

Montgomery County MS4 Illicit Discharge Program

Dry Weather Screening

Dry weather discharges from municipal storm sewer systems have been shown to contribute significantly to downstream water quality degradation. Because of this, it is important for Montgomery County to develop a dry weather screening program to identify and eliminate illicit discharges, and to remain in compliance with MS4 permit requirements. The following sections outline and describe processes to be used by Montgomery County, Virginia as part of a dry weather illicit discharge screening program based on MS4 requirements and recommendations from the Center for Watershed Protection IDDE Guidance Manual.

A. Schedule & Prioritization

A dry weather screening event will be conducted only during periods of dry weather, defined as at least 72 hours after the most recent rain event (greater than or equal to 0.10 inches of precipitation).

The current permit minimum screening requirement is discussed in Section B. With a current total of 67 outfalls, the outfall screening and inspection program will include an inspection of *all* outfalls annually. The identification of high risk outfalls will therefore be based on actual inspection data and any illicit discharge complaints or reports received from the public or generated by staff. Should the number of outfalls in the permitted system grow to an extent that this screening is no longer feasible, the prioritization methodology discussed in the remainder of this section will be initiated.

Because some sources are more likely to produce illicit discharge, it is important to prioritize sub-watersheds on an ongoing basis to ensure that high risk locations are screened regularly. Aspects that factor into a sub-watershed's priority can include infrastructure age, upstream land use, illicit discharge history, dumping, and cross connections. The following table can be used to assist in prioritizing sub-watersheds, with a higher score equating a higher priority.

Sub-watershed Condition	Description	Points Assigned
Past Discharge Complaints/Reports	Less than 5	1
	5 to 10	2
	Greater than 10	3
Dry Weather Water Quality (% of times water quality standards are exceeded)	Less than 25%	1
	25% to 50%	2
	Greater than 50%	3
Number of Stormwater Outfalls	Less than 10	1
	10 to 20	2
	Greater than 20	3
Average Age of Development	Less than 25 years	1
	25 to 50 years	2
	Greater than 50 years	3

Adapted from CWP IDDE Guidance Manual (2004)

Once all sub-watersheds have been scored, those with scores in the top third should be classified as high risk, those in the middle third by score as moderate, and those in the bottom third as low risk.

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Required Minimum Annual Screenings

Screenings are required to be conducted annually for a minimum of 50 outfalls. A record should be kept documenting outfalls that have been previously screened in order to track compliance. By tracking outfall screening, effort can be made to ensure that no outfalls are left unscreened over a long period of time as well as focus screening efforts on high risk outfalls.

B. Data Collection Methodology

The “Outfall Dry Weather Screening Data Sheet” form should be completed for each outfall screened by County staff. The form includes information related to the following:

- Date/Time/Weather
- Latitude / Longitude
- Drainage area land use
- Outfall description
- Quantitative information such as flow measurements and estimated discharge rate
- Visual observations

Weather information is available from NOAA and/or www.weather.gov for the 72-hour period preceding a scheduled dry weather screening event.

C. Investigation of non-stormwater discharges

In the event that a continuous or intermittent non-stormwater discharge is suspected or identified, a subsequent investigation should be performed within 60 days to identify and locate the discharge source. The priority of discharges to investigate are as follows.

- Sanitary sewage or significant contamination.
- Less hazardous discharges such as noncontact cooling water, wash water, etc.

Discharges that are authorized under a separate VPDES or state permit do not require further action.

D. Source Investigation and Follow-Up Methodology

If a non-stormwater discharge is identified, the field staff will note the flow rate and field conditions of the discharge, and attempt to identify the source of the discharge by tracing the flow upstream. Photographs will be taken of observed conditions and/or sources. Field staff will notify the County Engineer and collect samples if instructed to do so.

If no source can be identified through initial investigation, the field staff will notify the County Engineer to schedule for follow-up investigation by County staff at intervals set by the county Engineer. When/if an illicit discharge is identified, county staff will conduct additional investigations as needed to eliminate the source; refer to section F.

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If an intermittent discharge is observed, the County will document a minimum of three (3) separate investigations made in an attempt to observe the discharge when it is flowing. If all three (3) attempts are unsuccessful, the follow up investigations will be terminated and the outfall will continue to be assessed as per the regular schedule.

If an illicit discharge is identified, but within 6 months of initiation of investigations a source has not been identified AND the same discharge has not been identified again, the occurrence will be documented and the outfall's inspection priority will be increased in future annual inspections.

E. Illicit Discharge Source Elimination Policies and Procedures

1. Internal Source – Originating from County Property, Equipment, and/or Activities
 - a. The County Engineer will identify and contact the responsible party and direct supervisor of the responsible party to amend activities/procedures or conduct repairs to eliminate the discharge.
 - b. County staff will conduct a follow-up investigation to verify that the discharge has been eliminated. If not addressed, repeat Step a. Continue as needed.
 - c. County staff will increase the outfall's inspection priority in future annual inspections.
2. External Source – Originating Outside of County Property, Equipment, and/or Activities
 - a. The County Engineer will identify and contact the responsible party to amend activities/procedures or conduct repairs to eliminate the discharge.
 - b. County staff will conduct a follow-up investigation to verify that the discharge has been eliminated. If not addressed, the County Engineer will contact the Virginia Department of Environmental Quality (DEQ) Blue Ridge Regional Office and notify of the responsible party's actions in reference to the General Permit VAR04 9VAC25-890-40.
 - c. County staff will increase the outfall's inspection priority in future annual inspections.

F. Tracking

The "Outfall Dry Weather Screening Data Sheet" form should be completed for each outfall screened by County staff; sections 7 through 9 should be used to track additional investigations. A database or spreadsheet should be created and maintained including screening dates, whether an illicit discharge was documented, subsequent action, and outfall priority.

G. Public Reporting

A "Report a Stormwater Discharge" form is attached and will be posted on the County website. The "Outfall Dry Weather Screening Data Sheet" form is attached will be used to investigate public complaints and follow-up inspections. The date sheet will be provided to residents upon request as an educational outreach.

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Report a Stormwater Discharge

Please note as much information as possible to assist in the investigation.

Contact Montgomery County Environmental services at (540) 394-2090
or email our Stormwater Specialist at burkejw@montgomerycountyva.gov

Please describe the incident.

If known, please include a description of the type and estimated amount of material(s) involved.

If known, indicate if materials entered a storm drain or surface waters (streams, ponds, or wetlands).

Please any information on the person, company, or entity responsible, if known.

Please describe the location of the incident.

From nearest address, intersection, main road, or waterway

Is the incident still occurring?

Note the time and/or time span that the incident was observed

Where other agencies alerted to the incident?

Please note any notification to police, emergency services, VDOT, EPA, DEQ, etc.

Contact Information

If you wish to remain anonymous, leave this section blank.

Otherwise, please supply your name, phone number, email contact and address

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.):	Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ ' _____"	Ft, In	Tape measure
	Measured length	_____ ' _____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

<input type="checkbox"/> Unlikely <input type="checkbox"/> Potential (presence of two or more indicators) <input type="checkbox"/> Suspect (one or more indicators with a severity of 3) <input type="checkbox"/> Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?