GERMANNA
COMMUNITY COLLEGE

Fredericksburg Campus

# Illicit Discharge Detection and Elimination Manual

**June 2025**

Germanna Community College
10000 Germanna Point Drive
Fredericksburg, VA 22408

For concerns related to Illicit Discharge Detection and Elimination or for reporting pollution into stormwater runoff contact Garland Fenwick, Director of Facilities or designee at 540-423-9046.

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**APPENDICES**



**ACRONYMS**

| | |
|---|---|
| DEQ | Virginia Department of Environmental Quality |
| EPA | Environmental Protection Agency |
| GCC | Germanna Community College |
| IDDE | Illicit Discharge Detection and Elimination |
| MS4 | Municipal Separate Storm Sewer System |
| NPDES | National Pollutant Discharge Elimination System |
| SWPPP | Stormwater Pollution Prevention Plan |
| TMDL | Total Maximum Daily Load |
| VAC | Virginia Administrative Code |
| VPDES | Virginia Pollutant Discharge Elimination System |
| VSMP | Virginia Stormwater Management Program |

## 1.0 INTRODUCTION AND PURPOSE

This manual presents the standard protocol which Germanna Community College (GCC) will utilize to implement its Illicit Discharge Detection and Elimination (IDDE) Program. The manual provides written procedures to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to GCC's small municipal separate storm sewer system (MS4). The written procedures are required to be developed, implemented, and updated by GCC as a condition of the college's MS4 General Permit (General Permit). The General Permit authorizes stormwater discharges from MS4s to surface waters in urbanized areas of the Commonwealth of Virginia. The General Permitting mechanism is designed to prevent pollutants from entering water bodies through stormwater runoff.

The MS4 Program is part of the Federal National Pollutant Discharge Elimination System (NPDES), which is authorized through the Clean Water Act. With delegation from the Environmental Protection Agency (EPA), MS4 General Permits in Virginia are issued through the Virginia Pollution Discharge Elimination System (VPDES) and administered by the Virginia Department of Environmental Quality (DEQ). This manual was developed in general accordance with the EPA's, *"Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments."* To ensure compliance with IDDE requirements of the General Permit, GCC is required to perform the procedures outlined in this manual.

GCC's IDDE Program Manual includes five distinct components:

- **Training** – Procedures to train applicable operations and maintenance staff are discussed in Section 2.0 of this manual.
- **Administration/Documentation** – For GCC to demonstrate compliance to the conditions of the General Permit, documentation of IDDE activities performed is paramount. This is discussed in Section 2.0 of this manual from field through administrative responsibilities.
- **Identification of an Illicit Discharge** – Procedures to screen, identify, and report questionable illicit discharges are outlined in Sections 3.0 and 4.0 of this manual.
- **Investigating the source of an Illicit Discharge** – Procedures to investigate potential illicit discharges that have been identified or reported are outlined in Section 5.0 of this manual.
- **Elimination of an Illicit Discharge** – Procedures to eliminate illicit discharges that have been confirmed through the investigation effort are outlined in Section 6.0 of this manual.

## 2.0 PROGRAM ADMINISTRATION/DOCUMENTATION

The General Permit requires GCC to provide training once every 24 months to applicable operations and maintenance staff in recognition and reporting of illicit discharges. This manual serves as the training material to meet the General Permit requirement.

The written procedures herein serve as the foundation of a successful IDDE Program and help to achieve General Permit compliance. However, implementation of the procedures is critical for achieving the IDDE Program goal to eliminate non-stormwater discharges to GCC's storm sewer system and ultimately receiving waters. As referenced throughout this manual, the IDDE Program relies on supplemental materials to assist with implementation and documentation. Documentation that procedures have been implemented is critical to demonstrate permit compliance in the case of a regulatory audit. Operations and maintenance staff who are identified for IDDE training should be familiar with each Section of this manual, GCC's IDDE Field Guide, and the supplemental materials provided in the Appendices of this manual, which include:

- **Outfall Inspection Form** – This form is used for outfall screening to assist in determining the potential of an illicit discharge. The form is in Appendix A.
- **IDDE Response Procedures** – This reference is used in the event of an illicit discharge. The procedures are in Appendix B.

In addition to the documentation above, GCC incorporates by reference the following:

- **IDDE and Post-Construction Stormwater Facility Maps** – Identifies the locations of all outfalls that are required to be screened. The maps are intended to be used when conducting the annual screening and tracking illicit discharges.
- **Outfall Inventory** – Provides a list of campus outfalls and attributes required by the General Permit. The inventory is in the MS4 Tracking spreadsheet.
- **Illicit Discharge Log** – A spreadsheet to assist with ensuring documentation required by the General Permit for each investigation regarding any suspected illicit discharge. To be completed by the GCC Director of Facilities or designee; but may require information from maintenance staff. The log is in the MS4 Tracking spreadsheet.

As highlighted throughout this manual, documentation of illicit discharge reports, investigations, and elimination actions is critical for demonstrating compliance to the General Permit. In the case of an illicit discharge, GCC's General Permit requires, at a minimum, the following information:

- ✓ The date or dates that the illicit discharge was observed and reported;
- ✓ The results of the investigation, including the source, if identified;
- ✓ Any follow-up of the investigation;
- ✓ Resolution of the investigation; and
- ✓ The date that the investigation was closed.

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A discharge may require reporting to DEQ and any interconnected MS4s; therefore, the discharge must be properly documented by GCC. This will enable GCC to access this information if future requests are received concerning the discharge in question. The information will also be included in the annual report described in the following section.

## 2.1 Annual Reporting to DEQ

GCC must annually report to DEQ information pertaining to its IDDE efforts. The information is included in GCC's MS4 Annual Report due October 1st of each year. Information required for reporting includes:

1) A confirmation statement that the Outfall & Post Construction Stormwater Facility Maps and Outfall Inventory have been updated to reflect any changes to the MS4 occurring on or before June 30th of the reporting year;
2) The total number of outfalls screened during the reporting period as part of the dry-weather screening program; and
3) A list of illicit discharges to the MS4 including spills reaching the MS4 with information as follows:
   (a) The source of illicit discharge;
   (b) The dates that the discharge was observed, reported, or both;
   (c) Whether the discharge was discovered by the permittee during dry-weather screening, reported by the public, or other method (describe); and
   (d) How the investigation was resolved.
   (e) A description of any follow-up activities; and
   (f) The date the investigation was closed.

## 2.2 IDDE Manual Updates and Modifications

Modifications to the IDDE Manual may occur as part of an iterative process to protect water quality. Updates and modifications to this manual shall be consistent with the conditions of the General Permit and documented in the annual report.

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## 3.0 IDENTIFICATION OF AN ILLICIT DISCHARGE

Municipal separate stormwater sewer system (MS4) means a conveyance, or system of conveyances, that ultimately discharge into surface waters or wetlands. That is, any system of drainage from roads, parking lots, catch basins, curbs, gutters, ditches, man-made channels, or storm drains that convey stormwater is part of the MS4. These conveyance systems are vulnerable to contamination. Substances other than stormwater that enter receiving waters may be considered an illicit discharge and elimination of those discharges is the focus of this manual. An illicit discharge can:

1. Be a measurable flow from a storm drain during dry weather that contains pollutants or pathogens;
2. Have a unique frequency, composition, and mode of entry in the storm drain system;
3. Be caused when the sewage disposal system interacts with the storm drain system; or
4. Be discharges of pollutants from specific source areas and operations known as "generating sites." Generating sites are identified in the GCC Good Housekeeping & Pollution Prevention Program Manual.

### 3.1 Defining an Illicit Discharge

For the purpose of GCC's IDDE Program, an illicit discharge is defined as:

> *Illicit Discharge - Any discharge to an MS4 that is not composed entirely of stormwater, except discharges specifically identified in the Virginia Administrative Code (VAC) and determined not to be a significant contributor of pollutants to the MS4.*

Most sources of an illicit discharge on the GCC campuses are likely to originate from a generating site or activity, such as a washing area or vehicle maintenance area. These could result from daily practices or from a specific spill incident. Table 1 provides source pollutants that could be generated from areas of each campus.

**Table 1. Examples of source pollutants of an illicit discharge.**

| | |
|---|---|
| • Automotive fluids (oil, fuel, antifreeze) | • Landscape waste (grass clippings, etc.) |
| • Cooking oil and grease | • Improperly applied fertilizer |
| • Solvents | • Sediment |
| • Paints | • Vehicle wash water |
| • Chemical cleansers (detergents, soaps) | • Sanitary sewer wastewaters |
| • Improperly applied pesticides/herbicides | • Dumpster leachate |
| • Improperly managed salts | • Trash |

The regulations do have exemptions for some non-stormwater discharges that would not be considered an illicit discharge if not a significant contributor of pollutants to the MS4. Table 2 includes some of the discharges relevant to GCC that are not a significant contributor of pollutants; and therefore, are not considered illicit discharges. If there is uncertainty of the source or constituents within an observed discharge, the GCC Director of Facilities or designee should be contacted immediately so a determination can be made.

**Table 2. Examples of sources that are not considered illicit discharges.**

| | |
|---|---|
| • Fire-fighting activities* | • Air conditioning condensate |
| • Water line flushing | • Footing or foundation drains |
| • Landscape/lawn irrigation | • Springs |
| • Diverted stream flows | • Water from crawl space pumps |
| • Rising groundwater | • Dechlorinated swimming pool wastewater |
| • Uncontaminated groundwater infiltration | • Discharges from potable water sources |
| • Uncontaminated pumped groundwater | • Flows from riparian habitats and wetlands |
| • Individual residential car washing | • Street wash water |
| • Noncommercial fundraising car washes if the washing uses only biodegradable, phosphate-free, water-based cleaners | • Other activities generating discharges identified by the department as not requiring VPDES authorization |

* Discharges or flows from fire-fighting activities need only be addressed where they are identified as significant sources of pollutants to surface waters.

## 3.2 Outfall Map and Inventory

An outfall is a point where GCC's MS4 discharges concentrated flow to surface waters or wetlands, such as at the end of a pipe or open drainage channel. Generally, these are the locations that drain stormwater from campus and can be evaluated routinely to identify potential pollutants. Action can then be taken to prevent these pollutants from traveling downstream. The General Permit requires GCC to maintain a storm sewer map for each MS4 campus and outfall information table as part of the IDDE Manual. GCC may elect to map the known point of discharge location closest to the actual outfall when the outfall is located outside of GCC's legal responsibility. The General Permit also requires GCC to map the locations and types of stormwater management facilities.

GCC's outfall maps illustrate the locations of the outfalls from the storm sewer system and the receiving waterway. The outfall maps are a critical component of the outfall screening and serves as a tool to identify potential pollutant generating sites, the storm sewer layout adjacent to the sites, and the locations where the storm sewer discharges to a waterway or the point of discharge off the MS4.

An illicit discharge identified on campus may originate from an upstream interconnected MS4. Contacts to interconnected MS4s are included on the maps for reporting a potential off-site pollutant source. The upstream MS4 should be notified immediately so to identify and eliminate the pollutant source.

The General Permit also requires GCC to maintain an Outfall Information Table that includes the following permit-required attributes for each outfall: unique identifier, latitude/longitude, drainage area, receiving water, 6$^{th}$ order HUC, water quality impairment, and TMDLs. The Director of Facilities or designee should maintain a copy of both the IDDE Maps and Outfall Information Table for review upon request by the public or DEQ. The documents should be updated when changes to existing outfalls are found or new outfalls are added with new construction.

## 3.3 Awareness During Daily Activities and Operations

Potential illicit discharges can be identified and removed prior to entering the storm sewer system with effective screenings and appropriate follow-up when pollutants have the potential to be exposed to precipitation, and subsequently, stormwater runoff. GCC's Facilities staff are in the best position to identify these pollutants such as those identified in Table 1. Figure 1 provides several examples of the observations and actions that could prevent an illicit discharge. If the observer is not qualified or appropriately trained to take the appropriate action, or if illegal dumping is observed, notify the GCC Director of Facilities or designee. The GCC Good Housekeeping & Pollution Prevention Manual can also be referenced for instruction on appropriate actions.

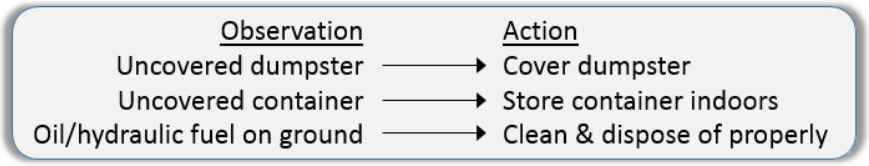


**Figure 1. Example daily observations and subsequent actions that can prevent an illicit discharge.**

## 3.4 Special Local Water Quality Concerns

GCC's MS4 ultimately discharges to receiving waters that have been identified by DEQ to not meet water quality standards. Subsequent studies, called Total Maximum Daily Load (TMDL) studies, have been performed by DEQ. The TMDL studies identify specific pollutants causing the impairments to the receiving waters and designate the amount of the pollutant the receiving water can assimilate to achieve water quality standards. A required reduction of the pollutant is typically assigned to the MS4s that drain to the impaired segment of the waterway. It is important that GCC's maintenance and operations employees be aware of these special pollutants shown in Table 3.

**Table 3. Special pollutants of concern.**

| MS4 Campus | TMDL | Pollutants of Concern | Approval Date |
|---|---|---|---|
| Fredericksburg | Chesapeake Bay | Nitrogen and Phosphorous | 12/29/2010 |

## 3.5 Reporting Procedures

GCC Facilities staff are the first line of defense for preventing generating sites from contributing to an illicit discharge. If Facilities staff detect an Illicit discharge as defined in Section 3.0, report the illicit discharge immediately to the Director of Facilities or designee who shall report the discharge to DEQ within 24 hours.

VDOT is an interconnected MS4s with GCC meaning there is stormwater being conveyed from GCC property, but only by means of sheet flow and not via a point source discharge. Any report from an interconnected MS4 of an illicit discharge originating from a GCC campus should be immediately reported to the Director of Facilities or designee for investigation and documentation.

Actions that are taken to prevent an illicit discharge are designated as good housekeeping practices and do not need to be reported to DEQ. Facilities staff shall report a good housekeeping issue within 24 hours to the

Director of Facilities or designee. The SWPPP log shall be used to document good housekeeping issues. See the Good Housekeeping and Pollution Prevention Manual for reporting procedures concerning good housekeeping issues.

An illicit discharge may also be reported by other individuals that are not trained or authorized to perform necessary actions, such as reports from students, faculty, staff, or contractors. These individuals may recognize an illicit discharge after learning about pollution in stormwater runoff through GCC's public education and outreach efforts. The GCC stormwater webpage directs these individuals to contact the Director of Facilities or designee, who will subsequently perform the appropriate follow-up action and complete the documentation. If Facilities staff is notified of an illicit discharge, the appropriate action should be taken, and the Director of Facilities or designee shall be notified. Figure 2 summarizes this procedure.

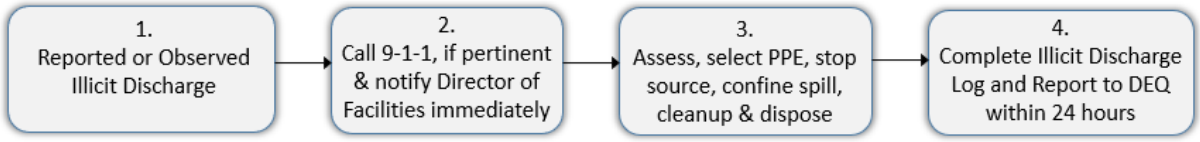


**Figure 2. Illicit Discharge and Detection reporting procedures for GCC Facilities staff.**

If an illicit discharge has occurred, the Director of Facilities or designee will then document the report with the Illicit Discharge Log in the MS4 Tracking spreadsheet. Facilities staff should be familiar with the Illicit Discharge Log in order to assist with providing the necessary information required. Refer to the guidance in Appendix B for more in-depth procedures to follow if an illicit discharge is detected.

## 4.0 OUTFALL SCREENING

In an effort to detect, identify, and eliminate illicit discharges to GCC, an annual outfall screening is required by the Program Plan under the General Permit for all of the outfalls on the GCC MS4 campuses. In the case that illicit discharges are observed at specific outfalls and the source is not identified or eliminated, subsequent screening at a higher frequency may be necessary.

### 4.1 Dry-Weather Outfall Screening

Outfall screening shall be performed during dry weather using the Outfall Inspection Form provided in Appendix A. Completion of the form serves as the appropriate documentation that the required outfall screening has been performed and should be retained on file for a minimum of 3 years.

Since GCC has less than 50 outfalls, all outfalls must be screened annually. However, if GCC ever exceeds 50 outfalls, a risk-based approach may be used to dry weather screening, where observation points are identified based upon illicit discharge risks upstream of an outfall. Observation points may include points of interconnection, manholes, points of discharge, conveyances, or inlets suspected to have a high likelihood of receiving illicit discharges. Each observation point screened may be counted as one outfall screening activity, but illicit discharges reported by the public and subsequent investigations may not be counted as screening events; however, once the resolution of the investigation and the date the investigation was closed has been documented, an observation point may be established for future screening events.

Outfalls that are flowing during dry weather may indicate an active pollution issue, depending on if rain has occurred during the last 24 to 48 hours. Special attention should be paid to outfalls that are flowing, especially when no rain has occurred within the last 48 hours. When the screening of an outfall indicates an illicit discharge, the GCC Director of Facilities or designee shall be notified within 24 hours so an investigation, as described in Section 5.0, can be performed and a record in the Illicit Discharge Log completed.

A checklist or mechanism should be used to track the following information for dry weather screening events:

- ✓ Observed indicators of possible illicit discharge events, such as floatables, deposits, stains, and vegetative conditions (e.g., dying or dead vegetation, excessive vegetative growth);
- ✓ If a discharge was observed, the estimated discharge rate and visual characteristics of the discharge (e.g., odor, color, clarity) and the physical condition of the outfall; and
- ✓ For observation points, the location, downstream outfall unique identifier, and risk factors or rationale for establishing the observation point.

The Outfall Inspection Form includes the following sections, which are to be completed for each outfall during outfall screening:

- ***Section 1: General Information*** – Requires general information regarding the property name, outfall or observation point ID with latitude and longitude, inspection date and time, inspector name, date and quantity of the last rainfall event. Tips for completing Section 1 include:
  - ✓ The unique Outfall or observation point ID can be found on the IDDE Map. Update map to reflect new outfalls and observation points;
  - ✓ Take at least 1 photo of the outfall or observation point for documentation purposes, especially if there is question regarding an illicit discharge; and
  - ✓ Rainfall data can be gathered from weather stations near the property.

- ***Section 2: Outfall Inspection Description*** – Requires a description of the outfall or observation point and determination if flow is present during dry-weather. The inspection location is typically performed at the outfall which often is a closed pipe or an open channel. In some cases, the inspection location may be at an observation point which may be the last point of interconnection or point of discharge leaving the property and continuing off-site. In other cases, the screening location may be at an observation point which may be an upgradient manhole, inlet or conveyance due to steep slopes or thick vegetation. Tips for completing Section 2 include:
  - ✓ If the cross-section of a pipe or channel is abnormal, measure the unique dimensions.
  - ✓ If submerged in water, indicate if it is partially or fully submerged.
  - ✓ The identification of flow is important since flow during dry weather would indicate a non-stormwater discharge. If a pipe is partially submerged, and it is difficult to identify dry-weather flow, a nearby leaf or blade of grass can be dropped onto the water surface near the outfall. The travel of the object on the surface can help indicate if flow is discharging from the outfall.
  - ✓ Upon completion of this section, if no flow is present, skip to Section 5 of the form.

- ***Section 3: Quantitative Characterization for Flowing Outfalls*** – Requires quantitative information of the flow present at the outfall, including information to determine an estimate of the flow rate. The purpose of this information is to help identify the source of the discharge. Tips for completing Section 3 include:
  - ✓ Flow rate can be estimated with the following equations. Measured data from the form is shown in bold below.

    ***Flow (for pipes):***

    $$\frac{\boldsymbol{'X'\,liters}}{\boldsymbol{'X'\,seconds}} \times \frac{1\ gallon}{3.78\ liters} \times \frac{60\ seconds}{minute} = Flow\ in\ gpm$$

  - ✓ For the Flow #1 calculation, time in seconds is the time to fill the bottle to 'X' liters.

***Flow (for open channels):***

$$\left[\left(\frac{\boldsymbol{bot.width\ (ft)} + \boldsymbol{top\ width\ (ft)}}{2}\right) \times \boldsymbol{depth\ (ft)}\right] \times \frac{\boldsymbol{Length\ (ft)}}{\boldsymbol{travel\ time\ (seconds)}} \rightarrow$$

$$\times \frac{7.48\ gallons}{1\ cubic\ ft} \times \frac{60\ seconds}{minute} = Flow\ in\ gpm$$

- ✓ For the Flow #2 calculation, travel time is estimated by the time it takes a floating object to travel the defined length.

- ***Section 4: Physical Indicators for Flowing Outfalls Only*** – Requires the observance of physical indicators in the flow, such as odor and color, to assist with identifying the source of the discharge. A tip for completing Section 4 includes:
  - ✓ Take photos of visible indicators.

- ***Section 5: General Physical Indicators for both Flowing and Non-Flowing Outfalls*** – Requires physical indicators be noted that are not related to flow, such as abnormal vegetation and staining, which can indicate that an intermittent discharge has occurred in the past, even if not currently flowing. Tips for completing Section 5 include:
  - ✓ Take photos of visible indicators.
  - ✓ Note benthic growth, such as algae or slime on channel surfaces, which can be an indicator of nutrients in the stormwater runoff (See Figure 3).

**Figure 3. Example Photo showing algae growth.**

- ***Section 6: Outfall IDDE Characterization*** – Requires the assignment of a severity score for prioritizing outfall follow-up investigation, if necessary. A tip for completing Section 6 includes:
  - ✓ The severity of concern at an outfall is best judged by the outfall inspector. The rating system provided on the form is intended to provide consistency and guidance; but the intuition of the inspector overrides the scoring rules.

- ***Section 7: Outfall Channel Field Concerns*** – Requires the observance of the condition of the channel and an assessment of the severity of the concern such as blockages, erosion, outfall damage, etc. Tips for completing Section 7 include:
  - ✓ Take photos of visible indicators.
  - ✓ Note outfall damage such as cracking in a concrete flume that can contribute sediment to the waterway or result in vegetation growth that may eventually impede flow (See Figure 4).

**Figure 4. Example Photo showing cracking of a concrete flume.**

- ***Section 8: Outfall Channel Rating*** – Requires the assignment of a severity score for prioritizing outfall follow-up investigation, if necessary. A tip for completing Section 8 includes:
  - ✓ The severity of concern at an outfall is best judged by the outfall inspector. The rating system provided on the form is intended to provide consistency and guidance; but the intuition of the inspector overrides the scoring rules.

- ***Section 9: Any Non-illicit Discharge Concerns*** – The inspector should identify any other concerns such as trash, overgrowth prohibiting flow, or structural concerns of the outfall (e.g., collapsed pipe).

### 4.2 Wet-Weather Screening

While dry-weather screening events can identify illicit discharges that are continuous, wet-weather screening events may identify pollutant discharges that are temporary. Wet-weather screening may be appropriate if dry-weather screening identifies physical indicators from Sections 4 and 5 of the Outfall Inspection Form.

## 5.0 INVESTIGATING ILLICIT DISCHARGES

In the case of the identification of an illicit discharge, it is necessary to conduct an investigation to identify and eliminate the source of the discharge. An investigation may result from:

- A staff observation;
- A report to GCC Facilities staff from the general public;
- A report from an interconnected MS4; or
- The results of outfall screening.

If an illicit discharge has occurred, the determination will be made by the GCC Director of Facilities, or designee. In all cases of an illicit discharge, the Illicit Discharge Log must be completed as documentation for General Permit annual reporting.

The following sections outline the methodologies that shall be followed in the investigation of an illicit discharge.

### 5.1 Investigation Triggers and Prioritization

Upon the identification of an illicit discharge, the reporting date, location, and description must be reported in the Illicit Discharge Log. Note that Section 6 of the Outfall Inspection Form should be referenced to estimate a severity Index classification. The following shall trigger an investigation:

- The determination of the occurrence of an illicit discharge by the Director of Facilities, or designee based on an observed illicit discharge by GCC Facilities staff, such as during daily activities, or a follow-up from a reported observation.
- A severity index classification of either potential, suspect, or obvious. If more than one outfall screening produces one of these classifications, investigation efforts shall be prioritized as:
    - Obvious – Illicit discharge(s) suspected of being sanitary sewer discharges or significantly contaminated would have this classification.
    - Suspect – Numerous physical indicators result in this classification.
    - Potential – Discharges should not be expected to be hazardous to human health and safety.

The start and close date of the investigation is also required to be provided on the Illicit Discharge Log.

### 5.2 Investigation Protocol

An investigation of an illicit discharge may result in the source being easily identified or may be complex and may require referencing this manual, the IDDE Field Guide, IDDE map, and coordination with interconnected MS4s.

Based on the familiarity of the campus and its drainage areas, an initial field evaluation may easily identify the source of an illicit discharge. Once found, the source should be eliminated, and efforts documented on the Illicit Discharge Log. It is critical that documentation in the Illicit Discharge Log is complete to demonstrate illicit discharges have been addressed in accordance with the General Permit.

If the source of an illicit discharge is not easily identified, further investigation is necessary and should be guided by the following procedures:

1) Track the illicit discharge to its point of entry into the storm sewer. Tracking can be supplemented with review of the IDDE/Post-Construction Stormwater Management Facility map to identify flow directions and the drainage area. Cross reference the map with the GCC Stormwater Pollution Prevention Plan (SWPPP) map that indicates areas most likely to be the source of pollutants.
2) Conduct a field screening of the drainage area near the point of entry to identify the potential pollutant source. Document potential sources with photos, ensuring the photos give the appropriate context to the location of the source.

GCC Facility staff will primarily rely upon visual screenings of the areas in the storm sewer system upstream of the outfall at which an illicit discharge is detected. However, sampling and analysis can be performed as necessary to determine the characteristics of the illicit discharge and to help identify the most likely source. Improper connections and unpermitted cross-connections to the storm sewer system can be detected by utilizing a combination of methods to investigate non-stormwater discharges, such as visual/video screenings, and dye or smoke tracer testing. Additional dry-weather testing at an outfall or observation or discharge point assists in identification of abnormal conditions such as sporadic or continuous discharge, which can facilitate tracing of the source. Tracking techniques also include visual screenings of drainage structures and lines, damming lines to isolate areas, indicator monitoring, and optical brightener monitoring traps.

Other more elaborate approaches include using remote sensing tools to identify soil moisture, water temperature, and vegetation anomalies associated with illegal dumping activities. Due to the size of the GCC campuses and the activities that typically occur, it is not anticipated these types of tracking strategies will be necessary and further discussion is outside of the scope of this manual.

If an illicit discharge is determined to originate outside of the GCC property, then the appropriate locality and/or MS4 Program authority should be contacted immediately by GCC staff, and the request made to eliminate the discharge. The interconnected MS4 should initiate corrective action per their prescribed process. GCC staff will follow up with the responsible entity to verify the corrective action has been successfully implemented, and the final action will be documented and tracked in the Illicit Discharge Log.

Additional detail for conducting an investigation is provided in the *GCC IDDE Field Guide*.

## 5.3 Timeframes for Performing Investigations

In general, the timeframe for initiation of an investigation should be prioritized with first priority given to illicit discharges suspected of being sanitary sewage or otherwise significantly contaminated. More specifically, timeframes for initiating an investigation are established as follows:

- Obvious – First priority, begin investigation within two business days of identification of an illicit discharge.
- Suspect – Second priority, begin investigation within one week of the report of a suspected illicit discharge.
- Potential - Third priority, begin investigation within two weeks of the report of a potential illicit discharge.

If, after performing an investigation of an observed or reported illicit discharge, the source of the discharge has not been identified and the non-stormwater discharge has not been detected again after 6 months, efforts will be documented and the discharged identified as "non-recurring" with "source not found" on the IDDE Tracking Form. At that time, no further action is necessary. However, investigatory due diligence should include (with documentation):

- The tracking and field screening methods described in the previous Section were performed;
- At least one additional dry-weather screening during the 6-month time period; and
- At least one wet-weather screening.

If an observed discharge is intermittent, GCC Facilities staff will perform three separate investigations attempting to observe the discharge when it is flowing. If these attempts are unsuccessful, GCC Facilities staff will also document the occurrence and process and no further action is necessary.

## 6.0 ELIMINATING VERIFIED ILLICIT DISCHARGES

The ultimate goal of the IDDE Program is to eliminate illicit discharges from the MS4. Once an illicit discharge has been identified and an investigation has determined the source of the discharge, appropriate actions need to be taken and documented to eliminate the discharge.

### 6.1 Source Elimination

GCC's daily operations intend to prevent and address illicit discharges through the practices described in the Good Housekeeping & Pollution Prevention Manual. When an illicit discharge originates within GCC's property, GCC Facilities staff will take the necessary corrective action to eliminate the discharge. Follow-up screenings may be necessary to ensure the discharge into the GCC storm drain system has ceased. Periodic screenings should be conducted during both wet and dry weather after the initial illicit discharge to confirm the identified discharge has been eliminated. Actions and resolutions must be documented and maintained on file for 3 years.

When the source of an illicit discharge originates off-campus, and therefore, GCC does not have authority to eliminate the source, DEQ or interconnected MS4 should be contacted by the Director of Facilities or designee, as applicable. Figure 5 provides examples of the enforcement authorities to contact based on the type of illicit discharge. This list is not all-inclusive but is based on typical sources of illicit discharges. IDDE Tracking Forms should be maintained on file along with information related to the case, including dates, locations, photos, results of screenings and investigations, and identified sources.

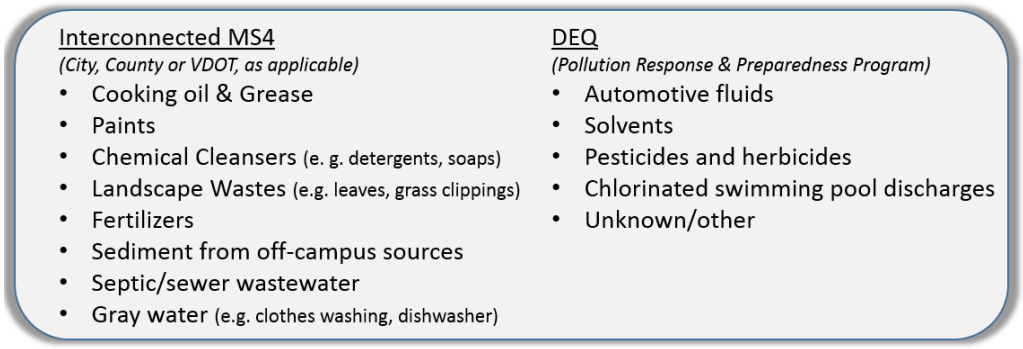


**Figure 5. Illicit discharge enforcement contacts for off-site illicit discharges entering GCC property.**

### 6.2 Follow-up on Source Elimination

Prior to closure of an illicit discharge investigation, GCC is required to conduct or request a follow-up investigation to ensure the illicit discharge has been eliminated. When the source originated on campus, the follow-up investigation may simply include a field screening with documentation including photographs where the source had previously been identified. In the case of an off-campus illicit discharge, follow-up should include a request for information from the appropriate upstream enforcement entity. Documentation of off-campus efforts is also required in the Illicit Discharge Log .

## 6.3 Administrative Action, Enforcement, and Penalties

GCC prohibits illicit discharges into its MS4 through language provided within the Standards of Conduct for staff and the Student Handbook for students. Contractors performing work on campus are made aware of the Good Housekeeping & Pollution Prevention Manual via the Contractor Good Housekeeping & Pollution Prevention log. Through these mechanisms (See Figure 6), GCC can eliminate illicit discharges in which the source occurs on campus property.

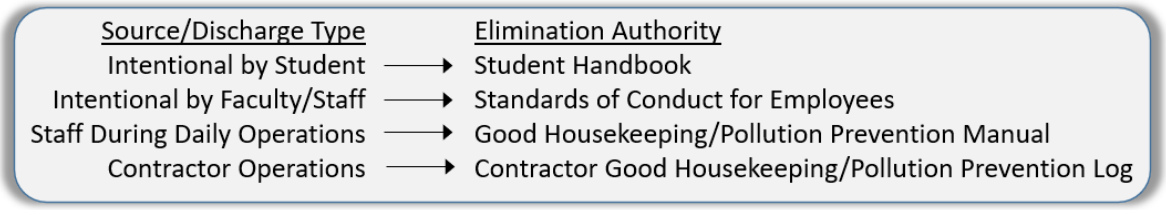


**Figure 6. GCC authority for prohibition of illicit discharges on campus.**

If an individual or entity is identified during an illicit discharge investigation to be responsible for intentionally contributing to the discharge, the following binding documents will be utilized to conduct any necessary administrative action, enforcement, or penalties:

- Student Handbook – GCC can pursue administrative action within its authority, such as disciplinary consequences.
- Standards of Conduct for Employees - GCC can pursue administrative action within its authority, such as disciplinary consequences.
- Contractor GHPP log – GCC can pursue administrative actions within its authority, such as revocation with a Stop Work Order or suspension or revocation of a contract.

Administrative action is the least desirable outcome of the GCC IDDE Program; however, it may be necessary in the following situations:

- Recurring or egregious illicit discharge incidents;
- Failure of a person knowingly responsible for an illicit discharge to notify GCC or DEQ; or
- Refusal by the responsible party to voluntarily take corrective action on an illicit discharge, once it is brought to their attention.

Because GCC has limited legal authority, any legal action would likely be initiated by a state or federal environmental agency in conjunction with the appropriate law enforcement agency. In some cases, as determined necessary by the Director of Facilities or designee, GCC may pursue common law trespass as a legal means to stop an illicit discharge.

One or more of the following enforcement actions will be performed for confirmed illicit discharges:

- Upon GCC verification that the reported incident is a valid illicit discharge, the responsible party will be notified immediately (by letter) of the requirement to correct the illicit discharge and, when appropriate, remediate the area affected by that discharge.
- The appropriate State Authority and/or DEQ will be notified in writing of the illicit discharge in certain cases where the discharge is occurring within a live watercourse.
- GCC may revoke or suspend a contract issued to an outside party should an illicit discharge be detected and not corrected by the responsible party.

### 6.4 Reportable Spills

If any unusual or extraordinary discharge should occur from a facility and the discharge enters or could be expected to enter surface waters, GCC shall promptly notify, in no case later than within 24 hours, DEQ by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any known adverse effects on aquatic life. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

- Unusual spillage of materials resulting directly or indirectly from processing operations;
- Breakdown of processing or accessory equipment;
- Spills of large quantities of chemicals or fuels; and
- Flooding or other acts of nature.

NOTE: The immediate (within 24 hours) reports required to be provided to DEQ may be made to the appropriate Regional Office Pollution Response Program found at the link below. https://www.deq.virginia.gov/our-programs/pollution-response/pollution-data-and-reporting. Reports may be made by telephone or by fax. For reports outside normal working hours, leave a message and this shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Services maintains a 24/7 telephone service at 1-800-468-8892.

**Appendix A: Outfall Inspection Form**

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# OUTFALL INSPECTION FORM

## Section 1: General Information

| | |
|---|---|
| Property Name: | Outfall/Observation Point ID: |
| Today's date: | Time: |
| Inspector Name: | Date of Last Rainfall Event: |
| Latitude: Longitude: | Quantity of Last Rainfall Event (in.): |

## Section 2: Outfall Inspection Description

| LOCATION | MATERIAL | CROSS-SECTION (SHAPE) | | DIMENSIONS (IN.) | SUBMERGED |
|---|---|---|---|---|---|
| ☐ **Closed Pipe** | ☐ RCP<br>☐ PVC<br>☐ CMP<br>☐ HDPE<br>☐ Steel<br>☐ Other: _____ | ☐ Circular<br>☐ Elliptical<br>☐ Box<br>☐ Other: _____ | ☐ Single<br>☐ Double<br>☐ Triple<br>☐ Quad<br>☐ Other: _____ | Diameter/Dimensions:<br>_____<br>Or<br>Width: _____<br>Height: _____ | In Water:<br>☐ No<br>☐ Partially<br>☐ Fully<br>With Sediment:<br>☐ No<br>☐ Partially<br>☐ Fully |
| ☐ **Open Drainage** | ☐ Concrete<br>☐ Earthen<br>☐ Rip-Rap<br>☐ Other: _____ | ☐ Trapezoid<br>☐ Parabolic<br>☐ V Shaped Ditch<br>☐ Other: _____ | | Depth: _____<br>Top Width: _____<br>Bottom Width: _____ | |
| ☐ **Drop Inlet** | ☐ Curb Inlet<br>☐ Curb Inlet w/ Grate | Measure Slot<br>(Grate area will not be measured) | | Height: _____<br>Width: _____ | |
| | ☐ Flat DI | ☐ Square or Rectangular | | Length: _____<br>Width: _____ | |
| | | ☐ Circular | | Diameter: _____ | |
| | ☐ DI in V Ditch | Measure Grate Area: _____ | | Length: _____Width: _____ | |
| | ☐ Other: _____ | | | | |
| ☐ **Observation Point** | ☐ At Regulated Outfall<br>☐ At Point of Discharge/ Interconnection<br>☐ Upgradient Manhole<br>☐ Upgradient Inlet<br>☐ Upgradient Open Channel<br>☐ Other _____ | | | | |
| **Flow Present?** | ☐ Yes (***If Yes, Flow Description)*** ☐ Trickle ☐ Moderate ☐ Substantial ☐ No (***If No, Skip to Section 5)*** | | | | |
| **Quantifiable?** | ☐ Yes ***(If Yes, Complete Section 3)*** ☐ No ***(If No, explain why and Skip to Section 5)*** _____ | | | | |

## Section 3: Quantitative Characterization for Flowing Outfalls

| FIELD DATA FOR FLOWING OUTFALLS | | | | |
|---|---|---|---|---|
| **PARAMETER** | | **RESULT** | **UNIT** | **EQUIPMENT** |
| Flow | Volume | | Liter | Bottle |
| | Time to fill | | Sec | Stopwatch |

**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 | ☐ | ☐ Sewage<br>☐ Rancid/sour<br>☐ Petroleum/gas<br>☐ Sulfide<br>☐ Other: | ☐ 1 – Faint | ☐ 2 – Easily detected | ☐ 3 – Noticeable from a distance |
| Color | ☐ | ☐ Clear<br>☐ Green<br>☐ Orange<br>☐ Yellow<br>☐ Red<br>☐ Gray<br>☐ Brown<br>☐Other: | ☐ 1 – Faint colors in sample bottle | ☐ 2 – Clearly visible in sample bottle | ☐ 3 – Clearly visible in outfall flow |
| Turbidity | ☐ | See Severity | ☐ 1 – Slight cloudiness | ☐ 2 – Cloudy | ☐ 3 – Opaque |
| Floatables (Does not include trash) | ☐ | ☐ Sewage (toilet paper, etc.)<br>☐ Petroleum (oil sheen)<br>☐ Suds<br>☐ Other: | ☐ 1 – Few/slight; origin not obvious | ☐ 2 – Some; indications of origin (e.g., possible suds or oil sheen) | ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials) |

**Section 5: General 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 | ☐ | ☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐Corrosion | |
| Deposits/Stains | ☐ | ☐ Oily ☐ Flow Line ☐ Paint ☐ Other: | |
| Abnormal Vegetation | ☐ | ☐ Excessive ☐ Inhibited | |
| Poor pool quality | ☐ | ☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen<br>☐ Suds ☐ Excessive Algae ☐ Other: | |
| Pipe benthic growth | ☐ | ☐ Brown ☐ Orange ☐ Green ☐ Other: | |

**Section 6: Overall IDDE Characterization**

**An IDDE score will be determined from the Severity Index in Section 4 and adding the number of indicators checked as present in Section 5**

☐ **Unlikely** (No indicator checked as present in Section 4 OR only **one (1)** indicator checked as present in Section 5)

☐ **Potential** – (**one (1)** indicator with a severity of **one (1)** in Section 4 OR **two (2)** indicators checked as present in Section 5)

☐ **Suspect** – **IDDE score of three (3)** (**one (1) or more** indicators checked in Section 4 with a total of severities **equal to three (3)** OR **more than two (2)** indicators checked as present in Section 5 OR a total of severities in Section 4 plus indicators checked as present in Section 5 is **equal to three (3)**)

☐ **Obvious** – **IDDE score of greater than three (3)** (one or more indicators checked in Section 4 with and the total of the severities **is greater than three (3)** OR a total of severities in Section 4 plus indicators checked as present in Section 5 **is greater than three (3)**).

Notes:

Inspectors Overall IDDE Characterization, if different: _____

Reason for Override: _____

## Section 7: Outfall Channel Field Concerns

| CONCERNS PRESENT | TYPE | SEVERITY | COMMENTS |
|---|---|---|---|
| Channel Blocked | ☐ Overgrown vegetation<br>☐ Debris<br>☐ Sediment accumulation<br>☐ Other: | ☐ 1 - ¼ Blocked<br>☐ 2 - ½ Blocked<br>☐ 3 - ¾ or more blocked | |
| Channel Erosion | ☐ Damaged paved ditch or rip-rap channel<br>☐ At immediate downstream banks<br>☐ At discharge of outfall (depression/pooling)<br>☐ Beneath or around pipe<br>☐ Other: | ☐ 1 - Minor<br>☐ 2 – Moderate<br>☐ 3 - Major | |
| Outfall Damage | ☐ Cracked Pipe<br>☐ Crushed Pipe<br>☐ Rusting or corroded pipe<br>☐ End wall damage<br>☐ Peeling paint<br>☐ Pipe disconnected from end wall<br>☐ Cracked/displaced or eroded paved ditch<br>☐ Rip-rap ditch has failed<br>☐ Erosion control blanket lined ditch has failed<br>☐ Vegetative ditch has failed<br>☐ Other: | ☐ 1 – Monitor<br>☐ 2 - Flow constricted due to damage<br>☐ 3 - Safety concern | |
| Other | | ☐ 1 - Minor<br>☐ 2 – Moderate<br>☐ 3 – Major | |

## Section 8: Outfall Channel Rating

☐ **No Maintenance Required** – No concerns indicated.

☐ **Monitor** – Presence of one or more indicators with a severity of one (1) or one with a severity of two (2)

☐ **Review** – One or more indicators with a severity of three (3) or two or more with a severity of two (2)

☐ **Repair** – Two or more indicators with a severity of t three (3) or a safety concern noted.

Notes:

Inspectors Outfall Channel Rating, if different: _____

Reason for Override: _____

## Section 9: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

## Appendix B: IDDE Response Procedures

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# In the Event of an Illicit Discharge

**1. Contact Facilities.** If the discharge is large and hazardous call The Fire Department at 9-1-1. Report an illicit discharge immediately to the Facilities Director or designee at (540) 423-9046. The Facilities Director or designee shall report the illicit discharge to DEQ within 24 hours.

**2. Assess the risk**. When a discharge occurs, determine the risks that may affect human health, the environment and the property. This may be done easily in cases where the type of contaminant discharged is known. In situations where the contaminant is unknown, determining risks may involve some investigation. In cases where the chemical is unknown, the spilled material may be identifiable from the container label or the Safety Data Sheet.

**3. Select personal protective equipment (PPE)**. It is crucial that the appropriate PPE is chosen to stop, confine, and cleanup the contaminant. Appropriate PPE may be a pair of gloves, eye and foot protection, or face masks. If the chemical is unknown and the risk level uncertain, use the highest level of caution and protection. Refer unknown chemical cleanup to the Fire Department and do not attempt to cleanup without appropriate guidance.

**4. Stop the source**. Stopping the source of a discharge may be apparent or may require investigation. In any case, the source should be controlled as quickly as possible.

**5. Confine the spill**. It is crucial to confine the discharge. In some cases, this step may need to occur before stopping the source. The proper containment measures necessary should be assessed based on the size and type of the discharge. If a large spill of fuel, sewage, or other hazardous materials occurs, contact the Fire Department to assist in response and cleanup.

**6. Evaluate the incident and implement cleanup**. Once the discharge is stopped and confined, the person responsible for cleanup should develop a plan of action to cleanup the discharge. Once the discharge is cleaned up, the waste material should be disposed of properly. See the Waste Management and Disposal Procedures section of Good Housekeeping & Pollution Prevention Manual for disposal guidance.