

Stormwater Pollution Prevention Plan Development Guide

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CITY OF MEDICINE

City of Durham, North Carolina

Stormwater Services Division

Department of Public Works

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Introduction

Purpose

This is a step-by-step guide to developing a Stormwater Pollution Prevention Plan (SPPP) for your business. Essential components of a SPPP will be discussed in detail. This guide considers all City, State, and Federal regulations applicable to SPPPs. There may be cases, though, where additional regulations may apply to your business. You have most likely either been instructed by City of Durham Water Quality staff or by requirement of a National Pollutant Discharge Elimination System (NPDES) Permit to develop a SPPP. You should take the time to read the instructions of City staff and/or your NPDES Permit for any additional requirements in your facility's SPPP beyond those discussed in this guide.

Background

In 1972, Congress passed the Clean Water Act. This Act focused on eliminating “point sources” of pollution in streams, such as industries, agricultural operations, and sewage plants. The 1972 Act was highly successful in reducing much of the pollution getting into streams and rivers (surface waters). However, research in the late 1970s and 1980s showed that an increasing amount of pollution entered surface waters via stormwater runoff. Every day, millions of people contribute to the pollution of our nation's streams, lakes, rivers, and oceans through lawful activities like operating motor vehicles or fertilizing lawns, and unlawful activities such as improper waste disposal or illegal dumping.

To combat this broad “non-point” source pollution problem, Congress amended the Clean Water Act in 1987 to require localities of 100,000 or more people to develop programs to reduce pollution from stormwater runoff. With a population of 194,405 (the fourth largest in North Carolina) Durham was subject to this rule. In 1994, The City developed a comprehensive stormwater management program aimed to improve and protect the water quality of Durham's surface waters and assist property owners with flooding problems. This program is implemented by Stormwater & GIS Services, which is part of the Department of Public Works.

Your business (and many others like yours) is required to develop a SPPP because it has the *potential* to release pollutants to the City Municipal Separate Storm Sewer System (MS4) or Waters of the State *and/or* your facility *already has released* pollutants to the MS4 or Waters of the State. The authority for this requirement comes from Durham City Code § 70-511(c)(1)(a) or from your NC State-issued NPDES Permit.

Stormwater Pollution Prevention Plans

What is a Stormwater Pollution Prevention Plan?

A Stormwater Pollution Prevention Plan (SPPP) is a document that addresses the following goals, specific to the business that develops it:

1. To implement and maintain **Best Management Practices** (BMPs) that identify, reduce, eliminate, and/or prevent the discharge of stormwater pollutants.
2. To **prevent violations** of surface water quality, groundwater quality, and sediment management standards.
3. To **eliminate illicit discharges** to stormwater drainage systems. Illicit discharges, according to Durham City Code (§ 70-511(a)), are “The discharge, emission, disposal, pouring, or pumping, directly or indirectly, to the drainage system of any liquid, solid, gas, or other substance, other than stormwater...”
Remember our slogan: “Only rain in the drain!”



TIP: Storm drains flow directly to streams...WITHOUT any treatment!

Document Handling

Your facility’s SPPP is an important document. It must be managed appropriately. There are three main components to handling your SPPP:

Updates

Your SPPP must be updated to accommodate significant changes at your facility which cause the documented practices to be less effective in controlling pollutants, or, as required to meet permit conditions, including meeting water quality standards. For example, this may include adding or revising Best Management Practices (BMPs) to account for increased work volume or a workspace expansion.

Tracking

Always know where your SPPP is. For most operations, a single copy of this document is recommended. This way, only a single copy must be maintained and updated as necessary. For businesses that require multiple copies be distributed to employees or departments, a document sign-out or tracking system is highly recommended.

Availability

An up-to-date version of your facility’s SPPP (including all maps, diagrams, forms, and records) must be readily available at all times to your employees as

well as City of Durham (and State/Federal) personnel. Requests for copies of your SPPP must be filled within two (2) weeks.

Anatomy of a Stormwater Pollution Prevention Plan

A SPPP is composed of multiple, equally important, sections. Note that while the *format* of this document is variable, the *content* is not.



TIP: Throughout the process, write your SPPP assuming the reader has no prior knowledge of your facility or operation!

Title Page

The title page should *at a minimum* include:

- the document title (Stormwater Pollution Prevention Plan),
- facility name,
- facility physical address,
- and date of last plan update/revision.

Operations Description

Describe the activities conducted in your operation. Include buildings, storage of raw materials, and the flow of goods and materials through the facility. For complex operations, a process flow diagram is helpful. Include any variations that could impact stormwater, including seasonal and climate-related changes in production, particularly if the changes affect contact with stormwater.

Materials Inventory (a.k.a. Potential Pollutants)

List significant materials handled, treated, stored, or disposed of that can be exposed to stormwater. Include the location of each material that is exposed to stormwater and a measure of its average on-hand quantity by volume or weight. Also include the significant materials handled during past activities.

Be sure to include:

- Materials handled indoors that could be tracked outdoors by equipment or vehicles.
- Explanations of how significant materials are handled, treated, stored, and disposed of to prevent pollution of stormwater and how each material has or can contaminate stormwater, including past activities.
- A list of the pollutants that may be present in your stormwater discharges.
- Method(s) and location(s) of on-site storage and disposal.



TIP: Even a water-based or biodegradable product can be a stormwater pollutant!

Pollution-Generating Activities

List pollutant generating activities and areas and describe their potential to be a pollutant source in a significant amount. Pollutant generating activities and areas can include:

- Loading and unloading of bulk dry or liquid materials.
- Dust or particulate generating processes.
- On-site solid waste or residual treatment, storage, or disposal; material handling sites; refuse sites; and sites used for the application or disposal of process wastewaters.
- Vehicle and equipment maintenance, fueling, and washing/cleaning.
- Outdoor storage area(s) of materials or products, stockpile area(s), tank farms, etc.
- Petroleum transfer area.
- Manufacturing building roofs and other processing areas where particles are emitted from air vents and are likely to mix with stormwater.
- Roofs or other surfaces composed of materials that may be mobilized (eluted) by stormwater, (e.g., galvanized or copper roofs).
- Outdoor manufacturing or processing area.
- Plant yards, immediate access roads and rail lines, manufacturing buildings, and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.

Also check storage tanks, pipes, or pumping areas and note any leaks, spills, or staining. Is the loading and unloading of materials exposed to stormwater? Do the dumpsters have a lid, or are they stored in a covered area? Verify whether the dumpsters or other disposal units have “unsealed” bottoms. Also pay attention to material handling equipment, including everything from vehicles to pallets, where raw and waste materials from industrial activities are exposed to stormwater.

Non-Stormwater Spill History

List and briefly describe (date, material spilled, quantity spilled, response actions) all significant pollutant spill incidents at the site, including during previous ownership, as records allow. Usually, formatting this section in a table is the simplest way.

Site Map

Draw an up-to-date site map to an identified scale or with relative distances between significant structures and drainage systems that includes the following:

- Stormwater outfalls (the places where stormwater runs off your grounds)
- Stormwater drainage and discharge structures
- An outline of the stormwater drainage areas for each stormwater outfall
- Buildings and paved areas
- Areas where potential pollutants are stored
- Surface water locations (streams, creeks, wetlands, drainage ditches, etc.)
- Areas of existing and potential soil erosion in a significant amount
- Vehicle (trucks, vans, forklifts, etc.) service areas

You can get a site map from several sources. Acceptable sources include:

- City of Durham Public Works Engineering (3rd Floor City Hall)
- Durham Online GoMaps (<http://gisweb.durhamnc.gov/gomaps/map/index.cfm>)
- Google Maps/Google Earth (<http://www.google.com>)

Runoff Monitoring Plan

Note: You don't need to include this section in your SPPP if you don't have a NPDES permit or are not directed to do so by Stormwater Services.

Some facilities, as directed, must collect samples of the stormwater that runs off facility grounds. *Outfalls* are points at which concentrated runoff leaves facility grounds.

Runoff samples collected at outfalls are used for:

1. Analytical (laboratory) analysis of actual pollutant content. Stormwater Services and/or your facility's NPDES Permit will indicate specific parameters to be measured.
 - This analysis must be conducted by a NC licensed laboratory. A list of companies providing these services is included with this guide. Contract with your chosen company *prior* to sampling to ensure appropriate processing time and for instruction on sampling procedures.
2. Qualitative (Visual) analysis for indicators of pollutant content
 - This analysis is conducted on-site no later than 30 minutes from the time of collection.



TIP: Please refer to this guide's Appendices for additional monitoring guidance and forms.

In your SPPP, identify who is responsible for monitoring and thoroughly describe monitoring procedures to meet requirements including sampling points, frequencies, methods, parameters, completing the discharge monitoring report, etc. At a minimum, the monitoring plan must include:

- Personnel who will conduct the sampling (name of company if not conducted by in-house personnel).
- Locations and descriptions of all points where samples will be taken (also reference on Site Map).
- An explanation of your chosen method for determining rainfall amount. For example, by use of a rain gauge.
- A list of the pollutant parameters (ie. pH, Oil and Grease, Total Suspended Solids) for analysis.
- Procedures for sample collection and handling, sending samples to the lab, and submitting the results to Stormwater Services/NC Division of Water Quality.

Stormwater Pollution Prevention Team (SPP Team)

This section should provide the reader with a clear understanding of who in your organization is responsible for:

- Developing/maintaining the SPPP and assisting the plant manager in its implementation, maintenance, and modification.
- Holding regular meetings to review the overall operation of the Best Management Practices (BMPs).
- Establishing responsibilities for sampling, inspections, operation and maintenance, and availability for emergency situations.



TIP: Be sure to create an SPP Team emergency contact list and post copies visibly around your facility, as well as inside your SPPP document.

Employee Training

All employees in your operation involved with potential pollutants or pollutant generating activities are required to have knowledge of your SPPP. The rationale is simple: the more people trained in spotting problems, the more prepared your operation can be to either prevent or respond to them.

Employees should have a general understanding of the SPPP, with particular emphasis on BMPs- especially those in which they must participate.

In the Employee Training section of your operation's SPPP, describe a plan for training employees that takes into consideration availability, turnover, etc. The frequency of training will also be influenced by these factors. Indicate what individual(s) will coordinate and conduct the trainings and what topics will be covered. Maintain records of which employees have been trained. These records should be kept in an appendix of your SPPP.

Best Management Practices (BMPs)

Best Management Practices (BMPs) are measures taken to prevent or reduce the amount of pollution entering surface waters. There are three categories of BMPs:

Operational

These practices usually involve processes, prohibitions, procedures, schedules of activities, and are low cost and low tech in nature. These BMPs focus on preventing pollutants from coming into contact with stormwater. Also, it is not uncommon for most businesses/operations to be already implementing some BMPs from this category. The following are *required* Operational BMPs:

- Good Housekeeping
- Preventive Maintenance
- Spill Prevention and Response
- Material Handling and Storage
- Waste Handling and Recycling

Operational BMPs usually become part of staff members' work routines. An efficient method of ensuring task completion is to instruct staff responsible for certain tasks to fill out logs or inspection forms. Oversight and accountability are key to upkeep of this type of BMP.

Structural

These types of practices also focus on preventing pollutants from coming into contact with stormwater. As the category name implies, this is accomplished through a wide assortment of installations, such as:

- Covered roofs and bays
- Secondary containment
- Dust control equipment
- Berms/dikes
- Silt fences
- Track-out pads

Structural BMPs can require constant inspection and upkeep to maintain their effectiveness. It is important to distinguish between temporary structural solutions (temporary textile berms or silt fences) and more permanent ones such as a covered roof.



TIP: Remember, temporary structural BMPs are not long-term solutions!

Treatment

While these BMPs can be structural in nature, they differ in that Treatment BMPs are meant to remove pollutants from stormwater, rather than prevent contact. These can be the most expensive of all BMP types, both in up-front and upkeep costs. Constant inspection and upkeep is necessary. Treatment BMPs are also not 100% effective, even if maintained and operated correctly. Some examples of treatment BMPs are:

- Oil/Water separators
- Neutralization tanks
- Sediment filtration systems

Use these types of BMPs as required or if operational and structural options are not adequate for addressing your facility's stormwater pollution issues.

Each of your facility's BMPs should be written to include the following details:

- Name of BMP
- Date of last revision
- Purpose/goals of BMP
- Procedures to follow
- Personnel responsible for BMP
- Management/oversight of BMP execution



TIP: Refer to the appendices of this guide for some example BMPs and a blank template for writing BMPs of your own!

Feasibility Study

This is a short discussion of your rationale for choosing to implement your current set of BMPs. Describe how your current set of BMPs is a best fit for your current process, manpower level, available capital, etc.

BMP Implementation Schedule

Once you have decided upon which BMPs your operation will be putting into use, create a schedule of dates by which each of your BMPs will be implemented. Different BMPs may require different startup period lengths. Once you have set implementation dates, you may be held accountable for them.

Inspections and Evaluations

As part of your operation's SPPP, you'll be expected to conduct self-inspections and evaluations periodically. The purpose of these inspections and evaluations is to assess

the effectiveness of your BMPs. These inspections and evaluations are conducted *in addition to* any that are part of BMPs.

Semi-Annual Inspection

Conduct an inspection of your facility and all stormwater systems twice a year—once in the Fall and once in the Spring. Document these inspections, as well as subsequent maintenance activities performed, recording date and time of inspection and individual(s) making the inspection. Maintain these records of inspection in an appendix of your SPPP. An example Inspection Log is included in the appendices of this guide. Be sure to note and correct any issues observed on your inspection form.

Annual Comprehensive Evaluation

Conduct an annual comprehensive evaluation once per year. This evaluation includes a full review of your SPPP and BMPs, including training, inspection, monitoring (if applicable), and maintenance logs. In other words, at the end of the year (January) be sure you've completed all your inspections, monitoring, training, and SPPP review.

Plan Update and Revision History

Create and keep with your SPPP a form or table for use in tracking updates and revisions to the document.

Final Review

Once all SPPP sections have been completed and assembled, conduct a review of the document. It is highly recommended that this review be conducted by multiple individuals with knowledge of your operation.

Signature by Responsible Person(s)

After final review and approval, the SPPP should be signed by your operation's Responsible Person(s). Pay attention to how the City of Durham Stormwater Management and Pollution Control Ordinance § 70-493(b) defines "responsible:"

Responsibility includes the ability to control what occurs on property through ownership of property, or through ownership, control, or management of a business, organization, or other entity whose activities occur on property and cause in part or in whole the action, incident, or condition.

If your facility is subject to a NPDES Permit, an "Authorized Facility Representative" will be required to certify the SPPP. Also, under a NPDES Permit, your operation's SPPP will require a "Certification of Non-Stormwater Discharges." This certification requires a signature confirming that your stormwater outfalls have been tested and that no non-stormwater discharges occur from your operation.

Appendix A: SPPP Completion Checklist

SPPP Completion Checklist – Page 1 of 2

Facility Assessment

	Yes	No	N/A
Nature of operation clearly described.			

Materials Inventory

All potential pollutants described			
Locations of all potential pollutants indicated			

Pollutant Generating Activities

All pollutant generating activities described			
Locations of pollutant generating activities indicated			

Spill History

Record of all onsite spills provided			
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Site Map

To-scale site map provided			
Outfalls labeled			
Stormwater drainage structures labeled			
Buildings/structures labeled			
Locations of pollutants/pollutant generating activities labeled			
Surface water locations (ponds/streams/etc.) labeled			

Runoff Monitoring Plan

Responsible personnel identified			
Outfall locations identified			
Pollutant parameters for analysis identified			
Sample collection procedures described			
Calculation steps for computing discharge rate, rainfall intensity, drainage area			

Pollution Prevention Team

Contact information and roles of team members provided			
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Best Management Practices (BMPs)

BMPs described in detail, including: Title, Purpose, Procedures, Responsible Personnel, and Management of Responsibility			
All appropriate BMPs in use			

BMP Implementation Schedule

Each BMP in the SPPP has a corresponding implementation date either posted on the BMP or in a separate table			
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SPPP Completion Checklist – Page 2 of 2

Feasibility Study	Yes	No	N/A
A brief discussion of BMP implementation rationale is included			
Employee Training			
Schedule of employee training sessions developed			
Content of training sessions developed			
Records of training sessions maintained			
Inspections and Evaluations			
Inspection and evaluation schedule developed			
Inspection and evaluation records maintained			
Plan Updates and Revision History			
Table or form highlighting all SPPP updates and revisions			
Final Review			
Review of SPPP complete			
Signature by Responsible Person(s)			
Signature(s) on SPPP			

Appendix B: Stormwater Runoff Monitoring Guide

Stormwater Runoff Monitoring Guide

Frequency

Monitoring frequency will be directed by the City of Durham, Stormwater Services or by your facility's State-issued National Pollutant Discharge Elimination System (NPDES) Permit.

Types of Monitoring

Visual (a.k.a. Qualitative)

This type of monitoring is conducted on-site and consists of a visual inspection of a stormwater runoff sample. The sample is described according to the following characteristics:

- Color
- Odor
- Clarity
- Floating Solids
- Suspended Solids
- Foam
- Oil Sheen
- Other obvious indicators of pollution

Analytical (a.k.a. Quantitative)

This type of monitoring consists of a laboratory analysis of a stormwater runoff sample. The City of Durham Stormwater Services or your facility's NPDES Permit will indicate for which parameters the samples must be analyzed. This analysis may only be performed by a state-licensed laboratory.

Outfalls

Points at which concentrated stormwater runoff leaves facility grounds are called outfalls. Outfalls can take the form of inlets to pipes, flumes, natural weirs, gaps in solid walls, etc. Observe the paths of runoff from your site during a storm to locate outfalls. If your facility grounds have no such outfalls (ie. all sheet flow), you may need to install devices to permanently or temporarily create outfalls (weirs, sandbags, etc.). Facilities can have any number of outfalls, depending on area, topography, and adjacency to storm sewer inlets and lines. Since sampling is an important indicator of Best Management Practice (BMP) effectiveness, it is important to know which potential

pollutants may reach any given outfall during storm events. Determine the locations of your outfall(s) using these guidelines and submit them to the City of Durham Stormwater Services or NC Division of Water Quality (as appropriate) for approval.

Forms

The Qualitative and Discharge Monitoring Forms may be found on the NC Division of Water Quality's website at the following address:

[http:// portal.ncdenr.org/web/lr/npdes-stormwater](http://portal.ncdenr.org/web/lr/npdes-stormwater)

(Click on the "Monitoring Forms tab and choose the Forms specific to your permit type.)

Generic copies of these forms may be found in Appendix F of this Guide.

Sampling Procedures

Samples must be collected from each outfall during a "measurable storm event." This is a rainstorm that:

- Produces an actual discharge from your stormwater discharge outfall(s)
- Occurs no less than 72 hours from the previous measurable storm event

Samples must be collected within the first 30 minutes after discharge begins!

Sampling Safety

- You're not required to sample runoff if doing so would put your sampling staff in danger or the outfalls are inaccessible.
- If an adverse condition prevents your staff from sampling during a sampling period, you're still required to file a Monitoring Report indicating the reasons why a sample couldn't be taken.

Visual Sampling

- Collect grab samples from the outfall locations using a clean, clear glass jar.
- Attempt to take the sample from the middle of the water column to avoid scooping sediment or solids into the sample.
- Record the outfall number, date, time sample was taken, as well as the name of the person conducting the monitoring.
- Examine the sample in a well-lit area within 30 minutes after collecting it.
- Document your observation of the required parameters and other obvious indicators of stormwater pollution.

- Fill out the Qualitative Monitoring Form and send copies to the NC Division of Water Quality and/or City of Durham Stormwater Services as required. Keep a copy filed in your Stormwater Pollution Prevention Plan.

Analytical Sampling

- Contract with your chosen laboratory service company prior to sampling to ensure appropriate processing time and for specific sampling instruction and chain-of-custody procedures. Sampling materials (bottles) may also be available from your chosen laboratory services company.
- Within 30 days of receipt of monitoring results, fill out the Discharge Monitoring Form and send copies to the NC Division of Water Quality and/or City of Durham Stormwater Services as required. Keep a copy filed in your Stormwater Pollution Prevention Plan.

Note: Analytical monitoring often requires reporting of runoff pH. pH must be measured within 15 minutes of sample collection and therefore cannot be reliably done after transport to the laboratory. Record the pH from each visual sample you collect.



TIP: If, during a monitoring period, no measurable storm events occur or no stormwater discharges from your facility's outfalls, you must still file a Monitoring Report! Indicate "NO DISCHARGE" on the Monitoring Forms.

Potential Sampling Problems and Solutions

Problem	Solution
Run-on from Neighboring Properties	Ideally, your stormwater samples will contain only runoff from your site. However, stormwater from a neighboring facility can "run on" and commingle with your own regulated discharge, possibly adding contaminants not found at your facility. You are responsible for any and all pollutants discharged from your site- irrespective of the pollutants' origins and whether the other facility has permit coverage. This responsibility includes run-on discharges from neighboring properties if this discharge commingles with your own regulated discharge. To accommodate stormwater run-on, EPA requires as part of the SPPP site description that you document the locations and sources of run-on. As part of this documentation, if you collect and analyze samples of the run-on, you will need to report all such findings in your SPPP.
Stormwater from industrial areas commingles with stormwater discharges from non-industrial areas or areas not regulated before it reaches the surface water body or MS4.	Attempt to sample the industrial stormwater discharge before it mixes with stormwater from non-industrial areas.

Adverse Weather Conditions	High tides and high flow or flood conditions can cause stormwater conveyances to reach maximum capacity, pipes to become clogged or submerged, and other unrepresentative flow situations. High flows could also be dangerous, so you should use your best professional judgment when selecting sampling locations. In some cases you may need to sample at a point before the intended outfall location.
Problem	Solution
There are numerous stormwater outfalls in one area.	Construct an impound channel or join together flows by building a weir or digging a ditch to collect discharge at a low point for sampling purposes. This artificial collection point should be lined with plastic to prevent infiltration and the introduction of sediment. Or, alternatively, sample at several locations to represent total site runoff.
The outfall is inaccessible (examples include underwater discharges or unreachable discharges such as a pipe discharging out of a cliff).	Go upstream of the discharge until a sample can be taken (i.e., to the nearest manhole or inspection point). You may need to sample at several locations to best represent runoff from this discharge point if you cannot access an upstream location.
A facility has many sampling locations making it difficult to collect all of the samples during the first 30 minutes of discharge, as required.	Have a sampling crew ready when storms are forecast to that all outfalls can be sampled during the first 30 minutes. Also, automatic samplers may be used to collect samples within the first 30 minutes, triggered by the amount of rainfall, the depth of flow, flow volume, or time.
A stormwater sample location is beneath a manhole.	For accessibility and safety, use a sampling pole to collect samples from a manhole. Before a person can enter a manhole to collect a sample, they must be trained in confined space entry.
Stormwater from more than one industry type is commingled.	You must comply with monitoring requirements for all applicable sectors and SIC codes.

Appendix C: Sample List of Best Management Practices

Best Management Practice Title/Topic

BMP	Purpose
Stormwater Pollution Prevention Training	This procedure should outline: content of training seminars, frequency of training, and assignment of trainers.
Good Housekeeping Program	Good housekeeping (GH) is the preservation of a clean and orderly work environment that contributes to overall Facility pollution control efforts.
Preventive Maintenance Program	This is a plan for your Facility to regularly inspect and test equipment and operational systems whose failure has a potential to release pollutants into the stormwater drainage system.
Spill Prevention	This BMP outlines general material handling guidelines for the prevention of spills of any type. Depending on your facility and the types of materials handled, you may want to write a separate BMP for each potential pollutant.
Spill Response	This BMP lists the specific steps employees must follow in case of a spill.
On-Site Contractor Responsibilities	Your facility is ultimately responsible for pollutants that leave its site. Disclaim to all vendors that come on to your site that vendors will be responsible for the cost and effort to clean up and remediate spills and other incidents caused by the vendor that creates pollution problems.
Industrial Activity Exposure	This BMP outlines how your facility will take reasonable measures to minimize the exposure of industrial activities to precipitation and stormwater run-on.
Daily Observations	This BMP is meant to identify critical items to be observed for problematic conditions before those conditions arise.
Scrap Metal Storage And Salvage	If applicable, this BMP outlines the procedures for accepting, processing, and storing scrap metal.
Hazardous Material Inventory Control	Make an effort to reduce the varieties of HAZMATs used and quantities stored at its facility. Minimizing the use of products to those on a short list can increase safety, while reducing purchase price, handling costs, disposal costs, and simplifying inventory.
Vegetation Practices	Preserving existing vegetation or re-vegetating disturbed soil as soon as possible after construction is the most effective way to control erosion

Sediment And Erosion Control	These BMPs are required for construction activities. If there is exposed soil at your facility that may be eroded and washed into storm drains or streams, you must reduce this erosion to the maximum extent practicable.
Management Of Runoff	Management of runoff is the consideration of appropriate traditional stormwater management practices (practices other than those which control the source of pollutants) used to divert, infiltrate, reuse, or otherwise manage stormwater runoff in a manner that reduces pollutants in stormwater discharges from the site.
On-Site And Remote Refueling Operations	This BMP details proper fueling procedures as well as fuel spill prevention and response plans.
Spill Kits	If spills occur at the facility, personnel should be equipped for both containment and cleanup. This BMP outlines the procedures for creating and staging spill kits for maximum safety and efficiency.
Oil/Water Separators	This BMP outlines guidelines for the maintenance and operation of the OWSs.
Secondary Containment	All containers used to store waste oils and other such potentially harmful liquids should have a form of secondary containment. The primary purpose of secondary containment is to provide additional storage capacity for any materials which may leak due to the failure, overfilling, or improper draining of the primary storage container.
Hazardous Materials Storage And Management	This BMP outlines precautions for keeping hazardous materials stored in a safe manner.
Hazardous Waste Storage And Management	This BMP outlines precautions for keeping hazardous waste stored in a safe manner.
Illicit Connections And Improper Discharges Elimination	This BMP outlines procedures that will correct any illicit connections and eliminate any improper discharges to the stormwater system.
Contaminated Soil Removal	This BMP outlines the steps in initiating the removal of contaminated soil that can cause stormwater runoff pollution problems.

Note: Not all BMPs listed above will be applicable to every operation. Choose the BMPs most appropriate for addressing the stormwater pollution potential of your operation. In addition, the above list is not comprehensive, and is intended to provide a starting point only.

Appendix D: Blank BMP Template

Appendix E: Example Inspection Forms

Facility Semi-Annual Inspection Form	
Date:	Facility Name:
Time:	Facility Address:
Inspector's Name:	

Illicit Discharges/Connections	Yes	No	N/A	Comments
Is site free of illicit discharges?				
Is site free of illicit connections?				
General Site Condition	Yes	No	N/A	Comments
Are pollutants stored in a location or manner that reduces the risk of significant illicit discharge?				
Are pollutant-generating activities conducted in a location or manner that reduces the risk of significant illicit discharge?				
Are the grounds free of spills, leaks, fugitive materials, track-in, and track-out?				
Are stormwater management devices and measures maintained and functioning properly?				
Hazardous Material Management	Yes	No	N/A	Comments
Are the HAZMAT storage areas in good condition?				
Are all containers in good condition and properly stored, labeled, and closed?				
Oil/Water Separator	Yes	No	N/A	Comments
Is the area free of signs of overflow?				
Has the facility implemented an oil/water separator inspection, maintenance, and operation program?				
Waste Management	Yes	No	N/A	Comments
Are dumpster pad and other waste collection areas kept clean to avoid stormwater contamination?				

Are waste collection containers of sufficient size to contain all materials?				
Do waste collection containers have proper lids that remain closed?				
Are waste collection containers in good condition?				
Automotive	Yes	No	N/A	Comments
Is all vehicle service conducted inside shop bays?				
Are vehicle washing activities conducted with proper controls?				
Are there 9 or fewer junk, salvaged, or unlicensed vehicles on the premises?				
Storm Sewer Maintenance	Yes	No	N/A	Comments
Does the facility inspect and maintain the onsite storm sewer system?				
Are facility storm drains free from obstructions and signs of pollutants?				
Spill Response	Yes	No	N/A	Comments
Is there an up-to-date emergency contact list posted in facility?				
Is there a spill prevention and response plan?				
Are spill kits available and fully stocked as appropriate?				
In the event of a spill is storm drain inlet/outlet protection available?				
Are spills cleaned up promptly and completely?				
Are significant spills reported and documented?				
Drum and Tank Management	Yes	No	N/A	Comments
Are containers labeled and in good condition? (no rust, corrosion, bulges, dents)				
Is secondary containment and cover in use where necessary?				
Is secondary containment free of any cracks, holes, or evidence of leaks?				

Are secondary containment drain valves maintained locked shut?				
Are drain logs and release observation records being maintained?				
Is tank leak detection system operating properly?				
NPDES Stormwater Permit	Yes	No	N/A	Comments
Does facility have a NPDES/NCGNE permit if required?				
Is the <i>current</i> Certificate of Coverage available for confirmation?				
Stormwater Pollution Prevention Plan (SPPP)	Yes	No	N/A	Comments
Is the SPPP readily available for review?				
Facility/Operations Narrative Description				
Maps (General Location and Site Layout)				
Potential Pollutants				
Spill History				
Secondary Containment Records				
BMP Summary and Implementation Plan				
Inspections and Evaluations				
Spill Prevention & Response Plan				
Preventative Maintenance and Good Housekeeping Program				
Employee Training				
Runoff Monitoring Plan				
Pollution Prevention Team				
Feasibility Study				

Plan Updates/Revision History				
Signature of Responsible Party				
Runoff Monitoring	Yes	No	N/A	Comments
Has required stormwater runoff monitoring been conducted?				
Are records of runoff monitoring maintained?				
Are monitoring results within benchmark allowances?				
Are Tier 1/2/3 responses documented as required?				
Inspections	Yes	No	N/A	Comments
Are copies of inspections and follow-up records maintained?				
Are issues self-identified and addressed promptly?				
Training	Yes	No	N/A	Comments
Have required trainings been conducted?				
Are training records maintained?				

Additional Notes and Comments:

COMPREHENSIVE SITE COMPLIANCE EVALUATION

DATE: _____

EVALUATOR(S): _____

No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
------------------------------	---------------------------	--------------------------

1. Accuracy of Site Map:

Identification and location of outfalls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watershed boundaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Direction of runoff flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buildings and impervious areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed material storage areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Locations of significant spills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Required Action: _____

2. Accuracy of SPPP and Related Records

No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
------------------------------	---------------------------	--------------------------

Pollution Prevention Team Members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outfall characteristics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed materials inventory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Records of significant releases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preventative maintenance inspection records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
Employee training records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stormwater sampling parameters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Required Action: _____

3. Accuracy of Potential Pollutant Sources	No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
Vehicle/ equipment maintenance, cleaning and fueling areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed material storage areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loading/ unloading areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Required Action: _____

4. Effectiveness of Stormwater Management Controls	No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
Good housekeeping practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preventative maintenance program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spill prevention and response	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preventative maintenance inspections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility inspections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
Employee training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-storm discharges-visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of stormwater-visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sediment and erosion areas-visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Structural measures and controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Required Action: _____

	No Action <u>Required</u>	Action <u>Required</u>	Not <u>Applicable</u>
5. Overall Evaluation Effectiveness of SPPP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Required Action: _____

“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 gathered and evaluated 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.”

Signature: _____
 Title: _____
 Date: _____

Appendix F: Blank Discharge Monitoring Reports



Stormwater Discharge Outfall (SDO) Qualitative Monitoring Report

For guidance on filling out this form, please visit: <http://portal.ncdenr.org/web/lr/npdes-stormwater/>

Permit No.: N/C/_/_/_/_/_/_/_/_ or Certificate of Coverage No.: N/C/G/_/_/_/_/_/_/_/_

Facility Name: _____

County: _____ Phone No. _____

Inspector: _____

Date of Inspection: _____

Time of Inspection: _____

Total Event Precipitation (inches): _____

Was this a “Representative Storm Event” or “Measureable Storm Event” as defined by the permit?
(See information below.)

Yes No

Please verify whether Qualitative Monitoring must be performed during a “representative storm event” or “measureable storm event” (requirements vary, depending on the permit).

Qualitative monitoring requirements vary. Most permits require qualitative monitoring to be performed during a “representative storm event” or during a “measureable storm event.” However, some permits do not have this requirement. Please refer to these definitions, if applicable.

A “**representative storm event**” is a storm event that measures greater than 0.1 inches of rainfall and that is preceded by at least 72 hours (3 days) in which no storm event measuring greater than 0.1 inches has occurred. A single storm event may contain up to 10 consecutive hours of no precipitation.

A “**measurable storm event**” is a storm event that results in an **actual discharge** from the permitted site outfall. The previous measurable storm event must have been at least 72 hours prior. The 72-hour storm interval does not apply if the permittee is able to document that a shorter interval is representative for local storm events during the sampling period, and the permittee obtains approval from the local DWQ Regional Office.

By this signature, I certify that this report is accurate and complete to the best of my knowledge:

(Signature of Permittee or Designee)

1. Outfall Description:

Outfall No. _____ Structure (pipe, ditch, etc.) _____

Receiving Stream: _____

Describe the industrial activities that occur within the outfall drainage area: _____

2. Color: Describe the color of the discharge using basic colors (red, brown, blue, etc.) and tint (light, medium, dark) as descriptors: _____

3. Odor: Describe any distinct odors that the discharge may have (i.e., smells strongly of oil, weak chlorine odor, etc.): _____

4. Clarity: Choose the number which best describes the clarity of the discharge, where 1 is clear and 5 is very cloudy:

1 2 3 4 5

5. Floating Solids: Choose the number which best describes the amount of floating solids in the stormwater discharge, where 1 is no solids and 5 is the surface covered with floating solids:

1 2 3 4 5

6. Suspended Solids: Choose the number which best describes the amount of suspended solids in the stormwater discharge, where 1 is no solids and 5 is extremely muddy:

1 2 3 4 5

7. Is there any **foam** in the stormwater discharge? Yes No

8. Is there an **oil sheen** in the stormwater discharge? Yes No

9. Is there evidence of **erosion or deposition** at the outfall? Yes No

10. Other Obvious Indicators of Stormwater Pollution:

List and describe _____

Note: Low clarity, high solids, and/or the presence of foam, oil sheen, or erosion/deposition may be indicative of pollutant exposure. These conditions warrant further investigation.

Semi-annual Stormwater Discharge Monitoring Report

STORM EVENT CHARACTERISTICS:

Date _____ (first event sampled)

Total Event Precipitation (inches): _____

Date _____ (list each additional event sampled this reporting period, and rainfall amount)

Total Event Precipitation (inches): _____

Note: If you report a sample value in excess of the benchmark, you must implement Tier 1, Tier 2, or Tier 3 responses. See General Permit text.

FOR PART A AND PART B MONITORING RESULTS:

- A BENCHMARK EXCEEDANCE TRIGGERS **TIER 1 REQUIREMENTS**. SEE PERMIT PART II SECTION B.
- 2 EXCEEDANCES IN A ROW FOR THE SAME PARAMETER AT THE SAME OUTFALL TRIGGER **TIER 2 REQUIREMENTS**. SEE PERMIT PART II SECTION B.
- **TIER 3:** HAS YOUR FACILITY HAD 4 OR MORE BENCHMARK EXCEEDENCES FOR THE SAME PARAMETER AT ANY ONE OUTFALL? YES NO
IF YES, HAVE YOU CONTACTED THE DWQ REGIONAL OFFICE? YES NO

REGIONAL OFFICE CONTACT NAME: _____

Mail an original and one copy of this DMR, including all "No Discharge" reports, within 30 days of receipt of the lab results (or at end of monitoring period in the case of "No Discharge" reports) to:

Division of Water Quality
Attn: DWQ Central Files
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

YOU MUST SIGN THIS CERTIFICATION FOR ANY INFORMATION REPORTED:

"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 fines and imprisonment for knowing violations."

(Signature of Permittee)

(Date)

Additional copies of this form may be downloaded at: <http://portal.ncdenr.org/web/wq/ws/su/npdessw#tab-4>

**STORMWATER DISCHARGE OUTFALL (SDO)
ANNUAL SUMMARY DATA MONITORING REPORT (DMR)
Calendar Year _____**

Individual NPDES Permit No. NCS or
 Certificate of Coverage (COC) No. NCG

This monitoring report summary of the calendar year should be kept on file on-site with the facility SPPP.

Facility Name: _____

County: _____

Phone Number: (____) _____

Total no. of SDOs monitored _____

Outfall No. _____

Is this outfall currently in Tier 2 (monitored monthly)? Yes No

Was this outfall ever in Tier 2 (monitored monthly) during the past year? Yes No

If this outfall was in Tier 2 last year, why was monthly monitoring discontinued?

Enough consecutive samples below benchmarks to decrease frequency

Received approval from DWQ to reduce monitoring frequency

Other _____

Was this SDO monitored because of vehicle maintenance activities? Yes No

	Total Rainfall, inches	Parameter, (units)							
Benchmark	N/A								
Date Sample Collected, mm/dd/yy									

"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 fines and imprisonment for knowing violations."

Signature _____

Date _____

For questions, contact your local Regional Office:

DWQ Regional Office Contact Information:



<p><u>ASHEVILLE REGIONAL OFFICE</u> 2090 US Highway 70 Swannanoa, NC 28778 (828) 296-4500</p>	<p><u>FAYETTEVILLE REGIONAL OFFICE</u> 225 Green Street Systel Building Suite 714 Fayetteville, NC 28301-5043 (910) 433-3300</p>	<p><u>MOORESVILLE REGIONAL OFFICE</u> 610 East Center Avenue/Suite 301 Mooresville, NC 28115 (704) 663-1699</p>
<p><u>RALEIGH REGIONAL OFFICE</u> 3800 Barrett Drive Raleigh, NC 27609 (919) 791-4200</p>	<p><u>WASHINGTON REGIONAL OFFICE</u> 943 Washington Square Mall Washington, NC 27889 (252) 946-6481</p>	<p><u>WILMINGTON REGIONAL OFFICE</u> 127 Cardinal Drive Extension Wilmington, NC 28405-2845 (910) 796-7215</p>
<p><u>WINSTON-SALEM REGIONAL OFFICE</u> 585 Waughtown Street Winston-Salem, NC 27107 (336) 771-5000</p>	<p><u>CENTRAL OFFICE</u> 1617 Mail Service Center Raleigh, NC 27699-1617 (919) 807-6300</p>	 <p><i>"To preserve, protect and enhance North Carolina's water..."</i></p>

City of Durham Stormwater & GIS Services Contact Information

For questions or comments regarding your facility or operation's Stormwater Pollution Prevention Plan, please contact the City of Durham Stormwater & GIS Services, Water Quality Section.

In-person meetings are by appointment only. Please call or email to make an appointment.

Email: StormWaterQuality@durhamnc.gov

Telephone: (919) 560-SWIM

The above email address and telephone number may also be used to report water quality problems, issues, and complaints.