

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WATER QUALITY

FACT SHEET

GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE STORMWATER FROM
CONSTRUCTION ACTIVITIES

Permit No. **NCG010000**

1. TYPES OF DISCHARGES COVERED

a. Activities Covered by this General Permit

Stormwater runoff discharged as point source(s) from construction activities including clearing, grading, and excavation activities which will result in the **disturbance of one or more acres of total land area**.

b. Types of Operations Covered

Point source conveyance of stormwater runoff from construction activities, including **clearing, grading, and excavation activities that result in the disturbance of one or more acres of total land area and require a Sedimentation and Erosion Control plan**.

c. Characteristics of Discharged Stormwater

Stormwater discharged will contain sediments eroded from the site of land disturbance activity. Suspended sediment is the primary constituent in construction stormwater and is commonly measured as total suspended solids (TSS) and/or turbidity:

- Total suspended solids (TSS) is a measure of the suspended material in water. The measure of TSS in stormwater allows for an estimation of sediment transport, which can have significant effects in downstream receiving waters.
- Turbidity, expressed as Nephelometric Turbidity Units (NTU), is a measure of the ability of light to penetrate the water. Turbidity is a function of the suspended solids in water. Turbidity has been demonstrated to adversely affect aquatic species, such as the ability of small macroinvertebrates to survive or reproduce, as well as adversely affect fish populations directly and indirectly [W.F. Henley et al., 2000].

There is also the potential for fluids (fuels, lubricants, hydraulic fluids, coolants, etc.) from construction equipment or machinery to contaminate stormwater during construction activity. In addition, materials stored on the construction site such as chemicals, explosives, etc., could enter the stormwater runoff discharge.

d. Geographic Area(s) 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 (EPA) and are not covered by 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.

f. Why Have a General Permit?

A general permit for construction activities is an appropriate permitting approach because:

- A general permit is an efficient method to establish the essential regulatory requirements that are appropriate for a broad range of construction activities;
- A general permit is the most efficient method to handle the large number of construction stormwater permit applications;
- The application requirements for coverage under a general permit are far less rigorous than individual permit application requirements and hence more cost effective;
- A general permit is consistent with EPA's four-tier permitting strategy that aims to use the flexibility provided by the Clean Water Act in designing a workable and reasonable permitting system.

2. DISCHARGE CONTROLS AND LIMITATIONS*

** See item c. below for a summary of the differences in the conditions of the Final General Permit from the previous permit conditions.*

a. Description of Typical Stormwater Controls and Treatment Facilities

Erosion Controls are designed to **prevent erosion by protecting soils**. Sediment controls are designed to **remove sediment from runoff** before the runoff is discharged from the site. Major types of sediment and erosion control practices are:

Land Cover

Mulches

Straw

Hydro mulch

Blankets and other “rolled”
products

Vegetative Practices

Temporary seeding

Permanent seeding

Sod stabilization

Vegetative buffer strips

Protection of existing trees and
vegetation**Structural Practices**

Earthen dike

Silt fence

Drainage swales

Check dams

Level spreader

Pipe slope drain

Temporary storm drain diversion

Storm drain inlet protection

Rock outlet protection

Sediment Traps and Basins

b. Final General Permit Stormwater Pollution Prevention Requirements

Listed below are several pollution prevention requirements and conditions of the General Permit that are critical to compliance.

- Construction activities disturbing one or more acres of land will need a local or state sediment and erosion control plan and coverage under the NPDES General Permit for stormwater point source discharges;
- Local or state sediment/erosion control plans must be approved before disturbance occurs;
- Must implement the state or local plan (deviations are a violation of the permit);
- Copy of all plans retained by permittee;
- Deposition of sediment off site, or in a stream or wetland, are considered violations of the permit;
- Visible deposition of sediment shall be reported to the DWQ within 24 hours of inspection;
- Corrective action shall be taken immediately to control discharge of any sediments off site or into waters of the state;
- A rain gauge shall be maintained on the site;
- A written record of the daily rainfall amounts shall be retained;
- At least once per week, each control measure shall be inspected to ensure that it is operating correctly and records maintained;
- Control measure inspections should also be made within 24 hours of rain events greater than 0.50 inches;
- The quality of all stormwater discharges shall be observed and recorded;
- Specific requirements are outlined for the handling of concrete materials
- Soil stabilization on any area of the site where land-disturbing activities have temporarily or permanently ceased according to the schedule in Table 1 below:

Ground Cover Requirements for Slope Conditions					
Slope Length	50' or greater	7 days	7 days	7 days	14 days
		7 days	7 days	14 days	14 days
	10' or less	7 days	14 days	14 days	14 days
		Steeper than 2:1	Steeper than 3:1	3:1 – 4:1	Flatter than 4:1

Table 1 – New Ground Cover Requirements for Construction Sites

c. Changes From the Existing General Permit

Below is a list of the most notable changes included in the Final General Permit:

- There are substantial changes to the ground cover requirements. Ground cover would be required within seven (7) days of temporary or permanent stopping of work for all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3:1. On all other areas, ground cover would be required within 14 days (except in special watersheds). See **Table 1** above.
- Added protections for projects draining to all High Quality Waters.
- Improved language on requirements to install, implement and maintain BMPs.
- Added 50' setback requirement for stock piles, and storage of land clearing, demolition debris, construction and domestic waste, and hazardous or toxic waste on construction sites.
- Added some definitions – “Control Measure” and “Stormwater Pollution Prevention Plan” and clarifying language to other Sections. The terms “Temporary Stabilization” and “Permanent Stabilization” are also now defined.

3. EXPANDED PERMIT REVIEW AND REVISION PROCEDURE

The Division of Water Quality (DWQ) determined early in the permit development process that it needed a more robust mechanism to involve the various stakeholders than it had traditionally used for this permit. Therefore, DWQ established a Construction General

Permit Technical Advisory Group, or “CTAG,” to work with DWQ staff in discussing various options for revision. The CTAG was made up of 14 members representing regulatory, environmental, and development interests. Either the entire group or a subgroup met 14 times since it was formed in July 2010. The meetings were also open to the public, and many citizens attended. Notes from all meetings were documented and provided both to the participants and to those on an extended mailing list. CTAG did not vote on the final recommended draft permit, but the Group did discuss all significant issues prior to DWQ staff’s preparation of the draft. As expected, not all members would voice support for all items in the proposed permit. However, DWQ was pleased with the support for the general direction of the permit development. A public comment period was held and a public meeting. Although many, helpful comments were received, the low volume of comments (only three letters) were taken as an indication that most of the difficult issues had been worked out during the year-long CTAG process.

4. MONITORING AND REPORTING REQUIREMENTS

Turbidity Monitoring and Limits

One of the most difficult parts of the permit review process was trying to develop a program for permittee self-monitoring and the DWQ’s enforcement of a turbidity effluent limit in the federal Effluent Limitation Guidelines (ELG) for Construction and Development (40 CFR § 450). The Technical Advisory Group (CTAG) working on this permit spent several meetings discussing options for implementing a turbidity monitoring program. Although the intent of the CTAG was to develop a viable monitoring and enforcement program that could be implemented by August 2, 2011, there were major obstacles to overcome.

- a. There is no EPA-approved field measurement technique for turbidity. A method needs to be developed. This issue does not just pose a problem for permittees; there is a great need for an EPA-approved monitoring technique to assist the states in how to monitor discharges and enforce on a daily average number. With no single-sample maximum number recognized in the ELG, there remain unanswered questions like, “how many samples must the DWQ enforcement staff collect in order to get a daily average?” The problem of measuring turbidity has not been solved, and DWQ sees no easy solution. In recognizing that the issues surrounding monitoring protocol and measuring techniques had not been addressed on a national level, DWQ staff concluded that these issues were not going to be addressed soon on an individual state level either.
- b. In addition to the issue of field measurement technique, the unavailability of the final turbidity effluent number (EPA initiated a stay for the numeric turbidity limit in 40 CFR § 450 until further notice) led staff to recommend a permit without discharge monitoring requirements. Of course, **North Carolina’s in-stream water quality standard for turbidity still applies** and is being enforced by the Division of Water Quality.

Ground Cover Soil Stabilization Requirements

Although the Division recognizes the benefits of a turbidity effluent number, it strongly believes that enforcing on ground cover requirement is a much more effective way to achieve reduced sediment loading to the state's waters. Therefore, the permit contains additional soil stabilization best management practices to accomplish the intent to reduce turbidity in, and the potential for sedimentation from, construction site discharges. The permit conditions specify that temporary or permanent ground cover should be applied on slopes greater than 3:1 within seven (7) days of cessation of land disturbance in any area of a site. We believe that this requirement alone will substantially reduce the discharge of sediment to North Carolina streams and other waterbodies.

5. COMPLIANCE SCHEDULE

The permittee shall comply with inspection, monitoring, and controls specified for stormwater discharges once disturbance has begun on the site and until completion of construction or development and the establishment of a permanent ground cover.

During construction and until the completion of construction or development and the establishment of permanent ground cover, the permittee shall provide the operation and maintenance necessary to operate the stormwater control measures and all erosion and sedimentation control measures at optimum efficiency.

6. SPECIAL CONDITIONS WHICH CAN BE APPLIED

In certain watersheds or with certain projects, additional requirements may be applied. Listed below are examples of situations where special conditions may be applied.

- The general permit contains language that indicates that where a project is proposed and the discharge could adversely affect a Federally Listed Threatened and Endangered Species, the Division may require special "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0124). These measures are applicable where the listed species has the potential to be impacted by construction site runoff.
- Land disturbing activities in designated "High Quality Waters" will require the additional measures specified in "Design Standards in Sensitive Watersheds."
- The revised permit makes it clear that the State can mandate additional BMP requirements for activities in sediment-impaired 303(d) streams.
- The Division of Land Quality of DENR has authority in 15A NCAC .04B .0115 to apply "Additional Measures" when it is determined that significant erosion and sedimentation continues despite the installation of standard protective practices.

- The Division of Water Quality retains authority to require an individual permit any time that an activity causes, or has a potential to cause, a violation of a water quality standard.

7. BASIS FOR CONTROLS AND LIMITATIONS

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System permit program (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of North Carolina. There is an Agreement between the EPA and the State setting forth the authorities and specifications for delegation to North Carolina.

Non-numeric Effluent Limitations that Apply to Construction Sites

The federal Construction and Development Point Source Rule (40 CFR § 450, “C&D rule”) that became effective February 1, 2010 includes non-numeric effluent limitations. The Final permit addresses each of these requirements.

Erosion and Sediment Controls

Construction activities may result in severe localized impacts on water quality due to high loads of pollutants, primarily sediment, associated with the erosion of disturbed land surfaces. Over a short period of time, construction sites can contribute more sediment to streams than was deposited previously over several decades. These concerns are addressed by the existing Sedimentation Control Program administered by the North Carolina Division of Land Resources, Department of Environment and Natural Resources under authority of the Sedimentation Pollution Control Act of 1973 as amended. Therefore, compliance with the construction stormwater general permit relies substantially and specifically on compliance with an approved Erosion and Sediment Control Plan.

The Sedimentation Control Program requires persons proposing to disturb more than an acre of land surface to submit an erosion and sedimentation control plan at least 30 days prior to beginning of the land disturbing activity. These plans are submitted to the regional engineer for Land Quality located in one of the seven Department regional offices or to a delegated local program. The Land Resources Division developed the Erosion and Sediment Control Planning and Design Manual to assist applicants in the preparation of such plans. Additionally, each plan is compared to a checklist of requirements to assure completeness and consistency in the review and approval process.

The Division of Land Resources also delegated their review and approval program to approximately 50 local governments in North Carolina. In addition to plan review and approval, the Land Quality Section inspects facilities for compliance, investigates

complaints, provides technical assistance, and conducts routine overview of the delegated local programs.

The specific requirements for all erosion and sediment control plans are contained in Title 15A North Carolina Administrative Code Chapter 4 (15A NCAC 4). These rules address the requirements for submission of approvable erosion and sedimentation control plans, the approval process, mandatory standards for land disturbance activities, design and performance standards, access and haul roads, maintenance, inspections and investigations, design standards in sensitive watersheds, and buffer zone requirements in addition to other provisions. These procedures are administered and enforced in such a manner as to provide protection of the receiving waters from pollution caused by erosion from the land disturbance activity.

Soil Stabilization

The permit requires that soil stabilization with ground cover be achieved within 7-14 days, depending on factors such as watershed location, slope grade, and slope length (refer to **Table 1** in Section 2 b. of this Fact Sheet). In addition, the permit outlines specific parameters for what is considered “temporary” and “permanent” soil stabilization (See “SECTION VIII. – DEFINITIONS”).

Analysis of precipitation data across North Carolina (13 weather stations) during a 12-year period demonstrated that on average, the probability of a 0.5” rainfall in one day is just below 10 percent. While rain events are not distributed evenly through any given time period and distribution is *seasonally- and geographically-dependent and highly variable*, the long term average suggests that overall the state receives a half-inch rain event about every 11 days. A similar analysis suggests that a quarter-inch of precipitation falls in a 24-hour period, on average, at least once every 4-7 days (depending on month and location). **The permit conditions to require ground cover must be established on steeper-slopes of disturbed areas within 7 days will reduce the chances of significant rainfall occurring before temporary or permanent stabilization is achieved.**

Dewatering Discharges

The federal C&D rule prohibits discharges from dewatering of trenches and excavations unless managed by appropriate controls. North Carolina Administrative Code (NCAC) Section 15A: 02H .0106 (f)(7) permits such discharges by rule, *provided that no water quality standards are contravened or expected to be contravened*.

Pollution Prevention Measures

The permit outlines pollution prevention measures in Section II.A.

Prohibited Discharges

Wastewater discharges (e.g., concrete washout, paint, oils, etc.) are not authorized by this the permit. Dumping of liquid building material wastes in storm drains is prohibited, and such wastes must be disposed of as required by state Statutes. Fuels, lubricants, coolants,

and hydraulic fluids, or any other petroleum products are prohibited from being discharged onto the ground or into surface waters.

Surface Outlets and Chemical Treatment

The permit requires sediment basins and impoundments to withdraw water from the surface, with specific exemptions allowed for certain small on-site sediment traps. Discharges must be directed from stormwater controls to vegetated areas unless infeasible. The permit also proposes requirements for chemical flocculants, including limiting use to those approved by DWQ.

8. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

There are no requested variances or alternatives to required standards.

9. 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.

10. STATE CONTACT

Additional information about the permit may be obtained at the above address between the hours of 8:00 AM and 5:00 PM Monday through Friday by contacting: Boyd DeVane at (919) 807-6373 or at boyd.devane@ncdenr.gov

11. PERMIT ISSUANCE

Draft Permit to Public Notice – Notice published May 13, 2011

Closing date for comments – June 16, 2011

Public meeting held June 7, 2011

Permit Reissuance Effective Date – Scheduled for August 2, 2011

12. REFERENCES

Henley, W.F., 'M.A. Patterson,' R.J. Neves, and A. Dennis Lemly. Effects of Sedimentation and Turbidity on Lotic Food Webs: A Concise Review for Natural Resource Managers. *Reviews in Fisheries Science*, 8(2): 125-139 (2000).