

MS-4599

TTS

**TEXAS DEPARTMENT OF
TRANSPORTATION**

**NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

**GUIDELINES FOR COMPLIANCE WITH
THE GENERAL PERMIT
FOR
CONSTRUCTION ACTIVITIES**

SEPTEMBER 1992

**Prepared by The Division of Bridges and Structures - Hydraulic Section
for
The Storm Water Management Task Force**

AGENDA

**Special District Engineers Meeting
September 17, 1992
Red Lion Inn
Austin, Texas**

September 17, 1992 - Convening at 9:00 a.m.

- I. Opening Remarks, Administration. (Arnold W. Oliver/Byron C. Blaschke)
- II. General Discussion
National Pollutant Discharge Elimination System
General Permits. (Roland Gamble - Division of Environmental Affairs, D-17)
- III. Notice of Intent Requirements. (John Aldridge - Division of Construction & Contract Administration, D-6)

BREAK
- IV. Guidelines for Compliance with General Permit. (Peter Smith - Division of Bridges & Structures, D-5)
- V. Erosion Sediment Controls. (Jay Vose - Division of Bridges & Structures, D-5 and Hank Smith - Texas Water Commission)

LUNCH BREAK
- VI. Sample Storm Water Pollution Prevention Plan (SWPPP). (John Kight - San Antonio District)

BREAK
- VII. Construction Site Management. - (Ken Bohuslav - Division of Highway Design, D-8)
- VIII. Integration of SWPPP With Construction. (Bobbie Templeton - Division of Construction & Contract Administration, D-6)
- IX. Changes to PS & E - September, October, November, and December Lettings. (Jerry Selby - Division of Highway Design, D-8)
- X. General Discussion.
- XI. Adjourn.

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**Compliance Guidelines for the General Permit for Construction Activities
Outline**

- 1.0 Introduction**
- 2.0 Notice of Intent Requirements**
- 3.0 Special Conditions**
- 4.0 Storm Water Pollution Prevention Plans**
 - 4.1 Contractor/Subcontractor Certification**
 - 4.2 Modifications to the SW3P**
- 5.0 Erosion and Sedimentation Controls**
 - 5.1 Stabilization Practices**
 - 5.2 Structural Control Practices**
 - 5.3 Other Controls**
- 6.0 Storm Water Management**
- 7.0 Maintenance Practices**
- 8.0 Inspection Practices**
- 9.0 Notice of Termination**
- 10.0 Glossary and List of Acronyms**

Appendices

- A1. Blank Notice of Intent Form**
- A2. Sample Notice of Intent Form**
- B. Draft Specification Item 506**
- C. Blank Notice of Termination Form**
- D. Applicable portions of the Federal Register**
- E. Average Annual Precipitation - State of Texas**

1.0 Introduction

The Clean Water Act makes it unlawful to discharge storm water from construction sites to waters of the United States, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. On September 9, 1992 the Environmental Protection Agency (EPA) published the final NPDES rules (see Appendix D) establishing the general permit requirements for storm water discharges associated with industrial activities from construction sites. To cover the large number of affected projects, the General Permit has been issued in lieu of separate individual applications for each project. The rules set forth requirements which have to be met before the project can be covered by the General Permit. These rules require that a Notice of Intent (NOI) be submitted to the EPA and a Storm Water Pollution Prevention Plan (SW3P) be prepared by October 1, 1992 for all projects under construction before October and continuing after that date. Construction projects which begin after the October 1, 1992 deadline will require the NOI submittal 48 hours prior to the beginning of construction and the completion of a SW3P. Construction activities which disturb less than 5 acres of total land do not need to comply with the General Permit. It is expected the EPA will amend the rules to include sites causing less than 5 acres of disturbance.

TxDOT intends to apply for coverage under a General Permit for Storm Water Discharges Associated with Industrial Activities from Construction Activities. Each project under the control of the department which falls within the NPDES permit requirements will need to develop a project specific Storm Water Pollution Prevention Plan (SW3P), issue a Notice of Intent (NOI) and satisfy the other conditions of the NPDES General Permit under penalty of law.

The purpose of these guidelines is to describe the procedures and methods to develop a storm water pollution prevention plan and associated components to comply with the NPDES General Permit.

2.0 Notice of Intent Requirements

In order for a construction project to be included under the General Permit a Notice of Intent (NOI) shall be submitted to the EPA at least 48 hours prior to commencement of construction. It should be noted that a NOI must not be submitted until the Storm Water Pollution Prevention Plan (SW3P) has been prepared. In accordance with the General Permit requirements a NOI should include the following:

- 1. The TxDOT District Office as the facility operator including the address, telephone number, and status as a State entity.**
- 2. The project name, mailing address and location of the construction site for which the notification is submitted. Where a mailing address for the site is not available, the location can be described in terms of the latitude and longitude of the approximate center of the facility to the nearest 15 seconds in which the construction site is located.**
- 3. The name of the receiving water(s) or, if the discharge is through a municipal separate storm sewer system (MS4 - located in municipalities with population > 100,000), the name of the municipal operator of the storm sewer and the ultimate receiving water(s).**
- 4. The number of any NPDES permit for any discharge (including non-storm water discharges) from the site that is currently authorized by an NPDES permit.**
- 5. An indication of whether the owner or operator has existing quantitative data which describes the concentration of pollutants in storm water discharges (existing data should not be included as part of the NOI).**
- 6. An estimate of project start date and completion dates, estimates of the number of acres of the site on which soil will be disturbed, and a certification that a storm water pollution prevention plan has been prepared for the facility in accordance with the General Permit requirements and such plan complies with approved State and/or local sediment and erosion plans or permits and/or storm water management plans or permits in accordance with the General Permit. (A copy of the plans or permits should not be included with the NOI submission).**

The certification on the notice of intent reads as follows:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Facilities which discharge storm water associated with industrial activity must use a NOI form provided by the EPA (Appendix A1), or photocopy thereof and must be signed by the District Engineer or Area Engineer. A copy of the NOI or other indication that storm water discharges from the site are covered under an NPDES permit, and a brief description of the project shall be posted at the construction site in a prominent place for public viewing. Appendix A2 contains a sample completed NOI form.

3.0 Special Conditions

3.1 Prohibition of Non-Storm Water Discharges

The General Permit for construction activities does not authorize non-storm water discharges that are mixed with storm water. These include, but are not limited to:

- process wastewaters
- toxic or hazardous materials
- detergents
- solvents

There are some exclusions, i.e. non-storm water discharges which can be authorized under the General Permit but must be specifically identified in the SW3P. These include:

- fire hydrant flushings
- waters used to wash vehicles or control dust in accordance with permit requirements
- potable water sources
- irrigation drainage
- detergent-free routine external building washdown
- air conditioning condensate
- natural springs and uncontaminated groundwater
- uncontaminated foundation or footing drains

Specifically excluded from any requirements under the General Permit are fire fighting operations.

3.2 Releases of Hazardous Substances and Oil

Discharges of hazardous or toxic substances including oil should be eliminated or minimized in accordance with the SW3P. If reportable quantities are discharged, then the procedures outlined in the regulations (p. 41219) should be followed.

4.0 Storm Water Pollution Prevention Plans

A storm water pollution prevention plan shall be developed for each construction site covered by the general permit. The plan shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with the construction site and to assure compliance with the terms and conditions of the general permit. The Storm Water Pollution Prevention Plan must be completed prior to the submittal of the NOI and shall include the following items:

1. **Site Description.** Each plan shall, provide a description of pollutant sources and other information as indicated:
 - a. A description of the nature of the construction activity;
 - b. A description of the intended sequence of major activities which disturb soils for major portions of the site;
 - c. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other activities;
 - d. An estimate of the runoff coefficient of the site after construction activities are completed and existing data describing the soil or the quality of any discharge from the site;
 - e. A site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, an outline of areas which are not to be disturbed, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water; and
 - f. The name of the receiving water(s) and the ultimate receiving water(s), and areal extent of wetland acreage at the site.

2. **Controls.** Each plan shall include a description of appropriate controls and measures that will be implemented at the construction site. The plan will clearly describe for each major activity the appropriate control measures and the timing during the construction process that the measures will be implemented. The controls will be implemented in accordance with Standard Specification Item 506 (Draft of the proposed 506 specification is provided as Appendix B) and relevant Special Specifications. Guidelines for the selection of suitable control measures are contained in Section 5.0. The description of the controls shall address the following minimum components:
 - stabilization practices,
 - structural practices, and
 - other controls, ie. waste disposal, and off-site vehicle tracking of sediments.

3. **Storm Water Management.** A description of measures to be taken to address long term water quantity and quality issues after the completion of construction activities.

4. **Maintenance**. A description of the procedures to ensure the timely maintenance of vegetation, erosion and sediment control measures and other protective measures identified in the site plan in good and effective operating condition (see Section 7.0).
5. **Inspections**. A description of the inspection procedures to ensure the effectiveness of vegetation, erosion and sediment control measures and other protective measures identified in the site plan (see Section 8.0).

4.1 Contractor/Subcontractor Certification

The SW3P must identify the contractor and/or subcontractors that will implement any measure outlined in the plan. It is imperative that the contractor understands the requirements of the General Permit and the provisions of the SW3P. All contractors and/or subcontractors identified in the plan must sign a copy of the following certification.

"I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

The certification must include the following.

- Name and title of signee
- Name, address, and phone number of the contracting firm
- Site address
- Date of certification

4.2 Modifications to the SW3P

The SW3P need not be submitted with the NOI, however, the EPA may request submittal of a specific plan or plans. The EPA may notify TxDOT that a plan does not meet one or more of the minimum requirements. If so, within 7 days of notification, suitable modifications should be made to the plan and a written certification of the modifications should be submitted to the EPA. Additionally, any procedures that have been undertaken but found to be ineffective or insufficient should be addressed by modifying the SW3P.

5.0 Erosion and Sedimentation Controls

Construction-related sediments can be a significant pollutant of streams, lakes, ponds, reservoirs, and underground aquifers. Not only does sediment reduce the quality of water for boating, fishing, swimming and other water-oriented recreation, it also creates maintenance problems due to excessive wear on pumps and to the reduced capacity of streams, lakes and other waterways. Other problems associated with sediment is the affinity of pesticides, phosphates and many other chemical pollutants for soil particles. These pollutants are carried to the waterway with the sediment and further reduce the quality of the water, both physically and chemically.

On most construction projects, the major part of the erosion potential exists between the time when the native vegetation is removed to begin site work and the completion of construction and revegetation. There are numerous activities associated with construction of roadways and land development that accelerate the rate of erosion. Virtually all of these actions involve the removal of vegetation and/or the disturbance of the native geologic structure to provide a construction site.

The adverse impacts upon the site and the environment in general can be reduced if these actions are taken with some forethought to controlling the resultant erosion. One method to accomplish this is to limit the extent of the native vegetation that is disturbed. This will often significantly reduce the volume of material eroded from a site. Planning the necessary locations of the disturbance and restricting construction traffic to those locations is an example of this type of planning.

Another method of reducing erosion potential is to revegetate any disturbed area as soon as possible. To make this effective, construction activity should be planned to progress as rapidly and completely as possible. This will reduce the length of time when there is a high potential for erosion. It also has the potential benefit of reducing total project costs. A related method would be to revegetate between phases of a project, when there will be a delay between these phases.

Construction sites are often damaged extensively by erosion. The most obvious damage is physical and the effects can be seen as gullies or rills cutting across the site, undercutting of banks and undermining of drainage structures. Less obvious damages are the loss of soil fertility and creation of hazardous working conditions.

Stream channels below disturbed areas may become clogged with sediment. This sediment will provide a medium to allow undesirable vegetation to grow, resulting in slowing the flow of water and deposition of more sediment until storm drain outflows are blocked and channel capacities are reduced. This will often result in flooding, maintenance problems or both.

Erosion and sediment controls include stabilization practices (nonstructural) and structural controls. There are several methods, structural and nonstructural, available to reduce the negative effects of sediment. Most of the common structural methods used (i.e. silt fences, rock berms, etc.) take advantage of the reduced ability of water to carry sediment when its velocity is reduced. The reduction of velocity can be produced by constructing berms, sediment basins, or similar structural controls. The velocity can also be reduced by establishing vigorous stands of vegetation on relatively flat slopes through which the sediment-laden water must flow.

The following design considerations should be considered to reduce sediment from construction projects.

1. Limit the size of disturbed areas to the greatest extent possible.
2. Stabilize any disturbed areas as soon as possible in accordance with the guidelines in section 5.1.
3. For construction activities in waterways, the following additional considerations should be made:
 - a. At the end of each work day spoils and loose excavated material that is subject to erosion should be removed from the channel.
 - b. No construction or fill materials should be stored within the limits of the channel. The designated equipment and materials storage and staging areas must have erosion controls.
 - c. Rock berms or sandbag berms may be used to entrap sediment.
 - d. The potential for increased flooding resulting from the location of the control measures should be addressed.
4. Controls are required to intercept silt from all disturbed areas.
5. Attempt to keep the velocities of stormwater runoff below the erosive level.
6. Protect slopes which may erode and other areas disturbed by construction activity from upstream runoff.
7. Capture and filter/detain stormwater runoff. The temporary erosion controls included in the plan must be able to intercept, without overtopping, the peak runoff resulting from the two (2) year storm. Care must be taken to locate low points in control barriers when assessing the flow capacity of the barrier.
8. Minimize the extent of sediment leaving the project site.
9. Reduce potential flooding problems associated with excessive sediment accumulation in storm drains and waterways.
10. Reduce the concentration of stormwater runoff and promote sheet flow to the greatest extent possible.
11. Revegetate all disturbed areas with a rapid, vigorous growth of long-term vegetation composed of a mixture of grasses.
12. Provide sedimentation and/or filtration ponds to maintain and improve water quality.
13. Erosion control plans should be phased to accommodate changes in drainage patterns that occur during construction.
14. Reduce the silt leaving a construction-site on the wheels of construction vehicles by providing

vehicle cleaning areas and/or stabilized construction entrances and exits.

15. Preserve and protect existing vegetation to the greatest extent possible.
16. The erosion sedimentation control planning should consider the natural topography and soil conditions in an attempt to limit the erosion potential.
17. Design erosion/sedimentation controls to harmonize with the natural character of the land.
18. When storm drain inlets must be protected, silt fences or equivalent device should be used.
19. Consider alternatives to achieve an optimum condition for erosion/sedimentation control, installation and cost effectiveness. An inspection of the site is generally necessary. Fig. 1 illustrates some of the applications for various devices.
20. Consideration should be given to potential safety and flooding hazards created by control measures.

	Maximum Flow-Through Rate (Gal./Min./Sq. Ft.) ^{***}	Trenched or Secured ^{**}	Recommended Maximum Drainage Area [*]	Recommended Maximum Slope Length
A. Sheet Flow				
1. Hay bales ^{****}	5	Yes	5 acre	50 ft. for slopes exceeding 10% (same for filter dikes)
2. Filter dikes	20	Yes	1 acre	
3. Brush berm	40	Yes	2 acre	
4. Silt fence	40	Yes	2 acre	
5. Rock berm	60	No	5 acre	
6. Diversion dike, etc.			5 acre	
7. Swales			5 acre	
B. Concentrated Flow				
1. Stone outlets	40	Yes	5 acre	
2. Diversion dike, etc.			5 acre	
3. Swales			5 acre	
4. Rock berm	60	Wire mesh sheath	5 acre	
5. Slope drain			5 acre	
6. Sediment traps			5 acre	
7. Sediment basin			100 acre	
C. Streamflow				
1. Rock berm		Wire mesh sheath and secured	±5 acre	
2. Sandbag berm		No	±5 acre	

- * The size of drainage area depends primarily on maximum flow-through rate. The maximum drainage area may be changed depending on whether the maximum flow-through rate is exceeded.
- ** Secured: Tied and/or staked.
- *** Primary Design Criteria: Runoff flow rate and maximum flow-through rate at the barrier. The maximum flow-through rates for various barriers are specified based on the physical properties of the barriers. In order to determine if the size of a drainage area is adequate for each control barrier, the runoff flow rate should be computed and compared with the maximum flow-through rate. The latter shall not be exceeded for the 2-year design storm runoff.
- **** Must be replaced every 2 months or at the discretion of the inspector.

FIGURE 1 TEMPORARY CONTROL MEASURES APPLICATION

5.1 Stabilization Practices

Pollution prevention plans must include descriptions of both temporary and permanent stabilization practices. Preserving existing vegetation or revegetating disturbed soil as soon as possible during construction is one of the most important and cost effective erosion control measures. A vegetative cover reduces the erosion potential by shielding the soil surface from the direct impact of the rainfall, improves the soils water storage capacity, slows the runoff allowing sediment to settle out, and tends to hold the soil in place. Vegetative covers may consist of grass, trees, mulch, straw, or retention blankets. The following are the Best Management Practices (BMP's) to be considered for stabilization practices.

- Existing vegetation will preserved as much as practicable. Areas not to be disturbed shall be indicated on the plans.
- Disturbed area will be minimized to the extent practicable by staging construction operations (refer to Standard Specification Item 506).
- As required by the General Permit, disturbed areas on which construction activity has ceased (temporarily or permanently) and which will be exposed for more than 21 days shall be stabilized within 14 days. An exception is within areas receiving less than 20 inches of annual rainfall which should be stabilized as soon as practicable and only to pre-project conditions.

The most common vegetative practices for soil stabilization are:

- Temporary Seeding
- Mulching
- Soil Retention Blankets
- Buffer Zones
- Preservation of Natural Vegetation
- Permanent Seeding/Sodding and Planting

5.1.1 Temporary Seeding

The purpose of temporary seeding is to establish a short term vegetative cover to reduce the erosion potential of disturbed areas that will not be permanently stabilized for long periods of time. Temporary seeding should be used in any area where erosion may occur or where the disturbed area will not be stabilized within 14 days after the last construction activity. Typical work areas may include soil stockpiles and temporary excavation or embankment areas.

Planting should take place when conditions are most favorable for growth (as long as the planting does not interfere with the schedule of other activities and/or regulatory requirements). Indigenous species should be used whenever possible. Before seeding, install other erosion control practices such as dikes, basins, and surface runoff control measures (e.g., gradient terraces, interceptor dike/swales, and level spreaders). Temporary seeding may not be an effective practice in arid and semi-arid regions where the

climate prevents fast plant establishment. In those areas, mulching may be better for the short term.

Proper seed bed construction and the use of high quality seed are needed to grow plants for effective erosion and sedimentation control. Seed beds can be prepared by spreading lime and fertilizers. Soil that has been compacted by heavy traffic or machinery may need to be loosened. All temporary seeding shall be in accordance with applicable portions of Standard Specification Item 164, "Seeding for Erosion Control".

In cold weather regions, if seeds are planted in fall or winter, the areas should be covered with mulch to provide protection from the weather. On slopes of 2:1 or more, or where adverse soil conditions exist such as in the presence of excessively hot or dry weather, seeding should be followed by spreading mulch (see section on Mulching). Frequent inspections are necessary to check that conditions for growth are good. If the plants do not grow quickly or thick enough to prevent erosion, the area should be reseeded as soon as possible. Seeded areas should be kept adequately moist. If normal rainfall will not be enough, mulching, matting, and controlled watering should be performed. Care should be taken to avoid over-irrigation of seeded areas.

Advantages of Temporary Seeding

- Generally inexpensive and easy to perform
- Establishes good soil stabilization quickly when conditions are conducive to plant growth
- Has good aesthetic qualities and can provide sedimentation controls for other site areas
- May help reduce costs of maintenance on other erosion controls (e.g., sediment basins may need to be cleaned out less often)

Disadvantages of Temporary Seeding

- Depends heavily on the season and rainfall rate for success
- On some soils extensive fertilizing may be required, possibly resulting in local water quality problems
- Requires protection from construction activities, once seeded
- May produce vegetation that requires expensive irrigation and maintenance

5.1.2 Mulching

Mulching is a temporary soil stabilization or erosion control practice where materials such as grass, hay, woodchips, wood fibers, or straw are placed on the soil surface. In addition to stabilizing soils, mulching can reduce the speed of storm water runoff over an area. When used together with seeding or planting, mulching can aid in plant growth by holding the seed, fertilizers, and topsoil in place, by helping to retain moisture, and by insulating against extreme temperatures. Mulching operations shall conform to the applicable portions of Specification Item No. 164, "Seeding for Erosion Control".

Mulching is often used alone in areas where temporary seeding cannot be used because of the season or climate. Mulching can provide immediate, effective, and inexpensive erosion control. On steep slopes and critical areas such as waterways, mulch matting is used with netting or anchoring to hold it in place.

Use of mulch may require a binder, netting, or the tacking of mulch to the ground. Final grading is not necessary before mulching. Mulched areas should be inspected often to find where mulched material has been loosened or removed. Such areas should be reseeded (if necessary) and the mulch cover replaced immediately.

Advantages of Mulching

- Provides immediate protection to soils that are exposed and that are subject to heavy erosion
- Retains moisture, which may minimize the need for watering
- Requires no removal because of natural deterioration of mulching and matting

Disadvantages of Mulching

- May delay germination of some seeds because cover reduces the soil surface temperature

5.1.3 Soil Retention Blankets

The use of soil retention blankets is an effective tool to prevent surface erosion and promote rapid establishment of a permanent (or temporary) vegetative cover. The two main applications for soil retention blankets are for slope protection and as a flexible channel liner protection. For slope protection applications, the blankets are useful in preventing the loss of top soil thereby reducing surface erosion and promoting establishment of grass cover. It is recommended that soil retention blankets be given serious consideration on slopes greater than 3:1. Soil retention blankets may also be used to stabilize drainage ditches when more severe measures such as concrete rip-rap or rockrevet mattresses are not appropriate. The purpose of the blankets in this application is to protect the integrity of the ditches while the permanent vegetative cover is established. The use of soil retention blankets should be in accordance with Standard Specification Item 169, "Soil Retention Blankets".

Advantages of Soil Retention Blankets

- Blankets for certain applications are easy to install
- Provide quick and effective protection from erosion problems
- Design methodologies for the use of blankets for flexible channel liners are available
- A wide variety of soil retention blankets to meet specific needs are available

Disadvantages of Soil Retention Blankets

- If the fabric is not properly selected, designed, or installed, the effectiveness may be reduced drastically

5.1.4 Permanent Seeding/Sodding and Planting

Permanent seeding and/or sodding of grass and planting trees and brush provides stabilization to the soil by holding soil particles in place. Vegetation reduces sediments and runoff to downstream areas by slowing the velocity of runoff and permitting greater infiltration of the runoff. Vegetation also filters sediments, helps the soil absorb water, improves wildlife habitats, and enhances the aesthetics of a site.

Permanent seeding, sodding, and planting is appropriate for any graded or cleared area where long-lived plant cover is desired. Some areas where permanent seeding or sodding is especially important are final grade excavations and embankments, buffer areas, vegetated swales, steep slopes, and stream banks. The permanent seeding or sodding should take place within 14 days after grading or clearing on the area has been completed, otherwise temporary seeding may be necessary. If sodding and planting materials are obtained from on-site or non-commercial operations, stabilization of the site where the materials were removed may be necessary. All seeding or sodding operations shall conform to Standard Specification Items 162 and 164, "Sodding for Erosion Control" and "Seeding for Erosion Control", respectively.

Advantages of Permanent Seeding and Planting

- Improves the aesthetics of a site
- Provides excellent stabilization
- Provides filtering of sediments
- Provides wildlife habitat

Disadvantages of Permanent Seeding and Planting

- May require irrigation to establish vegetation
- Depends on climate and weather for success

5.1.5 Buffer Zones

Buffer zones are vegetated strips of land used for temporary or permanent water quality benefits. Buffer zones are used to decrease the velocity of storm water runoff, which in turn helps to prevent soil erosion. The buffer zone can be an area of vegetation that is left undisturbed during construction, or it can be newly planted.

The buffer zone technique can be used at any site that can support vegetation. Buffer zones are particularly effective on floodplains, next to wetlands, along streambanks, and on steep, unstable slopes.

If buffer zones are preserved, existing vegetation, good planning, and site management are needed to protect against disturbances such as grade changes, excavation, damage from equipment, and other activities. The creation of new buffer strips requires the establishment of a good dense turf, trees, and shrubs (see Permanent Seeding and Planting). Careful maintenance is important to ensure healthy vegetation. The need for routine maintenance such as mowing, fertilizing, irrigating, and weed and pest control will depend on the species of plants and trees involved, soil types, and climatic conditions.

Planted areas may require debris removal and protection against unintended uses or traffic.

Advantages of Buffer Zones

- Can be inexpensive, especially if buffer zones are created from existing vegetation
- Provide aesthetic as well as water quality benefits
- Provide areas for wildlife habitat
- Provide screens for onsite operations if trees or large bushes are used

Disadvantages of Buffer Zones

- Are not feasible if land is not available
- Require plant growth in the buffer zone before it is effective

5.1.6 Preservation of Natural Vegetation

The preservation of natural vegetation (existing trees, brushes, and grasses) provides natural buffer zones. By preserving stabilized areas, it minimizes erosion potential, protects water quality, and provides aesthetic benefits. This practice is used as a permanent control measure.

This technique is applicable to all types of sites. Areas where preserving vegetation can be particularly beneficial are floodplains, wetlands, stream banks, steep slopes, and other areas where erosion controls would be difficult to establish or install.

Preservation of vegetation on a site should be planned before any disturbance of the site begins. Preservation requires a good site management plan to minimize the impact of construction activities on existing vegetation. Proper maintenance is important to ensure healthy vegetation that can control erosion. Different species, soil types, and climatic conditions will require different maintenance activities such as mowing, fertilizing, irrigation, and weed and pest control. Efforts should be made to develop a low maintenance vegetative cover. Maintenance should be performed regularly, especially during construction.

Advantages of Preservation of Natural Vegetation

- Can handle higher quantities of storm water runoff than newly seeded areas
- Increases the filtering capacity because the vegetation and root structure are usually denser in preserved natural vegetation than in newly seeded or base areas
- Enhances aesthetics
- Provides areas for interception and infiltration reducing the quantity and velocity of storm water runoff

- **Allows areas where wildlife can remain undisturbed**
- **Provides noise buffers and screens for onsite operations**
- **Usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation**

Disadvantages of Preservation of Natural Vegetation

- **Requires substantial planning to preserve and maintain the existing vegetation**

5.2 Structural Control Practices

The use of structural control measures in sediment and erosion control during construction activities is to protect the quality of the receiving waters by preventing sediments from moving offsite, reducing the erosive forces of runoff, diverting storm runoff away from exposed areas, and conveying runoff. The following structural practices are recommended for construction sites:

- Diversion, Interceptor and Perimeter Dikes,
- Interceptor and Perimeter Swales,
- Stone Outlet Structures,
- Rock, Brush, and Sandbag Berms,
- Silt Fence,
- Stabilized Construction Entrances,
- Sediment Basins, and
- Sediment Traps.

Other devices may be used, but are only recommended after consideration to the devices listed above have been given. These may include such items as Hay Bales, Triangular Sediment Filter Dikes, etc..

The use of structural controls does not preclude extensive consideration and compliance with traffic and general safety practices utilized on the projects. Additional thought must be given to potential flooding or nuisances created by the control devices during operation and in the case of failure of the devices.

All structural controls should be implemented in accordance with Standard Specification Item 506 and applicable Special Specifications. The following sections provide the description, purpose, applicability, and other necessary data to properly select and utilize the most common controls.

In accordance with the EPA regulations, disturbed areas greater than 10 acres within the same drainage basin shall provide a sedimentation basin with a capacity of 3600 cubic feet per acre. Where not attainable, suitable erosion and sedimentation controls are required. For sites disturbing between five and 10 acres a sedimentation basin is recommended but may be substituted with other suitable erosion and sedimentation controls.

5.2.1 Diversion, Interceptor and Perimeter Dikes

1. Definition

A temporary ridge of compacted soil located either (1) immediately above cut or fill slopes, (2) across disturbed areas or rights of way or (3) along the perimeter of the site or disturbed areas.

2. Purpose

- a) A diversion dike intercepts runoff from small upland areas and diverts it away from exposed slopes to a stabilized outlet, such as a rock berm or stone outlet structure.
- b) An interceptor dike protects exposed slopes by intercepting runoff and diverting it to a stabilized outlet away from the exposed area.
- c) A perimeter dike prevents off-site runoff from entering the disturbed area and prevents sediment-laden storm runoff from leaving the construction site or disturbed area.

3. Conditions Where Practice Applies

Generally, dikes are used during the construction period to intercept and reroute runoff from disturbed areas to prevent excessive erosion until permanent drainage features are installed and/or slopes are stabilized.

4. Design Guidelines

The following guidelines should be considered:

- a. Drainage Area - Less than five (5) acres (recommended)
- b. Top Width - Two (2) feet minimum
- c. Height (compacted fill) - 18 inches minimum height measured from the top of the existing ground at the toe to top of the dike
- d. Side Slopes - 2:1 or flatter. Dikes within the safety zone should have side slopes of 6:1 or flatter.
- e. Stabilization - Channel stabilization should be provided when erosive velocities are expected.
- f. Spacing -

Slope of disturbed areas above dike	greater than	10%	5-10%	less than	5%
Maximum distance between dikes:	100 ft.	200 ft.	300 ft.		
- g. Drainage diversions should not be directed to adjacent property.

5. Outlet

- a. Runoff diverted from a protected or stabilized area should outfall directly to an undisturbed or stabilized area.
- b. Runoff diverted from a disturbed or exposed upland area should be conveyed to a sediment trapping device such as a rock berm, stone outlet structure, sediment trap, sediment basin or to an area protected by any of these practices.

5.2.2 Interceptor and Perimeter Swales

1. Definition

A temporary excavated drainageway located across disturbed areas or rights of way or along the perimeter of a construction site.

2. Purpose

Interceptor swales protect exposed slopes by intercepting runoff. Perimeter swales prevent off-site runoff from entering the disturbed areas or prevent sediment-laden runoff from leaving the construction site or disturbed area. The outflow from a swale must be directed to a stabilized outlet or sediment trapping device.

3. Conditions Where Practice Applies

Interceptor swales are constructed across disturbed easements/rights of way. The perimeter swale is used during the construction period adjacent to the perimeter of the disturbed area. The perimeter swale also is used to prevent storm runoff from entering the disturbed area.

The intercepted runoff shall be adequately handled to prevent damage due to flooding or erosion to adjacent property. Swales shall remain in place until the disturbed area is permanently stabilized.

4. Design Guidelines

The following guidelines should be considered:

- a. **Drainage Area** - Less than five (5) acres (recommended)
- b. **Bottom Width** - Four (4) feet minimum and the bottom shall be level.
- c. **Depth** - One (1) foot minimum
- d. **Side Slopes** - 2:1 or flatter. Swales within the safety zone should have side slopes of 6:1 or flatter.
- e. **Grade** - must have positive drainage (sufficient grade to drain) to an adequate outlet.
- f. **Stabilization** - Channel stabilization should be provided when erosive velocities are expected.
- f. **Traffic Crossings** - all points where vehicles will cross swales must be stabilized. If a stone lining is used it should be at least six (6) inches in thickness for the full width of the traffic crossing.

h. Spacing -

Slope of right of way or disturbed area:	greater than 10%	5-10%	less than 5%
Minimum distance:	100 ft.	200 ft.	300 ft.

5. Outlet

- a. Runoff diverted from a protected or stabilized upland area should outfall directly onto an undisturbed or stabilized area.**
- b. Runoff diverted from a disturbed or exposed upland area should be conveyed to a sediment trapping device such as a rock berm, stone outlet structure, sediment trap or sediment basin or to an area protected by any of these practices.**
- c. The on-site location of the swale may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.**

5.2.3 Stone Outlet Structures

1. Definition

A temporary crushed stone dike installed in conjunction with and as a part of a diversion dike, interceptor dike or perimeter dike.

2. Purpose

The purpose of the stone outlet structure is to provide a protected outlet for a diversion dike, interceptor dike or perimeter dike and to provide for diffusion of concentrated flow and to allow the area behind the dike to drain.

3. Conditions Where Practice Applies

Stone outlet structures apply to any point of discharge where there is need to dispose of runoff at a protected outlet or to diffuse concentrated flow for the duration of the construction period.

4. Design Guidelines

The drainage area above the structure is recommended to be less than five (5) acres. The minimum length, in feet, of the crest of the stone outlet structure should be equal to six (6) times the number of acres of contributing drainage area. Maximum allowable flow through rate is 40 gallons per minute per square foot. The crest of the stone dike should be at least six (6) inches lower than the lowest elevation of the top of the earth dike and should be level. The stone should be crushed stone. Unless otherwise specified, all aggregate used in a stone outlet structure should be three (3) to five (5) inches open graded rock or larger. A fabric core consisting of filter fabric may be incorporated into the structure provided maintenance of the core is made possible. The

stone outlet structure should be located so as to discharge onto an already stabilized area or into a stable watercourse. Stabilization shall consist of a complete vegetative cover, paving, etc., sufficiently established to be erosion resistant.

5. Maintenance

The area upstream from the stone outlet structure should be maintained in a condition which will allow sediment to be removed following the runoff of a rainfall event. Periodic inspections (after each rainfall) should be made by the Contractor and when the silt reaches a depth equal to 1/3 the height of the structure or one (1) foot, whichever is less, accumulated silt should be removed and disposed of at an approved site in a manner that will not contribute to additional siltation. The structure should be reshaped as needed during inspection. The structure should be left in place until all upstream areas are stabilized and accumulated silt is removed.

5.2.4 Rock Berm

1. Description

A temporary berm constructed of open graded rock installed at the toe of a slope or the perimeter of the construction or disturbed area. Rock Berms may also be used in conjunction with silt fences or sandbag berms to provide additional sediment removal.

2. Purpose

The purpose of a rock berm is to intercept sediment-laden storm water runoff from disturbed areas, detain the sediment and release the water in sheet flow.

3. Conditions Where Practice Applies

The rock berm is used where:

- a. There is sheet flow or concentration of water in a channel or other drainageway above the berm.
- b. Generally, the contributing drainage area should be less than five (5) acres.
- c. Severe Service - For construction activities in stream beds where the contributing drainage area above the construction disturbance exceeds five (5) acres. In this case the rock berm is not to be used as a substitute for other measures further up in the watershed. It is to be used only where disturbance is occurring in the channel or where upslope measures are not feasible.

Particular attention should be given to the locations of rock berms within the safety zone to avoid traffic hazards.

4. Design Guidelines

A rock berm should be constructed at the perimeter of a disturbed area within the construction

area.

The following guidelines should be considered:

- a. **Drainage Area - Less than five (5) acres (recommended)**
- b. **Maximum Flow Through Rate - 60 gallons per minute per square foot**
- c. **Height - 18 inches minimum height measured from the top of the existing ground at the toe to top of the berm**
- d. **Top Width - Two (2) foot minimum**
- e. **Side Slopes - 2:1 or flatter. Berms constructed in the safety zone should have side slopes of 6:1 or flatter.**
- f. **Woven Wire Sheathing - Hexagonal opening hardware netting (such as poultry netting) secured with hog rings.**

Width = as required

Wire = 20 gauge, galvanized

Opening = Hexagon, one (1) inch in diameter

Woven wire sheathing should be considered when there is a concentration of water above the berm. For in stream use, the sheathing should be secured or staked to the stream bed.

- g. **Grade - Berms should be built along the contour at zero (0) percent grade or as near as possible.**
- h. **Material - Open graded rock three (3) to five (5) inches diameter (for sheet flow or concentrated flow condition). In areas where higher velocities or large volumes of water are expected (in stream use), open graded rock four (4) to eight (8) inches in diameter should be used.**

5. Outlet

Runoff should outfall directly to an undisturbed or stabilized area.

6. Maintenance

The area upstream from the rock berm should be maintained in a condition which will allow sediment to be removed following the runoff of a rainfall event. Weekly or after each rainfall, inspection should be made by the responsible party and when the silt reaches a depth equal to 1/3 the height of the berm or one (1) foot, whichever is less, it should be removed and the accumulated silt disposed of at an approved site in a manner that will not contribute to additional siltation. For installations in stream beds, additional daily inspections should be made on severe service rock berms; silt should be removed when accumulation reaches six (6) inches. The berm should be reshaped as needed during inspection. The rock berm should be left in place until all

upstream areas are stabilized and accumulated silt removed.

5.2.5 Brush Berm

1. Description

A temporary berm constructed of hand-placed brush from woody plants installed at the toe of a slope or the perimeter of a construction area. Machine placement of brush berms is not recommended.

2. Purpose

The purpose of a brush berm is to intercept sediment-laden storm water runoff from unprotected areas, detain the sediment and release the water in sheet flow.

3. Conditions Where Practice Applies

The brush berm is used where:

- a. There is an adequate source of woody brush that must be removed during construction.
- b. There is little or no concentration of water in a channel or other drainageway above the berm and the contributing drainage area is less than two (2) acres.

4. Design Guidelines

A brush berm should be constructed at the perimeter of a disturbed site within the construction area.

The following guidelines should be considered:

- a. **Drainage Area** - Less than two (2) acres (recommended).
- b. **Maximum Flow Through Rate** - 40 gallons per minute per foot squared frontal area.
- c. **Height** - 18 inches minimum height, measured from the top of the existing ground at the toe to the top of the berm.
- d. **Anchoring** - Brush berms should be secured using 1/4 inch polypropylene or nylon rope tied across the berm in crisscross fashion with a minimum tension of 50 pounds. The rope should be tied securely to 18 inch - 3/8 inch diameter rebar stakes driven into the ground on four (4) foot centers on both sides of the berm.
- e. **Grade** - Berms should be built along contour lines at zero (0) percent grade or as near as possible.
- f. **Material** - Woody brush and branches, preferably juniper less than (2) inches in diameter. All material should be hand placed with overlapping to eliminate channelization. Care should

be taken to avoid the incorporation of annual weeds and soil into the brush berm.

5. Outlet

Runoff should outfall directly to an undisturbed or stabilized area.

6. Maintenance

The area upstream of the brush berm should be maintained in a condition which will allow accumulated silt to be removed following the runoff of a rainfall event. Weekly, or after each rainfall event, inspections should be made by the responsible party and when silt reaches a depth equal to 1/3 the height of the berm or one (1) foot, whichever is less, the accumulated silt should be removed and disposed of at an approved site in a manner that will not contribute to additional siltation. The berm and its anchors should be repaired as needed to restore it to its original condition after each inspection. This may require additions or complete replacement as conditions warrant.

The brush berm should be left in place until all upstream areas are stabilized and accumulated silt is removed. Brush should be replaced ever six (6) months or more often if loss of foliage occurs.

5.2.6 Silt Fence

1. Description

Temporary barrier fence made of geotextile filter fabric which is water permeable and traps water-borne sediment.

2. Purpose

To intercept and detain water-borne sediment from storm water runoff.

3. Conditions Where Practice Applies

Silt fence is used during construction period near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fences should not be used where there is a concentration of water in a channel or drainageway or where soil conditions prevent a minimum toe-in depth of six (6) inches or installation of support post to a depth of 12 inches. If concentrated flow occurs after installation, corrective action should be taken such as placing rock berms or other corrective measures in the areas of concentrated flow.

4. Design Guidelines

A silt fence should be constructed near the perimeter of a disturbed area within the construction area.

The following guidelines should be considered:

- a. **Drainage Area** - less than two (2) acres (recommended).
- b. **Maximum Flow Through Rate** - 40 gallons per minute per foot squared frontal area maximum.
- c. **Height** - 24 inch minimum height measured from the existing or graded ground.
- d. **Toe-in** - Six (6) inch minimum.
- e. **Material** - woven or non-woven geotextile fabric. The fabric should be mildew resistant, rot-proof and resistant to heat and ultraviolet radiation. The fabric may require reinforcement with either a metal or thermoplastic material. The edges shall be treated to prevent unraveling. Seams and stress points should be reinforced.
- f. **Support** - Steel or wood fence posts spaced a maximum of eight (8) feet apart and embedded a minimum of one (1) foot. Woven wire backing (galvanized two (2) inch x four (4) inch welded wire, 12 1/2 gauge minimum or #6 Welded Wire Fabric) may be used to support the fabric material.

5. Outlet

Silt fences should be placed and constructed in such a manner that runoff from a disturbed or exposed area will be intercepted, sediment trapped and the surface runoff allowed to percolate through the structure.

Silt fences should be placed in such a manner that surface runoff which percolates through will flow onto an undisturbed or stabilized area.

5.2.7 Sandbag Berm

1. Description

A temporary berm constructed of stacked sand bags installed across a channel or right of way in a construction or disturbed area.

2. Purpose

The purpose of a sandbag berm is to intercept sediment-laden storm water runoff from disturbed areas, create a retention pond, detain sediment and release water in sheet flow.

3. Conditions Where Practice Applies

Typically, sandbag berms are used during construction activities in stream beds when the contributing drainage area is greater than five (5) acres, i.e., construction in channels, temporary channel crossing for construction equipment, etc.

4. Design Guidelines

A detailed design is not required for installation of a sandbag berm; however, the following guidelines should be considered:

- a. **Drainage Area** - Greater than five (5) acres (recommended).
- b. **Height of Berm** - 18 inches minimum height, measured from the top of the existing ground at the upslope toe to the top of the berm.
- c. **Width of Berm** - 48 inches minimum width measured at the bottom of the berm; 18 inches at the top.
- d. **Sandbag Size** - Length 24 to 30 inches, width 16 to 18 inches and thickness six (6) to eight (8) inches. Weight 90 to 125 pounds.
- e. **Sandbag Material** - Polypropylene, polyethylene or polyamide woven fabric, minimum unit weight four (4) ounces per square yard, mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70 percent.
- f. **Grade of Sand** - Coarse sand.

5. Outlet

Runoff water should flow over the tops of the sandbags or through pipes embedded below the top layer of bags.

6. Maintenance

The sandbag berm should be inspected after each rain. The sandbags should be reshaped or replaced as needed during inspection. Additional inspections should be made daily by the responsible party and when silt reaches six (6) inches, the accumulated silt should be removed and disposed of at an approved site in a manner that will not contribute to additional siltation. The sandbag berm should be left in place until all upstream areas are stabilized and accumulated silt removed; removal of bags should be done by hand.

5.2.8 Triangular Sediment Filter Dikes

1. Description

A temporary barrier constructed of wire mesh and geotextile fabric, installed along a flat area or across or at the toe of a slope. These dikes have a limited usefulness due to the fact they are expensive to maintain and are easily damaged. They do serve as an alternative to silt fences when the soil is too rocky to drive the support post for the silt fence.

2. Purpose

The purpose of a triangular sediment filter dike is to intercept and detain water-borne sediment from storm water runoff.

3. Conditions Where Practice Applies

The triangle sediment filter dike is used where:

- a. No other practice is feasible, and
- b. There is sheet flow (i.e. no concentration of water)
- c. Contributing drainage area is less than one (1) acre (recommended).

If concentrated flow occurs after installation, corrective action should be taken such as placing rock berms in the areas of concentrated flow.

If the slope exceeds 10%, the length of slope above the dike should be less than 50 feet.

4. Design Guidelines

The following guidelines should be considered:

- a. All dikes should be placed on the contour and in a row with ends tightly abutting the adjacent dike. Filter material should lap over ends six (6) inches to cover dike to dike junction; each junction should be secured by shoat rings.
- b. Maximum Flow Through Rate - Should not exceed 20 gallons per minute per foot squared frontal area.
- c. Triangular frame - 6 x 6 inch, six (6) gauge wire mesh. In general, each side of the triangle should be a minimum 18 inches. For installation option Number 1 (see below), the base of the triangle may be 12 inches. In this case the interceptor skirt must be toed-in 12 inches with compacted material.
- d. Filter Material - woven or non-woven geotextile fabric. The fabric should be mildew resistant, rot-proof and resistant to heat and ultraviolet radiation. The fabric may require reinforcement with either a metal or thermoplastic material. The edges shall be treated to prevent unraveling. Seams and stress points should be reinforced. The fabric cover and skirt shall be a continuous wrapping of the fabric; the skirt shall be a continuous extension of the upstream face.
- e. Interceptor Skirt - 12 inch minimum length.
- f. Installation Options.
 1. Interceptor skirt toed-in six (6) inches with compacted material.
 2. Interceptor skirt weighted with continuous layer of three (3) to five (5) inches open graded rock.
 3. Dike structure trenched in four (4) inches.

5.2.9 Sediment Basin

1. Description

A temporary basin or barrier constructed across a waterway or at other suitable locations to intercept sediment-laden storm water runoff and to trap and retain the sediment.

2. Scope

This applies to the installation of temporary sediment basins on sites where:

- failure of the structure would not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities;**
- the drainage area does not exceed 100 acres; and**
- the basin is to be removed once all disturbed areas are stabilized and the need for the basin is eliminated.**

3. Purpose

The purpose of a sediment basin is to intercept sediment-laden storm water runoff and reduce the amount of sediment leaving the disturbed area in order to protect drainage ways, properties and rights of way below the sediment basin.

4. Conditions Where Practice Applies

A sediment basin applies where physical site conditions or land ownership restrictions preclude the installation of barrier type erosion control measures to adequately control runoff, erosion and sedimentation. It is also used for disturbed areas of more than 10 acres within the same drainage basin in order to comply with NPDES requirements (see Section 5.2). It may be used below construction operations which expose critical areas to soil erosion.

5. Location

The sediment basin should be located to obtain the maximum storage benefit from the terrain and for ease of cleanout of the trapped sediment. It should be located to minimize interference with construction activities.

6. Size of the Basin

The volume of the sediment basin should be at least 1800 cubic feet per acre of total drainage area (0.5 inches over the watershed). Disturbed areas greater than 10 acres within the same drainage basin should provide a basin with a capacity of 3600 cubic feet per acre of total drainage area (1.0 inch over the watershed) to meet the NPDES regulations.

7. Outlet Design

Runoff should be computed in accordance with the Department's Hydraulic Manual. Runoff computations shall be based upon the soil-cover conditions expected to prevail in the contributing drainage area during the anticipated effective life of the structure. The basin should be designed with a typical retention time of 40 hours. An emergency spillway should be provided sufficient to pass the peak rate of runoff from a 25 year frequency storm. The 100 year storm should be investigated to assure that no loss of life or property is possible.

8. Embankment Cross Section

The minimum top width should be three (3) feet. The side slopes should not be steeper than 3:1. Embankment in the safety zone should not exceed 6:1.

9. Entrance of Runoff into Basin

Points of entrance of surface runoff into excavated sediment basins should be protected to prevent erosion. Diversions or other control devices should be installed as necessary to ensure direction of runoff and protect points of entry into the basin.

10. Maintenance

The sediment basin should be cleaned out when the volume as described above is reduced by 1/3. This cleanout should restore the original design volume to the sediment basin. The elevation corresponding to the maximum allowable sediment level should be determined during the design of the basin and should be stated on the plans.

11. Disposal

The sediment removed from the basin should be placed in an approved disposal area.

12. Safety

Sediment basins are attractive to children and can be very dangerous. Therefore, they should be fenced or otherwise made inaccessible to people or animals, unless this is deemed unnecessary due to the remoteness of the site or other circumstances.

5.2.10 Sediment Trap

1. Description

A small temporary basin formed by excavation and/or an embankment to intercept sediment-laden storm water runoff and to trap and retain the sediment.

2. Purpose

The purpose of a sediment trap is to intercept sediment-laden storm water runoff and trap the sediment in order to protect drainageways, properties and rights of way below the sediment trap from sedimentation.

3. Conditions Where Practice Applies

A sediment trap is usually installed at points of discharge from disturbed areas.

4. Drainage Area

The drainage area for a sediment trap is recommended to be less than five (5) acres.

5. Location

The sediment trap should be located to obtain the maximum storage benefit from the terrain, for ease of cleanout and disposal of the trapped sediment and to minimize interference with construction activities.

6. Trap Size

The volume of the sediment trap should be at least 1800 cubic feet per acre of total drainage area (0.5 inches over the watershed). Disturbed areas greater than 10 acres within the same drainage basin shall provide a basin (see Sediment Basin) with a capacity of 3600 cubic feet per acre of total drainage area (1.0 inch over the watershed) to meet NPDES regulations.

7. Trap Cleanout

Sediment should be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 of the design depth of the trap or one (1) foot, whichever is less. Sediment removed from the trap should be deposited in an approved spoils area and in such a manner that it will not cause additional siltation.

8. Embankment

The embankment should be mechanically compacted.

9. Excavation

All excavation operations should be carried out in such a manner that erosion and water pollution shall be minimal. Any excavated portion of sediment trap shall have 2:1 or flatter slopes unless it is located in the safety zone, where the slopes would be 6:1 or flatter.

10. Outlet

There are two (2) types of outlets recommended for sediment traps. Sediment traps are named according to the type of outlet. Each type has different design guidelines and will be discussed separately. The outlets should be designed, constructed and maintained in such a manner that sediment does not leave the trap and that erosion of the outlet does not occur. A trap may have several different outlets with each outlet conveying part of the flow based on the guidelines below and the combined outlet capacity shall meet that design.

A pipe outlet sediment trap consists of a basin formed by an embankment or excavation along

with an embankment. The outlet for the trap is through a perforated riser and a pipe through the embankment. The length of the riser should be perforated to achieve a 40 hour draw-down time. All pipe connections should be watertight.

A stone outlet sediment trap consists of a basin formed by an embankment or excavation and an embankment. The outlet for the trap is over a level stone section. The stone outlet for a sediment trap differs from that for a stone outlet structure because of the intentional ponding of water behind the stone. To provide for a ponding area, less coarse stone should be used throughout the outlet structure.

5.2.11 Stabilized Construction Entrance

1. Description

A stabilized pad of crushed stone, timber, or other stabilized surface treatment located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, sidewalk or parking area.

2. Purpose

The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public rights of way.

3. Conditions Where Practice Applies

A stabilized construction entrance applies to all points of construction ingress and egress.

4. Design Guidelines

The following design guidelines should be considered:

- a. **Stone Size** - If stone is used as the material, the stone size should be four (4) to eight (8) inch or larger open graded rock.
- b. **Drainage** - Entrance must be properly graded or incorporate a drainage swale to prevent runoff from leaving the construction site.
- c. **Thickness** - Not less than eight (8) inches.
- d. **Width** - Not less than full width of all points of ingress or egress.
- e. **Length** - As required, but not less than 50 feet.

5. Maintenance

The entrance should be maintained in a condition which will prevent tracking or flowing of sediment onto public rights of way. This may require periodic top dressing with additional stone or other material as conditions demand and repair and/or clean out of any measures used to trap

sediment. All sediment spilled, dropped, washed or tracked onto public rights of way should be removed immediately by contractor.

When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right of way. When washing is required, it should be done on an area stabilized with crushed stone or other stabilized material which drains into a sediment trap or sediment basin. All sediment should be prevented from entering any storm drain, ditch or watercourse using approved methods.

5.2.12 Pipe Slope Drain

1. Description

A flexible tubing and/or rigid pipe with prefabricated entrance section temporarily placed to extend from the top of a slope to the bottom of a slope.

2. Purpose

The purpose of the pipe slope drain is to convey surface runoff safely down slopes without causing erosion.

3. Conditions Where Practice Applies

Pipe slope drains are used where concentrated flow of surface runoff must be conveyed down a slope in order to prevent erosion. Recommended maximum drainage area is five (5) acres.

4. Design Criteria

Unless otherwise specified, pipe slope drains may be sized as follows:

PIPE/TUBING SIZE	DIAMETER (D) (INCH)	MAXIMUM DRAINAGE AREA (ACRES)
PSD-12	12	.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-30	30	5.0

5. Inlet

The height of the earth dike at the entrance to the pipe slope drain should be equal to or greater than the diameter of the pipe (D), plus 12 inches and should be adequate to prohibit overtopping by the 25 year storm.

6. Outlet

Pipe slope drain should outlet onto a stabilized area or stable watercourse. A sediment trapping device shall be used to trap sediment from any sediment-laden storm water runoff conveyed by the pipe slope drain.

5.2.13 Hay Bale Dikes

1. Description

A temporary barrier constructed with hay bales with a life expectancy of two (2) months or less, installed across or at the toe of the slope.

2. Purpose

The purpose of a hay bale dike is to intercept and detain small amounts of sediment from storm water runoff.

3. Conditions Where Practice Applies

The hay bale dike is used where:

- a. No other practice is feasible.
- b. There is no concentration of water in a channel or other drainageway above the hay bale.
- c. If concentrated flow occurs after installation, corrective action must be taken such as placing rock berms or other corrective measures in the areas of concentrated flow.
- d. Construction activities and re-vegetation will be completed in three (3) months or less.
- e. Contributing drainage area is less than 1/2 acre (recommended). If slope exceeds ten (10) percent, the length of slope above the hay bale dike should be less than 50 feet.

4. Design Guidelines

A design is not required. The following guidelines should be considered: observed:

Maximum flow through rate should not exceed five (5) gallons per minute per foot squared frontal area. All hay bale dikes should be placed on the contour. Bales should be embedded a minimum of four (4) inches and securely anchored using 3/8 inch diameter rebar stakes driven through the bales. Bales should be bound by either wire or nylon string. Jute or cotton binding is not recommended. Bales should be replaced every two (2) months or more often during wet weather when loss of structural integrity is accelerated.

5.3 Other Controls

Typically, there are no specific BMPs that should be used on all construction sites. Only the controls which best address site-specific conditions should be implemented to control or eliminate contamination of storm water. There are four areas of control (in addition to erosion and sedimentation controls and storm water management) that should be addressed in each Storm Water Pollution Prevention Plan. The controls that should be addressed include: minimization of offsite vehicle tracking of sediments; compliance with applicable State or local waste disposal, sanitary sewer, or septic system regulations; and appropriate pollution prevention measures for allowable non-storm water components of discharge. These controls along with additional controls are discussed in the following section.

Good housekeeping is basically keeping a clean, orderly construction site. One of the first steps towards preventing storm water contamination is improving housekeeping practices and using good common sense. Good housekeeping practices reduce the possibility of accidental spills, improve the response time if there is a spill, and reduce safety hazards as well.

Good housekeeping practices are inexpensive, relatively easy to implement, and are often effective in preventing storm water contamination.

Examples of good housekeeping on a construction site include:

- Neat and orderly storage of any chemicals, pesticides, fertilizers, fuels, etc., that are being stored at the site.
- Regular garbage, rubbish, construction waste, and sanitary waste disposal.
- Prompt cleanup of any spills of liquid or dry materials that have occurred.
- Cleanup of sediments that have been tracked by vehicles or have been transported by wind or storm water about the site or onto nearby roadways.

Proper management and disposal of materials and other construction site wastes is an important part of pollution prevention. Construction site materials which were overlooked as potential sources of storm water contamination in the past, should now be managed more carefully. This section will outline the obvious and not so obvious sources found on sites. These may be materials, practices, or locations where there is potential risk of pollution. Materials include surplus or refuse building materials as well as hazardous wastes. Practices include trash disposal, material handling, and spill prevention and cleanup measures. Controls and practices should meet any requirements of any Federal, State, and local requirements for project site.

This section discusses some of the waste materials encountered at construction sites and discusses generally how these materials should be stored and handled so that their exposure to storm water is minimized. However, this section does not provide specific detail on how to handle or dispose of these materials. Specific guidance should be obtained from appropriate waste management agencies and/or occupational health and safety agencies.

Construction projects tend to generate a great deal of solid waste material which is unique to this activity. These wastes are sometimes called "construction wastes."

Construction wastes may included but are not limited to:

- Trees and shrubs removed during clearing and grubbing or other phases of construction.
- Packaging materials (including wood, paper, plastic, etc.).
- Scrap or surplus building materials, e.g., scrap metals, rubber, plastic and glass pieces, masonry products, plywood, lumber, and other solid waste materials.
- Materials resulting from the demolition of structures (rubble).

The following steps will help ensure proper disposal of construction wastes.

- Select a designated waste collection area onsite.
- Provide an adequate number of containers with lids or covers that can be placed over the container prior to rainfall.
- When possible, locate containers in a covered area.
- Arrange for waste collection before containers overflow.
- If a container does spill, provide cleanup immediately.
- Plan for additional containers and more frequent pickups during the demolition phase of construction.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.
- Check local solid waste management agency for specific guidance.

Many of the materials found at a construction site may be hazardous to the environment or to personnel. It is always important to read the labels of the materials or products you have onsite' they may contain warning information that will indicate a potential problem. At a minimum, any products in the categories listed below are considered to be hazardous:

- Paints
- Acids for cleaning masonry surfaces
- Cleaning solvents
- Asphalt products
- Chemical additives used for soil stabilization (e.g., palliative such as calcium chloride)
- Concrete curing compounds and additives

Most problem situations involving hazardous materials are the result of carelessness or not using good common sense. The practices listed here will help avoid problems associated with the disposal of hazardous materials.

- Check with local waste management authorities to determine what the requirements are for disposing of hazardous materials.
- Use all of the product before disposing of the container.
- Do not remove the original product label from the container, it contains important information.
- If surplus products must be discarded, do not mix products together unless specifically recommended by the manufacturer.
- The correct method of disposal of these products varies with the product used. Follow the manufacturer's recommended method, which is often found on the label.

Contaminated soils are soils which have been exposed to and still contain hazardous substances. Contaminated soils may be encountered onsite during earthmoving activities or during the cleanup of a spill or leak of a hazardous product. Material storage areas may also have been contaminated by undetected spills. The nature of the contaminants may or may not be known. A State or local solid waste regulatory agency should be contacted concerning information and procedures necessary to treat or dispose of contaminated soils. Some landfills may accept contaminated soil; however, laboratory tests may be required prior to a final decision.

Emptying of excess concrete should not be allowed onsite. Likewise, washout of concrete trucks should not be performed onsite. These discharges are considered non-allowable non-storm water discharges. Concrete trucks should never be allowed to dump into storm drains or sanitary sewers.

Sandblasting is a commonly used technique to remove paint, dirt, etc., from surfaces. Sandblasting grits, which consist of both the spent sand and the particles of paint and dirt removed from the surface, are hazardous waste if they were used to clean old structures where lead, cadmium, or chrome based paints were used. They should not be washed into the storm drain or sanitary sewer. A licensed waste management or transport and disposal firm should be contacted to dispose of this type of used grit.

Day-to-day site practices can have a major impact on storm water contamination because of their potential for generating sediments. A common problem area is offsite vehicle tracking. Two practices are commonly used for minimizing offsite vehicle tracking of sediments: stabilized construction entrances and construction access road stabilization.

Controlling offsite tracking of sediments may require attention at most times when there is vehicle traffic at the construction site. The measures listed here are effective if used properly.

- A stabilized construction entrance and construction road are very effective methods for reducing offsite tracking of mud, dirt and rocks.
- Paved streets adjacent to the site should be swept to remove any excess mud, dirt, or rock tracked from the site.

- Deliveries or other traffic should be scheduled at a time when personnel are available to provide cleanup if it is required.

A stabilized construction road should be installed in disturbed areas where there will be a high volume of construction traffic expected. Preferably it should be maintained throughout the construction site, including parking areas. A stabilized construction road should not be located in a cut or fill area until after the grading has been performed. It should be built to conform to the site grades but with a minimum amount of cut and fill. It should also be designed so that the side slopes and road grade are not excessively steep. A construction road should not be constructed in areas which are frequently wet, or on highly erodible soils.

Consideration should be given to the use of sanitary facilities. The most commonly found facilities are portable facilities that store the sanitary wastes and should be emptied periodically. Other facilities include temporary facilities that employ septic systems for treatment and disposal of the sewage, or temporary facilities that discharge to a sanitary sewer system. Sanitary or septic wastes that are generated onsite should be treated or disposed of in accordance with State and/or local requirements. Depending upon the facilities that will be used onsite, this may require one or more of the following:

- Domestic waste haulers should be contracted to regularly remove the sanitary and septic wastes and to maintain the facilities in good working order. This will prevent overloading of the system which could allow discharges to storm water runoff.
- Wastes should be treated to an appropriate level before discharging.
- Facilities should be properly hooked into the sanitary sewer system to prevent illicit discharges.
- Untreated, raw sewage or septage should never be discharged or buried onsite.

Spills are a source of storm water contamination which can create health risks. Construction site spills are no exception. Construction site supervisors should create and adopt a spill control plan which would include measures to:

- Stop the source of the spill
- Contain the spill
- Clean up the spill
- Dispose of materials contaminated by the spill
- Identify and train personnel responsible for spill prevention and control

The following measures would be appropriate for a spill prevention and response plan.

- Store and handle materials to prevent spills.
 - Tightly seal containers.
 - Make sure all containers are clearly labeled.
 - Stack containers neatly and securely.

- **Reduce storm water contact if there is a spill.**
 - **Have cleanup procedures clearly posted.**
 - **Have cleanup materials readily available.**
 - **Contain any liquid.**
 - **Stop the source of the spill.**
 - **Cover spill with absorbent material such as kitty litter or sawdust.**

- **Dispose of contaminated materials according to manufacturer's instructions or according to State or local requirements.**

- **Identify personnel responsible for responding to a spill of toxic or hazardous materials.**
 - **Provide personnel spill response training.**
 - **Post names of spill response personnel.**

- **Keep the spill area well ventilated.**
- **If necessary, use a private firm that specializes in spill cleanup.**

6.0 Storm Water Management

The SW3P should include a description of "storm water management" measures. For this permit, this refers to controls that will reduce the discharge of pollutants in storm water from sites after completion of construction activities. The permit addresses only the installation and maintenance of controls during construction activities.

The purpose of storm water management is to minimize any increase in storm water discharge volumes and peak velocities as well as reduce the amount of pollutants discharged after construction operations have been completed. The prevention of increased streambed scour and bank erosion and maintenance of physical and biological characteristics of receiving waters is an expected result of good management practices. Such practices can include:

- flow attenuation features such as open vegetated swales, natural depressions, detention/retention structures
- outfall velocity dissipation devices
- man-made wetlands
- extended detention structures for water quality improvement

The SW3P should provide a description of the permanent storm water management practices utilized on the project.

7.0 Maintenance

Within 24 hours of a significant rainfall event (0.5 inches), the Contractor and Engineer will inspect the entire project to determine the condition of the erosion control devices. Sediment will be removed from devices and damaged devices repaired as soon as practical. "As soon as practical" is defined as follows: The surrounding exposed ground will have dried sufficiently to prevent further damage from heavy equipment. In the event of continuous rainfall over a 24 hour period, the Contractor will be required to hand carry and install additional backup devices as determined by the Engineer. The Contractor will remove silt accumulations and deposit the spoils in an area designated by the Engineer as soon as practical.

Repeatedly troublesome areas will be analyzed, modified and reconstructed to minimize maintenance and provide maximum protection. Prior to forecasted heavy rain predictions, the entire area will be inspected to ensure the best possible protection.

The Contractor should be required to clean paved surfaces immediately after rainfall events, especially areas where construction traffic has caused soils to accumulate on traffic surfaces.

All temporary erosion control devices will be repaired at the earliest date possible, but no later than seven (7) calendar days after the surrounding exposed ground will have dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainageways shall have priority followed by devices protecting storm sewer inlets.

8.0 Inspection Practices

Qualified personnel should inspect the construction site at least once every seven calendar days and within 24 hours of the end of a rainfall event storm that is 0.5 inches or greater. Where sites have been finally stabilized, or during seasonal arid periods in arid areas (areas with an average annual rainfall of 0-10 inches) and semi-arid areas (areas with an average annual rainfall of 10-20 inches) such inspection shall be conducted at least once every month.

- a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.
- b. Based on the results of the inspection, the site description identified in the plan and pollution prevention measures identified in the plan shall be revised as appropriate, but in no case later than 7 calendar days following the inspection. Such modifications shall provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.
- c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken shall be made and retained as part of the storm water pollution prevention plan for at least three years from the date that the site is finally stabilized. The report should be signed by the District or Area Engineer.

The inspection form to be used on TXDOT field inspections is available. Each drainage system or critical discharge area can be noted by code as to its performance and/or maintenance requirement.

A place is also provided for the recording of rainfall in inches from the last 24 hour period. The TXDOT Inspector should keep a rain gauge on site and check the functional level on a daily basis recording, if necessary, the amount of rain received. The rain gauge should be of a freeze proof design to maintain accurate records during cold weather conditions.

Priority maintenance items should be numbered in sequence by the TXDOT Inspector. Under no circumstances is the Contractor to deviate from this plan without written permission from the Engineer. The purpose of this form is, 1) to provide an easy and effective inspection report, 2) to provide the Contractor with updates for the work required, 3) to provide a track record of troublesome areas so that they can be identified, analyzed and modified to minimize maintenance and maximize performance, and 4) to provide a weekly report of activities.

9.0 Notice of Termination

A Notice of Termination (NOT) of coverage under the General Permit for construction activities may be submitted to the EPA following either of two sets of circumstances:

1. Final stabilization of the site has been achieved and the facility no longer discharges storm water associated with industrial activity.
2. The permittee has transferred operational control to another permittee and is no longer the operator for the site.

The elimination of storm water discharges means that all disturbed areas have been finally stabilized and temporary erosion and sediment controls have been removed or will be removed at an appropriate time. Final Stabilization is achieved when all soil disturbing activities at the site have been completed, and uniform vegetative cover with a density of 70% of the pre-project condition for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent measures such as use of rip rap, gabions, soil retention blanket or other geotextiles, have been employed.

Under most circumstances, TxDOT will be the permittee. In situations where there is a change of contractor, a NOT will not be required, however, the new contractor must read the SW3P and certify his understanding and conformance with the provisions of the permit.

Appendix C contains a standard NOT form which must be completed and submitted to the EPA. The following information is required.

- The mailing address of the relevant construction site. Where a mailing address for the site is not available, the location can be described in terms of the latitude and longitude of the approximate center of the facility to the nearest 15 seconds in which the construction site is located.
- The name, address, and telephone number of the operator addressed by the NOT.
- The NPDES permit for the storm water discharge identified by the NOT.
- The following certification:

"I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by an NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit from the Clean Water Act."

The signature should usually be the same as the one on the NOI for that project.

10.0 GLOSSARY of TERMS

Annual Flood - The highest peak discharge in a water year.

Apron - A floor or lining to protect a surface of the waterway from erosion.

Aquifer - A geologic formation or structure that transmits water in sufficient quantity to supply the needs for a water development. The term water-bearing is sometimes used synonymously with aquifer when a stratum furnishes water for a specific use. Aquifers are usually saturated sands, gravel, fractures, cavernous and vesicular rock.

Berm - A ledge or shelf that breaks the continuity of a slope.

Best Management Practices (BMP's) - schedules of activities, practices and procedures to prevent or reduce pollution of waters of the United States. Such practices include planning strategies, operating procedures and physical practices to control site runoff.

Broadcast Seeding - Any method of planting seed which scatters the seed in a random pattern on the surface of the soil.

Buffer Zone - An area which provides a degree of insulation from effects.

Channel - A natural or artificial stream that conveys water. Channels are often classified by their size and purpose.

Channel Stabilization - Erosion prevention and stabilization of velocity distribution in a channel using non-structural and structural measures.

Check Dam - Small dam constructed in a gully or other small water-course to decrease the streamflow velocity, minimize channel scour, and promote deposition of sediment.

Clearing - The removal of vegetation, structures or other objects as an item of highway or transportation facility construction.

Commencement of Construction - The initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

Concentrated Flow - Water, usually storm runoff, flowing in a confined feature such as a channel, ditch, swale, river, etc..

Cover, Ground - Any vegetation producing mat on or just above the soil surface. In forestry, low-growing shrubs, vines, and herbaceous plants under the trees.

Detention Pond - A man-made feature built to hold and store flood water or other surface runoff for later release.

Dike - An embankment constructed of earth or other suitable materials to protect land against overflow from streams, lakes, or tidal influences or to protect flat land areas from diffused surface water.

Diversion - A channel with a supporting ridge on the lower side constructed across a slope for the purpose of intercepting and diverting water.

Energy Dissipator - A devise used to reduce the energy of flowing water.

Environmental Protection Agency (EPA) - The Federal Agency responsible for developing and administering NPDES regulations.

Erosion - 1. The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep. 2. Detachment and movement of soil or rock fragments by water, wind, ice, or gravity. (i.e. accelerated, geological, gully, natural, rill, sheet, splash or impact, etc.)

Erosion Control - Includes protection of soil from dislocation by water, wind or other agents.

Final Stabilization - all soil disturbing activities at the site have been completed, and uniform vegetative cover with a density of 70% of the pre-project condition for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent measures such as use of rip rap, gabions, soil retention blanket or other geotextiles, have been employed.

Floodplain - The relatively flat area adjoining the channel of a natural stream which has been or may be inundated with flood waters.

Gabion - A wire basket(s) usually filled with stone used for structural purposes such as retaining walls, revetments, slope protection and similar applications.

Grade - 1. The slope of a roadway, channel, or natural ground. 2. Any surface prepared for the support of construction such as that for paving or laying a conduit.

Grading - Any stripping, cutting, filling, stockpiling, or combination thereof which modifies the land surface.

Grubbing - The process of removing tree roots, stumps and low-growing vegetation.

Hydroseeding - A method of broadcasting seed and sometimes lime, fertilizer, and mulch together in a mixture of water.

Mulch - Plant residues, natural, artificial, or other materials placed on exposed earth surfaces to reduce erosion, promote plant growth, conserve moisture, control the occurrence of unwanted vegetation, and to minimize temperature fluctuation.

Notice of Intent - Formal submission to EPA and any other State or local regulatory agencies indicating that a project conforms with the requirements of the NPDES General permit for construction activities.

Notice of Termination - Formal submission to EPA and any other State or local regulatory agencies indicating that construction activities covered under the NPDES General permit have been completed or transferred to another permittee.

NPDES - National Pollutant Discharge Elimination System - The program administered by the Environmental Protection Agency under Federal law to limit and control stormwater discharges from point sources and non-point sources.

Outfall - The point where water flows from a conduit, stream, drain, site.

Outlet - The point of water disposal from a stream, river, lake, tidewater, or artificial drain.

Point Source - any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation,

landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. Agricultural stormwater runoff and return flows from irrigated agriculture are excluded.

Pollution - Contamination of any component of the total environment by harmful sounds, smells, or sights degrading or injurious to humans and other living organisms.

Receiving Waters - The water into which runoff flows.

Riprap - Broken rock, cobbles, or boulders placed on earth surfaces for protection against the action of water.

Runoff - That portion of the precipitation that makes its way toward waterways, lakes, or oceans as surface or subsurface flow.

Runoff Coefficient - the fraction of total rainfall that will appear as runoff.

Scour - The result of abrasion. In this context, the wearing away of soils due to the action of streamflow.

Sediment - Solid soil material, both mineral and organic, that is being moved or has been moved from its original site by wind, gravity, flowing water or ice.

Sediment Basin - A depression formed by excavation or the construction of a barrier or dam built at suitable locations to retain rock, sand gravel, silt or other material.

Sedimentation - The action or process of depositing particles of waterborne or windborne soil, rock, or other materials.

Sheet Flow - Water, usually storm runoff, flowing in a thin layer over the ground surface. Syn. overland flow.

Sod - A portable mass of established grass, turf, or ground-cover plants.

Soil Retention Blanket - A covering usually of geotextile material to hold a soil in place and allow vegetation to grow.

Spillway - An open or closed conduit used to convey water from a reservoir. Usually used to convey the runoff of a given designed runoff.

Stabilization - The covering of soils by use of vegetation, mulches, geotextiles, rip rap, or gabions.

Stilling Basin - An open structure or excavation at the foot of an chute, drop, or spillway to reduce the energy of the descending runoff or stream.

Swale - A natural or man-made depression or channel which allows water to be carried away.

Vegetative Protection - Stabilization of erosive or sediment producing areas by covering the soil with non-structural cover, vegetation.

Waste Area - An approved area on or off the right-of-way providing for the disposal of waste such as excess earth, rock and vegetation debris.

Watershed Area - All land and water within the confines of a drainage divide or a water problem area consisting in whole or in part of land needing drainage or irrigation.

Waters of the United States - (a) All waters which are currently used, were used, or may be used, for interstate or foreign commerce, including waters subject to tidal effect and wetlands. (b) All interstate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds which would or could affect interstate or foreign commerce. (c) Tributaries of waters identified in (a) and (b).


Wetlands - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

List of Acronyms

BMP's	Best Management Practices
EPA	Environmental Protection Agency
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NOT	Notice of Termination
SW3P	Storm Water Pollution Prevention Plan
TxDOT	Texas Department of Transportation

APPENDICES

Appendix C — NOI Form Instructions

See Reverse for Instructions		Form Approved OMB No. 2040-0088 Approval Expires 8-31-95
NPDES FORM		United States Environmental Protection Agency Washington, DC 20460 Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity Under the NPDES General Permit
Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with industrial activity in the State identified in Section II of this form. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.		
I. Facility Operator Information		
Name:	_____	Phone: _____
Address:	_____	Status of Owner/Operator <input type="checkbox"/>
City:	_____	State: _____ ZIP Code: _____
II. Facility/Site Location Information		
Name:	_____	Is the Facility Located on Indian Lands? (Y or N) <input type="checkbox"/>
Address:	_____	
City:	_____	State: _____ ZIP Code: _____
Latitude:	_____	Longitude: _____ Quarter: _____ Section: _____ Township: _____ Range: _____
III. Site Activity Information		
MS4 Operator Name:	_____	
Receiving Water Body:	_____	
If You are Filing as a Co-permittee, Enter Storm Water General Permit Number: _____	Are There Existing Quantitative Data? (Y or N) <input type="checkbox"/>	Is the Facility Required to Submit Monitoring Data? (1, 2, or 3) <input type="checkbox"/>
SIC or Designated Activity Code	Primary: _____	2nd: _____ 3rd: _____ 4th: _____
If This Facility is a Member of a Group Application, Enter Group Application Number: _____		
If You Have Other Existing NPDES Permits, Enter Permit Numbers _____		
IV. Additional Information Required for Construction Activities Only		
Project Start Date: _____	Completion Date: _____	Estimated Area to be Disturbed (in Acres): _____
		Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans? (Y or N) <input type="checkbox"/>
V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		
Print Name: _____	Date: _____	
Signature: _____		

Instructions - EPA Form 3570-6
Notice Of Intent (NOI) For Storm Water Discharges Associated With Industrial Activity
To Be Covered Under The NPDES General Permit

When Must I File A Notice Of Intent (NOI) Form

Federal law at 40 CFR Part 122 prohibits point source discharges of storm water associated with industrial activity to a water body(ies) of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. The operator of an industrial facility that has such a storm water discharge must submit a NOI to obtain coverage under the NPDES Storm Water General Permit. If you have questions about whether you need a permit under the NPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a state agency, contact the Storm Water Hotline at (703) 821-4823.

Where To File NOI Form

NOIs must be sent to the following address:

Storm Water Notice of Intent
PO Box 1215
Newington, VA 22122

Completing The Form

You must type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, call the Storm Water Hotline at (703) 821-4823.

Section I Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility

F = Federal M = Public (other than federal or state)
S = State P = Private

Section II Facility/Site Location Information

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code. If the facility or site lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate corner of the site.

Indicate whether the facility is located on Indian lands.

Section III Site Activity Information

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

If you are filing as a co-permittee and a storm water general permit number has been issued, enter that number in the space provided.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges.

Indicate whether the facility is required to submit monitoring data by entering one of the following:

- 1 = Not required to submit monitoring data;
- 2 = Required to submit monitoring data;
- 3 = Not required to submit monitoring data; submitting certification for monitoring exclusion

Those facilities that must submit monitoring data (e.g., choice 2) are: Section 313 EPCRA facilities; primary metal industries; land disposal units/incinerators/BIF's; wood treatment facilities; facilities with coal pile runoff; and, battery reclaimers.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or are identified in Section II of this application.

For industrial activities defined in 40 CFR 122.28(b)(14)(i)-(ii) that do not have SIC codes that accurately describe the principal products produced or services provided, the following 2-character codes are to be used:

- HZ = Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA [40 CFR 122.28 (b)(14)(iv)];
- LF = Landfills, land application sites, and open dumps that receive or have received any industrial wastes, including those that are subject to regulation under subtitle D of RCRA [40 CFR 122.28 (b)(14)(v)];
- SE = Steam electric power generating facilities, including coal handling sites [40 CFR 122.28 (b)(14)(vi)];
- TW = Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage [40 CFR 122.28 (b)(14)(iii)] or;
- CO = Construction activities [40 CFR 122.28 (b)(14)(ii)].

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other NPDES permits presently issued for the facility or site listed in Section II, list the permit numbers. If an application for the facility has been submitted but no permit number has been assigned, enter the application number.

Section IV Additional Information Required for Construction Activities Only

Construction activities must complete Section IV in addition to Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

Section V Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor, or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or having elected official.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PA-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

NPDES
FORM



United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity Under the NPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with industrial activity in the State identified in Section II of this form. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Facility Operator Information

Name: TXDOT WACO DISTRICT Phone: 817 867 2709

Address: PO BOX 2222 Status of Owner/Operator: S

City: WACO State: TX ZIP Code: 76758-9999

II. Facility/Site Location Information

Name: US 99 Is the Facility Located on Indian Lands? (Y or N) N

Address:

City: State: TX ZIP Code:

Latitude: 354415 Longitude: 1052245 Quarter: Section: Township: Range:

Site Activity Information

MS4 Operator Name: TXDOT / CITY / FLOOD CONTROL DIST

Receiving Water Body: WALLER CREEK

If You are Filing as a Co-permittee, Enter Storm Water General Permit Number: Are There Existing Quantitative Data? (Y or N) N Is the Facility Required to Submit Monitoring Data? (1, 2, or 3) 1

SIC or Designated Activity Code. Primary: CO 2nd: 3rd: 4th:

If This Facility is a Member of a Group Application, Enter Group Application Number:

If You Have Other Existing NPDES Permits, Enter Permit Numbers:

IV. Additional Information Required for Construction Activities Only

Project Start Date: 042901 Completion Date: 0610194 Estimated Area to be Disturbed (in Acres): 1.01 Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans? (Y or N)

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: JOHN R ENGINEER

Date: 092492

Signature: [Handwritten Signature]

APPENDIX B

ITEM 506

DRAFT

**TEMPORARY EROSION, SEDIMENTATION AND WATER
POLLUTION PREVENTION AND CONTROL**

506.1. Description. This Item shall govern the control measures necessary to prevent and control soil erosion, sedimentation and water pollution which may degrade receiving waters including rivers, streams, lakes, reservoirs, tidal waters, groundwater and wetlands. The control measures contained herein shall be installed and maintained throughout the construction contract and coordinated with the permanent pollution control features specified elsewhere in the contract to assure effective and continuous water pollution control throughout the construction and post construction period. These control measures shall not be used as a substitute for the permanent pollution control measures unless otherwise directed by the Engineer in writing. The control measures may be shown on the plans and/or directed by the Engineer. The controls may include silt fences, dikes, dams, berms, sediment basins, mats, soil retention blankets, temporary seeding, mulch, channel liners, slope drains and other structural or non-structural water pollution controls. This item does not apply to commercial operations.

506.2. Items of Work and Materials. The items, estimated quantities and locations of the control measures will be shown on the plans; however, the Engineer may increase or decrease the quantity of these items as the need arises. The materials will be shown on the plans and specifications. The Engineer may allow other materials and work as the need arises as approved in writing.

506.3. Preconstruction Submittals. Prior to the start of the construction, the Contractor shall submit to the Engineer, for approval, schedules for accomplishment of the pollution control measures and the plan to keep the disturbed surface area to a minimum. The Contractor shall also submit, for approval, proposed methods of pollution control on construction and haul roads, field offices, equipment and supply areas, and material sources, as well as a plan for disposal of waste materials. No work shall be started until the schedules for implementation of the controls and methods of operations have been reviewed and approved by the Engineer in writing.

506.4. Construction Requirements.

(1) The Engineer has the authority to limit the disturbed surface area exposed by construction operations. The Contractor shall provide control measures to prevent or minimize impact to receiving waters as required by the plans and/or as directed by the Engineer in writing.

For areas of the State which have an average annual rainfall less than 20 inches and where construction operations have ceased for an extended period of time, the disturbed area shall be stabilized as soon as possible. For all areas of the State with an average annual rainfall greater than 20 inches, any disturbed area where construction activities have ceased, permanently or temporarily, for more than 21 days, the Contractor shall stabilize the area by the use of seeding, mulching, soil retention blankets or other appropriate measures within 14 days.

The Contractor shall be required to effectively prevent and control erosion and sedimentation on the site at the earliest practicable time as outlined in the approved schedule. Control measures will be implemented prior to the commencement of each construction operation, where applicable, or immediately after the area has been disturbed.

The Contractor shall limit the amount of disturbed earth to the area(s) shown on the plans or as directed by the Engineer. If the Contractor is not able to effectively control soil erosion due to the extent of the disturbed earth resulting from construction operations, the Engineer will limit the amount of disturbed area to that which the Contractor is able to stabilize or otherwise control erosion and sedimentation.

Should the control measures fail to function effectively, the Contractor shall act immediately to bring the erosion and sedimentation under control by maintaining existing controls or by providing additional controls as directed by the Engineer. Upon stabilization of the site, the control measures will be removed and properly disposed of as approved by the Engineer.

(2) The Contractor shall also conform to the following practices and controls. All labor, tools, equipment and incidentals to complete the work will not be paid for directly but shall be considered as subsidiary work to the various items included in the contract.

(a) Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any waterbody or streambed. Construction roads may not be located in or cross any waterbody without prior approval of the Engineer and shall be done in compliance with applicable rules and regulations.

(b) Construction operations in rivers, streams, lakes, tidal water and other waterbodies shall be restricted to those areas where it is necessary to perform the work shown on the plans. Frequent fording of flowing streams with construction equipment will not be permitted. Wherever stream crossings are necessary and when not specified on the plans, temporary bridges, timber mats or other structures shall be used at the Contractor's expense.

(c) Protected storage areas for paints, chemicals, solvents, fertilizers and other potentially toxic materials will be provided by the Contractor and the location approved by the Engineer.

(d) Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants and their location will be approved by the Engineer. The Contractor shall prevent pollution of receiving waters with petroleum products or other hazardous or regulated materials. When work areas or material sources are located adjacent to a waterbody, control measures such as dikes, gabions, or rock berms, shall be used to keep sediment and other contaminants from entering the adjacent waterbody. Care shall be taken during the construction and removal of such barriers to minimize downgradient sedimentation.

(e) All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.

(f) Disturbance of vegetation shall be minimized and limited to only what is shown on the construction plans or as directed by the Engineer in writing.

(g) Construction entrances shall be stabilized by the use of rock, timber matting or other acceptable techniques to minimize the offsite vehicle tracking of sediment.

506.5. Measurement and Payment. If the Contractor is required to install temporary erosion, sediment and water pollution control measures due to his negligence, carelessness, lack of maintenance, or failure to install permanent controls as a part of the work as scheduled, and are ordered in writing by the Engineer, such work shall not be measured for payment but shall be performed at the Contractor's expense. All labor, tools, equipment and incidentals to complete the work specified under 506.4(2) will not be paid for under applicable contract bid items.

When the need for control measures can not be attributed to the Contractor's negligence, carelessness, lack of maintenance, or failure to install permanent water pollution control measures and these measures are shown on the plans and/or directed by the Engineer, these measures shall be calculated and paid for in accordance with applicable contract bid items. Work performed under the requirements of this Item not comparable to work performed under contract bid items, the Contractor shall perform the work on a force account basis in accordance with Item 9 or by agreed unit prices. Removal of all control measures not incorporated as permanent control measures shall be performed at the Contractor's expense.

In case of failure on the part of the Contractor to control or correct soil erosion, water pollution and/or sedimentation from his construction operations, the Engineer reserves the right to employ outside assistance or to use State forces to provide the necessary corrective measures. Such incurred direct costs plus project engineering costs will be deducted from any moneys due or to become due to the Contractor.

Pollution control measures may be applicable to construction work outside the right of way where such work is necessary as a result of roadway-related construction such as material-source operations, haul roads and equipment storage sites. Pollution control measures outside the right of way will not be measured for payment but shall be performed at the Contractor's expense.

Please See Instructions Before Completing This Form

Form Approved. OMB No. 2040-0088
Approval expires: 6-31-88

NPDES
FORM



United States Environmental Protection Agency
Washington, DC 20460

**Notice of Termination (NOT) of Coverage Under the NPDES General Permit
for Storm Water Discharges Associated with Industrial Activity**

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the NPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

NPDES Storm Water
General Permit Number: _____

Check Here if You are No Longer
the Operator of the Facility:

Check Here if the Storm Water
Discharge is Being Terminated:

II. Facility Operator Information

Name: _____ Phone: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

III. Facility/Site Location Information

Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Latitude: _____ Longitude: _____ Quarter: _____ Section: _____ Township: _____ Range: _____

IV. Certification: I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Print Name: _____ Date: _____

Signature: _____

Instructions for Completing Notice of Termination (NOT) Form

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under the EPA issued National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26 (b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a NPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the the following address:

Storm Water Notice of Termination
P.O. Box 1185
Newington, VA 22122

Completing the Form

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, call the Storm Water Hotline at (703) 621-4823.

PLEASE SEE REVERSE OF THIS FORM FOR FURTHER INSTRUCTIONS

RECEIVED
SEP 14 92

Instructions - EPA Form 3610-7
Notice of Termination (NOT) of Coverage Under The NPDES General Permit
for Storm Water Discharges Associated With Industrial Activity

Section I Permit Information

Enter the existing NPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, contact the Storm Water Hotline at (703) 621-4823.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

Section IV Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce the burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

Federal Register

**Wednesday
September 9, 1992**

Part II

**Environmental
Protection Agency**

**Final NPDES General Permits for Storm
Water Discharges From Construction
Sites; Notice**

a Notice of Intent in accordance with Part II of this permit. Operators of storm water discharges associated with industrial activity who fail to submit a Notice of Intent in accordance with Part II of this permit are not authorized under this general permit.

This permit shall become effective on September 9, 1992.

This permit and the authorization to discharge shall expire at midnight, September 9, 1997.

Signed and issued this ____ day of _____ 1992.

(Signature of Water Management Director or Regional Administrator)

This signature is for the permit conditions in Parts I through IX and for any additional conditions in Part X which apply to facilities located in the State of _____.

NPDES General Permits for Storm Water Discharges From Construction Activities That are Classified as "Associated With Industrial Activity"

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Preface

The Clean Water Act (CWA) provides that storm water discharges associated with industrial activity from a point source (including discharges through a municipal separate storm sewer system) to waters of the United States are unlawful, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The terms "storm water discharge associated with industrial activity", "point source" and "waters of the United States" are critical to determining whether a facility is subject to this requirement. Complete definitions of these terms are found in the definition section (Part IX) of this permit.

The United States Environmental Protection Agency (EPA) has established the Storm Water Hotline at (703) 821-4823 to assist the Regional Offices in distributing notice of intent forms and storm water pollution prevention plan guidance, and to provide information pertaining to the storm water regulations.

Part I. Coverage Under This Permit

A. Permit Area

The permit covers all areas of:
Region I—for the States of Maine and New Hampshire; for Indian lands located in Massachusetts, New Hampshire, and Maine.

Region II—for the Commonwealth of Puerto Rico.

Region IV—for Indian lands located in Florida (two tribes), Mississippi, and North Carolina.

Region VI—for the States of Louisiana, New Mexico, Oklahoma, and Texas; and for Indian lands located in Louisiana, New Mexico (except Navajo lands and Ute Mountain Reservation lands), Oklahoma, and Texas.

Region VIII—for the State of South Dakota; for Indian lands located in

Colorado (including the Ute Mountain Reservation in Colorado), Montana, North Dakota, Utah (except Goshute Reservation and Navajo Reservation lands), and Wyoming; for Federal facilities in Colorado; and for the Ute Mountain Reservation New Mexico.

Region IX—for the State of Arizona; for the Territories of Johnston Atoll, Midway and Wake Island; and for Indian lands located in California, and Nevada; and for the Goshute Reservation in Utah and Nevada, the Navajo Reservation in Utah, New Mexico, and Arizona, the Duck Valley Reservation in Nevada and Idaho.

Region X—for the State of Alaska, and Idaho; for Indian lands located in Alaska, Idaho (except Duck Valley Reservation lands), and Washington; and for Federal facilities in Washington.

B. Eligibility

1. This permit may authorize all discharges of storm water associated with industrial activity from construction sites. (those sites or common plans of development or sale that will result in the disturbance of five or more acres total land area¹), (henceforth referred to as storm water discharges from construction activities) occurring after the effective date of this permit (including discharges occurring after the effective date of this permit where the construction activity was initiated before the effective date of this permit), except for discharges identified under paragraph I.B.3.

2. This permit may only authorize a storm water discharge associated with industrial activity from a construction site that is mixed with a storm water discharge from an industrial source other than construction, where:

A. the industrial source other than construction is located on the same site as the construction activity;

b. storm water discharges associated with industrial activity from the areas of the site where construction activities are occurring are in compliance with the terms of this permit; and

c. storm water discharges associated with industrial activity from the areas of the site where industrial activity other than construction are occurring (including storm water discharges from dedicated asphalt plants and dedicated concrete plants) are covered by a different NPDES general permit or

¹ On June 4, 1992, the United States Court of Appeals for the Ninth Circuit remanded the exemption for construction sites of less than five acres to the EPA for further rulemaking. (Nos. 90-70671 and 91-70200).

individual permit authorizing such discharges.

3. Limitations on Coverage

The following storm water discharges from construction sites are not authorized by this permit:

a. storm water discharges associated with industrial activity that originate from the site after construction activities have been completed and the site has undergone final stabilization.

b. discharges that are mixed with sources of non-storm water other than discharges which are identified in Part III.A of this permit and which are in compliance with Part IV.D.5 (non-storm water discharges) of this permit.

c. storm water discharges associated with industrial activity that are subject to an existing NPDES individual or general permit or which are issued a permit in accordance with paragraph VI.L (requiring an individual permit or an alternative general permit) of this permit. Such discharges may be authorized under this permit after an existing permit expires provided the existing permit did not establish numeric limitations for such discharges

d. storm water discharges from construction sites that the Director (EPA) has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard; and

e. storm water discharges from construction sites if the discharges may adversely affect a listed or proposed to be listed endangered or threatened species or its critical habitat.

C. Authorization

1. A discharger must submit a Notice of Intent (NOI) in accordance with the requirements of Part II of this permit, using a NOI form provided by the Director (or a photocopy thereof), in order for storm water discharges from construction sites to be authorized to discharge under this general permit.²

2. Where a new operator is selected after the submittal of an NOI under Part II, a new Notice of Intent (NOI) must be submitted by the operator in accordance with Part II, using a NOI form provided by the Director (or a photocopy thereof).

3. Unless notified by the Director to the contrary, dischargers who submit an NOI in accordance with the requirements of this permit are authorized to discharge storm water from construction sites under the terms and conditions of this permit 2 days after the date that the NOI is postmarked. The Director may deny

coverage under this permit and require submittal of an application for an individual NPDES permit based on a review of the NOI or other information (see Part VI.L of this permit).

Part II. Notice of Intent Requirements

A. Deadlines for Notification

1. Except as provided in paragraphs II.A.2, II.A.3, and II.A.4, individuals who intend to obtain coverage for storm water discharges from a construction site (where disturbances associated with the construction project commence before October 1, 1992), under this general permit shall submit a Notice of Intent (NOI) in accordance with the requirements of this Part on or before October 1, 1992:

2. Individuals who intend to obtain coverage under this general permit for storm water discharges from a construction site where disturbances associated with the construction project commence after October 1, 1992, shall submit a Notice of Intent (NOI) in accordance with the requirements of this Part at least 2 days prior to the commencement of construction activities (e.g. the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities);

3. For storm water discharges from construction sites where the operator changes, (including projects where an operator is selected after a NOI has been submitted under Parts II.A.1 or II.A.2) a NOI in accordance with the requirements of this Part shall be submitted at least 2 days prior to when the operator commences work at the site; and

4. EPA will accept an NOI in accordance with the requirements of this part after the dates provided in Parts II.A.1, 2 or 3 of this permit. In such instances, EPA may bring appropriate enforcement actions.

B. Contents of Notice of Intent

The Notice(s) of Intent shall be signed in accordance with Part VI.G of this permit by all of the entities identified in Part II.B.2 and shall include the following information:

1. The mailing address of the construction site for which the notification is submitted. Where a mailing address for the site is not available, the location of the approximate center of the site must be described in terms of the latitude and longitude to the nearest 15 seconds, or the section, township and range to the nearest quarter section;

2. The name, address and telephone number of the operator(s) with day to

day operational control that have been identified at the time of the NOI submittal, and operator status as a Federal, State, private, public or other entity. Where multiple operators have been selected at the time of the initial NOI submittal, NOIs must be attached and submitted in the same envelope. When an additional operator submits an NOI for a site with a preexisting NPDES permit, the NOI for the additional operator must indicate the number for the preexisting NPDES permit:

3. The name of the receiving water(s), or if the discharge is through a municipal separate storm sewer, the name of the municipal operator of the storm sewer and the ultimate receiving water(s);

4. The permit number of any NPDES permit(s) for any discharge(s) (including any storm water discharges or any non-storm water discharges) from the site;

5. An indication of whether the operator has existing quantitative data which describes the concentration of pollutants in storm water discharges (existing data should not be included as part of the NOI); and

6. An estimate of project start date and completion dates, estimates of the number of acres of the site on which soil will be disturbed, and a certification that a storm water pollution prevention plan has been prepared for the site in accordance with Part IV of this permit, and such plan provides compliance with approved State and/or local sediment and erosion plans or permits and/or storm water management plans or permits in accordance with Part IV.D.2.d of this permit. (A copy of the plans or permits should not be included with the NOI submission).

C. Where to Submit

1. Facilities which discharge storm water associated with industrial activity must use a NOI form provided by the Director (or photocopy thereof). The form in the Federal Register notice in which this permit was published may be photocopied and used. Forms are also available by calling (703) 821-4823. NOIs must be signed in accordance with Part VI.G of this permit. NOIs are to be submitted to the Director of the NPDES program in care of the following address: Storm Water Notice of Intent, PO Box 1215, Newington, VA 22122.

2. A copy of the NOI or other indication that storm water discharges from the site are covered under an NPDES permit, and a brief description of the project shall be posted at the construction site in a prominent place for public viewing (such as alongside a building permit).

² A copy of the approved NOI form is provided in Appendix C of this notice.

D. Additional Notification

Facilities which are operating under approved State or local sediment and erosion plans, grading plans, or storm water management plans shall submit signed copies of the Notice of Intent to the State or local agency approving such plans in accordance with the deadlines in Part II.A of this permit (or sooner where required by State or local rules), in addition to submitting the Notice of Intent to EPA in accordance with paragraph II.C.

E. Renotification

Upon issuance of a new general permit, the permittee is required to notify the Director of his intent to be covered by the new general permit.

Part III. Special Conditions, Management Practices, and Other Non-Numeric Limitations**A. Prohibition on Non-Storm Water Discharges**

1. Except as provided in paragraph I.B.2 and III.A.2, all discharges covered by this permit shall be composed entirely of storm water.

2. a. Except as provided in paragraph III.A.2.(b), discharges of material other than storm water must be in compliance with a NPDES permit (other than this permit) issued for the discharge.

b. The following non-storm water discharges may be authorized by this permit provided the non-storm water component of the discharge is in compliance with paragraph IV.D.5: discharges from fire fighting activities; fire hydrant flushings; waters used to wash vehicles or control dust in accordance with Part IV.D.2.c.(2); potable water sources including waterline flushings; irrigation drainage; routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

B. Releases in Excess of Reportable Quantities

1. The discharge of hazardous substances or oil in the storm water discharge(s) from a facility shall be prevented or minimized in accordance with the applicable storm water pollution prevention plan for the facility. This permit does not relieve the permittee of the reporting requirements

of 40 CFR part 117 and 40 CFR part 302. Where a release containing a hazardous substance in an amount equal to or in excess of a reporting quantity established under either 40 CFR 117 or 40 CFR 302, occurs during a 24-hour period:

a. The permittee is required to notify the National Response Center (NRC) (800-424-8802; in the Washington, DC metropolitan area 202-426-2675) in accordance with the requirements of 40 CFR 117 and 40 CFR 302 as soon as he or she has knowledge of the discharge;

b. The permittee shall submit within 14 calendar days of knowledge of the release a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, and steps to be taken in accordance with Part III.B.3 of this permit to the appropriate EPA Regional office at the address provided in Part V.C (addresses) of this permit; and

c. The storm water pollution prevention plan required under Part IV of this permit must be modified within 14 calendar days of knowledge of the release to: Provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

2. *Spills.* This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

Part IV. Storm Water Pollution Prevention Plans

A storm water pollution prevention plan shall be developed for each construction site covered by this permit. Storm water pollution prevention plans shall be prepared in accordance with good engineering practices. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site. In addition, the plan shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with industrial activity at the construction site and to assure compliance with the terms and conditions of this permit. Facilities must implement the provisions of the storm water pollution prevention plan required under this part as a condition of this permit.

A. Deadlines for Plan Preparation and Compliance

The plan shall:

1. Be completed (including certifications required under Part IV.E) prior to the submittal of an NOI to be covered under this permit and updated as appropriate;

2. For construction activities that have begun on or before October 1, 1992, except for sediment basins required under Part IV.D.2.a(2) (structural practices) of this permit, the plan shall provide for compliance with the terms and schedule of the plan beginning on October 1, 1992. The plan shall provide for compliance with sediment basins required under Part IV.D.2.a(a) of this permit by no later than December 1, 1992;

3. For construction activities that have begun after October 1, 1992, the plan shall provide for compliance with the terms and schedule of the plan beginning with the initiation of construction activities.

B. Signature and Plan Review

1. The plan shall be signed in accordance with Part VI.G, and be retained on-site at the facility which generates the storm water discharge in accordance with Part V (retention of records) of this permit.

2. The permittee shall make plans available upon request to the Director, a State or local agency approving sediment and erosion plans, grading plans, or storm water management plans; or in the case of a storm water discharge associated with industrial activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the municipal operator of the system.

3. The Director, or authorized representative, may notify the permittee at any time that the plan does not meet one or more of the minimum requirements of this part. Such notification shall identify those provisions of the permit which are not being met by the plan, and identify which provisions of the plan requires modifications in order to meet the minimum requirements of this part. Within 7 days of such notification from the Director, (or as otherwise provided by the Director), or authorized representative, the permittee shall make the required changes to the plan and shall submit to the Director a written certification that the requested changes have been made.

C. Keeping Plans Current

The permittee shall amend the plan whenever there is a change in design.

construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the plan or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified under Part IV.D.2 of this permit, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. In addition, the plan shall be amended to identify any new contractor and/or subcontractor that will implement a measure of the storm water pollution prevention plan (see Part IV.E). Amendments to the plan may be reviewed by EPA in the same manner as Part IV.B above.

D. Contents of Plan

The storm water pollution prevention plan shall include the following items:

1. *Site description.* Each plan shall provide a description of pollutant sources and other information as indicated:

- a. A description of the nature of the construction activity;
- b. A description of the intended sequence of major activities which disturb soils for major portions of the site (e.g. grubbing, excavation, grading);
- c. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other activities;
- d. An estimate of the runoff coefficient of the site after construction activities are completed and existing data describing the soil or the quality of any discharge from the site;
- e. A site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, an outline of areas which not be disturbed, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water; and
- f. The name of the receiving water(s), and areal extent of wetland acreage at the site.

2. *Controls.* Each plan shall include a description of appropriate controls and measures that will be implemented at the construction site. The plan will clearly describe for each major activity identified in Part IV.D.1.b appropriate control measures and the timing during the construction process that the

measures will be implemented. (For example, perimeter controls for one portion of the site will be installed after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls will be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls will be removed after final stabilization). The description and implementation of controls shall address the following minimum components:

a. *Erosion and sediment controls—(1). stabilization practices.* A description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included in the plan. Except as provided in paragraphs IV.D.2.(a).(1).(a), (b), and (c) below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(a). Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently cease is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

(b). Where construction activity will resume on a portion of the site within 21 days from when activities ceased, (e.g. the total time period that construction activity is temporarily ceased is less than 21 days) then stabilization measures do not have to be initiated on that portion of site by the 14th day after construction activity temporarily ceased.

(c). In arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall of 10 to 20 inches), where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is

precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

(2). *Structural practices.* A description of structural practices to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA.

(a) For common drainage locations that serve an area with 10 or more disturbed acres at one time, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite area that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

(b) For drainage locations serving less than 10 acres, sediment basins and/or sediment traps should be used. At a minimum, silt fences or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area unless a sediment basin providing storage for 3,600 cubic feet of storage per acre drained is provided.

b. *Storm water management.* A description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. Structural measures should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA. This permit only addresses

the installation of storm water management measures, and not the ultimate operation and maintenance of such structures after the construction activities have been completed and the site has undergone final stabilization. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with industrial activity have been eliminated from the site.

(1). Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite and sequential systems (which combine several practices). The pollution prevention plan shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels.

(2). Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel for the purpose of providing a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

c. *Other controls*—(1) *waste disposal*. No solid materials, including building materials, shall be discharged to waters of the United States, except as authorized by a Section 404 permit.

(2) *Off-site vehicle tracking* of sediments and the generation of dust shall be minimized.

(3) The plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

d. *Approved State or local plans*. (1) Permittees which discharge storm water associated with industrial activity from construction activities must include in their storm water pollution prevention plan procedures and requirements specified in applicable sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State or local officials. Permittees shall provide a certification in their storm water pollution prevention plan that their storm water pollution prevention plan reflects requirements applicable to protecting surface water resources in sediment and erosion site plans or site permits, or storm water management

site plans or site permits approved by State or local officials. Permittees shall comply with any such requirements during the term of the permit. This provision does not apply to provisions of master plans, comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit that is issued for the construction site.

(2) Storm water pollution prevention plans must be amended to reflect any change applicable to protecting surface water resources in sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State or local officials for which the permittee receives written notice. Where the permittee receives such written notice of a change, the permittee shall provide a recertification in the storm water pollution plan that the storm water pollution prevention plan has been modified to address such changes.

(3) Dischargers seeking alternative permit requirements shall submit an individual permit application in accordance with Part VI.L of the permit at the address indicated in Part V.C of this permit for the appropriate Regional Office, along with a description of why requirements in approved State or local plans or permits, or changes to such plans or permits, should not be applicable as a condition of an NPDES permit.

3. *Maintenance*. A description of procedures to ensure the timely maintenance of vegetation, erosion and sediment control measures and other protective measures identified in the site plan in good and effective operating condition.

4. *Inspections*. Qualified personnel (provided by the discharger) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater. Where sites have been finally stabilized, or during seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall of 10 to 20 inches) such inspection shall be conducted at least once every month.

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures

identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

b. Based on the results of the inspection, the site description identified in the plan in accordance with paragraph IV.D.1 of this permit and pollution prevention measures identified in the plan in accordance with paragraph IV.D.2 of this permit shall be revised as appropriate, but in no case later than 7 calendar days following the inspection. Such modifications shall provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.

c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph IV.D.4.b of the permit shall be made and retained as part of the storm water pollution prevention plan for at least three years from the date that the site is finally stabilized. Such reports shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part VI.C of this permit.

5. *Non-Storm Water Discharges*. Except for flows from fire fighting activities, sources of non-storm water listed in Part III.A.2 of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

E. Contractors

1. The storm water pollution prevention plan must clearly identify for each measure identified in the plan, the contractor(s) and/or subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the plan must sign a copy of the certification statement in Part IV.E

of this permit in accordance with Part VI.G of this permit. All certifications must be included in the storm water pollution prevention plan.

2. *Certification Statement.* All contractors and subcontractors identified in a storm water pollution prevention plan in accordance with Part IV.E.1 of this permit shall sign a copy of the following certification statement before conducting any professional service identified in the storm water pollution prevention plan:

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

The certification must include the name and title of the person providing the signature in accordance with Part VI.G of this permit; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.

Part V. Retention of Records

A. The permittee shall retain copies of storm water pollution prevention plans and all reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized. This period may be extended by request of the Director at any time.

B. The permittee shall retain a copy of the storm water pollution prevention required by this permit at the construction site from the date of project initiation to the date of final stabilization.

C. *Addresses.* Except for the submittal of NOIs (see Part II.C of this permit), all written correspondence concerning discharges in any State, Indian land or from any Federal Facility covered under this permit and directed to the U.S. Environmental Protection Agency, including the submittal of individual permit applications, shall be sent to the address of the appropriate Regional Office listed below:

1. CT, MA, ME, NH, RI, VT

United States EPA, Region I, Water Management Division (WCP-2109), Storm Water Staff, John F. Kennedy Federal Building, Room 2209, Boston, MA 02203.

2. NJ, NY, PR, VI

United States EPA, Region II, Water Management Division (2WM-WPC),

Storm Water Staff, 26 Federal Plaza, New York, NY 10278.

3. DE, DC, MD, PA, VA, WV

United States EPA, Region III, Water Management Division (3WM55), Storm Water Staff, 841 Chestnut Building, Philadelphia, PA 19107.

4. AL, FL, GA, KY, MS, NC, SC, TN

United States EPA, Region IV, Water Management Division (FPB-3), Storm Water Staff, 345 Courtland Street, N.E., Atlanta, GA 30365.

5. IL, IN, MI, MN, OH, WI

United States EPA, Region V, Water Quality Branch (5WQP), Storm Water Staff, 77 West Jackson Boulevard, Chicago, IL 60604.

6. AR, LA, NM (Except See Region IX for Navajo Lands, and See Region VIII for Ute Mountain Reservation Lands), OK, TX

United States EPA, Region VI, Water Management Division (6W-EA), Storm Water Staff, First Interstate Bank Tower at Fountain Place, 1445 Ross Avenue, 12th Floor, Suite 1200, Dallas, TX 75202.

7. IA, KS, MO, NE

United States EPA, Region VII, Water Management Division, Compliance Branch, Storm Water Staff, 726 Minnesota Avenue, Kansas City, KS 66101.

8. CO, MT, ND, SD, WY, UT (Except See Region IX for Goshute Reservation and Navajo Reservation Lands)

United States EPA, Region VIII, Water Management Division, NPDES Branch (8WM-C), Storm Water Staff, 999 18th Street, Denver, CO 80202-2466.

Note—For Montana Indian Lands, please use the following address: United States EPA, Region VIII, Montana Operations Office, Federal Office Building, Drawer 10096, 301 South Park, Helena, MT 59620-0026.

9. AZ, CA, HI, NV, Guam, American Samoa, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in NV and ID

United States EPA, Region IX, Water Management Division (W-5-1), Storm Water Staff, 75 Hawthorne Street, San Francisco, CA 94105.

10. AK, ID (Except See Region IX for Duck Valley Reservation Lands), OR, WA

United States EPA, Region X, Water Management Division (WD-134), Storm Water Staff, 1200 Sixth Street, Seattle WA 98101.

Part VI. Standard Permit Conditions

A. Duty to Comply

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of CWA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions

a. Criminal

(1). *Negligent Violations* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

(2). *Knowing Violations* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

(3). *Knowing Endangerment* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than \$250,000, or by imprisonment for not more than 15 years, or both.

(4). *False Statement* The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than 2 years, or by both. If a conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or by both. (See Section 309.c.4 of the Clean Water Act).

b. *Civil Penalties*—The CWA provides that any person who violates a

permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed \$25,000 per day for each violation.

c. *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows:

(1). *Class I penalty* Not to exceed \$10,000 per violation nor shall the maximum amount exceed \$25,000.

(2). *Class II penalty* Not to exceed \$10,000 per day for each day during which the violation continues nor shall the maximum amount exceed \$125,000.

B. Continuation of the Expired General Permit

This permit expires on October 1, 1997. However, an expired general permit continues in force and effect until a new general permit is issued. Permittees must submit a new NOI in accordance with the requirements of Part II of this permit, using a NOI form provided by the Director (or photocopy thereof) between August 1, 1997 and September 29, 1997 to remain covered under the continued permit after October 1, 1997. Facilities that had not obtained coverage under the permit by October 1, 1997 cannot become authorized to discharge under the continued permit.

C. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Duty to Provide Information

The permittee shall furnish to the Director: an authorized representative of the Director; a State or local agency approving sediment and erosion plans, grading plans, or storm water management plans; or in the case of a storm water discharge associated with industrial activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the municipal operator of the system, any information which is requested to

determine compliance with this permit or other information.

F. Other Information

When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the Director, he or she shall promptly submit such facts or information.

G. Signatory Requirements

All Notices of Intent, storm water pollution prevention plans, reports, certifications or information either submitted to the Director or the operator of a large or medium municipal separate storm sewer system, or that this permit requires be maintained by the permittee, shall be signed as follows:

1. All Notices of Intent shall be signed as follows:

a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. All reports required by the permit and other information requested by the Director or authorized representative of the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the Director.

b. The authorization specifies either an individual or a position having

responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

c. *Changes to authorization.* If an authorization under paragraph II.B.3. is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new notice of intent satisfying the requirements of paragraph II.B must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. *Certification.* Any person signing documents under paragraph VI.C shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

H. Penalties for Falsification of Reports

Section 309(c)(4) of the Clean Water Act provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or by both.

I. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the CWA or section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

J. Property Rights

The issuance of this permit does not convey any property rights of any sort.

nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

K. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

L. Requiring an Individual Permit or an Alternative General Permit

1. The Director may require any person authorized by this permit to apply for and/or obtain either an individual NPDES permit or an alternative NPDES general permit. Any interested person may petition the Director to take action under this paragraph. Where the Director requires a discharger authorized to discharge under this permit to apply for an individual NPDES permit, the Director shall notify the discharger in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the discharger to file the application, and a statement that on the effective date of issuance or denial of the individual NPDES permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate. Applications shall be submitted to the appropriate Regional Office indicated in Part V.C of this permit. The Director may grant additional time to submit the application upon request of the applicant. If a discharger fails to submit in a timely manner an individual NPDES permit application as required by the Director under this paragraph, then the applicability of this permit to the individual NPDES permittee is automatically terminated at the end of the day specified by the Director for application submittal.

2. Any discharger authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. In such cases, the permittee shall submit an individual application in accordance with the requirements of 40 CFR 122.26(c)(1)(ii), with reasons supporting the request, to the Director at the address for the appropriate Regional Office indicated in part V.C of this permit. The request may be granted by issuance of any individual permit or an alternative general if the

reasons cited by the permittee are adequate to support the request.

3. When an individual NPDES permit is issued to a discharger otherwise subject to this permit, or the discharger is authorized to discharge under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. When an individual NPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by the Director.

M. State/Environmental Laws

1. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by section 510 of the Act.

2. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

N. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

O. Inspection and Entry

The permittee shall allow the Director or an authorized representative of EPA, the State, or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and

other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

P. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Part VII. Reopener Clause

A. If there is evidence indicating potential or realized impacts on water quality due to any storm water discharge associated with industrial activity covered by this permit, the discharger may be required to obtain individual permit or an alternative general permit in accordance with Part I.C of this permit or the permit may be modified to include different limitation: and/or requirements.

B. Permit modification or revocation will be conducted according to 40 CFR 122.62, 122.63, 122.64 and 124.5.

Part VIII. Termination of Coverage

A. Notice of Termination

Where a site has been finally stabilized and all storm water discharges from construction activities that are authorized by this permit are eliminated, or where the operator of all storm water discharges at a facility changes, the operator of the facility must submit a Notice of Termination that is signed in accordance with Part VI.G of this permit. The Notice of Termination shall include the following information:

1. The mailing address of the construction site for which the notification is submitted. Where a mailing address for the site is not available, the location of the approximate center of the site must be described in terms of the latitude and longitude to the nearest 15 seconds, or the section, township and range to the nearest quarter section;

2. The name, address and telephone number of the operator addressed by Notice of Termination:

3. The NPDES permit number for the storm water discharge identified by the Notice of Termination;

4. An indication of whether the storm water discharges associated with industrial activity have been eliminated or the operator of the discharges has changed; and

5. The following certification signed in accordance with Part VI.G (signatory requirements) of this permit:

I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by an NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

For the purposes of this certification, elimination of storm water discharges associated with industrial activity means that all disturbed soils at the identified facility have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated.

B. Addresses

All Notices of Termination are to be sent, using the form provided by the Director (or a photocopy thereof),³ to the following address: Storm Water Notice of Termination, PO Box 1185, Newington, VA 22122.

Part IX. Definitions

Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Commencement of Construction—The initial disturbance of soils associated

with clearing, grading, or excavating activities or other construction activities.

CWA means the Clean Water Act or the Federal Water Pollution Control Act.

Dedicated portable asphalt plant—A portable asphalt plant that is located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR 443.

Dedicated portable concrete plant—A portable concrete plant that is located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

Director means the Regional Administrator of the Environmental Protection Agency or an authorized representative.

Final Stabilization means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) Located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR part 122); or (ii) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in appendices H and I of 40 CFR part 122); or (iii) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

NOI means notice of intent to be covered by this permit (see Part II of this permit.)

NOT means notice of termination (see Part VIII of this permit).

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Associated with Industrial Activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program. For the categories of industries identified in paragraphs (i) through (x) of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph (xi) of this definition, the term includes only storm water discharges from all areas (except access roads and rail lines) listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the: storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste

³ A copy of the approved NOT form is provided in Appendix D of this notice.

product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State or municipally owned or operated that meet the description of the facilities listed in this paragraph (i)-(xi) of this definition) include those facilities designated under 122.26(a)(1)(v). The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:

(i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi) of this definition);

(ii) Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373;

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator;

(iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under Subtitle D of RCRA;

(vi) Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;

(vii) Steam electric power generating facilities, including coal handling sites;

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45 and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (i)-(vii) or (ix)-(xi) of this subsection are associated with industrial activity;

(ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with 40 CFR 503;

(x) Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale;

(xi) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and which are not otherwise included within categories (i)-(x)).*

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which

are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States.

Part X. State Specific Conditions

The provisions of this Part provide modifications or additions to the applicable conditions of Parts I through IX of this permit to reflect specific additional conditions identified as part of the State section 401 certification process. The additional revisions and requirements listed below are set forth in connection with particular State, Indian lands and Federal facilities and only apply to the States, Indian lands and Federal facilities specifically referenced.

Region II

A. *Puerto Rico*. Puerto Rico 401 certification special permit conditions revise the permit as follows:

1. Part I.A of the permit is revised to read as follows:

Part I. Coverage Under This Permit

A. *Permit Area*. The permit covers all areas administered by EPA Region 2 in the Commonwealth of Puerto Rico.

2. Part III of the permit are revised to read as follows:

* On June 4, 1992, the United States Court of Appeals for the Ninth Circuit remanded the exclusion for manufacturing facilities in category (xi) which do not have materials or activities exposed to storm water to the EPA for further rulemaking. (Nos. 90-70871 and 91-70200).

Part III. Special Conditions, Management Practices, Commonwealth Special Conditions, and Narrative Effluent Limitations.

C. Commonwealth Special Conditions

1. Prior to the construction of any treatment system of waters compose entirely of storm water, the permittee shall obtain the approval of the engineering report, plans and specifications from the Environment Quality Board (EQB) of Puerto Rico.

2. The permittee shall submit to EQB with copy to the Regional Office the following information regarding its storm water discharge(s) associated with industrial activity: The number of storm water discharges associated with industrial activity covered by this permit and a drawing indicating the drainage area of each storm water outfalls:

a. For construction activities that have begun on or before October 1, 1992, the permittee is required to submit the information listed above no later than November 15, 1992.

b. For construction activities that have begun after October 1, 1992, the permittee is required to submit the information listed above within forty five (45) days of submission of the NOI.

D. Narrative Effluent Limitations

1. All discharges covered by this Permit shall be free of oil sheen at all times.

2. The storm water discharges associated with industrial activity from construction activities covered by this permit will not cause violation to the applicable water quality standards.

3. Part IV of the permit is revised to read as follows:

Part IV. Storm Water Pollution Prevention Plans

A. Deadlines for Plan Preparation and Compliance

The plan shall: 1. Be completed prior to the submittal of an NOI to be covered under this permit and updated as appropriate:

2. For construction activities that have begun on or before October 1, 1992, the plan shall provide for compliance with the terms and schedule of the plan beginning on October 1, 1992. On or before November 1, 1992, the permittee shall submit to EQB with copy to the Regional Office, a certification stating that the Plan has been developed and implemented in accordance with the requirements established in this permit.

The certification should be signed by the person who fulfills the signatory requirements in accordance with Part VI.G of this permit.

3. For construction activities that have begun after October 1, 1992, the plan shall provide for compliance with the terms and schedule of the plan beginning with the initiation of construction activities. Within thirty (30) days of submission of the NOI, the permittee shall submit to EQB with copy to the Regional Office, a certification stating that the Plan has been developed and implemented in accordance with the requirements established in this permit. This certification should be signed by the person who fulfills the signatory requirements in accordance with Part VI.G of this permit.

C. Keeping Plans Current. The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the plan or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified under Part IV.D.2 of this permit, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity.

Amendments to the plan may be reviewed by EPA in the same manner as Part IV.B above. If events have occurred which require the modification of the Plan, the engineer who performs the corresponding revision must submit to EQB with copy to the Regional Office, a certification stating the modifications performed to the plan. As soon as the modifications performed to the Plan are implemented, the person who fulfills the signatory requirements in accordance with Part VI.G of this permit shall submit to EQB with copy to the Regional Office, a certification stating that the modifications of the Plan have been implemented.

D. Contents of Plan

2. Controls.

d. Approved State or Local Plans

(4) Compliance with the Plan requirements does not relieve the permittee of his responsibility to comply with the provisions of the Sediment and

Erosion Control Plan (Plan CEST, as referred to in Spanish) required by EQB.

4. Part VI.N of the permit is revised to read as follows:

Part VI. Standard Permit Conditions

N. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit. Also, proper operation and maintenance includes, but is not limited to, the effective performance based on designed facility removals, adequate funding, effective management, qualified operator staffing, adequate training, adequate laboratory and process controls including appropriate quality assurance procedures.

Region VIII

B. Colorado (Federal facilities and Indian lands). There are no special conditions pursuant to Colorado 401 certification in this permit for storm water discharges associated with industrial activity from construction activities located on Indian lands in Colorado. Colorado 401 certification special permit conditions for storm water discharges associated with industrial activity from construction activities from Federal facilities is revised as follows:

1. Part I.A of the permit is revised to read as follows:

Part I. Coverage Under This Permit

A. Permit Area. The permit covers all Federal Facilities and Indian Lands administered by EPA Region 8 in the State of Colorado.

2. Part III of the permit is revised to read as follows:

Part III. Special Conditions

A. Prohibition on non-storm water discharges.

2.

b. The following non-storm water discharges may be authorized by this permit provided the non-storm water component of the discharge is in compliance with paragraph IV.D.5: Discharges from fire fighting activities; fire hydrant flushings; waters used to wash vehicles or control dust in accordance with Part IV.D.2.c.(2); potable water sources including waterline flushings; irrigation drainage; routine external building washdown which does not use detergents or other compounds; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate that has not been contaminated by industrial activity and no chemicals have been added to it; naturally occurring springs which have not been altered by the industrial activity; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

B. Releases in Excess of Reportable Quantities

1.

b. The permittee shall submit within 14 calendar days of knowledge of the release a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, and steps to be taken in accordance with paragraph III.B.3 of this permit to the appropriate EPA Regional Office at the address provided in Part V.C (addresses) of this permit and to the Colorado Water Quality Control Division at the following address: Colorado Department of Health, Water Quality Control Division, 4300 Cherry Creek Drive South, Denver, Colorado 80222-1530. Attention: Permits and Enforcement.

3. Part IV.B.2 of the permit is revised to read as follows:

Part IV. Storm Water Pollution Prevention Plans

B. Signature and Plan Review

2. The permittee shall make plans available upon request to the Director,

or authorized representative, or in the case of a storm water discharge associated with industrial activity which discharges through a municipal separate storm sewer system, to the operator of the municipal system. Federal Facilities located on non-Indian lands in Colorado shall make plans available upon request to the Colorado Water Quality Control Division.

4. Part VII.A of the permit is revised to read as follows:

Part VII. Reopener Clause

A. If there is evidence indicating potential or realized impacts on water quality due to any storm water discharge associated with industrial activity covered by this permit, the discharger may be required to obtain individual permit or an alternative general permit in accordance with Part I.C of this permit or the permit may be modified to include different limitations and/or requirements. If EPA develops new regulations which specifically impact storm water permit requirements or there is a change in statute which imposes additional requirements, this permit may be reopened and modified (following administrative procedures) to include the appropriate requirements.

Region IX

C. *Arizona.* Arizona 401 certification special permit conditions revise the permit as follows:

1. Part I.A of the permit is revised to read as follows:

Part I. Coverage Under This Permit

A. *Permit Area.* The permit covers all areas administered by EPA Region 9 in the State of Arizona, excluding all Indian lands.

2. Part II of the permit is revised to read as follows:

Part II. Notice of Intent Requirements

F. *Special NOI Requirements for the State of Arizona.* NOIs shall also be submitted to the State of Arizona Department of Environmental Quality at the following address: Storm Water Coordinator, Arizona Department of Environmental Quality P.O. Box 600, Phoenix, Arizona 85001-0600.

NOIs submitted to the State of Arizona shall include the well registration number if storm water associated with industrial activity is

discharged to a dry well or an injection well.

3. Part III of the permit is revised to read as follows:

Part III. Special Conditions

C. *Compliance with Water Quality Standards of the State of Arizona.* Discharges authorized by this permit shall not cause or contribute to a violation of any applicable water quality standards of the State of Arizona (A.G. Rule No. R92-006).

4. Part VIII of the permit is revised to read as follows:

Part VIII. Termination of Coverage

C. *Special NOT Requirement for the State of Arizona.* NOTs shall also be submitted to the State of Arizona Department of Environmental Quality at the following address:

Storm Water Coordinator, Arizona Department of Environmental Quality, P.O. Box 600, Phoenix, Arizona 85001-0600.

5. The following definition has been added to Part IX of the permit:

Part IX. Definitions

Significant sources of non-storm water includes, but is not limited to: Discharges which could cause or contribute to violations of water quality standards of the State of Arizona, and discharges which could include releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (see 40 CFR 110.10 and 40 CFR 117.21) or section 102 of CERCLA (see 40 CFR 302.4).

Region X

D. *Alaska.* Alaska 401 certification special permit conditions revise the permit as follows:

1. Part I.A of the permit is revised to read as follows:

Part I. Coverage Under This Permit

A. *Permit Area.* The permit covers all areas administered by EPA Region 10 in the State of Alaska.

2. Part II.C of the permit is revised to read as follows:

Part II. Notice of Intent Requirements

C. Where to Submit.

3. A copy of initial Notice of Intent (NOI), any NOI for the continuation of the general permit, and any Notice of Termination shall be submitted to the appropriate State regional office, attention Storm Water Coordinator, as follows:

Alaska Department of Environmental Conservation, Northern Regional Office, 1001 Noble Street, suite 350, Fairbanks, Alaska 99701, (907) 452-1714, Fax: 451-2187.

Alaska Department of Environmental Conservation, Southeastern Regional Office, 410 W. Willoughby, suite 105, Juneau, Alaska 99801, (907) 485-5350, Fax: 465-5362.

Alaska Department of Environmental Conservation, Southcentral Regional Office, 3601 "C" Street, suite 1334, Anchorage, Alaska 99503, (907) 563-8529, Fax: 562-4028.

Alaska Department of Environmental Conservation, Pipeline Corridor Regional Office, 411 W. 4th Ave., suite 2C, Anchorage, Alaska 99502, (907) 278-8594, Fax: 272-0690.

4. With the NOI to the State, a brief description of the activities to be covered shall be submitted. This shall be on a single sheet and shall describe the area to be disturbed to the nearest acre, the primary pollutants expected from the activities and the type of treatment to be provided.

3. Part III.B.1.b is revised to read as follows:

Part III. Special Conditions, Management Practices, and Other Non-Numeric Limitations

B. Releases in excess of Reportable Quantities.

1.

b. The permittee shall submit within 14 calendar days of knowledge of the release a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, and steps to be taken in accordance with Part III.B.3 of this permit to the appropriate EPA Regional Office at the address provided in Part V.C (addresses) of this permit and to the

appropriate State regional office (see section II.C for addresses):

4. Part IV.D.4 of the permit is revised to read as follows:

Part IV. Storm Water Pollution Prevention Plans

D. Contents of Plan.

4. Inspections. Qualified personnel (provided by the discharger) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater. Where sites have been finally stabilized, or during seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall of 10 to 20 inches) such inspection shall be conducted at least once every month. Monthly inspections shall be conducted for areas finally until a Notice of Termination (NOT) has been submitted for the area.

E. Idaho. Idaho 401 certification special permit conditions revise the permit as follows:

1. Part I.A of the permit is revised to read as follows:

Part I. Coverage Under This Permit

A. Permit Area. The permit covers all areas administered by EPA Region 10 in the State of Idaho.

2. Part III of the permit is revised to read as follows:

Part III. Special Conditions

C. All storm water shall be treated and disposed of in such a manner that the ground water standards of Idaho are not violated. Such standards are specified in Section 1.02299 of the "Idaho Water Quality Standards and Wastewater Treatment Requirements."

F. Washington (Federal facilities and Indian lands). Washington 401 certification special permit conditions revise the permit as follows:

1. Part I.A of the permit is revised to read as follows:

Part I. Coverage Under This Permit

A. Permit Area. The permit covers all Federal Facilities administered by EPA Region 10 in the State of Washington.

2. Part III of the permit is revised to read as follows:

Part III. Special Conditions

C. Washington State Standards

1. This permit does not authorize the violation of ground water standards (Chapter 173-200 WAC), surface water standards (Chapter 173-201 WAC), or sediment management standards (Chapter 173-204 WAC) of the State of Washington. The point of compliance with surface water standards shall be determined after consideration of the assignment of a dilution zone as allowed under Chapter 173-201 WAC. The point of compliance with ground water standards shall be determined by applying the provisions of Chapter 173-200 WAC. The point of compliance with sediment management standards shall be determined in accordance with Chapter 173-204 WAC.

2. Diversion of storm water discharges to ground water from existing discharges to surface water shall not be authorized by this permit if this causes a violation or the potential for violation of ground water standards (Chapter 173-200 WAC). Such discharges below the surface of the ground are also regulated by the Underground Injection Control Program (Chapter 173-218 WAC).

3. Washington Department of Ecology (WDOE) is currently developing a "Storm Water Pollution Prevention Plan" which will require facilities to assess the potential of their storm water discharges to violate the Washington State surface water, ground water, or sediment management standards. Those discharges with a high potential to violate standards will be required to develop and implement a monitoring program.

Upon issuance of the "Storm Water Pollution Prevention Plan" by WDOE, EPA may reopen this permit to require facilities to assess their storm water discharges and to require additional monitoring.

AVERAGE ANNUAL PRECIPITATION

