

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES

FACT SHEET

GENERAL PERMIT NCG240000
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE STORMWATER AND WASTEWATER

Permit No. NCG240000

Date: June 28, 2017

1. TYPES OF DISCHARGES COVERED

a. Industrial Activities Covered by this General Permit

Coverage under the NCG240000 General Permit is applicable to owners or operators of both stormwater and process wastewater discharges associated with activities classified as **compost manufacturing (SIC 2875, compost mixing & 2879, manufacturing soil conditioners)**. Coverage is limited to those facilities classified as large Type 1, Type 2, and small Type 3 composting operations as described in regulations administered by the North Carolina Division of Waste Management (DWM) and found at 15A NCAC 13B .1402(f). Coverage is also applicable to stormwater point source discharges **from like industrial activities** deemed by the Division of Energy, Mineral, and Land Resources (DEMLR) to be similar to these operations in the process, or the discharges, or the exposure of raw materials, intermediate products, by-products, products, or waste products.

Except upon DEMLR determination of similarity as provided immediately above, the following activities and associated discharges are excluded from coverage under the General Permit:

- Composting operations classified in 15A NCAC 13B .1402(g) as small Type 1 Facilities. *Rationale: DEMLR has determined that limited DEMLR resources might achieve better state-wide protection of water quality by first focusing on the other portions of the industry with more problematic feedstocks or larger physical extent. Although the small Type 1 facilities are captured by the NPDES rules, DEMLR intends to regulate the small yard waste facilities on a substantiated complaint basis, rather than a state-wide blanket approach via the General Permit for at least the first five-year permit cycle. Also, these facilities must notify DWM annually.*
- Backyard composting and on-farm composting as described in 13B .1402(g). *Rationale: These facilities are not captured by the NPDES regulations, and are not subject to the permitting required under those regulations.*
- Composting operations classified in 13B .1402(f) as Type 4 Facilities and large Type 3 Facilities. *Rationale: DEMLR's judgment is that this subsector processes feedstocks of greater potential for water quality impacts, and consequently should be permitted under the increased scrutiny attendant with individual permits, rather than under the General Permit. During the first permit term, the Division has considered and allowed some large Type 3 and Type 4 facilities when circumstances were appropriate (ex. only having a stormwater discharge; and no wastewater).*

- Composting operations for residuals management as described in regulations administered by DEMLR and found at 15A NCAC 2T .1100. *Rationale: DEMLR’s judgment is that this subsector processes feedstocks of greater potential for water quality impacts, particularly with respect to the potential for the concentration of heavy metals, and consequently should be permitted under the increased scrutiny attendant with individual permits, rather than under the General Permit.*
- Composting operations with discharges to especially protected receiving waters classified as ORW, HQW, trout waters, PNA waters, areas with special water quality management strategies established in North Carolina rules at 15A NCAC 2B .0200, and zero-flow streams as described in 15A NCAC 2B .0206. *Rationale: North Carolina rules include prohibitions on waste discharges to some of these receiving water classifications. In general, all of these classifications deserve the extra administrative attention and regulatory protection available through the individual permitting process, rather than through the General Permit.*
- Stand-alone mulching-only operations are not regulated by NCG240000. Where mulching operations are co-located at composting facilities and function to provide feedstocks to the composting operations, they are included with the rest of the composting operations, and are subject to regulation by NCG240000

Generally, composting operations that are not eligible for coverage under the General Permit may apply for separate coverage under an individual stormwater discharge permit and an individual wastewater discharge permit.

b. Types of Operations Covered

Basis for coverage: The federal NPDES program rules at 40CFR122.26(b)(14) specifically define the industrial activities that are subject to regulation for storm water discharges associated with industrial activity. These rules at 40CFR122.26(b)(14)(ii) and (xi) capture all of SIC Major Group 28. Composting is a listed industrial activity in SIC 2875, compost mixing and 2879, manufacturing soil conditioners, part of Major Group 28, and is subject to NPDES stormwater permitting. The General Permit covers all on-site activities and features associated with the compost manufacturing activity. Covered industrial activities and site features may include, but are not limited to: scales, receiving, staging, grinding, screening, rejects piles, storage, composting, turning, aeration, moisture addition, curing, blending, packaging, labeling, warehousing, loading, and other related on-site manufacturing activities. Also covered are stormwater runoff flows from on-site vehicle and equipment maintenance areas.

In accordance with NC General Statute 143-214.7A, A Type 1 solid waste compost facility shall not be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharge of process wastewater based solely on the discharge of stormwater that has come into contact with feedstock, intermediate product, or final product at the facility. *For purposes of that G.S., "Type 1 solid waste compost facilities" are facilities that may receive yard and garden waste, silvicultural waste, untreated and unpainted wood*

waste, or any combination thereof.

c. Characteristics of Discharged Stormwater and Wastewater

The composting process might be described as accelerated biological decomposition of organic materials. Basic process control parameters include temperature, moisture content, particle size, aeration rate, bulk porosity, feedstock selection, salts content, and carbon to nitrogen ratio. Feedstocks vary greatly across the industry, and can include leaves, wood chips, grass clippings, pre-consumer food wastes, post-consumer food wastes, manures, sludges, septage, and specialized industrial wastes. The flows resulting from the manufacturing process activities and from contact with on-site materials can be highly variable in pollutant strength.

During initial permit development in 2011, the Division reviewed two published studies of untreated compost discharges, as well as pollutant monitoring results collected under three DEMLR stormwater permits previously issued to composting operations. The very limited data set available, along with the inherent high variability of feedstocks, do not allow for a single definitive characterization of the pollutant concentrations in discharge flows. However, several categories of pollutants consistently appeared at high levels in the literature, in permittee monitoring, or in independent Division testing at compost manufacturing sites. See Appendix A for a tabulation of compost site monitoring data from the previous permit term. *Absent a larger and more differentiated data set, DEMLR continues to conclude that the following are potential pollutants of concern in both stormwater and wastewater discharges associated with composting activities.*

1. **BOD/COD**: These measures of oxygen demand were highly variable. The highest were reported at levels several times greater than general characterizations of raw sewage.
2. **TSS**: The highest levels of TSS were similarly reported at levels well above raw sewage, and well above the stormwater permitting benchmark for North Carolina.
3. **Fecal coliform/E. coli**: While reported bacteriological contamination *was not as high as raw sewage*, it was still reported as several orders of magnitude greater than North Carolina water quality standards.
4. **Nitrogen**: Highly variable results. In one published study, ammonia, an especially problematic form of nitrogen in the aquatic environment due to its toxicity, was reported at levels many times greater than general characterizations of raw sewage.
5. **Phosphorus**: Reported at levels several times greater than general characterizations of raw sewage, and well beyond the North Carolina stormwater discharge benchmark value.
6. **Metals – Cu, Pb, Zn**: DEMLR found limited data even within the limited data set we reviewed. For Cu, Pb, and Zn there were some reports of discharge levels above the stormwater discharge benchmark values for North Carolina. Industry representatives reported to DEMLR that woody feedstocks can sequester metals, and are a probable source in discharged flows.
7. **Oil & grease**: Vehicle and equipment maintenance areas only.

8. **pH:** The limited data included some pH values below North Carolina Water Quality Standards, but most values were within water quality standards.

Despite the potential for high absolute concentrations of pollutants in compost site discharges, two aspects of the discharges may serve to moderate the impact on receiving waters. First, discharges are typically associated with rain events. This means that the delivery of pollutants is not typically continuous, and that receiving waters may have the benefit of increased flows and increased pollutant dilution at the time of discharge. Second, industry representatives report that for many composting sites, and under good conditions, small rain events may be substantially absorbed by the composting materials, reducing the discharge volume. These moderating factors are of course very site specific, and the degree of the impact of the moderating factors has not been quantifiable.

Stormwater – Vehicle Maintenance Activities (VMAs): Although the analysis is the same, the parameter name “Total Petroleum Hydrocarbons (TPH)” for stormwater discharges associated with vehicle maintenance has been replaced by “Non-polar Oil & Grease by EPA Method 1664 (SGT-HEM).” This description causes less confusion for permittees and their laboratories because the request for “TPH” can be confused with more expensive gas chromatography tests for this group of compounds. Non-polar O&G continues to be a useful indicator for targeting petroleum-based oils and greases. DEMLR has retained the benchmark from the previous permit. We would only expect levels to exceed that 15 mg/l in discharges with significant oil contamination. Based on the relatively small number of compost sites that trigger the need to monitor discharges from VMAs, and the few hits outside of the pH range of 6-9, the proposed monitoring suite removes the requirement to monitor pH.

d. Geographic Area Covered by this General Permit

Discharges covered by this general permit are located at any place within the political boundary of the State of North Carolina. However, discharges located on the Cherokee Indian Tribal Reservation are subject to permitting by the U.S. Environmental Protection Agency, rather than NC DEMLR, and are not eligible for coverage under this General Permit.

e. Receiving Waters

As suggested by the potential pollutant strengths noted above, composting operations directly or indirectly discharging to especially protected receiving waters (receiving waters classified as **ORW, HQW, trout waters, PNA waters, areas with special water quality management strategies** established in North Carolina rules at 15A NCAC 2B .0200, and zero-flow streams as described in 15A NCAC 2B .0206) are **not eligible** for coverage under this General Permit. *DEMLR believes that while exceptions to this prohibition may be warranted on a case-by-case basis, individual permits should be strongly preferred for such facilities.*

2. CONSTRUCTING AND OPERATION OF A TREATMENT FACILITY

An “Authorization to Construct” (ATC) permit for new or expanding wastewater treatment facilities was once required by 15A NCAC 02H .0100 for the construction and operation of water pollution control facilities necessary to comply with NPDES permit conditions. That authorization had been incorporated into the NCG240000 General Permit to streamline the permitting process. In 2011, Section 9 of **Session Law 2011-394** eliminated the ATC requirement for industrial wastewater treatment facilities.

Also now absent from the revised General Permit is the authorization to construct and operate a Closed-Loop Recycle System (CLRS) that meets the requirements of the 15A NCAC 02T .1000 Rules. *(Requirements for these recycle systems are driven by a State program and were not impacted by SL 2011-394’s changes to the State Statute.)* **Facilities that construct and operate CLRS facilities must apply and obtain the necessary permits or approvals through the Non-Discharge Permitting Program in the Division of Water Resources (DWR).** This change was prompted by the Stormwater Permitting Program’s move out of DWR into DEMLR and helps ensure appropriate Division oversight of these systems. Systems that are **not designed as closed-loop and have the potential to discharge** to surface waters are still covered by NCG240000.

The Session Law did not remove authority for the Division to require that permittees notify the DEMLR Regional Office in advance of operation of newly installed or expanded wastewater treatment facilities. This directive remains a condition of this proposed permit (Part IV, Section A). *The rationale is that this notification alerts NC DEQ of potentially significant changes to wastewater discharges and allows the opportunity for an inspection to verify compliance with the NPDES permit.*

3. PROPOSED DISCHARGE CONTROLS AND LIMITATIONS

a. Stormwater Pollution Prevention Plan

As in the previous version of this General Permit, stormwater pollution must be controlled by the development and implementation of a Stormwater Pollution Prevention Plan (SPPP). DEMLR continues to believe that effective control of the pollutant content in industrial stormwater discharges can only be achieved when site management implements a written, site-specific management plan serving that objective. The revised draft permit contains several minor improvements in the SPPP largely related to improved clarity of language in the permit text. See the draft permit for the proposed new version of the SPPP requirements. All facilities covered under this General Permit must develop and implement an SPPP.

b. Stormwater discharge analytical monitoring

As in the previous version of this General Permit, all permittees must perform quarterly analytical monitoring of the stormwater discharges, must respond to any exceedances of the numerical benchmark values for the monitored parameters, must keep records of the

monitoring results and the permittee’s response actions, and must report the monitoring results to DEMLR. As before, the permittee has the option of applying and obtaining Representative Outfall Status (ROS) for one or more outfalls to reduce the obligation to monitor all stormwater discharge outfalls (SDOs) on site. ROS designation is handled outside of the permit and is **not available for wastewater outfalls**.

c. Stormwater discharges from vehicle maintenance areas (VMA)

As in the previous version of this General Permit and like most other industrial general permits, permittees are required to separately monitor stormwater discharges originating from site areas where vehicle maintenance activities are conducted. DEMLR’s view continues to be that monitoring discharges from qualifying vehicle maintenance areas contributes to the prevention of stormwater pollution from those activities.

d. Qualitative (Visual) monitoring of stormwater discharges

As in previous versions of this General Permit, the permittee must perform twice-per-year qualitative monitoring (visual monitoring) at all stormwater discharge outfalls. The proposed revised permit requires visual monitoring to coincide with the analytical sample.

e. Numerical benchmarks and tiered response structure

As in the previous version of this General Permit, the permittee must respond to benchmark exceedances with increased monitoring, increased management actions, increased record keeping, and/or the installation of stormwater BMPs in a tiered program. The exceedance of a numerical benchmark is not considered a violation of the permit conditions, although failure to respond as per the Tiered response structure would be. In that context, the benchmark value is not a numerical ‘permit limit’, but rather a management action level value. Four (4) benchmark exceedances require the permittee to notify the DEMLR Regional Office, and may prompt additional requirements under the provisions of Tier Three.

f. Wastewater discharge analytical monitoring and limitations

The draft permit specifies monitoring and reporting requirements for process wastewater discharges. DEMLR relies primarily on the definition of process wastewater found in the NPDES federal regulations at 40CFR122.2, “Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw materials, intermediate product, finished product, byproduct, or waste product.” In addition, DEMLR received an informal opinion in 2010, from the state’s Attorney General’s Office concluding that discharges from final product at a compost manufacturing facility meet the federal NPDES definitions of both wastewater discharges and stormwater discharges. The Attorney General’s Office opinion was confined to finished product, and did not address feedstocks and other in-process materials. DEMLR considers that those other materials give rise to process wastewater discharges per the federal definition cited above.

DEMLR has sought to identify under what circumstances a discharge from the final product at a compost facility may be permitted as a wastewater discharge, or instead a stormwater discharge. In 2010, DEMLR enlisted the assistance of DWM to develop a new criterion for presumptively identifying the polluting potential for the final product produced by a composting operation, and to presumptively distinguish wastewater flows from stormwater flows. The term ‘finished compost’ has been adopted by DWM and DEMLR, and is used in the General Permit to identify final products that have reached a higher degree of degradation and completion of the composting process. In the permitting process, DEMLR will presumptively consider that stormwater discharges arise from contact with ‘finished compost.’ Not all final products produced at a compost facility go to the same end user market. Some final products can be delivered to the customer in less time, at less cost, and at a lesser degree of degradation. That means that more organic and nutrient pollution potential remains in the compost final product, compared to more mature ‘finished compost.’ In the permitting process, DEMLR will presumptively consider that flows originating from contact with these less effectively composted final products give rise to process wastewater discharges.

Process wastewater discharges are subject to effluent limitations for the conventional pollutants of TSS, fecal coliform, BOD5, and pH. The General Permit requires quarterly sampling. DEMLR considered that unlike many wastewater flows from other industrial activities, flows from composting operations are likely to be intermittent and to be associated with sporadic rainfall events.

DEMLR intends that if our presumptive determination that a flow should be permitted as a stormwater does not lead to the permittee’s effective control of pollutant discharges from any particular site, we may on a case-by-case basis revisit that presumptive determination to assess whether such a flow might be more effectively controlled if re-classified as a process wastewater discharge, in accordance with the more inclusive scope of the 40CFR122.2 definition of process wastewater.

4. MONITORING AND REPORTING REQUIREMENTS

This General Permit specifies monitoring and reporting requirements for both quantitative (analytical) and qualitative (visual) assessment of the **stormwater discharges**, and operational inspections of the entire facility. Sample parameters and sample frequency are based upon pollutants potentially generated from composting operations as reported in the literature and in on-site monitoring reports from current DEMLR permittees.

The proposed monitoring and reporting requirements include the following changes:

- The proposed permit has been restructured to remove authorization to construct (ATC) requirements that are no longer applicable to this industry. In addition, authorization to construct and operate a Closed-Loop Recycle System (CLRS) that meets design

requirements in the 15A NCAC 2T Rules is no longer included as part of this General Permit. *Explanation: The revised structure simplifies the permit and brings requirements up to date with legislation passed in 2011. Because the Stormwater Permitting Program has since moved out of the Division of Water Resources (DWR), which administers the Non-Discharge Permitting Program, DEMLR concluded any necessary reviews and approvals of Closed-Loop Recycle Systems should originate with DWR.*

- The proposed permit has updated language in the Stormwater Pollution Prevention Plan (SPPP). *Explanation: The revisions make the permit consistent with other more recently updated general permits and attempt to reduce confusion.*
- The proposed permit also allows the permittee to **forgo sampling if adverse weather conditions prevent sample collection** (see the Definitions section of the draft permit). Inability to sample because of adverse weather conditions must be **documented in the SPPP**, recorded on the data monitoring forms (DMRs), and DMRs submitted to DEMLR. *Explanation: DEMLR feels this is a reasonable accommodation and keeps the safety of all employees in mind. The allowance mimics a similar provision in the EPA’s 2015 Multi-Sector Permit without the directive to take a “make-up” sample in the next monitoring period. DEMLR routinely advises permittees to take a “make-up” sample if one is missed during a period and plans to include this information in the final Technical Bulletin.*
- The proposed permit also provides that the permittee is **not required to sample runoff events outside of the normal operating hours** of the business (except in the case of inactive facilities, as they are not operating but may still be bound to sampling requirements—unless suspended by the Division’s granting “dormant status.”). *Explanation: DEMLR feels this is a reasonable accommodation and keeps the safety of employees in mind. Also, since early 2012 the Division’s Stormwater Permitting Program has allowed NPDES stormwater permittees to avoid monitoring requirements under the conditions of plant shut down or extended inactivity when no regulated industrial activities were on-going. Dormant status is granted only upon the Division’s inspection of the facility, and concurrence that industrial activities have ceased and no remaining threats to water quality exist from stormwater runoff. No wastewater generation or discharges are allowed during the dormant status period.*
- The proposed permit **drops pH monitoring in stormwater discharges from vehicle maintenance areas (VMA)**. *Explanation: DEMLR observed that very few pH measurements from VMA were outside of the benchmark range (See **Appendix B**) and suggests that pH should not be considered a characteristic pollutant of concern for vehicle maintenance areas in this industry. DEMLR has eliminated pH monitoring from VMA monitoring for other industry sectors over the last couple of years based on minimal added value to pollution prevention for runoff from these areas versus the rigor of equipment calibration requirements and constraints of a 15-minute hold time. DEMLR also notes that EPA’s 2015 MSGP does not include pH monitoring for Sector P, Land*

Transportation and Warehousing (which specifically includes vehicle maintenance activities).

- The proposed permit has **updated language in the Tier Responses to Benchmark Exceedances**. *Explanation: The revisions make the permit consistent with other more recently updated general stormwater permits. Most notably, the proposed permit allows the permittee to contact the Regional Office as early as Tier 2 to coordinate response actions of Tier 3, rather than waiting to trigger Tier 3.*
- The proposed permit **revises the reporting requirements** to be more consistent with other general permits in DEMLR's program. This includes revisions in accordance with the EPA's Electronic Reporting Rule. *This special condition (Part III, Section F) requires all NPDES permittees to report data electronically. The Stormwater Permitting Program continues to coordinate with EPA and the Division of Water Resources to use the eDMR infrastructure already in place to implement electronic reporting capabilities for NCG24.*
- The proposed permit **revises the qualitative monitoring requirements** to (1) allow representative outfall status (ROS) designation to reduce the number of outfalls monitored throughout the permit term, and (2) requires qualitative monitoring to be performed during the same event as the analytical samples (this is consistent with other permits). *Explanation: DEMLR has allowed ROS for qualitative monitoring for other general permits. Also, under this permit facilities are subject to semi-annual facility inspections. With a monitoring frequency quarterly, and with semi-annual facility inspections, the combined site management oversight in support of stormwater pollution control is sufficient and should not preclude ROS for qualitative monitoring.*
- **Part V, Standard Conditions** for NPDES General Permits has **updated language in various sections**. These include (1) **Section A**: Reducing period for an existing facility that applies for coverage for the first time to develop its SPPP from 1 year to 6 months, (2) **Section C**: Distinct bypassing conditions for stormwater controls and wastewater treatment facilities, (3) **Section D**: Allowance for permittee to provide analytical records to a DEMLR inspector electronically upon request. *Explanation: The revisions make the permit consistent with other more recently issued permits in DEMLR's Stormwater Program; and address authorized wastewater discharges covered under this General Permit. DEMLR also concluded that six months is a reasonable expectation for a new facility to develop and implement an SPPP and sees no reason to retain the one year allowance.*

The draft General Permit specifies monitoring and reporting requirements for quantitative assessment of the **wastewater discharge**. Specific pollutant parameters for which sampling must be performed and the frequency of the sampling are based upon the pollutants potentially generated from composting operations as reported in the literature and in site monitoring reports from current DEMLR permittees.

The draft permit continues to include specific monitoring requirements for the following conventional parameters for wastewater discharges: BOD, TSS, fecal coliform, pH, and total flow. The process wastewater permit limits are taken from federal rule for the minimum level of effluent quality attainable by secondary treatment as established in 40 CFR 133.102. Unlike stormwater discharges, a monitoring value for these wastewater discharge parameters higher than the permit limit constitutes a violation of the terms and conditions of the permit.

5. COMPLIANCE SCHEDULE

The proposed compliance schedule in Part V, Section A was modified **to address facilities that are renewing coverage** under this new permit, and **to reduce the time period for SPPP development at existing facilities applying for first-time coverage** (from 12 months to 6 months). The permittee is required to comply with Limitations and Controls specified for stormwater discharges in accordance with the following schedule:

Existing Facilities already operating but applying for permit coverage for the first time: The Stormwater Pollution Prevention Plan shall be developed and implemented within 6 months of the effective date of the **Certificate of Coverage** and updated thereafter on an annual basis. Secondary containment, as specified in Part III of this General Permit, shall be accomplished within 12 months of the effective date of the issuance of the **Certificate of Coverage**.

New Facilities applying for coverage for the first time: The Stormwater Pollution Prevention Plan shall be developed and implemented prior to the beginning of discharges from the operation of the industrial activity and be updated thereafter on an annual basis. Secondary containment, as specified in Part III of this General Permit shall be accomplished prior to the beginning of discharges from the operation of the industrial activity.

Existing facilities previously permitted and applying for renewal under this General Permit: All requirements, conditions, limitations, and controls contained in this permit (except new SPPP elements in this permit renewal) shall become effective immediately upon issuance of the **Certificate of Coverage**. New elements of the Stormwater Pollution Prevention Plan for this permit renewal shall be developed and implemented within 6 months of the effective date of this General Permit and updated thereafter on an annual basis. Secondary containment, as specified in Part III of this General Permit shall be accomplished prior to the beginning of discharges from the operation of the industrial activity.

6. SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

The special conditions in the draft General Permit are the requirements for implementation of the new electronic reporting of monitoring reports [**G.S. 143-215.1(b)**]. **These are included in Part III. Section F.**

7. BASIS FOR CONTROLS AND LIMITATIONS

Stormwater Discharges

The conditions of this draft General Permit have been designed using best professional judgment to achieve water quality protection through compliance with the technology-based

standards of the Clean Water Act (Best Available Technology [BAT] and Best Conventional Pollutant Control Technology [BCT]). Where the Director determines that a water quality standard violation is occurring and water quality-based controls or effluent limitations are required to protect the receiving waters, coverage under the General Permit shall be terminated and an individual permit will be required. Based on a consideration of the appropriate factors for BAT and BCT requirements, and a consideration of the factors discussed below in this fact sheet for controlling pollutants in stormwater discharges associated with the activities as described in Item 1 (Types of Discharge Covered), this proposed permit retains a set of requirements for developing and implementing stormwater pollution prevention plans, and specific requirements for monitoring and reporting on stormwater discharges.

The proposed permit conditions reflect the Environmental Protection Agency's (EPA) and North Carolina's continued pollution prevention approach to stormwater permitting. The quality of the stormwater discharge associated with an industrial activity will depend on the availability of pollutant sources. The Division maintains the position that implementing Best Management Practices (BMPs) and traditional stormwater management practices which control the source of pollutants meets the definition of BAT and BCT. The proposed permit conditions (for stormwater) are not numeric effluent limitations, but rather are designed to be flexible requirements for developing and implementing site specific plans to minimize and control pollutants in the stormwater discharges associated with the industrial activity.

Title 40 Code of Federal Regulations (CFR) Part 122.44(k)(2) authorizes the use of BMPs in lieu of numeric effluent limitations in NPDES permits when the agency finds numeric effluent limitations to be infeasible. The agency may also impose BMP requirements which are "reasonably necessary" to carry out the purposes of the Act under the authority of 40 CFR §122.44(k)(3). The conditions of the revised renewal permit are retained under the authority of both of these regulatory provisions. The pollution prevention requirements (BMP requirements) operate as limitations on effluent discharges that reflect the application of BAT/BCT. The basis is that the BMPs identified require the use of source control technologies which, in the context of this permit, are the best available of the technologies economically achievable (or the equivalent BCT finding).

All facilities covered by this stormwater General Permit must prepare, retain, implement, and (at a minimum of annually) update a stormwater pollution prevention plan (SPPP). The term "pollution prevention" distinguishes this source reduction approach from traditional pollution control measures that rely on end-of-pipe treatment to remove pollutants in the discharges. The pollution prevention approach adopted in the SPPPs in this renewal permit still focuses on two major objectives: 1) to identify sources of pollution potentially affecting the quality of stormwater discharges associated with industrial activity from the facility; and 2) to describe and ensure that practices are implemented to minimize and control pollutants in those discharges from the facility.

The Division believes that it is not appropriate, at this time, to require a single set of effluent limitations (for stormwater) or a single design or operational standard for all facilities which

discharge stormwater associated with industrial activity. The permit instead establishes a framework for the development and implementation of a site-specific SPPP. This framework provides flexibility to address the variable risk for pollutants in stormwater discharges associated with the industrial activities from this industry sector, while ensuring procedures to prevent stormwater pollution at a facility are appropriate given the processes employed, engineering aspects, functions, costs of controls, location, and age of facility (as discussed in 40 CFR §125.3). This approach also allows flexibility to establish controls to address varying sources of pollutants at different facilities.

There has been no significant change to this rationale since the previous general permit.

Stormwater Benchmarks

The **pH** benchmark range is based on N.C. Water Quality Standards contained in 15A NCAC 02B .0211 and is consistent with other renewed general stormwater permits.

The **total suspended solids (TSS)** benchmark of 100 mg/l is based on the median concentration derived from the National Urban Runoff Program (NURP) study in 1983 and serves as a benchmark in industrial stormwater permits with TSS monitoring.

The **non-polar oil and grease** (vehicle maintenance only) benchmark of 15 mg/l has been carried over from the previous permit cycle. The value is consistent with other states' benchmarks and/or limits at the time it was introduced and reflects a value we would associate only with significant oil contamination.

The **Chemical Oxygen Demand (COD)** benchmark is 120 mg/L. A ratio of 4:1 has been adopted as within the characteristic range for COD:BOD in domestic wastewaters. The benchmark for BOD₅ is based on the Secondary Treatment Regulation specified in the Code of Federal Regulations, Title 40, Part 133 (40 CFR §133). This regulation defines the minimum level of effluent quality attainable by secondary wastewater treatment as 30 mg/L for the 30-day average of BOD₅. ($30 \times 4 = 120$ mg/l)

The **Fecal Coliform** benchmark is 1000 col/100 mL. This value is based on BPJ and was consistent with the maximum (one-sample) threshold specified in Virginia's older Water Quality Standards. The N.C. Water Quality Standard (for all Class C waters, based on human health) provides that fecal coliforms shall not exceed a geometric mean of 200/100mL (MF count) based upon at least five consecutive samples examined during any 30-day period, nor exceed 400/100mL in more than 20 percent of the samples examined during such period. The SW Program does not consider these values practical for a stormwater benchmark. In addition, the N.C. Standard, 2B .0211, specifies that violations of that standard "are expected during rainfall events."

The **Total Nitrogen** benchmark is 30 mg/L. The benchmark for total nitrogen is the sum of the (nitrate + nitrite) and TKN benchmarks. The National Primary Drinking Water Regulation (40

CFR §141.11) specifies a maximum contaminant level of 10 mg/L nitrate. This value is the same as the N.C. water quality standard for water supply (WS) waters in the T15A NCAC 2B .0200 rules. The benchmark for TKN (organic nitrogen [20 mg/L]) is based on an approximate equivalency to secondary treatment of wastewater. This is reasonable, given that the majority of TKN found in stormwater is unlikely to be directly bio-available. Organic nitrogen, in the form of decaying leaves and twigs for example, will exert less demand on in-stream dissolved oxygen (DO) than TKN from domestic wastewater. Furthermore, low DO in receiving streams is rarely attributed to rainfall events. The lack of documented water quality problems, coupled with the sporadic nature of rainfall events, justifies the use of a TKN benchmark of 20 mg/L. Therefore, TN = 30 mg/L.

The **Total Phosphorus** benchmark is 2.0 mg/L, and is based on BPJ and is consistent with wastewater permit limits imposed on NSW dischargers.

Total Copper, Total Lead, and Total Zinc benchmarks:

Because of the sporadic nature of rainfall, acute (short-term) effects are considered when establishing stormwater benchmarks for toxicants. Toxicant benchmarks are set at one half the Final Acute Value (1/2 FAV) for metals. NCDEQ uses the ½ FAV to set daily maximum wastewater limits for toxicants in conjunction with weekly average limits. The FAV is estimated by a statistical analysis of acute toxicity data and protects 95 percent of the species in the most sensitive genera that has been tested. A safety factor of two is applied for water quality protection purposes. EPA's recommended Criteria Maximum Concentrations [CMC = ½ FAV] are based on dissolved metal criteria, but N.C. translates the values into total. Where metal values are hardness-dependent, the value is based on a hardness of 25 mg/L. The SW Program recognizes that acute values for these metals are low, and that their toxicity is highly variable (depending on the amount dissolved, which is affected by many factors). One of the primary factors influencing toxicity for Cu and Zn is hardness. North Carolina currently assumes 25 mg/L hardness when calculating toxicity values for these metals. **The benchmark values for Cu, Pb, and Zn have increased since the last permit term, based on a revised default hardness and method of translating dissolved criteria to total metal concentrations.**

The **Total Copper** benchmark is 0.010 mg/L, and is based on ½ FAV and is converted to total copper from dissolved copper reported in EPA's National Recommended Water Quality Criteria.

The **Total Lead** benchmark is 0.075 mg/L, and is based on ½ FAV and is converted to total lead from dissolved lead reported in EPA's 1980 Ambient Water Quality Criteria for Lead.

The **Total Zinc** benchmark is 0.126 mg/L, and is based on ½ FAV and is converted to total zinc from dissolved zinc as reported in EPA's National Recommended Water Quality Criteria.

Wastewater Discharge Limitations

The authorized process wastewater discharge types from leachates, wash waters, and rinse waters are also retained in this draft permit. This draft permit includes **non-polar oil and grease** action levels for wastewater when VMA-derived stormwater drains and commingles with wastewater before discharge. The draft permit effluent limitations are based on N.C.

Water Quality Standards. The **pH and TSS** limitations are based on water quality standards in 15A NCAC 2B .0200, .0300, and .0400 (40 CFR by reference).

8. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

There are no requested variances or alternatives to required standards. Facilities requesting variances to required standards will not be covered under this General Permit but will instead be required to seek coverage under an individual permit.

9. THE ADMINISTRATIVE RECORD

The administrative record, including the draft permit, fact sheet, public notice, comments received, and additional information is available by writing to:

Stormwater Permitting Program
 Division of Energy, Mineral, and Land Resources
 1612 Mail Service Center
 Raleigh, North Carolina 27699-1612

The above documents are available for review and copying at:

Archdale Building, 9th Floor
 DEMLR Stormwater Permitting Program
 512 N. Salisbury Street
 Raleigh, North Carolina

between the hours of 8:00 AM and 5:00 PM Monday through Friday. Copies will be provided at DEMLR’s currently established estimate of the cost of reproduction.

10. DEMLR CONTACT

Additional information about the draft permit may be obtained at the above address between the hours of 8:00 AM and 5:00 PM Monday through Friday by contacting: **Robert Patterson** at (919) 807-6369 | robert.patterson@ncdenr.gov

11. SCHEDULE OF PERMIT ISSUANCE

Draft Permit Public Notice – Statewide notice published **August 15, 2017**;
 Draft available on DEMLR website **August 15, 2017**;
Comment Period Ends September 15, 2017.

Permit Scheduled to Issue – Scheduled for **September 30, 2017**
Effective October 1, 2017

12. PROCEDURE FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Division of Energy, Mineral, and Land Resources proposes to issue the NPDES General Permit for the above described stormwater discharges subject to the outlined limitations, management practices, and conditions. These determinations are open to comment from the public.

Interested persons are invited to submit written comments on the permit text or on the Division’s proposed determinations to the following address:

NC Dept. of Environmental Quality
 DEMLR Stormwater Program
 512 N. Salisbury St.
 1612 Mail Service Center
 Raleigh, NC 27699-1612
 Attn: **Robert Patterson**

All comments received within thirty days following the date of public notice are considered in the formulation of final determinations.

b. Public Meeting

The Director of the Division of Energy, Mineral, and Land Resources may hold a public meeting if there is a significant degree of public interest in a proposed permit or group of permits. Public notice of such a meeting will be circulated in newspapers in the geographical area of the discharge and to those on the Division’s mailing list at least thirty days prior to the meeting.

c. Appeal Hearing

An applicant whose permit is denied, or is granted subject to conditions he deems unacceptable, shall have the right to a hearing before the Commission upon making written demand to the Office of Administrative Hearing within 30 days following issuance or denial of the permit.

d. Issuance of a Permit When No Hearing is Held

If no public meeting or appeal hearing is held, after review of the comments received, and if the Division’s determinations are substantially unchanged, the permit will be issued and become effective on the first day of the month following the issuance date. This will be the final action of the Division of Energy, Mineral, and Land Resources.

If a public meeting or appeal hearing is not held, but there have been substantial changes, public notice of the Division’s revised determinations will be made. Following a 30-day comment period, the permit will be issued and will become effective on the first day of the

month following the issuance date. This will be the final action of the Division unless a public meeting or appeal hearing is granted.

APPENDIX A
NCG240000 2011- May 2017 DMR Data
 (13 Facilities covered under NCG24)

Stormwater

	TSS	COD	Fecal Coliform	Nitrogen	Phosphorous	Copper	Lead	Zinc	pH
# of exceedances	6	11	20	1	8	11	0	2	1
# of samples	26	28	28	26	25	28	28	28	27
exceedance %	23%	39%	71%	4%	32%	39%	0%	7%	4%
min	1.5	18	17	bdl	bdl	bdl	bdl	bdl	5.1
max	388	1310	60000	61.3	8.36	0.95	0.012	0.38	8.4
*based on current sw benchmarks **7 facilities reporting (others reporting no flow)									

Wastewater

No wastewater DMRs were located.