ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

Attachment to the 2024-2029 Stormwater Management Plan

DeKalb County
GEORGIA

1300 Commerce Drive
Decatur, GA 30030

Table of Contents

List of Tables

1 Introduction

This document provides the plan of activities to be undertaken to satisfy the provisions and specific requirements of Part 3.3.2 of the Stormwater Management Plan (SWMP), Illicit Discharge Detection and Elimination (IDDE). The goal of DeKalb County's IDDE Plan is to detect and eliminate illicit discharges[1], illegal connections,[2] and illegal dumping[3] into the Municipal Separate Storm Sewer System (MS4). This IDDE Plan seeks to detect and eliminate illicit discharges, illegal connections, and illegal dumping by conducting Dry Weather Screening (DWS) on outfalls and following the enforcement procedures detailed in the County's Enforcement Response Plan (ERP).

2 Outfall Inventory and Mapping

An MS4 outfall is "the most downstream point (*i.e.*, final discharge point) on an MS4 where it discharges to the receiving waters of the State." Only the point of discharge that is owned and maintained by the County is considered an MS4 outfall. Outfalls do "not include open conveyances connecting two MS4s, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the [State] and are used to convey waters of the [State]." Outfalls also do not include road culverts, headwalls leading to ditches, or intermediate drainage structures. The County maintains an MS4 outfall inventory. A map of outfalls, including all associated receiving waters, is included with the SWMP.

3 Outfall Screening

The purpose of the County's DWS program is to identify and eliminate illicit discharges, illegal dumping, and illegal connections to the MS4. DWS conditions are defined as having less than 0.1 inch of rainfall per day for the previous 72 hours. Each outfall is inspected to determine if flow is present. If flow is identified, physical parameters such as color, odor, oil sheen, and floatables are recorded on the IDDE Checklist form, which is included with the SWMP. Each outfall is screened at least once during the five-year permit period.

Whenever flow is identified, the inspector will collect two water samples. The samples will be taken using the procedures listed in the Sample Handling section below. One sample is for on-site and lab analysis for pH, temperature, conductivity, fluoride, and surfactants. The other sample is for the lab to analyze for fecal. The fecal sample is properly stored, and the time of the grab is noted to ensure it is taken to the lab within six hours of the grab. The regular analysis sample is analyzed on-site for pH ($\geq$6 and $\leq$9 s.u.) and temperature and conductivity ($\leq$300 µmho/cm) using portable meters or test strips. The manufacturer's instructions are followed when using these portable meters. The inspector will take both samples to the Department of Watershed Management (DWM) lab at the end of the day or within six hours of the grab, whichever is sooner. The DWM lab analyzes the regular sample for fluoride and surfactants, and the fecal sample for fecal coliform.

The inspector may also conduct additional testing in the field. The additional testing would be for fecal, fluoride and surfactants. If the results from the field tests indicate the potential presence of an illicit discharge, per Table 1 below, or, if the fecal measurement is above 200 MPN/100ml, additional grab samples will be taken and sent to the DWM laboratory for confirmation of the field results.

---

[1] The County's MS4 Permit defines "illicit discharge" as "any direct or indirect non-stormwater discharge to the [MS4], including but not limited to, sewage, process wastewater, and washwater. The discharge may be continuous or intermittent in occurrence." Illicit discharges contribute pollutants including heavy metals, oil and grease, nutrients and bacteria to receiving water bodies.

[2] An illegal connection is "any man-made conveyance connecting a non-stormwater discharge directly to the MS4." Such conveyances include any pipe channel, drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the MS4.

[3] Illegal dumping is the deposit of household waste or yard waste into the MS4. Household waste includes tires, furniture, household appliances, and other bulk items. Yard waste includes grass clippings, leaves, brush, and tree branches.

Table 1. Outfall Screening Parameters to be Sampled

Parameter	Explanation
pH	The normal pH range for stormwater is between 6 and 9. A higher or lower result indicates the presence of either acidic or basic contamination.
Conductivity	Good quality stormwater will have a low conductivity (less than 300 µmho/cm). A high conductivity result indicates a high dissolved solids content in the water, perhaps from an illicit connection or cross- contamination with sanitary wastewater
Fluoride	No traces of fluoride should exist in stormwater. Presence of fluoride above the stormwater kit detection limit may indicate a cross-connection with potable water.
Surfactants	No traces of surfactants should exist in stormwater. Presence of surfactants above the stormwater kit detection limit may indicate contamination from washwater.

All inspection results are recorded on the Outfall Checklist form included with the SWMP.

4 Source Tracing and Elimination

Whenever an inspection identifies dry weather flow, the inspector traces its source. The inspector will follow the flow from the location where it is first observed in an upstream direction along the conveyance system. For below-ground systems, flow is followed upstream from the outfall to the next manhole with a junction. The upstream assessment is performed as far as reasonably possible to minimize the potential sources. Specific areas included in upstream inspections are gutters, catch-basins, and streets. Inspectors check any gutters between manholes for evidence of flows such as runoff from street-cleaning operations, car washing, irrigation runoff, etc. Parking lots, garages, and areas behind buildings and warehouses are also be inspected for evidence of illegal dumping, which includes wet or stained pavement.

If the source cannot be directly traced (e.g., it disappears between manholes, pipe or network, or the channel terminates), inspectors inspect the contributing area draining to the last outfall observed with dry weather flow and record land use, type of operation, and any other relevant information. The inspector will also use additional source tracing methods such as videotaping and smoke testing.

If the inspector is unable to locate the source of flow through employing the source tracing activities described above, alternate sources are considered, such as illegal industrial connections or new illegal connections. As part of this process, industrial facilities in the drainage area are identified and facility inspections are performed. If a sanitary sewer connection is suspected, recent construction activities in the drainage area are inspected. Inspectors also look for areas in the road that have been disturbed and re-paved.

5 Sample Collection

A manual grab sample of dry weather flow is taken at outfall locations where flow is present. This is accomplished by inserting a plastic container under- or down-current of a discharge with the container opening facing upstream. In most cases, the sample container itself is used to collect the sample. Less accessible outfalls may require the use of poles and buckets to collect the grab sample. To ensure the manual grab samples are representative, inspectors do the following:

- Label sample containers before the sampling event.

- Take a cooler with ice to the sampling point.
- Take the grab from the horizontal and vertical center of the outfall, if possible.
- Avoid touching the inside of the container to prevent contamination (*e.g.*, sterile and sealed bacteriological bottles will be used to sample fecal coliform).
- Keep the sample free from uncharacteristic floating debris.
- Transfer samples into proper container (*e.g.*, from bucket to sample container). However, fecal coliform will remain in its original container.
- Keep samples separate and labeled clearly.

All equipment and containers that come into contact with the sample will be cleaned between inspections. Additionally, sample collection equipment and container materials will be totally non-reactive to prevent leaching of pollutants. Proper cleaning procedures will be followed in an effort to achieve clean-catch grab sampling.

5.1 Sample Handling

The grab sample volume, preservation requirements, and holding time requirement for those parameters being tested are listed in Table 2 below. Proper preservation and maintenance of the holding times for each parameter is essential for the integrity of the monitoring program. The preservation technique required for screening the parameters is cooling the samples to 4°C (for all of the parameters except Fluoride). Fecal coliform must be returned to the lab for analysis within six hours or the results may be unrepresentative of the outfall.

Table 2. Sample Handling Requirements

Parameter	Sample Volume	Sample Preservation	Maximum Holding Time
pH	N/A	None	Analyze in field
Conductivity	N/A	None	Analyze in field
Surfactants	500 mL	Cool, 4 °C	Analyze in field or 48 hours
Fluoride	500 mL	None	Analyze in field or 28 days
Fecal Coliform	100 mL	Cool, 4 °C	Analyze in field or 6 hours

If the sample is taken from a structure that has a node number, the node number is recorded on the label and is used to ensure each sample is uniquely identified in the field and tracked on field data collection forms. If the sample is taken from a structure without a node number, then it is noted on the label and chain of custody document that there is no node number, and the node number of the closest structure is recorded on the chain of custody form.

Collected samples are placed in the appropriate sample containers for preservation and shipment to the designated laboratory. Each sample is identified with a separate identification label. Information recorded on the label includes the following:

- Date
- Time
- Temperature
- pH
- Weather condition
- Address
- Node number
- To whom the results are to be sent

5.2 Laboratory Coordination and Sample Delivery

The samples are packed in coolers with ice (or ice packs) to ensure they maintain the required temperature of less than or equal to 4ºC during transport to the designated laboratory. The laboratory is contacted prior to sampling to assure the samples will be analyzed within their holding time. Samples may be placed in individual one-gallon re-sealable bags as a precaution to avoid spilling. All glass bottles are individually bagged and bubble-wrapped to prevent them from breaking. These samples may be placed in a large trash bag inside a cooler (to prevent sample leakage) with ice completely covering the samples.

A chain-of-custody (COC) form accompanies all samples. The COC form's purpose is to provide a mechanism for tracking each sample submitted for laboratory analysis. The information on the COC form must be identical to the information of the sample label. A COC form is prepared by the sample collector for each set of samples submitted for laboratory analysis. The COC form documents the transfer of custody from the sampler to the laboratory. Copies of the COC forms will be kept in inspection files.

6 Quality Assurance/Quality Control

This section describes the elements of the field quality assurance/quality control (QA/QC) program. The overall QA/QC objective for the monitoring program is to ensure that the data collected are of good quality.

6.1 Field QA/QC

The field equipment is calibrated appropriately prior to leaving for the sampling site to ensure proper performance of the equipment. This includes the pH meter, conductivity meter, and thermometer. If the pH meter does not self-calibrate, it is calibrated using two buffers that bracket the expected pH range (typically 4 and 7). If the conductivity meter does not self-calibrate, it is calibrated by rotating the probe below the surface in a standard Potassium Chloride solution in a circular motion. The readings must be within 10 percent to be acceptable.

If a sample is suspect, quality control blanks are incorporated into the procedures. Quality control blanks are used in the field to determine potential sample contamination during sample collection, handling, shipment, storage, or laboratory handling and analysis. Reagent grade water is used for the quality control blanks.

6.2 Laboratory QA/QC

The laboratories follow EPD-approved methods and should routinely perform quality control checks during laboratory analysis, including calibration standards, blanks, laboratory control samples, laboratory control duplicate samples, matrix spikes, and matrix spike duplicates. Spikes and duplicates are performed on a minimum of 10 percent of samples.

7 Enforcement

If an illicit discharge, illegal connection, or illegal dumping is identified, the inspector will follow the enforcement procedures delineated in the County's ERP, provided as **Appendix A** of the SWMP.

7.1 Potential Illicit Discharge Inspection

The County's MS4 Permit defines "illicit discharge" as "any direct or indirect non-stormwater discharge to the [MS4], including but not limited to, sewage, process wastewater, and washwater. The discharge may be continuous or intermittent in occurrence." Illicit discharges contribute pollutants including heavy metals, oil and grease, nutrients and bacteria to receiving water bodies. If the County receives a complaint related to an illicit discharge and the County confirms that non-stormwater is being discharged into the MS4, the County will perform an Illicit Discharge Inspection.

The purpose of the illicit discharge inspection is to identify and eliminate illicit discharges, to the MS4. Whenever flow is identified, the inspector will follow the procedure detailed above in the Outfall Screening section, including source tracing and elimination, sample collection, sample handling, laboratory and sample delivery, quality assurance/quality control, field QA/QC, laboratory QA/QC and enforcement.

All inspection results are recorded on the Illicit Discharge Inspection Form included in the SWMP. The illicit discharge inspection form, all notes, forms, lab results, enforcement actions, status and any other information related to the complaint are stored on the County's secure database.