned to the site, leaving inadequate supervision two days per week. Citizen visits and refuse hauled from this center have increased 51% between FY14 and FY18, from 4,342 tons to 6,561 tons respectively. An additional supervisor/truck driver is needed to address workload increases and provide additional supervision at the site. This initiative is funded with Solid Waste Fee revenue. There is no general fund impact.

b. Service Level Impacts – The service level impacts are the following:

- **Refuse hauled from citizen center (Balls Ford Road)**
 - FY20 w/o Addition | 5,000 tons
 - FY20 w/ Addition | 7,000 tons

Program Summary

Director’s Office

Provide overall leadership and management oversight for all Public Works activities. Review all major policy issues, financial transactions, BOCS reports, and County Executive generated tracker reports, and interface with executive management and the citizens of PWC on complex issues within the department.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Key department program measures met	54%	58%	67%	60%	60%
Public Works DART	7.90	5.47	7.58	3.64	6.40

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Leadership & Management	\$1,327	\$1,402	\$1,397	\$772	\$789
BOCS agenda items	55	53	53	55	55

Stormwater Infrastructure Management

Ensure that the County's stormwater infrastructure follows environmental regulations, standards, and policies, including County standards, the Chesapeake Bay Total Maximum Daily Load (TMDL), and the County's MS4 permit. 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.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Drainage assistance requests responded to within five business days	99%	97%	100%	97%	97%

Public Works

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Stormwater Management Infrastructure Inspection	\$576	\$684	\$810	\$844	\$828
County-maintained facilities inspected and/or re-inspected	875	935	969	980	900
Privately-maintained facilities inspected and/or re-inspected	266	250	256	220	200
Stormwater Management Infrastructure Maintenance	\$2,223	\$2,527	\$2,737	\$2,918	\$3,228
Major maintenance cases completed/closed	277	254	460	230	350

Site Development

Review multiple levels of land development plans and inspection of 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	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 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)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Plan Review	\$1,513	\$1,596	\$1,780	\$1,798	\$1,995
Site development plan submissions reviewed	366	367	448	450	400
Lot grading lots reviewed	1,117	1,153	1,338	1,000	1,000
Site Inspections	\$1,616	\$1,623	\$1,595	\$1,867	\$1,898
Virginia Stormwater Management Program & erosion & sediment control inspections	17,364	18,346	17,049	20,000	19,000

Public Works

Watershed Improvement

Ensure that the water quality of streams within each of the County's watersheds is in compliance with environmental regulations, standards, and policies, including the Chesapeake Bay TMDL and the County's MS4 permit. The focus of this program is to address water quality issues associated with illicit pollution discharges into the storm drainage system, discharge of pollutants from industrial activities, sediment release associated with stream erosion, and 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	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Industrial or high risk inspections conducted	31	115	130	50	25
Linear feet of stream restorations completed	1,468	4,723	1,380	3,000	3,000

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Watershed Monitoring	\$3,897	\$4,219	\$6,792	\$4,579	\$4,744
Linear feet of stream assessments completed	56,800	66,200	63,260	60,000	60,000
Dry weather outfalls monitored and inspected	1,187	936	853	1,000	600
Watershed Improvements	\$430	\$392	\$573	\$445	\$489
Pounds of phosphorus reduction achieved	100	280	112	200	200

Fleet Management

Provide County vehicle maintenance and County vehicle replacement. Provide fuel, repairs, vehicle acquisition, equipment disposal, and maintenance services to the County's vehicles and equipment in an efficient and cost effective manner, and minimize downtime due to breakdowns or other unscheduled maintenance. Replace County vehicles at the optimum point in the vehicle life cycle, maximizing cost-effectiveness and vehicle safety and reliability.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Cost per mile - light duty public safety vehicles	\$0.27	\$0.24	\$0.24	\$0.25	\$0.24
Cost per mile - light duty non-public safety vehicles	\$0.33	\$0.38	\$0.26	\$0.35	\$0.27
Work orders that are scheduled maintenance*	55%	57%	60%	58%	65%
Availability of public safety light duty vehicles*	90%	91%	87%	94%	90%
Public Safety vehicles due or overdue for replacement*	10%	10%	10%	8%	10%

Public Works

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
County Vehicle Maintenance	\$7,071	\$7,149	\$7,799	\$8,068	\$9,579
Vehicles maintained that are under 10,000 lbs. gross vehicle weight	1,208	1,225	1,274	1,245	2,189
Heavy equipment maintained that are over 10,000 lbs. gross vehicle weight	229	231	256	250	261
Fleet work orders	7,094	6,956	7,009	7,515	8,015
County Vehicle Replacement	\$2,439	\$3,179	\$1,464	\$2,633	\$2,658
General fund vehicles purchased*	115	87	90	73	110

* Full year reporting was not captured correctly. Revisions to prior years' data are based on current reporting methodology.

Facilities Construction Management (FCM)

Support the Capital Improvement Program (CIP) by developing budgets and managing the design and construction of County facilities. The majority of expenditure costs in this activity are recovered from capital projects.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
FCM customers satisfied with overall project management	100%	93%	98%	90%	90%
CIP construction change order different from original contracted amount	5%	2%	3%	<8%	<8%

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
County Facility Construction	(\$14)	\$172	(\$31)	\$125	\$125
Total CIP projects	9	8	8	8	9
Total non-CIP projects	2	0	2	1	1

Sign Shop

Inspect, fabricate, install, and maintain all street name signs as mandated. 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	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Street signs completed within 10 days of request	-	60%	92%	65%	80%

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Street Name Signs	\$215	\$197	\$176	\$207	\$193
Streets requiring street name signs	9,696	9,826	9,826	9,775	9,912
Street name signs fabricated for maintenance	723	1,172	1,592	1,000	1,500
Signs and Graphics	\$30	(\$36)	\$68	\$18	\$43
Signs and graphics fabricated for revenue	11,686	17,199	8,806	12,500	8,000

Public Works

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	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Community improvement projects completed within 10% of estimated cost	97%	100%	100%	95%	95%

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Small Community Improvement Construction	\$2,714	\$2,509	\$2,016	\$2,089	\$1,988
Drainage infrastructure inspected (% of easement miles)	-	-	37%	25%	25%
Drainage infrastructure projects completed/closed	-	254	460	200	350
Responsive to project estimate requests within 30 days	-	-	-	90%	90%

Mosquito & Forest Pest Management

Survey, reduce, and control mosquitoes and certain forest pest populations. Program objectives include minimizing mosquito-transmitted disease 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, Sudden Oak Death, and Oak Splendour Beetle, and minimizing adverse environmental and human health impacts resulting from the treatment of these pests.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Mosquito traps processed within 48 hrs to detect West Nile & Zika virus	100%	100%	100%	98%	98%
High priority mosquito habitat applications	-	-	-	-	90%
Citizen site visit requests responded to within 24 hours	98%	93%	92%	95%	95%
Gypsy moth surveys conducted to determine if spraying is needed	-	1,069	1,047	1,050	1,050

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Mosquito/Forest Pest Monitoring	\$835	\$840	\$855	\$951	\$913
Larval mosquito habitat inspections	5,726	5,682	5,752	5,500	5,500
Reduction and Response	\$597	\$609	\$618	\$905	\$715
Mosquito larvicide applications	1,874	1,216	1,374	1,750	1,500
Community outreach events	-	44	48	40	40

Public Works

Solid Waste

Provide solid waste management services to all citizens, institutions, and businesses. Facilities and programs promote waste reduction and recycling, and efficiently receive and process all acceptable household and commercial wastes generated within the geographical boundaries, including the towns of Dumfries, Haymarket, Occoquan, and Quantico. Processing of the waste will meet or exceed all applicable federal, state, and local regulations.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Refuse recycled	34%	37%	35%	39%	32%
Tons of refuse processed	435,623	447,563	444,654	450,000	450,000

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Solid Waste Management & Administration	\$3,016	\$4,041	\$2,879	\$4,809	\$5,116
Non-residential accounts processed	4,153	4,249	4,356	4,300	4,400
Appeals completed within 30 days	100%	100%	>99%	>99%	-
Yard Waste Composting	\$2,590	\$2,025	\$2,437	\$3,582	\$3,634
Tons of County yard waste diverted from waste stream	28,132	21,747	24,688	29,000	26,000
Solid Waste Facilities Operation	\$10,305	\$9,585	\$9,341	\$8,399	\$9,183
Refuse trucks inspected	4,199	3,986	3,958	4,000	4,000
Pounds of Household Hazardous Waste and eWaste collected	1.5M	1.5M	1.3M	1.7M	1.3M
Citizens trips to Solid Waste facilities	532,526	584,044	585,903	590,000	600,000
Recyclable Materials Collected, Processed & Marketed	\$668	\$724	\$740	\$1,048	\$1,140
Tons of recyclables processed and marketed	9,741	6,902	1,637	7,000	1,500
Revenue generated from sale of recyclables	\$413,977	\$497,932	\$628,591	\$450,000	\$700,000
Landfill Closure	\$0	\$0	\$0	\$2,086	\$2,086

Public Works

Building & Grounds

Provide building maintenance services to over 130 County-owned facilities (approximately 1.4 million square feet) and selected leased properties; assist with property beautification by providing landscaping services through internal and contracted grounds maintenance operations; manage security system installation and repair; conduct snow removal, asphalt repairs and installation; and provide moving services. Support County government operations through mail, graphic arts, and printing services. Provide 24/7 emergency response support to address natural or manmade disasters.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Printing jobs completed within 10 working days	-	-	-	-	91%
Cost per square foot for custodial services	\$2.39	\$2.25	\$2.36	\$2.33	\$2.33
Routine maintenance work requests completed within 10 working days	79%	73%	72%	73%	73%
Cost per square foot for building maintenance program service	\$3.66	\$4.24	\$3.68	\$4.24	\$4.00
Printing jobs completed on time	91%	78%	97%	90%	-
Routine grounds maintenance requests completed within 10 working days	87%	67%	76%	87%	82%

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Building Maintenance	\$4,268	\$5,337	\$5,451	\$5,016	\$5,073
Work orders	4,475	4,338	4,289	4,500	4,500
Grounds Maintenance	\$1,507	\$1,872	\$1,394	\$1,876	\$1,878
Grounds work requests	776	786	713	800	800
Custodial Services	\$2,786	\$2,873	\$2,991	\$3,251	\$3,240
Square footage maintained by custodial services	1.2M	1.3M	1.2M	1.3M	1.2M
Graphics Arts & Print Shop	\$564	\$195	\$327	\$85	\$97
Copies produced in-house	4.6M	5.1M	3.8M	5.2M	4.8M
Printing jobs completed	2,338	1,616	1,749	1,700	1,700
Mail Room and Courier Service	\$421	\$349	\$371	\$421	\$440
Total pieces of mail handled	1.4M	1.4M	1.3M	1.4M	1.4M
Security	\$917	\$957	\$1,055	\$1,198	\$1,308
Citizen meeting agreements supported by paid guard service	-	-	-	60	60
Alarms and access devices work orders	862	1,159	889	1,000	1,000

Public Works

Property Management

Provide a wide array of internal county services including space planning, agency moves, furniture purchasing, and management of surplus furniture items. Manage the leases of county buildings, the utility payments, and energy usage monitoring of both owned and leased properties. Manage the County's Records Center in accordance with the mandated Library of Virginia retention standards.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Customers satisfied with overall project management	98%	99%	98%	98%	98%
Average cost per square foot of leased space	\$19.55	\$19.94	\$20.15	\$19.95	\$20.95
Cost avoidance realized by redeploying surplus items	\$189,734	\$224,286	\$266,213	\$200,000	\$200,000

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Property Management	\$2,031	\$2,650	\$2,771	\$2,457	\$2,568
Property management projects completed	282	258	290	250	275
Energy Management	\$2,672	\$2,679	\$3,191	\$3,246	\$3,333
Annual facility electrical usage - KWH per square foot	18.58	19.17	19.08	19.00	19.00
Real Estate	\$6,240	\$6,910	\$7,196	\$7,509	\$7,373
Commercial square feet leased	323,309	334,653	348,532	351,806	360,000
Records Management	\$153	\$152	\$161	\$283	\$259
Boxes delivered/picked up	5,424	5,320	6,491	5,350	5,500
Records checked in/checked out	8,436	8,109	7,493	8,300	8,300

Public Works

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. Stimulate volunteer efforts across the County that empower citizens to clean trash and litter from common areas, waterways and the County's major roadways, to remove graffiti and other community maintenance issues in and around neighborhoods, and to address other challenges by working together.

Key Measures	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Founded current year PCE cases resolved or moved to court action within 100 days	91%	97%	92%	91%	91%
Designated road avg litter rating- 1= no visible trash and 5= trash dumping site	1	1	1	2	-
First inspection of complaint within seven days	93%	96%	97%	88%	95%
Average time to resolve cases (calendar days)	54	36	46	45	45

Program Activities & Workload Measures (Dollar amounts expressed in thousands)	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Adopted	FY20 Adopted
Litter Control	\$709	\$721	\$727	\$923	\$849
Tons of trash removed by County Litter Crew	168	111	125	167	155
Illegal signs removed from State right-of-way	17,713	6,827	12,253	7,500	7,500
Landscaping	\$487	\$443	\$503	\$623	\$707
Landscaping areas maintained	44	44	44	44	44
Acres of medians and rights-of-way maintained	234	234	230	234	234
Property Code Enforcement	\$2,587	\$2,520	\$2,541	\$2,773	\$2,679
Total cases resolved	6,489	4,574	4,179	5,000	4,500
Total inspections conducted	16,426	13,575	11,455	11,500	11,500