

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

FACT SHEET

GENERAL PERMIT NCG210000
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE STORMWATER

Permit No. NCG210000

Date: June 17, 2013

1. TYPES OF DISCHARGES COVERED

a. Industrial Activities Covered by this General Permit

Coverage under this general permit is applicable to all owners or operators of stormwater point source discharges associated with establishments primarily engaged in activities classified as **Lumber and Wood Products, Except Furniture**, Standard Industrial Classification Major Group 24 (SIC 24). Coverage is also applicable to point source discharges **from like industrial activities** deemed by the Division of Water Quality (DWQ) 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 when DWQ deems activities, discharges, or exposure to be similar as described above, the following activities are **excluded from coverage** under this General Permit: establishments primarily engaged in **Logging – SIC 2411**; manufacturing **Wood Kitchen Cabinets – SIC 2434**; and **Wood Preserving – SIC 2491**.

b. Types of Industrial Operations Covered

The industrial activities covered under this General Permit include facilities such as sawmills and planing mills, hardwood dimension and flooring mills, shingle mills, cooperage stock mills, millwork operations, veneer mills, and plywood mills engaged in producing lumber and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood or related material, such as wood containers, wood pallets, mobile homes, prefabricated wood buildings, and reconstituted wood products.

The logging industry, SIC 2411, is exempt from permitting as set forth in 40 CFR 122.27 and is not eligible for coverage under this permit.

When viewed as a class, many of the facilities in this General Permit typically conduct their activities outdoors. The activities at these facilities that can contribute to stormwater pollution include storage of raw materials, intermediate products, final products, by-products, waste products, or chemicals outside; loading and unloading chemicals or hazardous substances, the use of un-housed manufacturing and heavy

equipment; generation of significant amounts of dust or particulate; and raw material and chemical spillage or leaks.

Pollutant parameters of particular concern in these industries can be broadly categorized as organics, oils, suspended and dissolved solids, metals, and pH.

c. Characteristics of Discharged Stormwater

DWQ Regional Office staff inspections have identified a pattern of problems at facilities in the SIC 24 category, particularly at sites with large sawdust piles or mulch piles. Documented cases of oxygen-consuming pollutants, suspended solids content, low pH, metals toxicity, and dissolved solids have been associated with surface water quality standards violations¹. In addition, historical TSS and Biochemical Oxygen Demand (BOD₅) data reported by wood chip mills under General Permit NCG220000 suggest that elevated levels of pollutants in the stormwater discharge can be expected from facilities that have wood chipping operations. Chip mills are newly covered under this general permit (since 2011). See Appendix A for a summary tabulation of self-monitoring data generated by permittees under NCG21 and NCG22.

The Division continues to consider whether leachate from accumulations of small-sized woody materials, such as mulch piles or sawdust piles, should be permitted as stormwater or wastewater.

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. Discharges located on the Cherokee Indian Tribal Reservation are subject to permitting by the U.S. Environmental Protection Agency and are not eligible for coverage under this general permit.

e. Receiving Waters

Receiving waters include all surface waters of North Carolina or municipal separate storm sewer systems conveying stormwater to surface waters.

2. PROPOSED DISCHARGE CONTROLS AND LIMITATIONS

a. Stormwater Pollution Prevention Plan

As in previous versions of this General Permit, stormwater pollution must be controlled by the development and implementation of a Stormwater Pollution Prevention Plan (SPPP or Plan). DWQ continues to believe that effective control of the pollutant content in industrial stormwater discharges can only be achieved when site management implements a site-specific, written, management plan serving that objective. The 2013 revised draft permit contains several minor improvements in the SPPP largely related to improved clarity of language in the permit text. See the draft General Permit for the proposed new version of the

SPPP requirements. All facilities covered under the General Permit must develop and implement an SPPP.

b. Stormwater discharge analytical monitoring

As in the 2008 and 2011 versions of this General Permit, a subset of all permittees must perform analytical monitoring on 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 DWQ. Analytical monitoring of all site stormwater discharges is required for permittees with accumulations of reduced-size woody materials, such as sawdust, wood chips, bark, or mulch, that remain exposed for more than seven days. The permit text provides limiting conditions that will allow DWQ to excuse the monitoring requirement on a case-by-case basis.

c. Stormwater discharges from vehicle maintenance areas (VMA)

As in the 2008 and 2011 versions of this General Permit, another subset of all permittees must perform analytical monitoring on stormwater discharges originating from site areas where vehicle maintenance activities are conducted. Analytical monitoring of VMA discharges is required if the permittee uses 55 gallons of new oil (motor oil plus hydraulic oil) per month, averaged over a whole year.

d. Visual monitoring of stormwater discharges

As in previous versions of this General Permit, the permittee must perform qualitative monitoring (visual monitoring) at all stormwater outfalls. All permittees are subject to this permit requirement.

e. Numerical benchmarks and tiered response structure

As in previous versions 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. 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 could be viewed as a management action level value. Four (4) benchmark exceedances require the permittee to notify the DWQ Regional Office, and may prompt additional requirements under the provisions of Tier Three. This general permit first incorporated stormwater numerical benchmarks and tiered responses in the 2008 renewal.

3. MONITORING AND REPORTING REQUIREMENTS

This permit specifies visual and analytical monitoring, and reporting requirements for both quantitative and qualitative assessment of the stormwater discharges, as well as operational inspections of the entire facility. For those subsets of permittees subject to analytical monitoring requirements (facilities with accumulations of sawdust, chips, bark,

or mulch, etc.; and facilities with qualifying VMA discharges), the specific pollutant parameters and the frequency of the sampling are based on the potential for contamination of the stormwater runoff from the industrial activities, and on the types of petroleum-based materials used, stored, and transferred at VMA's of these sites. Visual monitoring parameters are consistent with other general permits in the NPDES stormwater program.

Proposed changes to monitoring and reporting requirements relevant to the two subsets of permittees required to perform analytical monitoring include the following.

- The draft permit incorporates a modified definition of what storm event should be sampled. Previous permits required sampling during a “representative storm event.” The proposed NCG210000 permit renewal now requires permittees to sample the “**measurable storm event**,” a new term for North Carolina stormwater permits beginning in 2011. The “measurable storm event” is an event that results in an actual discharge, rather than an event with a rainfall measuring 0.1 inches or more. To qualify as a measurable storm event, the previous storm event must have been at least 72 hours prior.
- The proposed general permit allows the permittee to forgo sampling if *adverse weather* conditions prevent sample collection. Inability to sample because of adverse weather conditions must be **documented in the SPPP**, and recorded on the data monitoring forms (DMRs), and the DMR's submitted to DWQ.
- The proposed general permit also provides that the permittee is not required to sample runoff events outside of the normal operating hours of the business.
- The proposed general permit provides that the permittee may petition the DWQ Regional Office Supervisor for relief from monitoring requirements, on a case-by-case basis, upon DWQ's Compliance Evaluation Inspection and the finding that site conditions do not present a significant risk of stormwater pollution.

4. COMPLIANCE SCHEDULE

The proposed compliance schedule in Part III, Section A was modified to address facilities that are renewing coverage under this new permit. 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 12 months of the effective date of the **Certificate of Coverage** and updated thereafter on an annual basis. Secondary containment, as specified in Part II, Section A, Paragraph 2(b) 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 II, Section A, Paragraph 2(b) 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, Paragraph 2(b) of this general permit shall be accomplished prior to the beginning of discharges from the operation of the industrial activity.

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

This draft general permit does not propose any special conditions.

6. BASIS FOR CONTROLS AND LIMITATIONS

Stormwater Discharges

The conditions of this 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 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 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 permit conditions reflect the Environmental Protection Agency’s (EPA) and North Carolina’s 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. This renewal permit still reflects the Division’s position that implementation of Best Management Practices (BMPs) and traditional stormwater management practices which control the source of pollutants meets the definition of BAT

and BCT. The permit conditions 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 renewal permit are retained under the authority of both of these regulatory provisions. The pollution prevention requirements (BMP requirements) in this permit 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 these general permits, are the best available of the technologies economically achievable (or the equivalent BCT finding).

All facilities covered by this 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 typically rely on end-of-pipe treatment to remove pollutants in the discharges. The plan requirements are based primarily on traditional stormwater management, pollution prevention and BMP concepts, providing a flexible basis for developing site-specific measures to minimize and control the amounts of pollutants that would otherwise contaminate the stormwater runoff.

The pollution prevention approach adopted in the SPPP 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 stormwater discharges associated with industrial activity from the facility and to ensure compliance with the terms and conditions of the permit.

The Division believes that it is not appropriate, at this time, to require a single set of effluent limitations or a single design or operational standard for all facilities which discharge stormwater associated with industrial activity. This permit instead establishes a framework for the development and implementation of site-specific stormwater pollution prevention plans. This framework provides the necessary flexibility to address the variable risk for pollutants in stormwater discharges associated with the industrial activities that are addressed by this permit, while ensuring procedures to prevent stormwater pollution at a given 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 allows flexibility to establish controls which can appropriately address different sources of pollutants at different facilities.

The EPA and NPDES States have, on a case-by-case basis, imposed BMP requirements in NPDES permits. The EPA has also continued to review and evaluate case studies involving

the use of BMPs and the use of pollution prevention measures associated with spill prevention and containment measures for oil. The development of the NPDES permit application requirements for stormwater discharges associated with industrial activity resulted from the evaluation and identification of the potential contaminants and the resultant water quality impacts of stormwater discharges from industrial sites. Public comments received during the rule making provided additional insight regarding stormwater risk assessment, as well as appropriate pollution prevention and control measures and strategies. During that time EPA again reviewed stormwater control practices and measures. These experiences have shown the Division that pollution prevention measures such as BMPs can be appropriately used and that permits containing BMP requirements can effectively reduce pollutant discharges in a cost-effective manner. BMP requirements are imposed in general permits in lieu of numeric effluent limitations pursuant to 40 CFR 122.44(k)(2).

There has been no significant change to this rationale since the previous General Permit NCG210000.

Stormwater Benchmarks

pH for all stormwater discharges: While pH monitoring was included in previous versions of this permit, DWQ now proposes to remove pH testing and benchmarks from the 2013 version of General Permit for this industry. The 2013 version of NCG21 for the timber industry substitutes aluminum and zinc monitoring for pH monitoring. The solubility and resulting aquatic toxicity of many metals, including aluminum and zinc, is strongly influenced by low pH. See Appendix A for a discussion of DWQ's interpretation of the pH self-monitoring data generated over the last five-year term of NCG21.

TSS for all stormwater discharges: The standard **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 most other industrial stormwater permits with TSS monitoring. **The lower TSS benchmark for ORW, HQW, trout (Tr), and primary nursery area (PNA) waters of 50 mg/l reflects half that standard value** and was set to flag potential problems in discharges to waters with much lower in-stream water quality standards for TSS concentrations (20 mg/l for HQW and ORW; 10 mg/l for trout and PNA waters).

COD for stormwater discharges (but not for VMA discharges): The **COD benchmark is set at 120 mg/L**, consistent with all other stormwater General Permits employing COD. COD is one measure of the organic pollutants in stormwater, and is generally found at levels three to six times the BOD₅ levels in domestic wastewaters. NC DWQ has selected a multiplier of 4 in comparison to the standard BOD₅ benchmark of 30 mg/L. DWQ's standard BOD₅ benchmark is based on the Secondary Treatment Regulations specified in the Code of Federal Regulations, 40 CFR 133. The regulation defines the minimum level of effluent quality attainable by secondary wastewater treatment as 30 mg/L. There has been no change to this COD benchmark value since the 2008 permit.

Total Zinc for stormwater discharges (but not for VMA discharges): Zinc monitoring is required in the EPA Multi-Sector General Permit for the timber industry, Part 8, Subpart A, Sector A, Subsector A1, for sawmills and planing mills. These types of facilities generally might be expected to have accumulations of small size materials (sawdust, etc.) exposed and potentially generating stormwater pollutants. **North Carolina sets the zinc benchmark for all stormwater permits requiring zinc monitoring at 0.067 mg/L Total Recoverable Zinc.** The benchmark value is based on the ½ FAV value recommended in EPA’s 2006 National Recommended Water Quality Criteria.

Total Aluminum for stormwater discharges (but not for VMA discharges): **The aluminum benchmark is set at 0.75 mg/L Total Recoverable Aluminum.** The benchmark value is based on the ½ FAV value recommended in EPA’s 1988 Ambient Water Quality Criteria for Aluminum. DWQ compliance and enforcement actions with one NCG21 permittee indicated that aluminum toxicity in association with low pH resulted in significant water quality impacts.

Oil and Grease for VMA discharges: The **“Non-polar O&G” [by EPA Method 1664 (SGT-HEM)] benchmark of 15.0 mg/L** is consistent with other states’ benchmarks and/or limits for total petroleum hydrocarbons (TPH) and reflects a value normally only associated with significant oil contamination. Specifying the EPA Method 1664 with the silica gel treatment step (SGT-HEM) in the permit ensures a cost effective way to estimate TPH (as opposed to gas chromatographic analysis.)

The basis of this change is that the previous O&G method tested for fatty matter from animal and vegetable sources and hydrocarbons of petroleum origin. The Non-polar oil and grease method proposed targets the family of chemical compounds that originated as crude oil, such as gasoline, diesel, kerosene, etc., and is better suited to vehicle maintenance activities. This action is consistent with other recently renewed general permits for discharges associated with vehicle maintenance activities (VMA).

7. 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.

8. THE ADMINISTRATIVE RECORD

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

Stormwater Permitting Unit
 Division of Water Quality
 1617 Mail Service Center
 Raleigh, North Carolina 27699-1617

The above documents are available for review and copying at:

Archdale Building, 9th Floor
 Surface Water Protection Section
 Stormwater Permitting Unit
 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 a charge of 10 cents per page.

9. STATE 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: **Ken Pickle** at (919) 807-6376.

10. SCHEDULE OF PERMIT ISSUANCE

Draft Permit Public Notice – **Statewide Notice to publish June 17, 2013;**
Draft available on-line by June 7, 2013;
Comment Period Ends July 17, 2013

Permit Scheduled to Issue – **July 31, 2013;**
Effective August 1, 2013

11. PROCEDURE FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Division of Water Quality proposes to issue an 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 of Water Quality’s proposed determinations to the following address:

Stormwater Permitting Unit
 Division of Water Quality
 1617 Mail Service Center
 Raleigh, North Carolina 27699-1617
 Attn: **Ken Pickle**

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 Water Quality 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 of Water Quality 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 of Water Quality 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 Water Quality.

If a public meeting or appeal hearing is not held, but there have been substantial changes, public notice of the Division of Water Quality 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 of Water Quality unless a public meeting or appeal hearing is granted.

APPENDIX A

NCG210000 and NCG220000 Data Analysis Summary, 2013

NCG210000, Self-reporting data for the period 2008 – 2013

Parameter	Count of Exceedances	Per Cent	Reported Range	Benchmark
TSS	171/654	26%	1 mg/L – 6080 mg/L	100 mg/L
COD	203/641	32%	2.5 mg/L – 8920 mg/L	120 mg/L
pH	59/653	9%	2.4 – 10.08 std units	6 – 9 std units

NCG220000, Chip Mills self-reporting data for the period 2001 - 2007

Parameter	Count of Exceedances	Per Cent	Reported Range	Benchmark*
TSS	97/308	31%	1 mg/L – 14000 mg/L	100 mg/L
BOD5	66/301	22%	2 mg/L – 238 mg/L	30 mg/L
pH	3/206	1.5%	5.7 – 9.5 std units	6 – 9 std units
O&G	2/169	1.2%	1mg/L – 83 mg/L	30 mg/L

*Permittees under NCG22 were not subject to a permit benchmark: NCG22 permit conditions required monitoring and reporting only. The stated benchmarks in this column are the benchmarks that would have been applicable under stormwater permits issued in 2007 for other industrial stormwater dischargers.

Summary of data-based conclusions and data-based draft permit actions:

- **TSS:** With 26% and 31% of all measurements reported in excess of the stormwater benchmark of 100 mg/L, DWQ concludes that control of TSS pollution has not yet been attained within the subsets of the industry required to monitor for TSS. *DWQ action: the General Permit should continue to require TSS monitoring and response actions by the qualifying subset of permittees.*

- **COD/BOD:** With 32% and 22% of all measurements reported in excess of the relevant benchmarks, DWQ concludes that control of oxygen-demanding pollutants has not yet been attained by the industry subset required to monitor for oxygen-demanding pollutants. *DWQ action: the General Permit should continue to require some measurement of oxygen-demanding pollutants, along with response actions by the qualifying subset of permittees. Between the two test methods, our judgment is that COD provides a better way to measure the impact of oxygen-demanding pollutants derived from woody materials. COD will be continued in NCG21.*

- **pH:** According to our permittees and our Regional Office inspectors, in a good number of site circumstances it has proven extremely difficult to get reliable measurements of pH due to several factors, including the short 15-minute hold time. In addition, considering that only 9% and 1.5% of pH measurements were outside the benchmark range, the data sets above might be interpreted to suggest that pH is not a widespread problem within the industry. On the other hand, our Regional Office has issued an NOV to one facility in this industry where low pH was linked

with increased metals solubility and resulting aluminum toxicity, producing serious water quality standards violations. DWQ action: the General Permit will no longer require pH monitoring. Instead, toxic metals testing will be substituted for it. DWQ has selected two toxic metals for monitoring, zinc and aluminum.

- **O&G:** The O&G results from the Chip Mills data set suggest that it is not a widespread pollutant within the industry. Neither the 2008 version, nor the 2013 draft General Permit currently include any measure of oil and grease in the main industrial stormwater discharge. DWQ action: O&G will not be added to the revised NCG21 monitoring requirements on the main stormwater flow. However, VMA monitoring will continue to require measurement of petroleum hydrocarbons with the analytical method for Non-polar oil and grease, EPA 1664 (SGT-HEM) which is a more specific test for petroleum hydrocarbons than the O&G measurements previously required in NCG21 and NCG22.

Examples referenced in section 1 c., related to the pollutants cited in Regional Office enforcement actions:

ⁱ Scott Sawmill Case (Yadkin County, WSRO). Sawdust pile leachate resulted in impacts to stream and 2/5/2007 NOV with recommendation for enforcement action for Removal of Use and Oils, deleterious substances, colored or other wastes.

Mulch Masters facility under NCG210366 (Wake County, RRO): 5/14/2004 DWQ samples recorded BOD₅ levels of 3,000 mg/l in mulch pile leachate and 290 mg/l in-stream about 100 yards from the discharge from this site. Facility has since relocated to Warren County.

Carolina Bark facility under NCG210360 (Northampton Co., RRO): 10/2003 DWQ sample recorded pH of 3.2. Further sampling in March 2008 suggested aluminum toxicity. Significant removal of use impacts in the adjoining receiving water.